



SHELTER CATALOGUE

CATALOGUE OF THE DIFFERENT SHELTER SOLUTIONS IMPLEMENTED BY SHELTER CLUSTER PARTNERS IN MOZAMBIQUE

Mozambique Shelter Cluster
www.sheltercluster.org

Last updated - March 2026



This catalogue compiles shelter designs previously and currently used by partners and serves as a reference for shelter responses in Mozambique. It brings together key technical information to support the design, implementation and adaptation of shelter solutions according to the local context and available resources

The multiple needs of affected families in terms of safety, privacy, protection and livelihood must be assisted through approaches that are appropriate to the specific context and the availability of resources. Humanitarian actors use a range of methods to provide support to affected people. These methods include the provision of basic materials for shelter construction, technical support, cash assistance, sensitization and promotion of safe shelter construction and installation of shelter practices, or a combination of these and other approaches involving construction.

The aim of shelter assistance programmes is to support affected families and their communities in their pathway to recovery towards safe, adequate, and appropriate shelter, prioritizing the most vulnerable and looking to ensure participation. Basic services and dignified living condition are integral part of safe and adequate shelter.

Building resilience requires understanding local typologies and materials and, above all, applying the right **techniques**

TERMINOLOGIES

Construction Typologies:

Component	Traditional	Mixed	Conventional
Foundation	Compacted soil or stone	Cement-stabilized base or compacted soil	Reinforced concrete
Walls	Adobe, pau-a-pique, wooden poles	Adobe, pau-a-pique, or cement blocks	Cement blocks or brick masonry
Roof	Thatch or tarpaulin* on wooden frame	CGI sheets, thatch, or tarp on wooden frame	CGI sheets or concrete slab
Floor	Compacted soil	Cement screed or compacted soil	Concrete or tiles

*Although tarpaulin is a manufactured material commonly used for roofing due to its availability and ease of transport and installation, the shelter is classified as traditional based on the construction technique and structural system

Response Phases:

Phase	Purpose	Approximate Duration
Emergency	Rapid, life-saving shelter providing immediate protection and basic coverage. Lightweight structures designed for quick deployment and short-term occupancy	Up to 6–12 months
Early Recovery / Transitional	Medium-term shelter allowing households to stabilize living conditions and progressively upgrade housing. Uses local materials and improved structural elements.	1-5 years
Permanent / Durable	Long-term housing solutions designed for safe and durable occupancy. Includes permanent structural systems and allows progressive expansion.	10+ years

Traditional:

Built with **local materials** (bamboo, adobe, wooden poles, thatch) using **empirical and improved local techniques**

Mixed:

Combines **local and conventional (industrial) materials**, integrating **resilient technical** improvements for higher durability

Conventional:

Uses **industrial materials** (cement blocks, concrete, steel) and formal methods following construction standards



Traditional Typology



Mixed Typology



Conventional Typology

EMERGENCY SHELTER

Emergency shelter can be defined as the short term/temporary shelter that provides lifesaving support, the most basic shelter support that can be provided before, during or immediately after a disaster/conflict (Humanitarian Shelter Guidelines, Version 2, 2018).

Type of sites: Temporary sites, relocation sites, newly displaced families and newly returning families.

Category	Typology	Observed Lifespan	Assembly Time	Use & Occupancy	Technical Characteristics	Cost Range (USD)*	DRR Level	Objective
EMERGENCY	Basic	Up to 6 months, highly dependent on climatic exposure (rain, UV, wind) and absence of preventive maintenance	Approx. 6-8 hours (rapid deployment model using pre-defined kit components)	Designed strictly for temporary emergency occupancy. Not structurally adequate for roofing upgrades (e.g. addition of thatch or heavier roof systems) due to limited load-bearing capacity and weak structural joints	Lightweight frame system (typically timber or light-gauge elements). Minimal bracing. Basic ground anchoring (stakes or pegs). Single-layer weatherproof covering (tarpaulin). No structural elevation unless site-prepared. Limited resistance to prolonged rainfall and wind uplift	< 200	Basic fixation and minimal anchoring	Immediate life-saving shelter providing rapid coverage and minimum protection
	Improved	6-12 months depending on maintenance, joint reinforcement condition and environmental stress	1-2 days (requires trained installation team and basic site preparation)	Short-term occupancy with improved environmental protection. Provides enhanced safety compared to basic emergency shelter but remains non-permanent. Limited potential for structural upgrading	Reinforced structural frame with improved connection detailing. Additional diagonal bracing elements. Enhanced anchoring system. Improved tarpaulin fixation to reduce wind uplift. Better load distribution compared to basic model. Still limited foundation system	150-350	Basic to intermediate stabilization (anchoring + bracing)	Short-term stabilization with improved structural integrity and weather resistance

*Shelter cost estimates may vary depending on the partner, procurement period, seasonal availability of materials (e.g. bamboo), and the reference year of purchase

PROJECT DESCRIPTION

Methodology

Emergency shelters follow a community-led approach involving IDP and host communities, as well as local authorities. Local artisans, both women and men, are trained in Build Back Safer (BBS) techniques and supported through technical supervision during construction. Materials are sourced locally whenever possible, with specific items externally procured in line with environmental procedures.

Community Engagement / Participation

Beneficiaries are involved throughout the construction process, contributing to implementation. This promotes ownership and responsibility, supporting better maintenance of the shelters.

Cultural Practices (Sustainability)

The use of familiar materials and techniques facilitates cultural acceptance and supports long-term use and household adaptation.

Environmental Consideration

Local materials reduce transport-related impact and support sustainable resource use. Techniques are adapted to local climatic conditions to enhance resilience, while controlled sourcing is required to prevent resource depletion.

Other Information

Women are encouraged to participate in construction activities, with equal access to BBS training. PSEA awareness sessions are mandatory for all participants prior to engagement.

EMERGENCY SHELTER



Shelter Typology:
Emergency Shelter – Basic

Province(s):
Cabo Delgado

District(s):
Metuge

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary Site
- Relocation site, Resettlement sites
- Host areas/ Affected areas
- Return/origin location

General Description

This model enables rapid, low-cost deployment in conflict-affected rural temporary and resettlement sites, using a lightweight bamboo frame and tarpaulin to provide immediate shelter for IDPs.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 8 m²
Dimensions: 4 m x 2 m
Internal height: *Not specified*
Foundation: Local mud floor (no elevation)

Implementation & Performance

Construction time: 1-2 days
Workforce: 1 skilled, 3 unskilled
Shelter habitability: 2.6 m² per person/ suitable for 3 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Traditional bamboo frame

Main materials:

- **Roofing:** bamboo, tarpaulin
- **Walls:** bamboo, nylon rope

Bamboo use: Yes (walls/structure)

Material treatment: *Not specified*

Shelter estimated cost

Materials: USD 90

Labour: USD 10

Cost reference year: 2020-2022

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Partial (embedded bamboo posts)

Floor elevation: No (mud floor)

Bracing: Yes

Drainage: Channels between shelters to reduce flood risk during the rainy season

Site layout: Shelter spacing allows basic drainage channels

Advantages & limitations

- Fast assembly, low cost, and easy transport make the shelter suitable for rapid deployment in temporary sites
- Compact dimensions limit occupancy and result in reduced internal space and privacy
- Lack of doors, windows and floor elevation increases safety and protection concerns

Key considerations

- Intended for short-term emergency use, plan upgrading if occupancy extends beyond the emergency phase
- Improve privacy and protection where feasible
- Prioritize site drainage due to the lack of floor elevation

PROJECT DESCRIPTION

Methodology

Emergency shelters follow a community-led approach involving IDP and host communities, as well as local authorities. Local artisans, both women and men, are trained in Build Back Safer (BBS) techniques and supported through technical supervision during construction. Materials are sourced locally whenever possible, with specific items externally procured in line with environmental procedures.

Community Engagement / Participation

Beneficiaries are involved throughout the construction process, contributing to implementation. This promotes ownership and responsibility, supporting better maintenance of the shelters.

Cultural Practices (Sustainability)

The use of familiar materials and techniques facilitates cultural acceptance and supports long-term use and household adaptation.

Environmental Consideration

Local materials reduce transport-related impact and support sustainable resource use. Techniques are adapted to local climatic conditions to enhance resilience, while controlled sourcing is required to prevent resource depletion.

Other Information

Women are encouraged to participate in construction activities, with equal access to BBS training. PSEA awareness sessions are mandatory for all participants prior to engagement.

EMERGENCY SHELTER



Shelter Typology:
Emergency Shelter – Improved

Province(s):
Nampula

District(s):
Meconta

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary Site
- Relocation site, Resettlement sites
- Host areas/ Affected areas
- Return/origin location

General Description

This emergency shelter model supports rapid deployment in post-conflict contexts, particularly in rural relocation and resettlement sites, to address immediate life-saving shelter needs of IDPS.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 15 m²
Dimensions: 6 m x 2.5 m
Internal height: Not specified
Foundation: Soil floor

Implementation & Performance

Workforce: Skilled and unskilled labour (*numbers not specified*)
Shelter habitability: 3 m² per person/ suitable for up to 5 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Traditional, pau-a-pique

Main materials:

- **Roofing:** bamboo, tarpaulin, thatch
- **Walls:** bamboo and local wood, thatch

Bamboo use: Yes (walls/structure)
Material treatment: No

Shelter estimated cost

Materials: USD 300
Labour: USD 50
Cost reference year: 2020-2022
Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes

Floor elevation: No (soil floor)

Bracing: Yes

Drainage: Drainage channels created along and between shelters

Site layout: Shelter spacing and drainage channels to reduce flood risk during the rainy season

Advantages & limitations

- Locally available materials enable rapid, cost-effective construction and support cultural acceptance.
- Limited internal space and reduced privacy due to the absence of internal divisions
- Lower durability of untreated local materials, requiring frequent maintenance and increasing vulnerability to weather, pests and rot.

Key considerations

- Suitable only for short-term emergency use
- Not recommended for prolonged occupancy without material upgrading
- Requires regular maintenance, especially in rainy seasons

PROJECT DESCRIPTION

Methodology

Emergency shelters follow a community-led approach involving IDP and host communities, as well as local authorities. Local artisans, both women and men, are trained in Build Back Safer (BBS) techniques and supported through technical supervision during construction. Materials are sourced locally whenever possible, with specific items externally procured in line with environmental procedures.

Community Engagement / Participation

Beneficiaries are involved throughout the construction process, contributing to implementation. This promotes ownership and responsibility, supporting better maintenance of the shelters.

Cultural Practices (Sustainability)

The use of familiar materials and techniques facilitates cultural acceptance and supports long-term use and household adaptation.

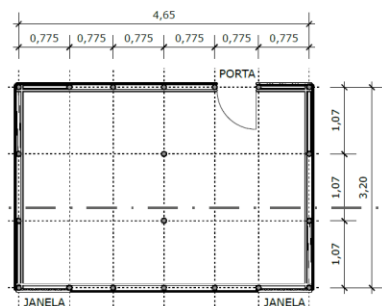
Environmental Consideration

Local materials reduce transport-related impact and support sustainable resource use. Techniques are adapted to local climatic conditions to enhance resilience, while controlled sourcing is required to prevent resource depletion.

Other Information

Women are encouraged to participate in construction activities, with equal access to BBS training. PSEA awareness sessions are mandatory for all participants prior to engagement.

EMERGENCY SHELTER



Shelter Typology:

Emergency Shelter – Improved

Province(s):

Cabo Delgado, Nampula

District(s):

Corrane, Ibo, Quissanga

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary Site
- Relocation site, Resettlement sites
- Host areas/ Affected areas
- Return/origin location

General Description

This model is implemented in conflict-affected rural areas, particularly in relocation and resettlement sites, to provide rapid, life-saving shelter for IDPs, using locally available materials.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 15 m²
Dimensions: 6 m x 2.5 m
Internal height: 2.89 m
Foundation: Soil floor

Implementation & Performance

Workforce: Skilled and unskilled labour (*numbers not specified*)
Delivery modality: Community-based/ in-kind
Shelter habitability: 3m² per person/ suitable for up to 5 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Traditional, Pau-a-Pique

Main materials:

- **Roofing:** bamboo, tarpaulin, thatch
- **Walls:** bamboo and local wood, thatch

Bamboo use: Yes (walls/structure)

Material treatment: Yes

Shelter estimated cost

Materials: USD 300

Labour: USD 50

Cost reference year: 2020-2022

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, embedded bamboo posts

Floor elevation: No (soil floor), but the wall base is protected with denser materials to reduce moisture and splash damage

Bracing: Yes, bamboo and local wood poles arranged in a cross-bracing pattern to enhance structural integrity and prevent swaying or collapse

Site layout: *Not specified*

Advantages & limitations

- Locally available materials enable rapid, cost-effective construction and support cultural acceptance
- Lower durability of untreated local materials, requiring frequent maintenance and increasing vulnerability to weather, pests and rot

Key considerations

- Suitable for short-term emergency response only
- Structural stability relies heavily on correct installation of cross-bracing elements
- Not recommended for prolonged occupancy without material treatment or upgrading

PROJECT DESCRIPTION

Methodology

Emergency shelters follow a community-led approach involving IDP and host communities, as well as local authorities. Local artisans, both women and men, are trained in Build Back Safer (BBS) techniques and supported through technical supervision during construction. Materials are sourced locally whenever possible, with specific items externally procured in line with environmental procedures.

Community Engagement / Participation

Beneficiaries are involved throughout the construction process, contributing to implementation. This promotes ownership and responsibility, supporting better maintenance of the shelters.

Cultural Practices (Sustainability)

The use of familiar materials and techniques facilitates cultural acceptance and supports long-term use and household adaptation.

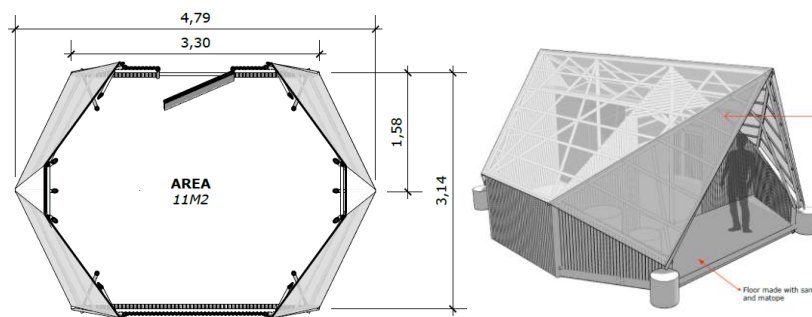
Environmental Consideration

Local materials reduce transport-related impact and support sustainable resource use. Techniques are adapted to local climatic conditions to enhance resilience, while controlled sourcing is required to prevent resource depletion.

Other Information

Women are encouraged to participate in construction activities, with equal access to BBS training. PSEA awareness sessions are mandatory for all participants prior to engagement.

EMERGENCY SHELTER



Shelter Typology:
Emergency Shelter – Improved

Province(s):
Cabo Delgado

District(s):
Ibo

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary Site
- Relocation site, Resettlement sites
- Host areas/ Affected areas
- Return/origin location

General Description

This emergency shelter model is used in conflict-affected rural areas to provide rapid, life-saving shelter for IDPs through a simple, lightweight structure using locally available materials.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 10.36 m²
Dimensions: 3.3 m x 3.14 m
Internal height: 2.37 m
Foundation: Sand and Matope
Floor

Implementation & Performance

Workforce: 1 skilled, 2 unskilled
Delivery modality: Community-based/ in-kind
Shelter habitability: 3.4 m² per person/ suitable for 3 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Lightweight pitched-roof structure
Main materials:
- **Roofing:** Tarpaulin
- **Walls:** Bamboo, local stakes
Bamboo use: Yes (walls/structure)
Material treatment: Not specified

Shelter estimated cost

Materials: USD 77
Labour: N/A
Cost reference year: 2021-2023
Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: No
Floor elevation: No
Bracing: Structural form provides stability against wind loads

Advantages & limitations

- Lightweight and efficient construction allows rapid deployment in emergency contexts
- Design is well accepted by the local community and supports beneficiary participation
- Limited internal area restricts occupancy and is not suitable for larger households
- Designed as a temporary solution, requiring maintenance or upgrading for extended use

Key considerations

- Suitable for very short-term emergency response only
- Occupancy should be limited to a maximum of three persons per shelter
- Not recommended for prolonged use without design adaptation or material upgrading.

PROJECT DESCRIPTION

Methodology

Owner-driven approach with technical guidance. Households lead the construction process with support from trained artisans and technical supervision

Community Engagement / Participation

Local artisans were trained in shelter construction and resilient building techniques. Households were also trained to improve shelter quality and durability, including adding thatch to the roof and applying mud mortar to the walls

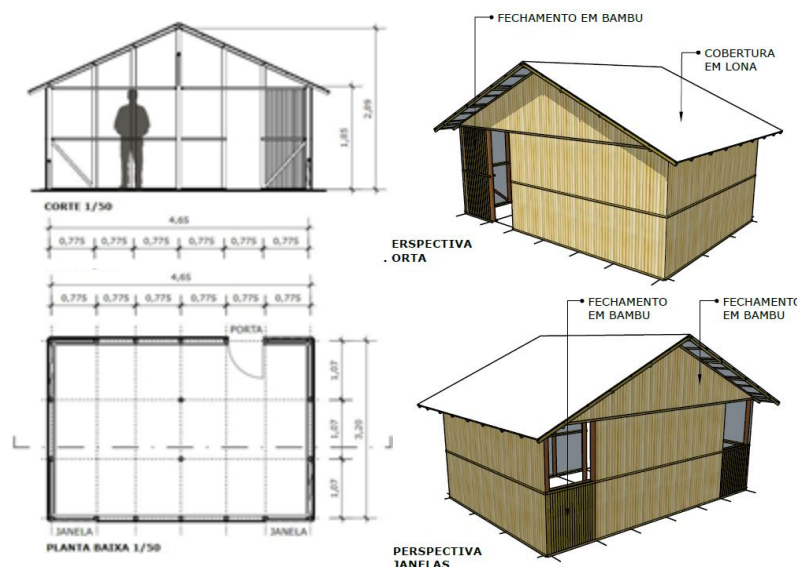
Cultural Practices (Sustainability)

Shelter design and construction materials align with locally known building practices, supporting cultural acceptance and enabling households to adapt, extend, or improve the shelter over time using familiar solutions

Environmental Consideration

The shelter can be upgraded and roofing materials replaced with locally available alternatives, reducing dependence on external supply chains. Attention is given to responsible sourcing and minimizing environmental impacts related to natural resource use

EMERGENCY SHELTER



Shelter Typology:
Emergency Shelter - Improved

Province(s):
Cabo Delgado

District(s):
Ibo

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary Site
- Relocation site, Resettlement sites
- Host areas/ Affected areas
- Return/origin location

General Description

This emergency shelter model is used in conflict-affected rural areas to provide rapid, life-saving shelter for IDPs through a simple, lightweight structure using locally available materials.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: m²
Dimensions: 4.65 x 3.20 m
Internal height: 2.89 m
Foundation: Sand Floor

Implementation & Performance

Workforce: 4 teams of 1 skilled and 3 unskilled labour
Delivery modality: Community-based/ in-kind
Shelter habitability: 3 m² per person/ suitable for 5 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Traditional, Pau-a-Pique
Main materials:
- **Roofing:** tarpaulin and bamboo
- **Walls:** bamboo, local stakes
Bamboo use: Yes, walls and roof structure
Material treatment: Burnt oil applied to elements in contact with the ground

Shelter estimated cost

Materials: USD 154
Labour: USD 86
Cost reference year: 2023
Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, Vertical stakes embedded 60 cm into the ground with two horizontal battens
Floor elevation: No
Bracing: Yes, corner bracing with inclined struts

Advantages & limitations

- Short construction time using locally available materials
- Design allows internal partitioning and incremental upgrading
- Limited privacy due to lightweight wall materials and absence of internal divisions
- Bamboo walls present increased vulnerability to fire

Key considerations

- Anticipate logistics and supply constraints during planning, particularly in island contexts
- Potential for upgrading and incremental improvements
- Low environmental impact due to the use of locally available materials

PROJECT DESCRIPTION

Methodology

Mobilization of beneficiaries for shelter construction using simple and rapid techniques, combined with the provision of shelter materials and basic tool kits. This approach is complemented by on-site technical guidance to ensure safe and standardized construction, using locally available materials in conflict-displacement contexts.

Community Engagement / Participation

Community labour supports rapid construction and basic skills transfer

Cultural Practices (Sustainability)

Use of locally known techniques ensures cultural acceptance and replication

Environmental Consideration

Use of local materials minimizes transport needs and environmental impact, avoiding unnecessary cutting of trees or destruction of local crops



EMERGENCY SHELTER

Shelter Typology:
Emergency Shelter – Improved

Province(s):
Cabo Delgado

District(s):
Metuge

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary Site
- Relocation site, Resettlement sites
- Host areas/ Affected areas
- Return/origin location

General Description

This model enables rapid, low-cost deployment in conflict-affected rural temporary and resettlement sites, using lightweight bamboo and tarpaulin construction to provide immediate shelter for IDPs

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 9 m²
Dimensions: 3.0 x 3.0 x 2.5 m
Internal height: *Not specified*
Foundation: Soil floor

Implementation & Performance

Construction time: 1-2 days
Workforce: 1 Skilled and 1 unskilled labour
Shelter habitability: Suitable for 3 persons

Construction System

Structural system: Traditional, Pau-a-Pique

Main materials:

- **Roofing:** tarpaulin
- **Walls:** Bamboo, tire cords, 4 inch nails

Bamboo use: Yes (walls/structure)

Material treatment: *Not specified*

Shelter estimated cost

Materials: USD 52

Labour: USD 10

Cost reference year: 2020-2021

Exclusions: Logistics not included

Key considerations

- Intended strictly for short-term emergency use and not suitable for prolonged occupancy without upgrades
- Implementation requires community mobilization, technical follow-up, and basic protection and privacy improvements where feasible

DRR/ Resilience techniques used

Anchoring: Not specified

Floor elevation: No (soil floor)

Bracing: Yes, bamboo elements arranged to provide basic wind stability

Drainage: Basic drainage through shelter spacing and simple channels to reduce water accumulation during the rainy season

Technical capacity: Local carpenters and community members support basic construction, repair, and maintenance for rapid deployment

Advantages & limitations

- Very short construction time and low cost support rapid emergency deployment using familiar materials and techniques
- Simple construction enables assembly by low-skilled labour and allows basic adaptations when materials are available
- Limited covered area reduces internal space and privacy, while the lack of floor elevation increases exposure to moisture and flooding
- Durability depends on bamboo treatment, which is not always ensured, and the absence of internal divisions and doors raises protection concerns

PROJECT DESCRIPTION

Methodology

The shelter response addresses urgent life-saving needs of IDPs through the provision of emergency shelters and core-relief/NFI assistance. Shelters are tailored to household size, vulnerability level and displacement phase, using locally sourced materials according to the context. Implementation is carried out through partnerships with international NGOs and strengthened collaboration with local entities.

Community Engagement / Participation

Beneficiaries participate throughout the construction process, fostering ownership and responsibility. Engagement includes open communication channels, community meetings, complaint and feedback mechanisms (CFM), advocacy for community needs, and monitoring of impact and outcomes

Cultural Practices (Sustainability)

Emergency shelters use familiar materials and techniques to ensure cultural acceptance and integration within the community.

Other Information

The response has been implemented through partnership agreements to address protracted displacement, with continued strengthening of localization and capacity development of local entities



EMERGENCY SHELTER

Shelter Typology:
Emergency Shelter – Improved

Province(s):
Cabo Delgado

District(s):
Mueda

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary Site
- Relocation site, Resettlement sites
- Host areas/ Affected areas
- Return/origin location

General Description

This shelter model was implemented in conflict-affected rural relocation and resettlement sites, providing a more durable emergency shelter solution using locally available materials and traditional construction techniques.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

DRR/ Resilience techniques used

Anchoring: *Not specified*

Floor elevation: No

Bracing: Provided through pau-a-pique and truss roof structure

Technical capacity: Construction supported by skilled and unskilled labour with local building knowledge

Dimensions & Layout

Type 1: 18 m² (6 m x 3 m) – households ≤5 members

Type 2: 30 m² (5 m x 6 m) – households >5 members

Internal height: *Not specified*

Foundation: Soil floor

Construction System

Structural system: Traditional, Pau-a-Pique

Main materials: Local wooden poles, bamboo poles, mud daub (matope) walls, plastic tarpaulin and grass roofing fixed on timber truss

Bamboo use: Yes (walls/structure)

Material treatment: *Not specified*

Shelter estimated cost

Type 1:

- Material: USD 360.44
- Labour: USD 62.18

Type 2:

- Material: USD 663.45
- Labour: USD 76.03

Implementation & Performance

Workforce: 1 skilled, 3 unskilled

Delivery modality: Not specified

Advantages & limitations

- Rapid construction using community labour and familiar techniques, supporting basic skills transfer
- Use of locally known construction practices ensures cultural acceptance and ease of replication
- Durable short-term emergency solution using local materials
- Requires more advanced construction skills and materials than basic emergency shelters

Key considerations

- Implementation relies on community mobilization and technical supervision
- Use of local materials reduces transport needs, but requires availability and coordination
- Intended as an emergency standard with higher durability, not a permanent solution

PROJECT DESCRIPTION

Methodology

Provision of materials and basic shelter toolkits, combined with on-site technical guidance, to support rapid construction during the emergency response phase

Community Engagement / Participation

Community members actively participate in shelter construction through the provision of labour, using familiar techniques. This supports rapid implementation, basic skills transfer, and community ownership

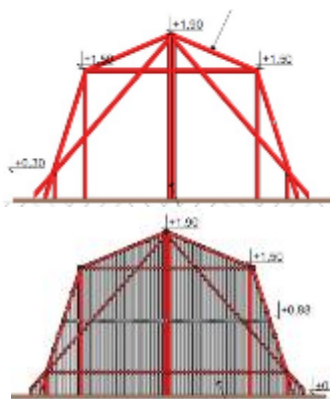
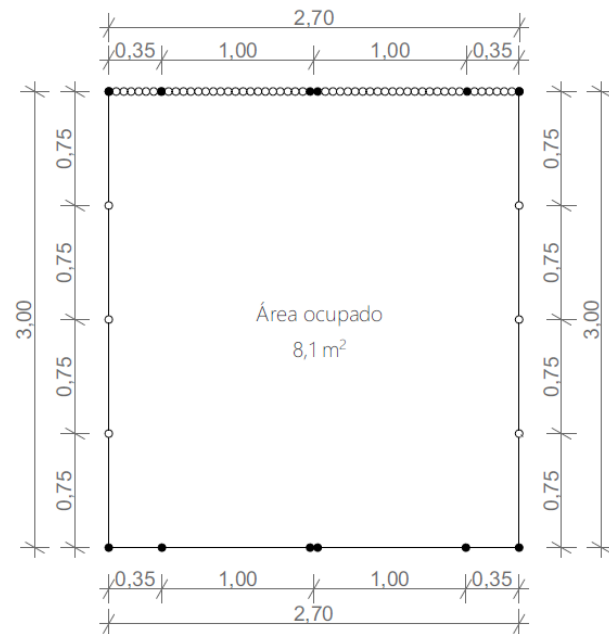
Cultural Practices (Sustainability)

The shelter design is based on locally known construction practices, ensuring cultural acceptance and facilitating replication by affected communities

Environmental Consideration

The use of locally available materials reduces transportation requirements and environmental impact, supporting emergency-scale deployment

EMERGENCY SHELTER



Shelter Typology:
Emergency Shelter – Improved

Province(s):
Cabo Delgado

District(s):
Ancuabe (Natove)

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary Site
- Relocation site, Resettlement sites
- Host areas/ Affected areas
- Return/origin location

General Description

This emergency shelter model is implemented in conflict-affected rural relocation and resettlement sites, providing rapid, low-cost shelter using lightweight bamboo and tarpaulin construction.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 8 m²
Dimensions: 3 m x 2.7 m
Internal height: 1.9 m
Foundation: Sand floor

Implementation & Performance

Workforce: 0 Skilled and 4 unskilled
Delivery modality: Community-based
Shelter habitability: 4 m²/ person (2 occupants)

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Traditional, lightweight bamboo structure

Main materials:

- **Roofing & walls:** bamboo, tarpaulin
- **Fixings:** 3.5" common nails, recycled rubber cord

Bamboo use: Yes (walls/structure)

Material treatment: Bamboo treated with anti-termite solution

Shelter estimated cost

Materials: USD 43.39
Labour: USD 4.74
Cost reference year: 2022
Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Not specified

Floor elevation: No

Bracing: Yes, provided by bamboo structural frame

Technical capacity: Construction carried out by community members with basic training

Advantages & limitations

- Rapid, very low-cost construction, using lightweight materials that allow transport of multiple shelters per truck
- Compact dimensions, suitable for temporary and high-density sites
- Limited internal space and privacy, with no floor elevation, increasing exposure to heat and moisture
- Thermal discomfort, with very hot indoor conditions during sunny days

Key considerations

- Intended strictly for short-term emergency response, with performance highly dependent on the lifespan of the tarpaulin
- Requires follow-up measures, particularly to improve protection and privacy where feasible

PROJECT DESCRIPTION

Methodology

The shelter structure was constructed with the support of trained artisans. Once the frame was completed, households carried out the wall infill (matting) as part of the construction process

Community Engagement / Participation

The shelter structure was constructed with the support of trained artisans. Once the frame was completed, households carried out the wall infill (matting) as part of the construction process

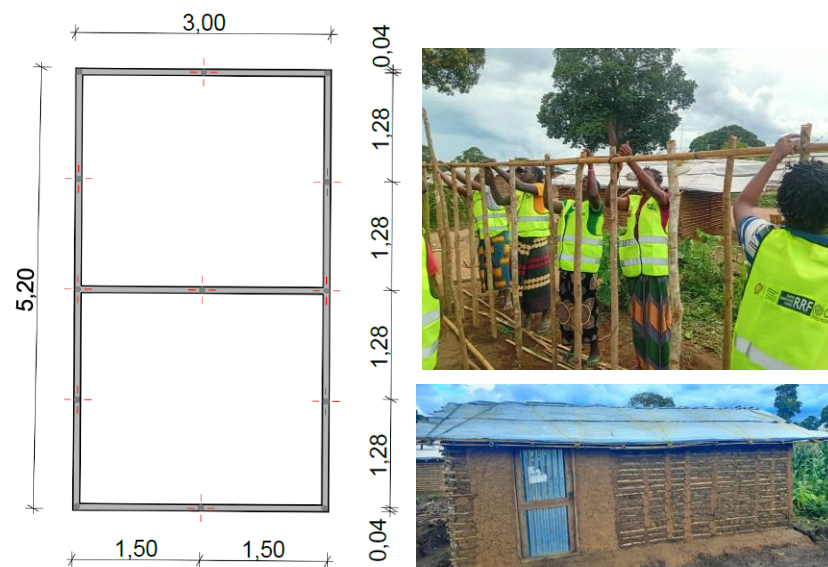
Cultural Practices (Sustainability)

The shelter structure was constructed with the support of trained artisans. Once the frame was completed, households carried out the wall infill (matting) as part of the construction process

Environmental Consideration

Locally available materials were used to reduce transport and environmental impact. Basic material treatment was applied to improve durability, particularly for elements in contact with the ground

EMERGENCY SHELTER



Shelter Typology:
Emergency Shelter - Improved

Province(s):
Cabo Delgado

District(s):
Mueda

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary Site
- Relocation site, Resettlement sites
- Host areas/ Affected areas
- Return/origin location

General Description

This emergency shelter model is used in conflict-affected rural areas to provide rapid shelter for IDPs. It uses locally available materials and simple construction techniques, allowing quick assembly and community participation.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 15 m²
Dimensions: 5.2 x 3 m
Internal height: 2.89 m
Foundation: Soil Floor

Implementation & Performance

Workforce: 10 trained artisans
Delivery modality: Community-based/ in-kind
Shelter habitability: 3 m² per person/ suitable for 5 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system:

Main materials:

- **Roofing:** tarpaulin supported by bamboo structure
- **Walls:** bamboo, local stakes

Bamboo use: Yes, walls and roof structure

Material treatment: Yes, Burnt oil

Shelter estimated cost

Materials: USD 230

Labour: N/A

Cost reference year: 2026

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, Vertical stakes placed 60 cm into the ground and reinforced with two horizontal wooden pieces

Floor elevation: No

Bracing: Yes, provided through wall configuration and structural framing

Advantages & limitations

- Uses locally available materials
- Simple construction method suitable for community implementation and rapid construction
- Limited availability of some materials in local markets, with some needing to be sourced outside the district

Key considerations

- Flexible design that can be adapted to local conditions and availability of materials
- Regular maintenance may be required due to the use of untreated or semi-treated local materials

EARLY RECOVERY/ TRANSITIONAL SHELTER

Early recovery/ transitional shelter refers to an intermediate shelter solution implemented during the early recovery phase, providing safer and more stable living conditions while allowing incremental improvements and progressive upgrading using locally available materials and household participation.

Category	Typology	Observed Lifespan	Assembly Time	Use & Occupancy	Technical Characteristics	Cost Range (USD)*	DRR Level	Objective
EARLY RECOVERY/ TRANSITIONAL	Standard	12-24 months with regular maintenance (thatch replacement cycle, joint inspection and minor repairs)	Up to 3 days depending on availability of local materials and skilled labor	Transitional occupancy allowing incremental improvement and partial consolidation. Suitable for households intending to remain medium-term. Requires active household participation in maintenance	Locally sourced structural elements (timber/bamboo). Reinforced joints and standardized bracing layout. Proper tarpaulin installation protected by secondary roofing layer (e.g. thatch). Improved door and window framing. Basic internal spatial organization. Elevated plinth where required. Surface drainage around shelter perimeter to reduce water ingress	300-700	Full bracing, basic elevation and drainage measures	Evolutionary transitional shelter with upgrade potential and improved resilience
	Hybrid	2-5 years depending on material quality and structural consolidation level	3-5 days depending on degree of masonry/foundation incorporation	Intermediate solution bridging transitional and permanent housing. Designed to support progressive consolidation and partial structural upgrading without full reconstruction	Combination of local materials with semi-permanent components (e.g. partial masonry walls, stabilized plinth). Improved roof-to-wall anchorage. More robust foundation system. Increased lateral stability and durability. Reduced maintenance frequency compared to standard transitional shelter	600-1000	Intermediate structural reinforcement (enhanced connections and partial permanent elements)	Transitional-to-permanent bridging solution enabling structural consolidation over time

*Shelter cost estimates may vary depending on the partner, procurement period, seasonal availability of materials (e.g. bamboo), and the reference year of purchase

PROJECT DESCRIPTION

Methodology

Transitional shelters follow a community-led approach supported by technical guidance. Local artisans, both women and men, are trained in resilient construction and Build Back Safer (BBS) techniques, supported by on-site supervision to ensure improved performance beyond emergency standards. Materials are mainly sourced locally, with external procurement when required, in line with environmental standards.

Community Engagement / Participation

Beneficiaries participate in construction and basic layout decisions. Households with limited labour capacity are supported. This strengthens ownership and allows incremental upgrading over time.

Cultural Practices (Sustainability)

Familiar materials and local techniques support cultural acceptance while integrating improved practices that allow households to progressively adapt, reinforce, or upgrade the shelter.

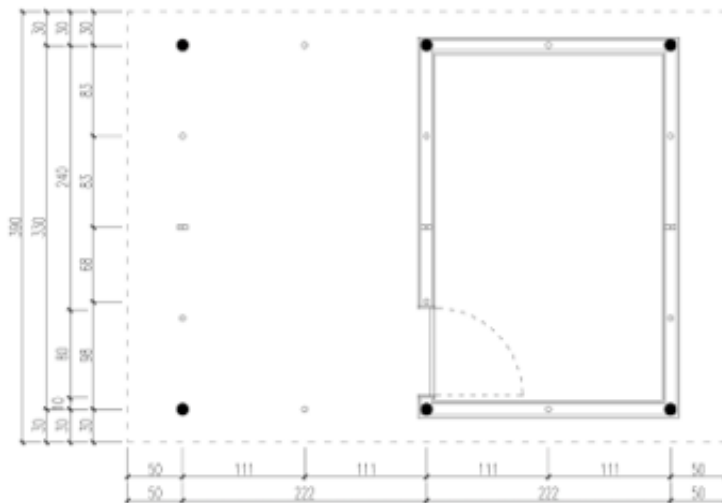
Environmental Consideration

Local materials are prioritized and treated to improve durability, while sourcing follows environmental standards to reduce pressure on natural resources.

Other Information

Women are encouraged to participate in construction, with equal access to technical training. PSEA awareness sessions are mandatory prior to engagement.

EARLY RECOVERY/ TRANSITIONAL SHELTER



Shelter Typology:

Transitional Shelter – Standard

Province(s):

Cabo Delgado

District(s):

Metuge

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary Site
- Relocation site, Resettlement sites
- Host areas/ Affected areas
- Return/origin location

General Description

This shelter model is implemented in different contexts, providing a transitional shelter solution based on locally available materials and traditional construction techniques, suitable for early recovery

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 16 to 20 m²

Dimensions: 4 m x 4 m

Internal height: *Not specified*

Foundation: Sand floor

Implementation & Performance

Workforce: 2 Skilled and 3 unskilled labour

Delivery modality: Community-based

Shelter habitability: 4 m per person/ suitable for 3-5 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Traditional, Pau-a-Pique

Main materials:

- Roofing: Bamboo, tarpaulin, grass
- Walls: Bamboo, wooden poles, pau-a-pique with mud, nylon rope

Bamboo use: Yes (walls/structure)

Material treatment: *Not specified*

Shelter estimated cost

Materials: USD 130

Labour: USD 20

Cost reference year: 2022-2024

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes

Floor elevation: No

Bracing: Yes

Technical capacity: Construction carried out by community members using locally known techniques, supported by basic technical guidance during the early recovery phase

Advantages & limitations

- Use of local and sustainable materials supports cultural acceptance, local ownership, and ease of replication
- Community appropriation of the model using familiar design and construction techniques, allowing incremental expansion and adaptation over time
- Improves local construction skills, but lacks proper foundations and requires ongoing maintenance of roofing materials

Key considerations

- Performance depends on regular maintenance, particularly replacement of grass roofing
- Requires monitoring to ensure durability over the intended lifespan

PROJECT DESCRIPTION

Methodology

Transitional shelters follow a community-led approach with technical guidance. Local artisans, both women and men, are trained in resilient construction and Build Back Safer (BBS) techniques, supported by on-site supervision to ensure improved performance beyond emergency standards. Materials are mainly sourced locally, with external procurement when required, in line with environmental standards.

Community Engagement / Participation

Beneficiaries participate in construction and basic layout decisions. Households with limited labour capacity are supported. This strengthens ownership and allows incremental upgrading over time.

Cultural Practices (Sustainability)

Familiar materials and local techniques support cultural acceptance while introducing improved practices that allow households to adapt or reinforce the shelter progressively.

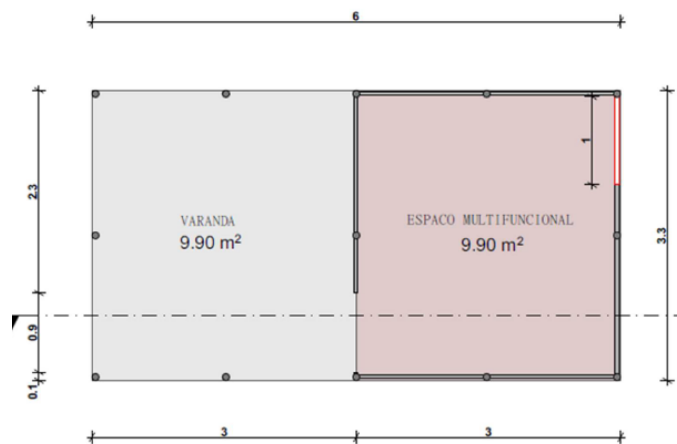
Environmental Consideration

Local materials are prioritized and treated to enhance durability. Sourcing follows environmental standards to prevent resource depletion.

Other Information

Women are encouraged to participate in construction, with equal access to technical training. PSEA awareness sessions are mandatory prior to engagement

EARLY RECOVERY/ TRANSITIONAL SHELTER



Shelter Typology:

Transitional Shelter – Standard

Province(s):

Cabo Delgado

District(s):

Metuge

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary Site
- Relocation site, Resettlement sites
- Host areas/ Affected areas
- Return/origin location

General Description

This shelter model is implemented in different contexts, providing a transitional shelter solution using locally available materials and traditional construction techniques, suitable for early recovery contexts

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 9.9 to 19.8 m²

Dimensions:

- 3 m x 3.3 m
- 3.3 m x 6 m

Internal height: *Not specified*

Foundation: Sand floor

Implementation & Performance

Workforce: 2 Skilled and 3 unskilled labour

Delivery modality: Community-based

Shelter habitability: 3.3 m² to 3.9 m² per person/ suitable for 3-5 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Traditional, Pau-a-Pique with Veranda

Main materials:

- Roofing: Bamboo, tarpaulin
- Walls: Bamboo, wooden poles, pau-a-pique with mud

Bamboo use: Yes (walls/structure)

Material treatment: *Not specified*

Shelter estimated cost

Materials: USD 100

Labour: USD 20

Cost reference year: 2022-2024

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes

Floor elevation: No

Bracing: Yes, provided through bamboo structural frame and wall configuration

Technical capacity: Construction based on local techniques, enabling community-led implementation and acceptance

Advantages & limitations

- Incremental design allows extension over time, including enclosure of the veranda, while improving ventilation and semi-open use of the shelter
- Use of local materials and familiar construction techniques supports community appropriation
- Lack of proper foundations limits structural performance
- Roofing materials require regular maintenance and replacement of tarpaulins

Key considerations

- Performance depends on regular maintenance, particularly replacement of grass roofing
- Requires monitoring to ensure durability over the intended lifespan

PROJECT DESCRIPTION

Methodology

Transitional shelters follow a community-led approach with technical guidance. Local artisans, both women and men, are trained in resilient construction and Build Back Safer (BBS) techniques, supported by on-site supervision to ensure improved performance beyond emergency standards. Materials are mainly sourced locally, with external procurement when required, in line with environmental standards.

Community Engagement / Participation

Beneficiaries participate in construction and basic layout decisions. Households with limited labour capacity are supported. This strengthens ownership and allows incremental upgrading over time.

Cultural Practices (Sustainability)

Familiar materials and local techniques support cultural acceptance while introducing improved practices that allow households to adapt or reinforce the shelter progressively.

Environmental Consideration

Local materials are prioritized and treated to enhance durability. Sourcing follows environmental standards to prevent resource depletion.

Other Information

Women are encouraged to participate in construction, with equal access to technical training. PSEA awareness sessions are mandatory prior to engagement



EARLY RECOVERY/ TRANSITIONAL SHELTER

Shelter Typology:

Transitional Shelter – Hybrid

Province(s):

Manica, Sofala

District(s):

Sussundenga, Buzi

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary Site
- Relocation site, Resettlement sites
- Host areas/ Affected areas
- Return/origin location

General Description

This shelter model is implemented in cyclone-affected rural contexts, providing a transitional shelter solution based on locally available materials and traditional construction techniques

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 18 m²

Dimensions: 5.15 m x 3.5 m

Internal height: *Not specified*

Foundation: Sand floor

Implementation & Performance

Workforce: 1 Skilled and 2 unskilled labour

Delivery modality: Community-based

Shelter habitability: 3.6 m per person/ suitable for 5 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Traditional timber frame with pau-a-pique wall system

Main materials:

- Roofing: Local timber, CGI roofing sheets
- Walls: Local wooden poles, macane sticks, mud-plastering

Bamboo use: Yes (walls/structure)

Material treatment: *Not specified*

Shelter estimated cost

Materials: USD 700

Labour: USD 70

Cost reference year: 2022-2023

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes

Floor elevation: No

Bracing: Yes, through woven wall system and timber structural frame

Technical capacity: Construction carried out by local artisans using traditional techniques, enabling community-led implementation

Advantages & limitations

- Supports early recovery through culturally adapted construction using local materials
- Strengthens community ownership and local construction capacity
- Durability depends on the quality and availability of local materials
- Construction quality may vary depending on artisan skill levels

Key considerations

- Performance depends on regular maintenance, particularly maintenance of roofing elements
- Requires monitoring to ensure durability over the intended lifespan

PROJECT DESCRIPTION

Methodology

The shelter is constructed using an improved pau-a-pique system with basic reinforcement measures. Implementation combines the use of local materials with technical support to improve construction quality and durability compared to basic shelters

Community Engagement / Participation

Community members contribute to the construction process through labour, applying locally known techniques with technical guidance to support safer and more consistent implementation

Cultural Practices (Sustainability)

The model is based on traditional pau-a-pique construction practices, ensuring cultural acceptance and allowing households to adapt and upgrade the shelter over time

Environmental Consideration

The use of locally available materials reduces transportation needs; however, careful material sourcing and quality control are required to limit environmental impact and ensure durability



EARLY RECOVERY/ TRANSITIONAL SHELTER

Shelter Typology:

Transitional Shelter – Hybrid

Province(s):

Cabo Delgado

District(s):

Chiure

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This improved pau-a-pique shelter uses local materials and reinforced techniques, providing greater durability, while remaining transitional in nature due to its construction and maintenance requirements.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 18 m²

Dimensions: 5 m x 3 m

Internal height: *Not specified*

Foundation: Compacted soil

Implementation & Performance

Set-up time: 3-5 days

Workforce: 2 skilled and 3 unskilled labour

Delivery modality: Community-based construction with technical supervision

Shelter habitability: 3.6 m² per person/ suitable for 5 occupants

Construction System

Structural system: Improved pau-a-pique load-bearing walls with reinforced timber structure

Main materials:

- **Roofing:** CGI
 - **Walls:** Bamboo, tyre cords, galvanized wires, wooden poles, mud, burnt oil
 - **Doors / windows:** Bamboo, tyre cords, galvanized wires, galvanized nails, bolt lock
 - **Floor:** Concrete slab and soil
- Bamboo use:** Yes (walls and elements)
Material treatment: *Not specified*

Shelter estimated cost

Materials: USD 670

Labour: USD 23.72

Cost reference year: 2021

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes

Floor elevation: No

Bracing: Yes, reinforced wall structure and connections

Technical capacity: Build Back Better (BBB) workshops and testing of designs with carpenters and community members

Advantages & limitations

- Provides increased covered space, privacy, and durability compared to emergency shelters
- Incorporates safer construction practices and technical knowledge transfer to beneficiaries
- Requires longer construction time and higher technical skills than basic shelters
- If built by beneficiaries, requires significant mobilization and sustained technical support

Key considerations

- Long-term performance depends on maintenance, material quality, and technical supervision
- Can serve as a basis for future upgrading but does not meet full permanent housing standards

PROJECT DESCRIPTION

Methodology

Mobilization of beneficiaries for shelter construction using simple and rapid construction techniques, combined with the provision of shelter materials and basic toolkits. This approach is complemented by on-site technical guidance to ensure safe and standardized construction, using locally available materials in conflict-displacement contexts.

Community Engagement/ Participation

Community members contribute to the construction process through labour, applying locally known techniques with technical guidance to support safer and more consistent implementation.

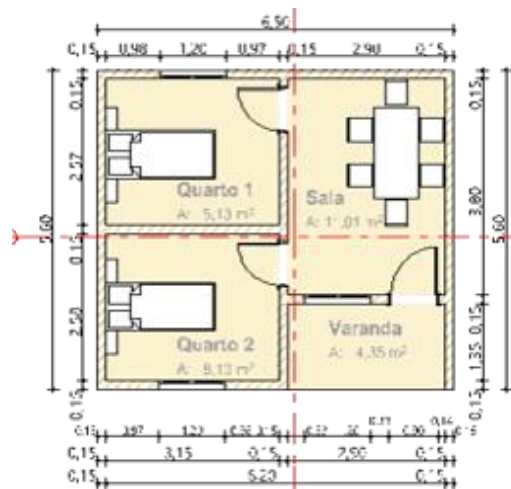
Cultural Practices (Sustainability)

Community members contribute to the construction process through labour, applying locally known techniques with technical guidance to support safer and more consistent implementation.

Environmental Consideration

The use of locally sourced materials reduces transport needs and environmental impact, while considering seasonal availability and responsible use of natural resources

EARLY RECOVERY/ TRANSITIONAL SHELTER



Shelter Typology:

Transitional Shelter – Hybrid

Province(s):

Cabo Delgado

District(s):

Mecufi

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This shelter model is based on improved pau-a-pique construction using local materials and reinforced techniques. It provides increased space, privacy, and durability compared to emergency shelters, while allowing incremental upgrading.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 33.6 m²

Dimensions: 5.6 m x 5.2 m

Internal height: *Not specified*

Foundation: Soil floor

Implementation & Performance

Set-up time: >5 days

Workforce: 2 skilled and 3 unskilled labour

Delivery modality: Community-based

Shelter habitability: 3.6 m² per person/ suitable for 5 occupants

Construction System

Structural system: Improved traditional pau-a-pique system

Main materials:

- **Roofing:** CGI, timber beams, nails
- **Walls:** bamboo, tyre cords and galvanized wires, galvanized nails, wooden poles, mud, burnt oil
- **Doors/windows:** Bamboo, tyre cords and galvanized wires, galvanized nails, bolt lock
- **Floor:** Soil

Bamboo use: Yes (walls/structure)

Material treatment: Yes

Shelter estimated cost

Materials: USD 809.24

Labour: USD 30.76

Cost reference year: 2021

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes

Floor elevation: No

Braicing: Yes, preparedness-oriented construction techniques to reduce vulnerability to heavy storms and cyclones

Technical capacity: BBB (Build Back Better) workshops testing designs with carpenters and community members

Advantages & limitations

- Increased covered space, privacy, and durability compared to basic shelters
- Uses local materials and a technique known by the community, can be upgraded
- Requires technical skills and longer construction time
- If built by beneficiaries, requires significant mobilization and technical support

Key considerations

- Performance and durability depend on material quality and maintenance, with potential for incremental upgrading into more durable housing

PROJECT DESCRIPTION

Methodology

Shelter construction is implemented through beneficiary mobilization using simple and rapid construction techniques, combined with the provision of shelter materials and basic toolkits. On-site technical guidance ensures safer and more standardized construction using locally available materials in conflict-displacement contexts

Community Engagement / Participation

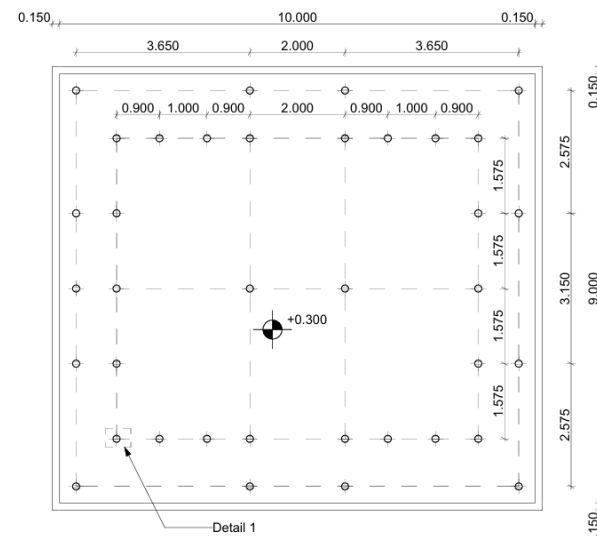
Community members participate in the construction through labour, applying locally known techniques with technical guidance to support safer and more consistent implementation

Cultural Practices (Sustainability)

The model is based on traditional pau-a-pique construction practices, ensuring cultural acceptance and allowing households to adapt, maintain and upgrade the shelter over time

Environmental Consideration

The use of locally available materials reduces transportation needs; however, careful material sourcing and quality control are required to minimize environmental impact and ensure durability.



caritas

EARLY RECOVERY/ TRANSITIONAL SHELTER

Shelter Typology:

Transitional Shelter – Hybrid

Province(s):

Cabo Delgado

District(s):

Mecúfi

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This improved pau-a-pique shelter uses locally available materials and reinforced construction techniques to improve durability. However, due to the construction system and maintenance requirements, the shelter is considered transitional and suitable for future upgrading.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 77.19 m²

Dimensions: 9.3 x 8.3 m

Internal height: 2.2 m

Foundation: Compacted soil

Implementation & Performance

Set-up time: > 5 days

Workforce: 2 skilled and 3 unskilled labour

Delivery modality: Community-based construction with technical supervision

Shelter habitability: 3.6 m² per person/ suitable for 5-8 occupants

Construction System

Structural system: Improved pau-a-pique load-bearing walls with reinforced timber structure

Main materials:

- **Roofing:** CGI sheets fixed to timber beams with nails
- **Walls:** Bamboo lattice structure tied with tyre cords and galvanized wire, finished with mud plaster
- **Doors / windows:** Bamboo frames fixed with tyre cords, galvanized wire and nails, with simple bolt lock

Bamboo use: Yes (walls and elements)

Material treatment: Timber posts treated with used motor oil

Shelter estimated cost

Materials: USD 2 265.63

Labour: USD 46,87

Cost reference year: 2025

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, posts embedded in the ground to improve structural stability

Floor elevation: No

Bracing: Yes, reinforced wall structure and connections

Advantages & limitations

- Provides increased covered space, privacy and durability compared to emergency shelters
- Incorporates safer construction practices and supports technical knowledge transfer to beneficiaries
- Requires longer construction time and higher technical skills compared to basic shelter solutions
- When built by beneficiaries, requires strong community mobilization and continuous technical support

Key considerations

- Long-term performance depends on regular maintenance, material quality and adequate technical supervision
- The shelter can serve as a basis for future upgrading but does not meet full permanent housing standards

2025

PROJECT DESCRIPTION

Methodology

Mobilization of beneficiaries for shelter construction using simple and rapid techniques, combined with the provision of shelter materials and basic toolkits. This approach is complemented by on-site technical guidance to ensure safe and standardized construction using locally available materials in conflict-displacement contexts

Community Engagement/ Participation

Community members contribute to the construction process through labour, applying locally known techniques with technical guidance to support safer and more consistent implementation

Cultural Practices (Sustainability)

The model is based on traditional pau-a-pique construction practices, ensuring cultural acceptance and allowing households to adapt and upgrade the shelter over time

Environmental Consideration

The use of locally available materials reduces transportation needs; however, careful sourcing and quality control are required to limit environmental impact and ensure durability



EARLY RECOVERY/ TRANSITIONAL SHELTER

Shelter Typology:

Transitional Shelter – Hybrid

Province(s):

Cabo Delgado

District(s):

Balama

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This improved pau-a-pique shelter uses locally available materials and reinforced construction techniques, providing greater durability while remaining transitional in nature due to its construction system and maintenance requirements. The shelter features a two-sided (gable) roof with zinc sheets.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 15.6 m²

Dimensions: 5.2 m x 3 m

Internal height: *Not specified*

Foundation: Compacted soil floor

Implementation & Performance

Workforce: 1 skilled and 3 unskilled labour

Delivery modality: Community-based construction with technical supervision

Shelter habitability: 3.6 m² per person/ suitable for 5 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Improved Pau-a-Pique

Main materials:

- **Roofing:** CGI, timber beams, nails
- **Walls:** bamboo, tyre cords and galvanized wires, galvanized nails, wooden poles, mud, burnt oil

Bamboo use: Yes (walls/structure)

Material treatment: Wood treatment applied

Shelter estimated cost

Materials: USD 750

Labour:

Cost reference year: 2026

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, structure anchored to foundation elements to improve stability

Floor elevation: Yes, elevated floor or raised foundation to reduce moisture and flooding risk

Bracing: Yes, reinforced bamboo wall frame and roof connections

Advantages & limitations

- Uses locally available materials and familiar construction techniques, supporting community participation and skills transfer
- Provides improved durability and living conditions compared to basic emergency shelters
- Construction quality and durability depend on correct application of techniques and regular maintenance

Key considerations

- Requires technical supervision during construction to ensure structural stability
- Regular maintenance is needed, particularly for wall protection and roof elements
- Can serve as a basis for incremental upgrading, but does not meet full permanent housing standards

PROJECT DESCRIPTION

Methodology

Provision of shelter materials and basic toolkits, combined with on-site technical guidance to support safe and standardized construction using locally available materials in cyclone and armed conflicts affected contexts

Community Engagement/ Participation

Community members participate in shelter construction by providing labor, with basic technical supervision. This approach strengthens local skills, promotes ownership, and supports knowledge transfer on safer construction practices

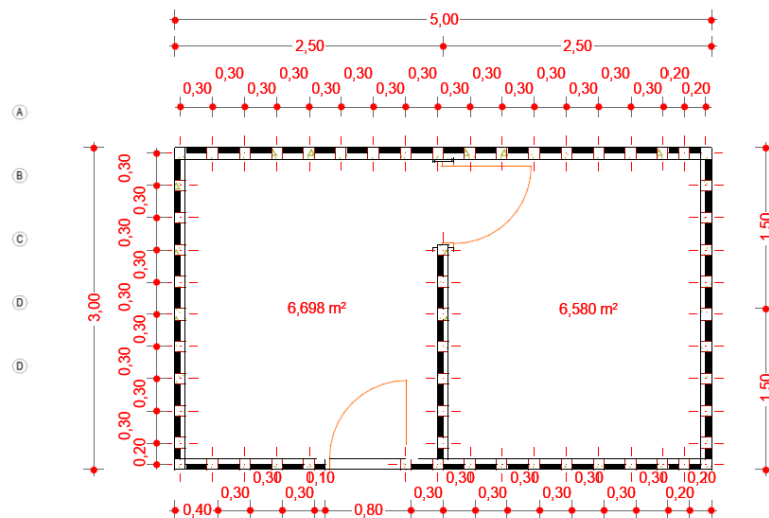
Cultural Practices (Sustainability)

The shelter design follows traditional construction methods commonly used in the area, ensuring cultural acceptance and ease of adoption. Familiar techniques facilitate replication and incremental improvements by households

Environmental Consideration

The use of locally sourced materials reduces transport needs and environmental impact, while considering seasonal availability and responsible use of natural resources.

EARLY RECOVERY/ TRANSITIONAL SHELTER



Shelter Typology:
Transitional Shelter – Standard

Province(s):
Nampula

District(s):
Memba

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This shelter model is implemented in areas affected by cyclones and conflict, using locally available materials and traditional construction techniques. The design improves durability and living conditions compared to basic emergency shelters and allows incremental upgrading.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 15 m²

Dimensions: 5 m x 3 m

Internal height: *Not specified*

Foundation: Compacted soil floor

Implementation & Performance

Workforce: 2 skilled and 3 unskilled labour

Delivery modality: Community-based

Shelter habitability: : 3 m² per person/ suitable for 3-5 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Traditional, Pau-a-pique

Main materials:

- **Roofing:** Bamboo, tarpaulin
- **Walls:** bamboo, wooden poles, pau-a-pique with mud

Bamboo use: Yes (walls/structure)

Material treatment: Wood treatment applied

Shelter estimated cost

Materials: USD 150-200 (depending on location)

Labour: N/A

Cost reference year: 2020

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes

Floor elevation: No

Bracing: Yes, bamboo structural frame with woven wall panels and reinforced roof connections

Advantages & limitations

- Uses locally available materials and familiar construction techniques, allowing rapid implementation and community participation
- Low-cost shelter solution compared to other emergency shelter options
- Durability depends on material quality and treatment and requires regular maintenance, particularly of roofing materials.

Key considerations

- Structural performance depends on correct application of construction techniques, technical supervision, and regular maintenance
- Regular monitoring is required during the rainy season, particularly for roofing performance and drainage around the shelter.

PROJECT DESCRIPTION

Methodology

Provision of shelter materials and basic toolkits, supported by on-site technical guidance to enable safe and timely construction

Community Engagement / Participation

Community members contribute labour using familiar techniques and materials, supporting local ownership and basic skills transfer

Cultural Practices (Sustainability)

The shelter design follows locally known construction practices, ensuring cultural acceptance and allowing households to adapt, reinforce, or upgrade the shelter over time

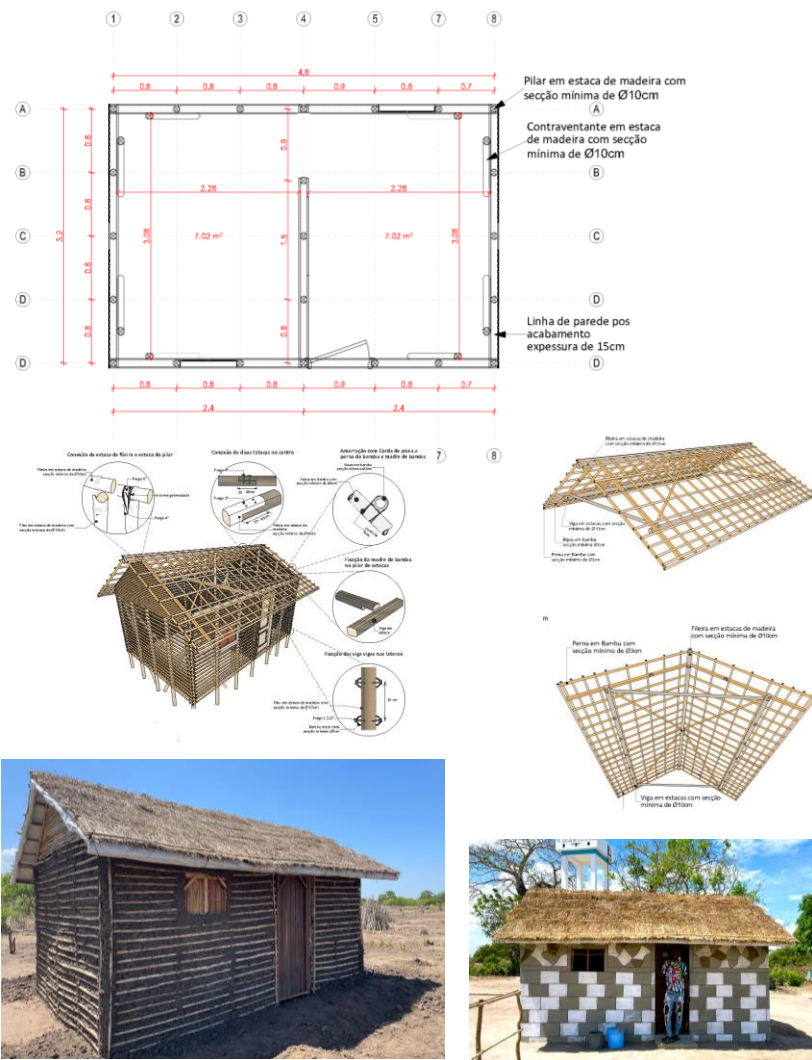
Environmental Consideration

Locally available materials reduce transportation needs and environmental impact, requiring responsible sourcing to avoid pressure on natural resources

Other Information

The shelter is intended for temporary to transitional use and may be adapted or upgraded depending on needs and material availability

EARLY RECOVERY/ TRANSITIONAL SHELTER



Shelter Typology:
Transitional Shelter – Standard

Province(s):
Cabo Delgado

District(s):
Metuge

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This shelter model is implemented in conflict-affected rural contexts, providing a temporary shelter solution using locally available materials and traditional pau-a-pique construction techniques.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 14.04 m²

Dimensions: 4.8 m x 3.2 m

Internal height: *Not specified*

Foundation: Soil floor

Implementation & Performance

Workforce: 4 unskilled labour

Delivery modality: Community-based, BBS

Shelter habitability: 3.5 m² per person/ suitable for 4 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Traditional, Pau-a-Pique

Main materials:

- **Roofing:** Thatch, tire wire, nails, tire rope
- **Walls:** Bamboo, wooden poles, pau-a-pique with mud

Bamboo use: Yes (walls/structure)

Material treatment: *Not specified*

Shelter estimated cost

Materials: USD 280

Labour: USD 79

Cost reference year: 2023

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: *Not specified*

Floor elevation: No

Bracing: Yes, cross bracing and reinforced roof connections

Technical capacity: Construction carried out by community members using traditional pau-a-pique techniques, with basic technical supervision

Advantages & limitations

- Use of local materials and traditional construction techniques supports community ownership, incremental upgrading, household adaptation, and basic privacy through internal partitions, while structural bracing improves stability compared to basic shelters
- Limited internal space and lack of resistance to cyclonic winds, with durability dependent on material quality, regular maintenance, and environmentally responsible sourcing of local materials

Key considerations

- Structural performance depends on correct construction, supervision, and regular maintenance
- Requires monitoring during rainy seasons and in cyclone-prone areas

PROJECT DESCRIPTION

Methodology

Provision of construction materials and basic shelter toolkits, combined with on-site technical guidance, to support community-led construction during the early recovery phase. The approach enables timely shelter delivery while maintaining minimum technical and safety standards

Community Engagement/ Participation

Community members actively participate in shelter construction through the provision of labour, using familiar traditional techniques. This supports rapid implementation, basic skills transfer, strengthened ownership, and improved understanding of shelter maintenance

Cultural Practices (Sustainability)

The shelter design is based on locally known construction techniques and materials, ensuring cultural acceptance and facilitating replication, adaptation, and incremental upgrading by affected households

Environmental Consideration

The use of locally available materials reduces transportation requirements and associated environmental impacts, while supporting more sustainable construction practices and large-scale deployment

EARLY RECOVERY/ TRANSITIONAL SHELTER



Shelter Typology:

Transitional Shelter – Hybrid

Province(s):

Cabo Delgado

District(s):

Mecufi

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This model is implemented in cyclone-affected rural host communities in Cabo Delgado. It uses traditional pau-a-pique construction with local materials, offering improved durability, ventilation, and privacy over emergency shelters.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 24.5 m²

Dimensions: 3.9 m x 6.3 m

Internal height: *Not specified*

Foundation: Compacted soil floor

Implementation & Performance

Workforce: 10 skilled and 4 unskilled labour

Delivery modality: Community-based

Shelter habitability: 4.8 m² per person/ suitable for 5 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Traditional, pau-a-pique, load-bearing walls with timber roof structure.

Main materials:

- **Roofing:** CGI, timber beams, nails
- **Walls:** bamboo, timber, mud plastering, nails of different sizes, recycled rubber rope and wire

Bamboo use: Yes (walls/structure)

Material treatment: Wood treatment applied

Shelter estimated cost

Materials: USD 500

Labour: No cost

Cost reference year: 2020

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes

Floor elevation: No (site preparation and compacted soil floor)

Bracing: Yes, cross bracing and reinforced roof connections

Advantages & limitations

- Traditional construction using local materials, well known by the community and easy to build, with improved ventilation and privacy compared to emergency shelters
- Allows incremental upgrading and adaptation over time
- Requires a high quantity of materials and regular maintenance
- Longer construction time than emergency shelters, with durability dependent on material quality

Key considerations

- Suitable for early recovery and transitional phases
- Performance and durability depend on material quality and maintenance, with potential for incremental upgrading into more durable housing

PROJECT DESCRIPTION

Methodology

Provision of materials and basic shelter toolkits, combined with on-site technical guidance, to support rapid construction during the emergency response phase and ensure correct application of the proposed construction techniques

Community Engagement/ Participation

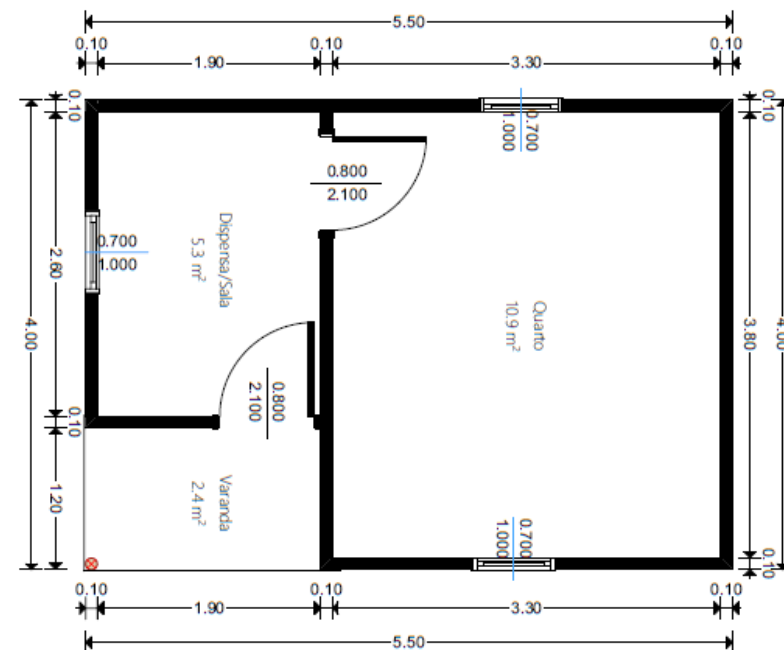
Community members actively participate in shelter construction through the provision of labour, using familiar materials and techniques. This process supports rapid implementation, facilitates basic skills transfer, and strengthens community ownership during the emergency phase

Cultural Practices (Sustainability)

The shelter design is based on locally known construction practices, ensuring cultural acceptance by the affected communities and enabling ease of replication and adaptation using existing local knowledge

Environmental Consideration

The use of locally available materials reduces transportation requirements and environmental impact. This approach supports emergency-scale deployment while minimizing pressure on logistics and natural resources



EARLY RECOVERY/ TRANSITIONAL SHELTER

Shelter Typology:
Emergency Shelter – Standard

Province(s):
Cabo Delgado

District(s):
Ancuabe

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary Site
- Relocation site, Resettlement sites
- Host areas/ Affected areas
- Return/origin location

General Description

This model is implemented in conflict-affected rural relocation and resettlement sites, providing an enhanced emergency shelter solution using bamboo and tarpaulin construction.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 22 m²

Dimensions: 4 m x 5.5 m

Internal height: *Not specified*

Foundation: Sand floor

Implementation & Performance

Workforce: 3 Skilled and 2 unskilled labour

Delivery modality: Community-based

Shelter habitability: 4.8 m² per person/ suitable for 3 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Traditional, pau-a-pique

Main materials:

- **Roofing:** bamboo, tarpaulin
- **Walls:** Bamboo and wooden poles, recycled rubber rope

Bamboo use: Yes (walls/structure)

Material treatment: Not specified

Shelter estimated cost

Materials: USD 139.51

Labour: USD 23.73

Cost reference year: 2023-2024

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, bamboo posts embedded in ground

Floor elevation: No

Bracing: Yes, provided by bamboo structural frame

Technical capacity: Construction supported by community labour with basic technical guidance

Advantages & limitations

- Locally adapted construction using familiar materials allows fast implementation, good ventilation, and potential upgrading or expansion
- Performance depends on material durability, requiring treatment and regular tarpaulin replacement
- Not suitable for cyclonic winds, limiting use in high-exposure areas.

Key considerations

- Intended for emergency response with enhanced durability, not as a long-term solution
- Requires follow-up and maintenance, particularly for material treatment, tarpaulin replacement, and protection measures

PROJECT DESCRIPTION

Methodology

Implementation follows a simple and structured construction approach using traditional techniques and locally available materials. Works are carried out by trained artisans with basic technical supervision to ensure construction quality and correct application of agreed techniques.

Community Engagement/ Participation

Community engagement is ensured through coordination with local leaders and information-sharing with beneficiary households. Beneficiaries may participate in selected construction activities, supporting ownership and basic understanding of shelter use, maintenance and future upgrading.

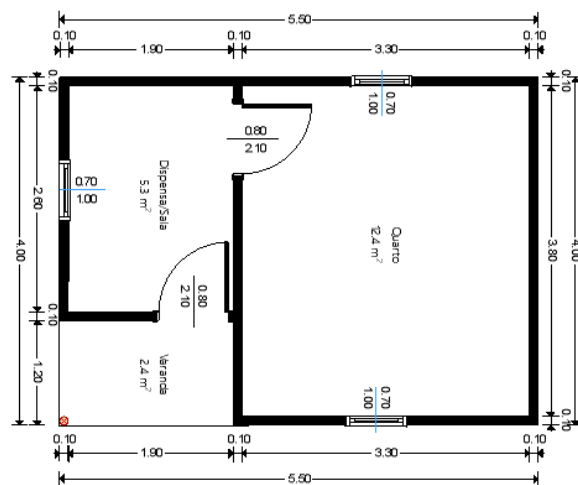
Cultural Practices (Sustainability)

The shelter design is based on traditional building practices and familiar materials, supporting cultural acceptance and enabling households to adapt or upgrade the shelter over time using locally known techniques.

Environmental Consideration

The use of locally available materials reduces transport needs and reliance on external supply chains. Environmental impacts are minimised through responsible sourcing and limited use of processed materials.

EARLY RECOVERY/ TRANSITIONAL SHELTER



Shelter Typology:

Transitional Shelter – Hybrid

Province(s):

Cabo Delgado

District(s):

Ancuabe, Meluco, Quissanga, Chiure

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

Transitional shelter solution implemented during the early recovery phase, using locally available materials and traditional pau-a-pique construction techniques. The model improves living conditions and allows for incremental upgrading, including internal adaptations such as pantry or kitchen space.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 22 m²

Dimensions: 5.5 m x 4 m

Internal height: 2.5 m

Foundation: Ground preparation and pavement (no permanent foundation)

Implementation & Performance

Workforce: 3 skilled and 3 unskilled labour

Delivery modality: Community-based/ artisan-led

Shelter habitability: 4.8 m² per person/ suitable for 3 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Improved traditional pau-a-pique construction

Main materials:

- **Roofing:** Zinc sheets, wood beams and nails
- **Walls:** Pau-a-pique (bamboo sticks, timber, mud plastering, nails of different sizes, recycled rubber rope and wire)
- **Floors:** Compacted soil

Bamboo use: Yes (walls and elements)

Material treatment: Wood treatment

Shelter estimated cost

Materials: USD 807.95

Labour: USD 33.20

Cost reference year: 2024

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes

Floor elevation: No

Bracing: Yes, wall bracing applied to improve structural resistance

Site layout: Yes, basic pavement preparation to improve drainage and reduce erosion

Advantages & limitations

- Uses locally available materials and familiar construction techniques
- Allows incremental upgrading and internal adaptation over time
- Construction time and costs are higher than emergency shelters
- Durability and resistance are limited compared to permanent housing solutions. Availability of materials may vary locally

Key considerations

- Requires regular maintenance due to material characteristics
- Upgrading to more durable solutions should be planned from the outset

PROJECT DESCRIPTION

Methodology

Provision of construction materials and basic shelter toolkits, combined with technical supervision and on-site guidance, to support community-led construction during the early recovery phase. The approach builds on traditional techniques while integrating basic resilience measures

Community Engagement/ Participation

Community members actively participate in shelter construction through the provision of labour, using locally familiar construction methods. This supports rapid implementation, strengthens community ownership, and contributes to basic skills development related to shelter construction and maintenance

Cultural Practices (Sustainability)

The shelter design is based on traditional pau-a-pique construction techniques and locally accepted housing typologies, ensuring cultural appropriateness and facilitating replication, adaptation, and incremental upgrading by beneficiary households

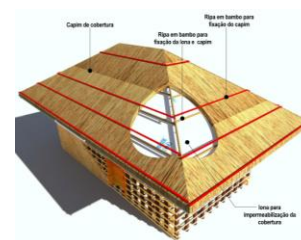
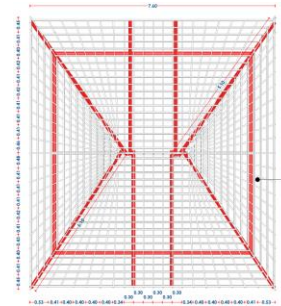
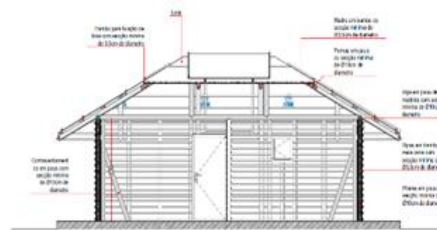
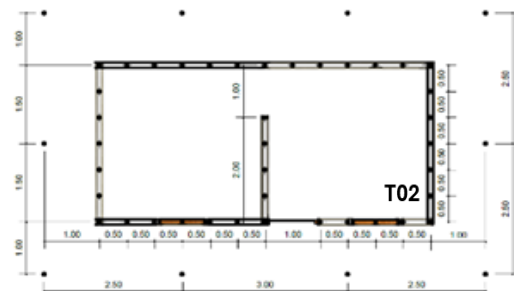
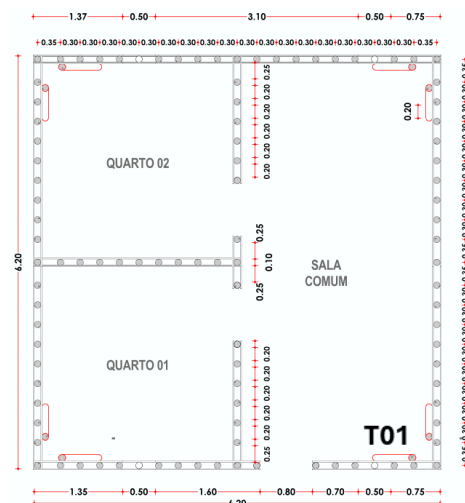
Environmental Consideration

The high use of locally available materials reduces transportation requirements and associated environmental impacts. Responsible sourcing and treatment of natural materials are essential to balance construction needs with environmental conservation

Other Information

The use of a hipped roof configuration improves thermal comfort and rainwater runoff and contributes to better performance under wind conditions when combined with adequate bracing and roof connections

EARLY RECOVERY/ TRANSITIONAL SHELTER



Shelter Typology:
Transitional Shelter – Standard

Province(s):
Cabo Delgado

District(s):
Montepuez

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This model uses traditional construction techniques with a hipped roof and local materials, offering improved durability, stability, and thermal performance over emergency shelters

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 18 m² & 30 m²

Dimensions:

- **Type 1:** 6 m x 3 m
- **Type 2:** 5 x 3 m

Internal height: 2 m

Foundation: Compacted soil

Implementation & Performance

Set-up time: >15 days

Workforce: 1 skilled and 3 unskilled labour

Delivery modality: Community-based

Shelter habitability: Type 1: suitable for households of up to 5 members/ Type 2: suitable for larger households

Construction System

Structural system: Traditional load-bearing pau-a-pique walls with timber roof structure and hipped roof

Main materials:

- **Roofing:** thatch, tire wire, nails, tire rope
- **Walls:** Bamboo, wooden poles, clay, nails

Bamboo use: Yes (walls/structure)

Material treatment: Wood treatment applied where feasible

Shelter estimated cost

Type 1:

- **Materials:** USD 267
- **Labour:** USD 47.39

Type 2:

- **Materials:** USD 349.68
- **Labour:** USD 63.29

Cost reference year: 2021-2023

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, foundation preparation, cement skirting board

Floor elevation: No

Bracing: Yes, provided through wall bracing and reinforced roof connections

Advantages & limitations

- High use of local materials and local labour, based on traditional construction techniques well known by the community
- Allows expansion and incremental upgrading over time, with improved thermal comfort in both hot and cold periods
- Susceptible to fire risk due to use of grass roofing and tarpaulin during high temperatures
- Limited durability and requires ongoing maintenance, with environmental sustainability dependent on responsible use of local materials

Key considerations

- Performance depends on construction quality, maintenance, and availability of treated materials
- Fire risk mitigation and environmental management measures should be considered where feasible

PROJECT DESCRIPTION

Methodology

Provision of construction materials and basic shelter toolkits, combined with technical supervision and on-site guidance, to support community-led construction during the early recovery phase. The approach builds on traditional techniques while integrating basic resilience measures

Community Engagement/ Participation

Community members actively participate in shelter construction through the provision of labour, using locally familiar construction methods. This supports rapid implementation, strengthens community ownership, and contributes to basic skills development related to shelter construction and maintenance

Cultural Practices (Sustainability)

The shelter design is based on traditional pau-a-pique construction techniques and locally accepted housing typologies, ensuring cultural appropriateness and facilitating replication, adaptation, and incremental upgrading by beneficiary households

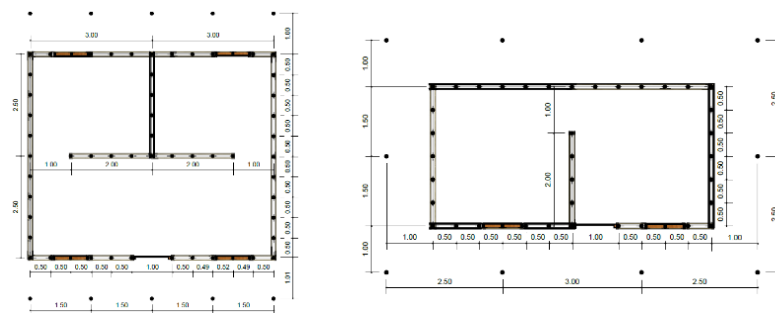
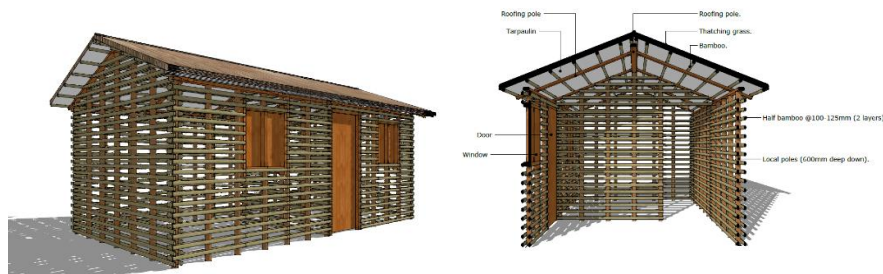
Environmental Consideration

The high use of locally available materials reduces transportation requirements and associated environmental impacts. Responsible sourcing and treatment of natural materials are essential to balance construction needs with environmental conservation

Other Information

The use of a hipped roof configuration improves thermal comfort and rainwater runoff and contributes to better performance under wind conditions when combined with adequate bracing and roof connections

EARLY RECOVERY/ TRANSITIONAL SHELTER



Shelter Typology:
Transitional Shelter – Improved

Province(s):
Cabo Delgado

District(s):
Mueda

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This shelter model is implemented in conflict-affected rural contexts, providing a temporary shelter solution using locally available materials and traditional pau-a-pique construction techniques.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 18 m² & 30 m²

Dimensions:

- **Type 1:** 6 m x 3 m
- **Type 2:** 5 x 3 m

Internal height: *Not specified*

Foundation: Compacted soil, with cement stabilization

Implementation & Performance

Set-up time: >5 days

Workforce: 1 skilled and 3 unskilled labour

Delivery modality: Community-based

Shelter habitability: Type 1: suitable for households of up to 5 members/ Type 2: suitable for larger households

Construction System

Structural system: Traditional, pau-a-pique superstructure with local wooden poles and bamboo, supporting a hipped roof on a timber truss system

Main materials:

- **Roofing:** tarpaulin and grass fixed on local wooden trusses
- **Walls:** Bamboo, wooden poles, pau-a-pique with mud

Bamboo use: Yes (walls/structure)

Material treatment: Wood treatment applied

Shelter estimated cost

Type 1:

- **Materials:** USD 470.89
- **Labour:** USD 76.03

Type 2:

- **Materials:** USD 818.25
- **Labour:** USD 76.03

Cost reference year: 2021-2023

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, foundation preparation and stabilization

Floor elevation: No

Bracing: Yes, roof band reinforcement and roof connections

Advantages & limitations

- Mid-term shelter solution providing improved durability, stability, and safety
- Use of traditional techniques and local materials supports community familiarity and recovery
- Requires more advanced construction skills and materials than basic shelters
- Poor soil consistency increases the need for cement stabilization
- Limited water availability in Mueda can slow down wall mud-daubing and construction processes

Key considerations

- Performance depends on construction quality, soil conditions, and availability of treated materials
- Adequate technical supervision is required to ensure correct roof reinforcement and connections

PROJECT DESCRIPTION

Methodology

Transitional shelters are implemented through the provision of construction materials and basic toolkits, combined with technical guidance and supervision. The approach supports community-led construction using locally available materials and traditional techniques while integrating basic resilience measures

Community Engagement/ Participation

Community members actively participate in shelter construction through labour contribution and locally known building practices. This strengthens local ownership and supports the transfer of basic safer construction skills

Cultural Practices (Sustainability)

Shelter designs build on locally familiar construction techniques and materials, ensuring cultural acceptance and ease of replication. Households can adapt, extend, or improve the shelter over time according to their needs

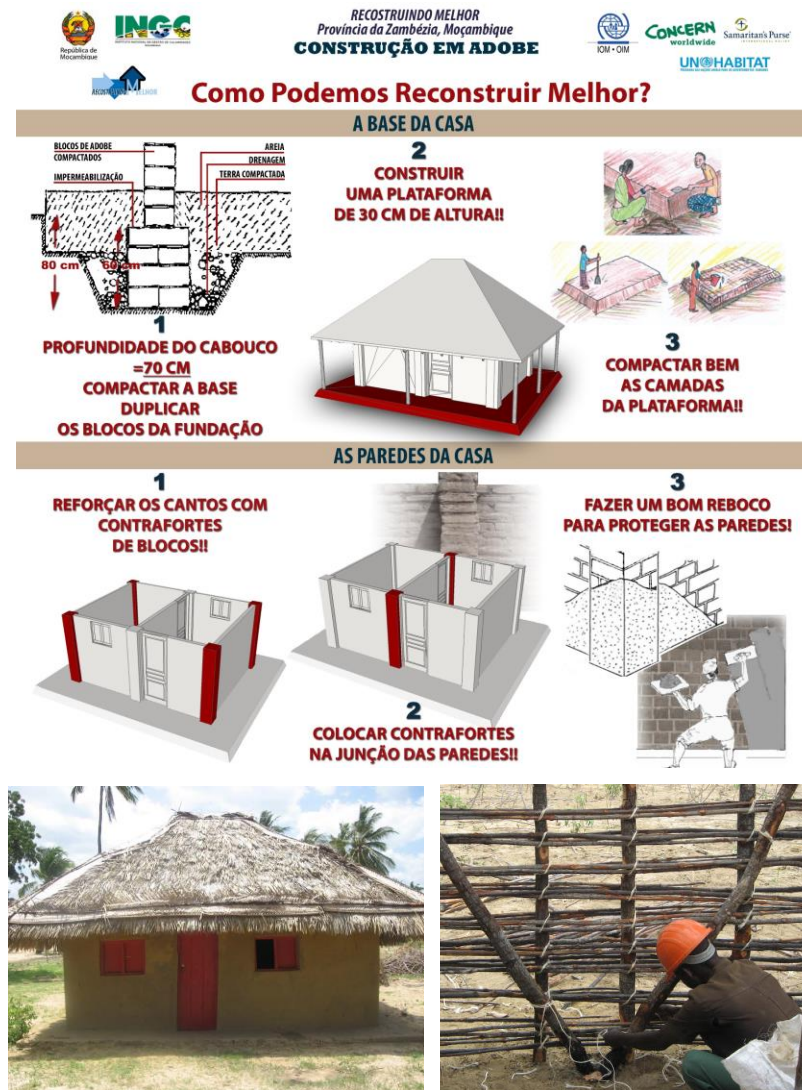
Environmental Consideration

Locally available materials are prioritized to reduce transport needs and environmental impact. Responsible sourcing and treatment of natural materials are encouraged to improve durability.

Other Information

Transitional shelters provide improved living conditions compared to emergency shelters and can be progressively upgraded by households into more durable housing solutions

EARLY RECOVERY/ TRANSITIONAL SHELTER



Shelter Typology:

Transitional Shelter – Hybrid

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

Province(s):

Zambezia and Nampula

District(s):

Chinde, Pebane, Mongicual and Angoche

Setting

- Rural
- Urban

General Description

This model is based on improved adobe construction using local materials and traditional techniques, strengthening durability and construction quality while maintaining community ownership

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Dimensions & Layout

Area: 16 m²

Dimensions: 4 m x 4 m

Internal height: *Not specified*

Foundation: Local mud base

Construction System

Structural system: Traditional improved adobe system with load-bearing walls and a timber and bamboo roof structure

Main materials:

- **Roofing:** Bamboo, stakes, tarpaulin, grass
- **Walls:** Bamboo, stakes, pau-a-pique with mud, nylon or rubber rope, adobe plaster with cement

Bamboo use: Yes (walls/structure)

Material treatment: *Not specified*

Shelter estimated cost

Materials: USD 900

Labour: USD 120

Cost reference year: 2012-2013

Exclusions: Logistics not included

Implementation & Performance

Workforce: 2 skilled and 3 unskilled labour

Delivery modality: Community-based

Shelter habitability: 4 m² per person (suitable for 3–5 occupants)

DRR/ Resilience techniques used

Anchoring: Yes, improved base preparation

Floor elevation: Yes

Bracing: Yes, wall reinforcement and corner buttresses

Advantages & limitations

- Promotes the use of local and sustainable materials and construction techniques
- Strong community appropriation due to familiar design and methods
- Improves local construction practices through technical guidance
- Lacks proper foundations, affecting long-term durability
- Roofing materials require regular maintenance and grass replacement

Key considerations

- Technical supervision is required to ensure proper foundations, wall protection, and roof detailing
- Incremental improvements (elevated platform, better foundations, roof maintenance) are essential to enhance durability

PROJECT DESCRIPTION

Methodology

Construction of communal shelters based on a standardized design, combining the provision of materials with technical supervision to ensure minimum safety, quality, and durability standards during the early recovery phase

Community Engagement / Participation

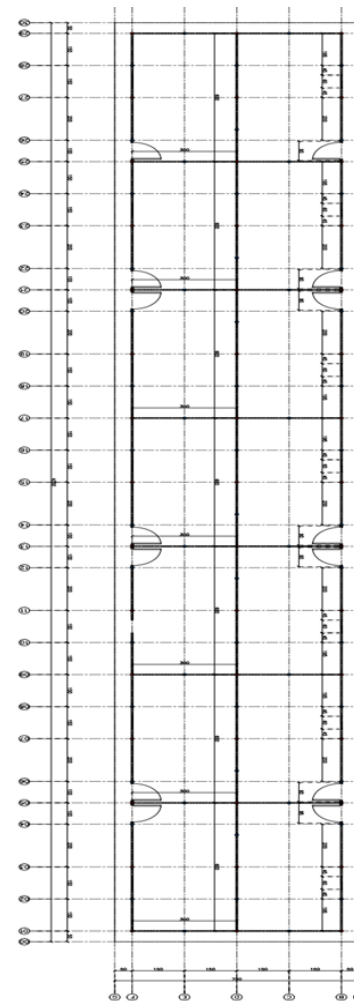
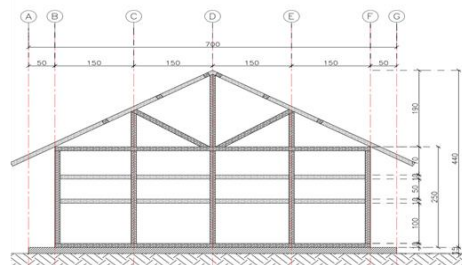
Community members participate mainly through the provision of unskilled labour during construction, supporting implementation and contributing to basic understanding of shelter use, maintenance, and communal living arrangements

Cultural Practices (Sustainability)

The shelter design uses locally familiar materials and construction practices, supporting community acceptance and ease of use, while recognizing the temporary and communal nature of the shelter solution

Environmental Consideration

The use of locally available materials helps reduce transportation requirements; however, the scale of construction requires careful material sourcing and management to minimize environmental impact



TRANSITIONAL SHELTER

Shelter Typology:
Transitional Shelter –
Communal

Province(s):
Cabo Delgado

District(s):
Mueda

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This communal transitional shelter is implemented to accommodate displaced populations in transit or newly arrived households awaiting plot allocation and individual shelter support.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 252 m²
Dimensions: 6 m x 42 m
Internal height: 2.5 m
Foundation: Concrete floor with soil base

Implementation & Performance

Workforce: 3 skilled and 3 unskilled labour
Delivery modality: Contractor-supported construction
Shelter habitability: 3.5 m² per person/ suitable for approximately 70 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Timber frame structure with vertical wooden poles embedded at sufficient depth to resist wind loads

Main materials:

- **Roofing:** CGI, timber trusses, nails, wire
- **Walls:** Wooden poles, bamboo, mud infill
- **Floor:** Concrete slab and soil

Bamboo use: Yes, wall

Material treatment: *Not specified*

Shelter estimated cost

Materials: USD 5000

Labour: USD 400

Cost reference year: 2021-2022

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, wooden poles embedded at depth
Floor elevation: Yes
Bracing: Yes, short spacing between structural elements and pole sizing
Drainage: Yes, roof slope for effective rainwater drainage

Advantages & limitations

- Flexible shelter solution for displaced populations in transit or recently arrived
- Provides independent units within a communal structure
- Reduced privacy due to shared communal layout
- Lack of internal partitions for individual family units

Key considerations

- Intended as a temporary, short- to medium-term communal shelter solution
- Requires clear management arrangements to address privacy, safety, and maintenance
- Should be complemented by timely transition to individual household shelters

PROJECT DESCRIPTION

Methodology

The transit shelter consists of semi-permanent communal structures with internal partitions, used as a temporary reception and accommodation centre for newly arrived displaced populations while awaiting relocation or individual shelter assistance. Construction is implemented by humanitarian partners using standardized designs for rapid deployment at scale.

Cultural Practices (Sustainability)

The shelter design uses locally familiar materials and construction techniques, supporting cultural acceptance and facilitating communal living arrangements during temporary displacement.

Environmental Consideration

Environmental impacts are mainly linked to the sourcing of natural materials and variability in material quality, requiring careful management to ensure durability and reduce environmental pressure.



TRANSITIONAL SHELTER

Shelter Typology:

Transitional Shelter –
Communal

Province(s):

Cabo Delgado

District(s):

Mueda

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This communal transitional shelter is implemented to accommodate displaced populations in transit or newly arrived households awaiting plot allocation and individual shelter support.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: *Not specified*

Dimensions: *Not specified*

Internal height: *Not specified*

Foundation: Concrete floor

Implementation & Performance

Workforce: *Not specified Not specified*

Delivery modality:

Capacity: Approximately 96 households/ 480 individuals across 6 blocks

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Semi-permanent timber and bamboo structure with internal partitions

Main materials:

- **Roofing:** CGI, timber trusses, nails, wire
- **Walls:** Bamboo walling
- **Internal Partition:**
- **Floor:** Concrete slab and soil

Bamboo use: Yes, wall

Material treatment: *Not specified*

Shelter estimated cost

Total: USD 13 000 -16 000

Cost reference year: 2022

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, wooden poles embedded at depth

Floor elevation: Yes

Bracing: Yes, short spacing between structural elements and pole sizing

Drainage: Yes, roof slope for effective rainwater drainage

Advantages & limitations

- Provides immediate, flexible accommodation for displaced populations in transit
- Allows rapid reception of large numbers of new arrivals
- Limited privacy due to communal layout and shared spaces
- Space constraints and lack of targeted protection for specific vulnerabilities

Key considerations

- Requires strong site management to address protection, privacy, and maintenance
- Should be complemented by timely relocation to individual household shelters

RETROFITTING

Retrofitting can be defined as the improvement of existing shelters through repair, reinforcement, or upgrading of structural and non-structural elements to improve safety, structural stability, and weather resistance. These interventions extend the lifespan of shelters and reduce vulnerability to hazards without requiring full reconstruction.

Category	Typology	Observed Lifespan	Assembly Time	Use & Occupancy	Technical Characteristics	Cost Range (USD)*	DRR Level	Objective
Retrofitting	Light Retrofitting	6-12 months depending on tarpaulin condition and maintenance	1-2 days depending on shelter condition and material availability	Short-term improvement of existing shelters focusing on weatherproofing and minor structural stabilization. Suitable for households remaining in existing shelters requiring immediate improvement	Installation of tarpaulins, improved roof fixing and overlaps, basic anchoring and rope bracing. Minor reinforcement of existing timber or bamboo structure using shelter fixing kits and local materials.	50-150	Basic reinforcement including anchoring, roof fixing, and basic bracing	Improve weather protection and extend the service life of existing shelters through rapid, low-cost interventions
	Structural Retrofitting / Shelter Upgrading	2-5 years depending on structural condition and level of reinforcement	3-5 days depending on scope of repairs and material availability	Improvement of existing shelters through targeted repairs, structural reinforcement, and partial upgrading. Suitable for medium-term occupancy and incremental shelter improvement	Reinforcement of timber or bamboo structure, roof upgrading (tarpaulin or CGI), improved bracing and anchoring, repair or replacement of damaged elements, and strengthening of structural connections.	250-600	Intermediate structural reinforcement including improved connections and roof upgrading	Improve structural stability, safety, and durability of existing shelters while enabling progressive upgrading over time
	Permanent Housing Retrofitting (Roof Repair)	5-10+ years depending on structure condition and installation quality	3-7 days depending on roof size and structural repairs required	Long-term upgrading of existing permanent houses through roof replacement and structural reinforcement in hazard-prone areas.	Replacement of roofing with CGI sheets, installation of hurricane clips, roof band reinforcement, improved roof-to-wall connections, and structural bracing.	800-1500	High structural reinforcement including roof-to-wall connections and hurricane clips	Increase structural resistance to wind and rain and improve durability of permanent houses

*Shelter cost estimates may vary depending on the partner, procurement period, seasonal availability of materials (e.g. bamboo), and the reference year of purchase

PROJECT DESCRIPTION

Methodology

The intervention focuses on shelter retrofitting through cash-based assistance, combined with technical guidance, to support targeted repairs and improvements to existing shelters during the early recovery phase

Community Engagement/ Participation

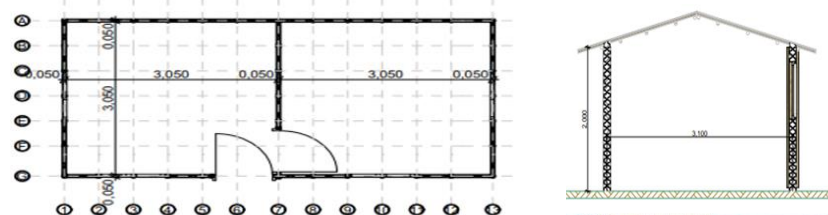
Households actively participate by identifying priority shelter needs and implementing repairs, with support from skilled labour where required. This approach strengthens ownership and ensures adaptations respond to household-specific conditions.

NRC Cash Modality

Cash assistance is provided to enable households to procure materials and labour locally for shelter retrofitting. The modality allows flexibility, faster implementation, and more cost-effective support compared to in-kind assistance, while requiring close monitoring to ensure intended use

Environmental Consideration

Environmental impacts are mainly related to material sourcing and quality, requiring careful management to limit pressure on natural resources and ensure durability of shelter improvements



Shelter Typology:
Transitional Shelter –
Retrofitting

Province(s):
Cabo Delgado

District(s):
Mueda, Muidumbe, Nangade,
Quissanga

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This intervention focuses on retrofitting existing shelters. Support is provided primarily through cash assistance, enabling households to reinforce, repair, and upgrade their shelters according to priority needs.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 18 m²
Dimensions: 3 m x 6 m
Internal height: 2 m
Foundation: Soil floor

Implementation & Performance

Workforce: 1 skilled and 2 unskilled labour
Delivery modality: Cash-based assistance with technical guidance
Shelter habitability: 3.5 m² per person/ suitable for 6 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Improvement of existing timber and bamboo shelter structures through selective reinforcement and roof upgrading

Main materials:

- **Roofing:** Tarpaulin, dry grass
- **Walls:** Wooden poles, bamboo

Bamboo use: Yes, existing walls and structure

Material treatment: *Not specified*

Shelter estimated cost

Materials: USD 250

Labour: USD 50

Cost reference year: 2022-2024

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, improved pole embedment

Floor elevation: No

Bracing: Yes, reduced spacing between structural elements

Drainage: Yes, roof slope improvement for drainage

Advantages & limitations

- Provides dignified and flexible cash-based assistance, allowing households to prioritize shelter improvements, generally faster and more cost-effective than in-kind support
- Requires strong monitoring and follow-up to ensure cash is used for intended shelter purposes, as competing household priorities may limit shelter upgrades
- Tarpaulin roofing has limited durability and typically requires replacement after around one year

Key considerations

- Technical guidance is essential to maximize the impact of retrofitting interventions
- Monitoring mechanisms should be in place to support appropriate use of cash and ensure minimum shelter standards

PROJECT DESCRIPTION

Methodology

The intervention focuses on shelter retrofitting through cash-based assistance, combined with technical guidance, to support targeted repairs and improvements to existing shelters during the early recovery phase

Community Engagement/ Participation

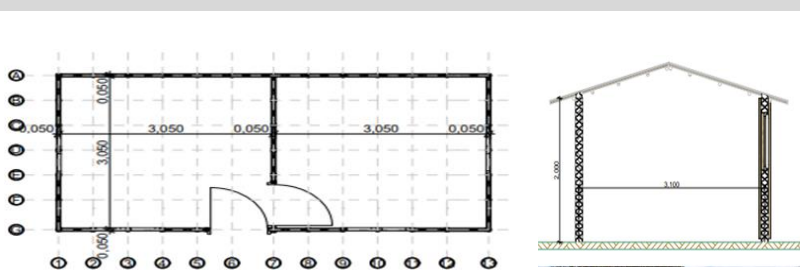
Households actively participate by identifying priority shelter needs and implementing repairs, with support from skilled labour where required. This approach strengthens ownership and ensures adaptations respond to household-specific conditions.

NRC Cash Modality

Cash assistance is provided to enable households to procure materials and labour locally for shelter retrofitting. The modality allows flexibility, faster implementation, and more cost-effective support compared to in-kind assistance, while requiring close monitoring to ensure intended use

Environmental Consideration

Environmental impacts are mainly related to material sourcing and quality, requiring careful management to limit pressure on natural resources and ensure durability of shelter improvements



TRANSITIONAL SHELTER

Shelter Typology:
Transitional Shelter –
Retrofitting

Province(s):
Cabo Delgado

District(s):
Mocimboa da Praia

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This intervention focuses on retrofitting existing shelters. Support is provided primarily through Voucher assistance, enabling households to reinforce, repair, and upgrade their shelters according to priority needs.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 18 m²
Dimensions: 3 m x 6 m or bigger
Internal height: 2 m
Foundation: Soil and cement

Implementation & Performance

Workforce: 1 skilled and 2 unskilled labour
Delivery modality: Cash-based assistance with technical guidance
Shelter habitability: 3.5 m² per person/ suitable for 6 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Improvement of existing timber and bamboo shelter structures through selective reinforcement and roof upgrading

Main materials:

- **Roofing:** Timber, CGI
- **Walls:** Wooden poles, bamboo

Bamboo use: Yes, existing walls and structure

Material treatment: *Not specified*

Shelter estimated cost

Materials: USD 375
Labour: USD 50
Cost reference year: 2022-2024
Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, improved pole embedment

Floor elevation: No

Bracing: Yes, reduced spacing between structural elements

Drainage: Yes, roof slope improvement for drainage

Advantages & limitations

- Provides dignified and flexible cash-based assistance, allowing households to prioritize shelter improvements, generally faster and more cost-effective than in-kind support
- Requires strong monitoring and follow-up to ensure cash is used for intended shelter purposes, as competing household priorities may limit shelter upgrades
- Tarpaulin roofing has limited durability and typically requires replacement after around one year

Key considerations

- Technical guidance is essential to maximize the impact of retrofitting interventions
- Monitoring mechanisms should be in place to support appropriate use of cash and ensure minimum shelter standards

PROJECT DESCRIPTION

Methodology

The intervention focuses on retrofitting existing shelters through roof fixing improvements, installation of tarpaulins, and structural reinforcement using shelter fixing kits. Materials are provided in-kind and combined with technical guidance and basic training on safer construction and repair techniques

Community Engagement / Participation

Households participate in the retrofitting works, supported by local artisans and technical teams. Households with limited labour capacity receive additional assistance. This approach strengthens ownership and supports future shelter maintenance

Cultural Practices (Sustainability)

The intervention builds on existing shelter structures and local construction practices, integrating improvements into traditional shelter designs while improving safety and durability

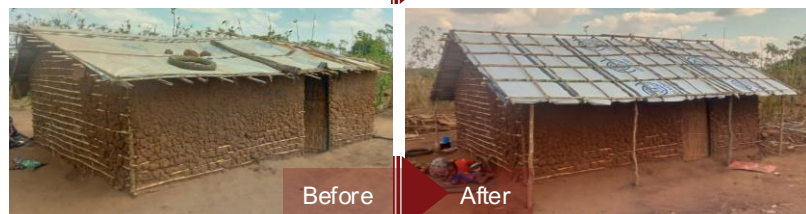
Environmental Consideration

Retrofitting existing shelters reduces the need for new construction materials and limits pressure on natural resources by improving existing structures instead of building new shelters

Other Information

Training on safer construction and shelter maintenance is provided. Women are encouraged to participate, and PSEA awareness sessions are conducted before implementation

TRANSITIONAL SHELTER



Shelter Typology:

Transitional Shelter –
Retrofitting

Province(s):

Cabo Delgado

District(s):

Chiure, Quissanga

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This intervention focuses on light shelter retrofitting through the installation of tarpaulins on existing bamboo and timber structures, providing rapid protection and improved weatherproofing using locally available materials

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 16-20 m²

Dimensions: 4m x 4m

Internal height: *Not specified*

Foundation: Soil Floor

Implementation & Performance

Workforce: 1 skilled and 4 unskilled labour

Delivery modality: In-kind materials combined with technical training and on-site support

Shelter habitability: 3-4 m² per person/ suitable for 3-5 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Selective reinforcement and upgrading of existing Pau-a-Pique shelters

Main materials:

- **Roofing:** Bamboo, tarpaulin
- **Walls:** Bamboo, wooden poles, pau-a-pique with mud, nylon rope

Bamboo use: Yes, existing walls and structure

Material treatment: *Not specified*

Shelter estimated cost

Materials: USD 50-150

Labour: USD 20

Cost reference year: 2022-2023

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, improved roof fixing using tarpaulins and nylon ropes

Floor elevation: No

Bracing: Yes, basic reinforcement through shelter fixing toolkits

Technical capacity: Distribution of shelter fixing toolkits combined with training on basic resilient construction techniques for local artisans and households

Advantages & limitations

- Adapted to existing shelter conditions, allowing repair, extension, and upgrading while building on local materials and construction methods
- Cost-efficient by maximizing the use of existing structures
- Requires strong planning and detailed needs assessments, as well as skilled technical staff to define and monitor appropriate interventions

Key considerations

- Quality and impact depend on accurate technical assessment, follow-up, and ongoing supervision
- Training and supervision are critical to ensure effective and safe retrofitting

PROJECT DESCRIPTION

Methodology

Light shelter retrofitting is implemented through the provision of tarpaulins and basic fixing materials, combined with on-site technical guidance to improve weatherproofing and short-term protection of existing shelters

Community Engagement / Participation

Community members actively participate in the retrofitting process through the provision of labour and the application of basic installation techniques, supporting rapid implementation and basic understanding of shelter maintenance

Cultural Practices (Sustainability)

The intervention builds on existing shelter structures and locally familiar construction practices, allowing households to adapt improvements using materials and techniques they already know

Environmental Consideration

The use of limited materials and locally available resources reduces transportation needs; however, the temporary nature of tarpaulins requires careful material management and timely replacement to limit environmental impact



TRANSITIONAL SHELTER

Shelter Typology:
Transitional Shelter –
Retrofitting

Province(s):
Cabo Delgado

District(s):
Ancuabe

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This intervention focuses on upgrading existing shelters through roof replacement and structural reinforcement, improving durability, weather protection, and overall shelter safety using locally available materials and CGI roofing.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 24 m²
Dimensions: 4 m x 6 m
Internal height: *Not specified*
Foundation: Sand Floor

Implementation & Performance

Workforce: 3 skilled and 1 unskilled labour
Delivery modality: In-kind materials combined with technical guidance
Shelter habitability: 4.8 m² per person/ suitable for 3-8 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Existing Pau-a-Pique structure reinforced with tarpaulin roofing

Main materials:

- **Roofing:** Tarpaulin and bamboo
- **Walls:** Bamboo, wooden posts, mud infill

Bamboo use: Yes, walls and structure
Material treatment: *Not specified*

Shelter estimated cost

Materials: USD 37.75
Labour: USD 10.95
Cost reference year: 2023-2024
Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes
Floor elevation: No
Bracing: Yes, strengthening of roof and wall structure
Technical capacity: Training on correct techniques for overlapping, perforating, and fixing tarpaulins

Advantages & limitations

- Uses few resources and relies on locally available materials
- Does not require specialized construction skills
- Will not withstand cyclonic winds and requires regular replenishment (approximately every 12 months)
- Tarpaulin roofing cannot withstand full exposure over long periods

Key considerations

- Should be combined with follow-up support or more durable shelter solutions
- Proper installation and fixing of tarpaulins is essential to maximize performance

PROJECT DESCRIPTION

Methodology

Provision of construction materials and shelter fixing kits, combined with technical supervision and on-site guidance, to support the retrofitting and upgrading of existing shelters during the early recovery phase. The approach builds on traditional construction techniques while integrating basic resilience and reinforcement measures

Community Engagement/ Participation

Community members and households actively participate in retrofitting works through the provision of labour, using locally familiar construction methods. This supports rapid implementation, strengthens community ownership, and contributes to skills development related to shelter repair, upgrading, and maintenance

Cultural Practices (Sustainability)

The intervention builds on traditional construction techniques and existing housing typologies, ensuring cultural appropriateness while allowing households to repair, adapt, reinforce, and incrementally upgrade their shelters over time

Environmental Consideration

Retrofitting existing shelters reduces the need for new construction materials and limits transportation requirements and associated environmental impacts. Responsible sourcing and treatment of natural materials remain important to balance shelter improvements with environmental conservation



TRANSITIONAL SHELTER

Shelter Typology:

Transitional Shelter –
Retrofitting

Province(s):

Cabo Delgado

District(s):

Montepuez

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This intervention upgrades existing shelters through roof replacement and structural reinforcement, improving durability, weather protection, and shelter safety.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area:

- o Type 1: 18 m²
- o Type 2: 30 m²

Dimensions:

- o T1: 6 m x 3 m
- o T2: 5 m x 5 m

Internal height: *Not specified*

Foundation: Sand floor

Implementation & Performance

Workforce: 1 skilled and 2 unskilled labour

Delivery modality: In-kind materials combined with technical guidance

Shelter habitability: 4.8 m² per person/ suitable for 3-8 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Existing shelter structure upgraded through reinforcement of the superstructure and replacement of grass thatch roofing with CGI sheets

Main materials:

- Roofing: Timber, CGI
- Walls: Bamboo, wooden posts, mud infill

Bamboo use: Yes, walls and structure

Material treatment: *Not specified*

Shelter estimated cost

Materials: USD 536.71

Labour: USD 63.29

Cost reference year: 2023-2024

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes

Floor elevation: No

Bracing: Yes, strengthening of roof and wall structure

Technical capacity: Training on roof installation, structural reinforcement, and safer construction techniques

Advantages & limitations

- Long-term solution supporting localization, capacity development, and community participation
- Improved roofing increases shelter durability and thermal comfort
- Shelter sizes may vary, affecting material quantities, and households may remain vulnerable during construction works

Key considerations

- Requires technical assessment, accurate material estimation, and supervision during construction
- Construction should minimize household exposure during upgrading works
- Training improves construction quality and long-term shelter maintenance

PROJECT DESCRIPTION

Methodology

The intervention focuses on retrofitting existing shelters through roof fixing improvements, installation of tarpaulins, and structural reinforcement using shelter fixing kits. Materials are provided in-kind and combined with technical guidance and basic training on safer construction and repair techniques

Community Engagement / Participation

Households participate in the retrofitting works, supported by local artisans and technical teams. Households with limited labour capacity receive additional assistance. This approach strengthens ownership and supports future shelter maintenance

Cultural Practices (Sustainability)

The intervention builds on existing shelter structures and local construction practices, integrating improvements into traditional shelter designs while improving safety and durability

Environmental Consideration

Retrofitting existing shelters reduces the need for new construction materials and limits pressure on natural resources by improving existing structures instead of building new shelters

Other Information

Training on safer construction and shelter maintenance is provided. Women are encouraged to participate, and PSEA awareness sessions are conducted before implementation

TRANSITIONAL SHELTER



Shelter Typology:

Permanent Housing Solution –
Roof Repairs/ Retrofitting

Province(s):

Cabo Delgado, Sofala

District(s):

Ancuabe, Beira

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This intervention focuses on repairing and reinforcing damaged roofing systems of existing permanent houses in cyclone-affected areas to improve durability, structural stability and weather protection.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: Roof coverage up to 45 m²

Dimensions: Depends on repaired house

Foundation: Existing foundation

Implementation & Performance

Workforce: 1 skilled and 2 unskilled labour

Delivery modality: Material supply and technical repair works

Shelter habitability: Depends on repaired structure

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Reinforcement and replacement of roofing system

Main materials:

- Galvanized IBR or CGI roof sheets
- Treated timber
- Hurricane clips
- Umbrella nails
- Roof and wall bracing

Bamboo use: No

Material treatment: Wood treatment included

Shelter estimated cost

Materials: USD 1200

Labour: USD 215

Cost reference year: 2024

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, strong roof connections, hurricane clips, roof band reinforcement

Floor elevation: No

Bracing: Yes, roof and wall reinforcement

Advantages & limitations

- Long-term solution ensuring durability and stability
- Improved protection against weather elements
- Improved insulation and energy efficiency
- Requires advanced construction skills and materials
- Roof-only repairs may overlook other structural weaknesses

Key considerations

- Ensure reinforcement of structural connections
- Skilled labour is required for proper installation

PERMANENT SHELTERS/ DURABLE SOLUTIONS

Permanent shelters/ durable housing solutions refer to long-term housing interventions designed to provide safe, stable, and adequate living conditions for affected populations. These solutions support recovery and durable settlement and are designed to allow progressive improvement, expansion, and integration of disaster risk reduction measures over time

Category	Typology	Observed Lifespan	Assembly Time	Use & Occupancy	Technical Characteristics	Cost Range (USD)*	DRR Level	Objective
PERMANENT	Core	3-10 years minimum structural lifespan, expandable beyond initial phase	7-15 days depending on curing time, foundation type and material availability	Permanent occupancy model requiring secure land tenure and access to basic services. Designed as an expandable starter unit allowing phased construction.	Structural system in pau-a-pique, mixed masonry or reinforced concrete. Permanent foundation system (strip footing or slab). Engineered roof anchoring system. Minimal internal finishes. Designed to allow horizontal or vertical expansion. Full integration of DRR principles in structural design	1000-2000	Full structural DRR integration (foundation, anchoring, load path continuity)	Durable core housing unit supporting long-term settlement and progressive expansion
	Full	>15 years with periodic maintenance	Several weeks depending on structural complexity and finishing level	Complete permanent housing solution intended for long-term settlement	Full masonry or reinforced concrete structural system. Engineered foundation. Complete roof anchoring and structural load path continuity. Full wall finishes and internal partitions. Higher resistance to climatic hazards. Low maintenance frequency compared to other typologies	> 2000	Full hazard-resistant structural compliance	Complete durable housing solution with long-term structural stability

*Shelter cost estimates may vary depending on the partner, procurement period, seasonal availability of materials (e.g. bamboo), and the reference year of purchase

PROJECT DESCRIPTION

Methodology

Implementation follows a structured construction approach, either contractor-led or supported by skilled local artisans, based on standardized designs and technical specifications. On-site technical supervision ensures construction quality, correct application of techniques and compliance with agreed safety and resilience standards.

Community Engagement / Participation

Community engagement is integrated through information sharing, coordination with local leaders and, where applicable, limited beneficiary involvement in construction activities. This supports ownership, understanding of the shelter model and basic capacity for use, maintenance and future upgrading.

Cultural Practices (Sustainability)

Shelter design and construction methods align with local building traditions, using familiar materials and techniques. This supports cultural acceptance and enables households to adapt, extend or improve the shelter over time using locally known solutions.

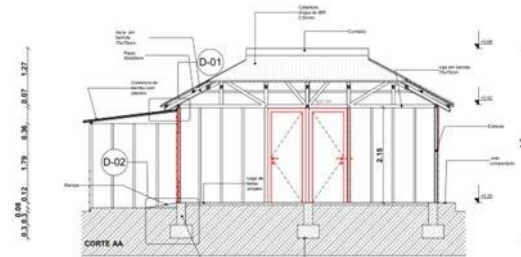
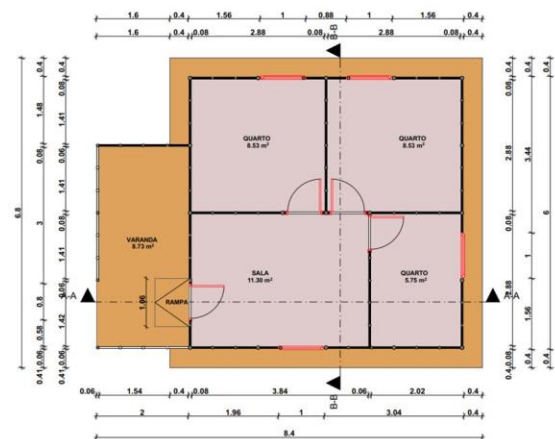
Environmental Consideration

The use of locally available materials helps reduce transportation impacts and reliance on external supply chains. Attention is given to responsible sourcing and minimizing environmental impacts related to natural resource use.

Other Information

The model is suitable for replication in similar contexts, subject to material availability, technical capacity and adequate supervision. Scalability may vary depending on local resources and access to skilled labour.

PERMANENT HOUSE



Shelter Typology:

Permanent Shelter – Core

Province(s):

Cabo Delgado

District(s):

Metuge

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This permanent shelter model provides a core housing solution using reinforced construction techniques and a mix of local and industrial materials. It offers long-term safety and privacy and allows incremental expansion and upgrading over time.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 16-32 m²

Dimensions: 4 m x 4 m

Internal height: 2.15 m

Foundation: Cement Floor

Implementation & Performance

Workforce: 2 skilled and 3 unskilled labour

Delivery modality: Community-based construction with technical supervision and training

Shelter habitability: 6 m² per person/ suitable for 5-7 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Reinforced permanent structure with concrete foundation and CGI roofing

Main materials:

- **Roofing:** Timber, CGI
- **Walls:** Bamboo, wooden poles, iron rods, cement

Bamboo use: Yes, walls and structure

Material treatment: *Not specified*

Shelter estimated cost

Materials: USD 2 000 – 2 500

Labour: USD 400

Cost reference year: 2023-2024

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, strong foundations and reinforced structural system

Floor elevation: Yes

Bracing: Yes, full bracing of walls and roof structure

Technical capacity: Capacity-building through resilient construction trainings for local artisans and households, in line with resilient construction standards

Advantages & limitations

- Durable and resilient construction offering privacy, strong foundations, and structural stability suitable for long-term housing
- Allows expansion and upgrading over time using local materials
- Higher costs compared to transitional solutions, with additional maintenance required (e.g. wall plastering for rain protection)

Key considerations

- Costs may limit scalability for highly vulnerable households without additional support
- Technical supervision is essential to ensure compliance with construction standards

PROJECT DESCRIPTION

Methodology

Implementation follows a structured construction approach, either contractor-led or supported by skilled local artisans, based on standardized designs and technical specifications. On-site technical supervision ensures construction quality, correct application of techniques and compliance with agreed safety and resilience standards.

Community Engagement / Participation

Community engagement is integrated through information sharing, coordination with local leaders and, where applicable, limited beneficiary involvement in construction activities. This supports ownership, understanding of the shelter model and basic capacity for use, maintenance and future upgrading.

Cultural Practices (Sustainability)

Shelter design and construction methods align with local building traditions, using familiar materials and techniques. This supports cultural acceptance and enables households to adapt, extend or improve the shelter over time using locally known solutions.

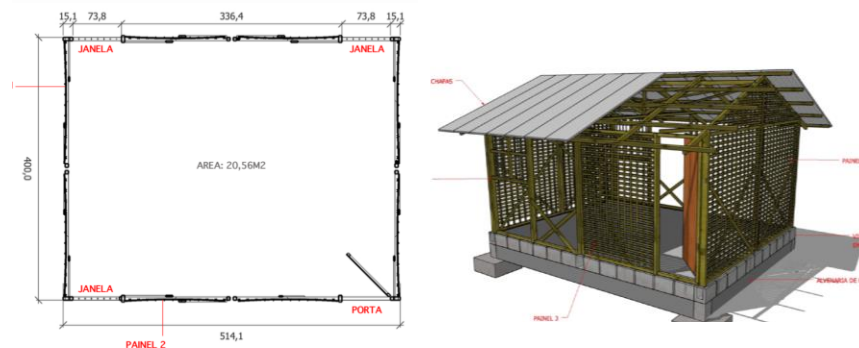
Environmental Consideration

The use of locally available materials helps reduce transportation impacts and reliance on external supply chains. Attention is given to responsible sourcing and minimizing environmental impacts related to natural resource use.

Other Information

The model is suitable for replication in similar contexts, subject to material availability, technical capacity and adequate supervision. Scalability may vary depending on local resources and access to skilled labour.

PERMANENT HOUSE



Shelter Typology:
Permanent Shelter – Core

Province(s):
Cabo Delgado

District(s):
Ibo district

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This permanent shelter model provides a core housing solution using reinforced construction techniques and a mix of local and industrial materials. It offers long-term safety and privacy and allows incremental expansion and upgrading over time.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 20.56 m²

Dimensions: 4 m x 5.14 m

Internal height: 3.1 m

Foundation: Isolated concrete footings

Implementation & Performance

Workforce: 2 skilled and 3 unskilled labour

Delivery modality: Construction with skilled labour

Shelter habitability: 4.11 m² per person/ suitable for 5 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Timber roof structure connected to the wall structure using metal brackets, reinforced pau-a-pique walls with coral stone infill and cement plaster

Main materials:

- **Roofing:** CGI
- **Walls:** Pau-a-pique (bamboo, timber, rocks, cement plastering), doors and windows

Bamboo use: Yes, walls and structure

Material treatment: Yes

Shelter estimated cost

Materials: USD 1 600

Labour: USD 100

Cost reference year: 2021-2022

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, strong foundations

Floor elevation: Yes

Bracing: Yes, cross-bracing

Technical capacity: Build Back Safer approach with capacity-building for local artisans

Other DRR notes: Reinforced roof anchorage to increase resistance to strong winds and floods

Advantages & limitations

- Local materials and traditional techniques support cultural acceptance, community uptake, and faster construction
- Build Back Safer approaches enhance resilience to climate shocks but may require additional training for local artisans
- Limited availability of local materials and skilled labour can constrain scale-up, particularly in island contexts

Key considerations

- Ensure technical supervision and on-the-job coaching, alongside early assessment of local materials and skilled labour availability, to maintain Build Back Safer quality
- Anticipate logistics and supply constraints during planning, particularly in island contexts

PROJECT DESCRIPTION

Methodology

Implementation follows a structured construction approach, either contractor-led or supported by skilled local artisans, based on standardized designs and technical specifications. On-site technical supervision ensures construction quality, correct application of techniques and compliance with agreed safety and resilience standards.

Community Engagement / Participation

Community engagement is integrated through information sharing, coordination with local leaders and, where applicable, limited beneficiary involvement in construction activities. This supports ownership, understanding of the shelter model and basic capacity for use, maintenance and future upgrading.

Cultural Practices (Sustainability)

Shelter design and construction methods align with local building traditions, using familiar materials and techniques. This supports cultural acceptance and enables households to adapt, extend or improve the shelter over time using locally known solutions.

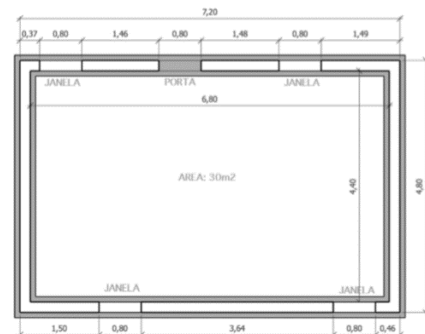
Environmental Consideration

The use of locally available materials helps reduce transportation impacts and reliance on external supply chains. Attention is given to responsible sourcing and minimizing environmental impacts related to natural resource use.

Other Information

The model is suitable for replication in similar contexts, subject to material availability, technical capacity and adequate supervision. Scalability may vary depending on local resources and access to skilled labour.

PERMANENT HOUSE



Shelter Typology:

Permanent Shelter – Core

Province(s):

Cabo Delgado

District(s):

Ibo district

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

Permanent core shelter solution using coral ragstone masonry walls and a concrete floor, combined with CGI roofing. Designed to provide durable and resilient housing, with reduced long-term maintenance needs and potential for incremental upgrading over time.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 34.56 m²

Dimensions: 7 x 4.8 m

Internal height: *Not specified*

Foundation: Concrete floor

Implementation & Performance

Workforce: 3 skilled, 2 unskilled

Delivery modality: Contractor-led construction

Shelter habitability: 46.9 m² per person/ suitable for 5 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Load-bearing masonry in coral ragstone with wooden beam roof)

Main materials:

- **Roofing:** CGI
- **Walls:** Coral ragstone
- **Floor:** Concrete

Bamboo use: No

Material treatment: *Not specified*

Shelter estimated cost

Materials: USD 1 200

Labour: USD 150

Cost reference year: 2020

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, load-bearing masonry walls (coral ragstone)

Floor elevation: Yes, concrete floor improving stability and moisture protection

Bracing: Yes, rigid masonry structure providing inherent structural stability

Materials: Use of locally available materials reducing supply chain risks

Roofing: CGI roofing suitable for cyclone-prone contexts

Advantages & limitations

- Strong and durable coral ragstone structure with good insulation properties and lower long-term maintenance needs
- Locally available material, reducing transportation costs, but availability may be limited, particularly in island contexts
- Requires specialized skills and workmanship, which can increase construction time and costs

Key considerations

- Scalability may be constrained by material availability
- Skilled technical supervision is required to ensure construction quality

PROJECT DESCRIPTION

Methodology

Implementation follows a structured construction approach, either contractor-led or supported by skilled local artisans, based on standardized designs and technical specifications. On-site technical supervision ensures construction quality, correct application of techniques and compliance with agreed safety and resilience standards.

Community Engagement / Participation

Community engagement is integrated through information sharing, coordination with local leaders and, where applicable, limited beneficiary involvement in construction activities. This supports ownership, understanding of the shelter model and basic capacity for use, maintenance and future upgrading.

Cultural Practices (Sustainability)

Shelter design and construction methods align with local building traditions, using familiar materials and techniques. This supports cultural acceptance and enables households to adapt, extend or improve the shelter over time using locally known solutions.

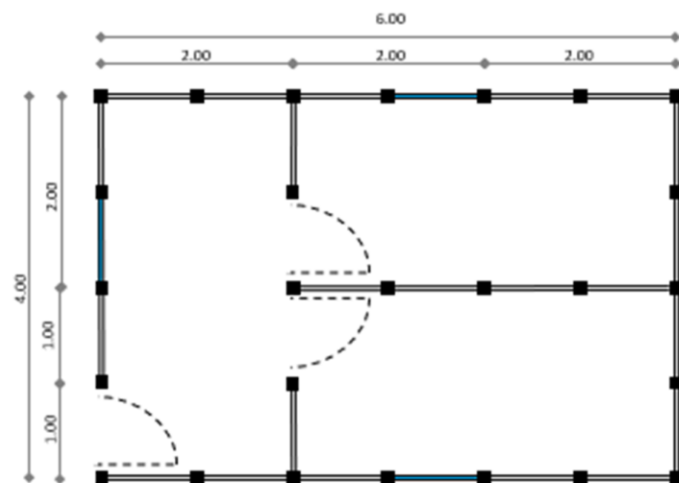
Environmental Consideration

The use of locally available materials helps reduce transportation impacts and reliance on external supply chains. Attention is given to responsible sourcing and minimizing environmental impacts related to natural resource use.

Other Information

The model is suitable for replication in similar contexts, subject to material availability, technical capacity and adequate supervision. Scalability may vary depending on local resources and access to skilled labour.

PERMANENT HOUSE



Shelter Typology:

Permanent Shelter – Core

Province(s):

Cabo Delgado/ Nampula

District(s):

Pemba, Memba,
Sussundenga

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

Permanent core shelter solution using traditional pau-a-pique construction with mud-cement plastering and CGI roofing. The model is locally adapted, supports incremental upgrading and expansion, and contributes to longer-term recovery and housing stability

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 24 m²

Dimensions: 6 x 4 m

Internal height: *Not specified*

Foundation: Stabilized soil base with cement skirting

Implementation & Performance

Workforce: 2 skilled, 2 unskilled

Delivery modality: Community-based construction with technical supervision and training of local artisans

Shelter habitability: 4.8 m² per person/ suitable for 5 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Traditional reinforced pau-a-pique system

Main materials:

- Roofing: CGI
- Walls: bamboo, timber, rocks, mud-cement plastering
- Floor: Soil

Bamboo use: Yes (Walls)

Material treatment: Wood treatment for durability and termite protection

Shelter estimated cost

Materials: USD 1500

Labour: USD 120

Cost reference year: 2020–2022

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, strong foundations

Floor elevation: Partial, use of sandbags

Bracing: Yes, Wall bracing and roof connections

Materials: Use of local materials with wood treatment

Advantages & limitations

- Shelter can be upgraded and expanded over time, supporting long-term recovery and stability
- Balancing the use of local materials with environmental conservation can be challenging, and construction may take longer and require more advanced skills than emergency or transitional shelters

Key considerations

- Requires skilled workmanship to ensure quality and durability
- Longer construction time compared to emergency shelters
- Environmental management of local materials is essential

PROJECT DESCRIPTION

Methodology

Implementation follows a structured construction approach, either contractor-led or supported by skilled local artisans, based on standardized designs and technical specifications. On-site technical supervision ensures construction quality, correct application of techniques and compliance with agreed safety and resilience standards.

Community Engagement / Participation

Community engagement is integrated through information sharing, coordination with local leaders and, where applicable, limited beneficiary involvement in construction activities. This supports ownership, understanding of the shelter model and basic capacity for use, maintenance and future upgrading.

Cultural Practices (Sustainability)

Shelter design and construction methods align with local building traditions, using familiar materials and techniques. This supports cultural acceptance and enables households to adapt, extend or improve the shelter over time using locally known solutions.

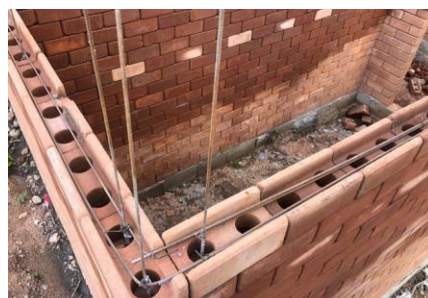
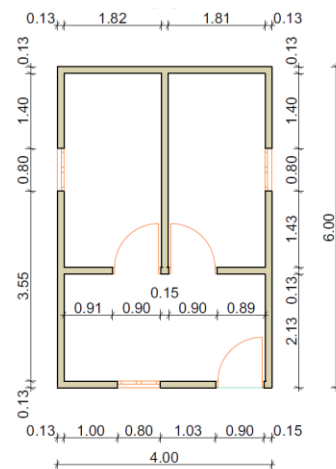
Environmental Consideration

The use of locally available materials helps reduce transportation impacts and reliance on external supply chains. Attention is given to responsible sourcing and minimizing environmental impacts related to natural resource use.

Other Information

The model is suitable for replication in similar contexts, subject to material availability, technical capacity and adequate supervision. Scalability may vary depending on local resources and access to skilled labour.

PERMANENT HOUSE



Shelter Typology:

Permanent Shelter – Core

Province(s):

Nampula

District(s):

Memba

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

Permanent shelter solution using load-bearing masonry construction (cement blocks or CSEB) with CGI roofing. The model is locally adapted, supports incremental upgrading and expansion, and contributes to long-term recovery and housing stability.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 24 m²

Dimensions: 6 x 4 m

Internal height: *Not specified*

Foundation: Reinforced concrete strip footing

Implementation & Performance

Set-up Time: >15 days

Workforce: 2 skilled, 2 unskilled

Delivery modality: Community-based construction with technical supervision and training of local artisans

Shelter habitability: 4.8 m² per person/ suitable for 5 occupants

Construction System

Structural system: Load-bearing masonry with reinforced concrete elements

Main materials:

- **Roofing:** Timber, CGI
- **Walls:**
- **Option 1:** Reinforced cement blocks
- **Option 2:** CSEB (Compressed Stabilized Earth Bricks)

Bamboo use: No

Material treatment: Wood treatment

Shelter estimated cost

Materials: USD 2300 - 2500

Labour: USD 160

Cost reference year: 2020–2022

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, strong foundations

Floor elevation: Yes

Bracing: Yes, Concrete columns and bands

Materials: Use of stabilized masonry units and treated timber

Advantages & limitations

- Local and culturally adapted construction approach
- Shelter can be upgraded and expanded over time, supporting long-term recovery
- Higher costs and longer construction time compared to emergency or transitional shelters, requiring more advanced construction skills and materials

Key considerations

- Requires skilled workmanship and technical supervision
- Higher material costs may limit scalability
- Best suited for permanent housing solutions in stable contexts

PROJECT DESCRIPTION

Methodology

Implementation follows a structured construction approach, either contractor-led or supported by skilled local artisans, based on standardized designs and technical specifications. On-site technical supervision ensures construction quality, correct application of techniques and compliance with agreed safety and resilience standards.

Community Engagement / Participation

Community engagement is integrated through information sharing, coordination with local leaders and, where applicable, limited beneficiary involvement in construction activities. This supports ownership, understanding of the shelter model and basic capacity for use, maintenance and future upgrading.

Cultural Practices (Sustainability)

Shelter design and construction methods align with local building traditions, using familiar materials and techniques. This supports cultural acceptance and enables households to adapt, extend or improve the shelter over time using locally known solutions.

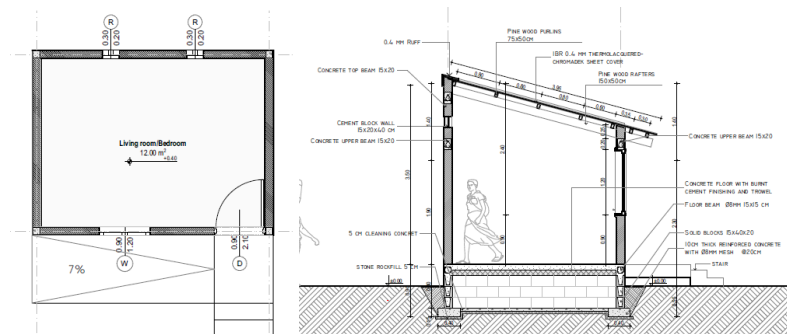
Environmental Consideration

The use of locally available materials helps reduce transportation impacts and reliance on external supply chains. Attention is given to responsible sourcing and minimizing environmental impacts related to natural resource use.

Other Information

The model is suitable for replication in similar contexts, subject to material availability, technical capacity and adequate supervision. Scalability may vary depending on local resources and access to skilled labour.

PERMANENT HOUSE



Shelter Typology:
Permanent Shelter – Core

Province(s):
Sofala

District(s):
Beira

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

Permanent core shelter solution using reinforced concrete block masonry, concrete flooring and IBR roofing. Designed for urban, cyclone-affected contexts, the shelter provides a durable and resilient housing solution that supports household recovery and allows for future expansion.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 12 m²

Dimensions: 3 x 4 m

Internal height: *Not specified*

Foundation: Reinforced concrete strip footing

Implementation & Performance

Workforce: 2 skilled, 2 unskilled
Delivery modality: Community-based construction with technical supervision and training of local artisans

Shelter habitability: 4 m² per person/ suitable for 3 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Load-bearing reinforced concrete block masonry with concrete columns and bands

Main materials:

- **Roofing:** Galvanized IBR
- **Walls:** Reinforced concrete blocks
- **Floors:** Concrete flooring
- Doors and windows

Bamboo use: No

Material treatment: Wood treatment

Shelter estimated cost

Materials: USD 3200

Labour: USD 330

Cost reference year: 2024

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, strong foundations

Floor elevation: Yes

Bracing: Yes, Concrete columns and bands

Materials: Reinforced concrete blocks and cement plastering

Advantages & limitations

- Permanent and resilient housing solution supporting household recovery in urban contexts
- Shelter allows for future expansion and is locally adapted
- Higher costs and longer construction time compared to emergency or transitional shelters
- Requires advanced construction skills and materials, and provides limited space as a single-room unit

Key considerations

- Best suited for urban return or reconstruction contexts
- Requires skilled labour and technical supervision
- Small initial footprint necessitates planned future expansion

PROJECT DESCRIPTION

Methodology

A participatory, community-based approach was used, combining local recruitment and training of workers, phased construction, and active involvement of beneficiaries in monitoring materials and progress, while adapting activities to local conditions and resource availability

Community Engagement / Participation

Local residents participated in construction as masons, carpenters, and helpers, supporting construction activities and site organization. Teams were organized collaboratively, with technical staff providing training and supervision. Beneficiaries also participated in monitoring materials and progress, strengthening ownership and construction quality

Cultural Practices (Sustainability)

Community consultations ensured that housing design, construction methods, and site layouts were aligned with local traditions and preferences, supporting cultural acceptance and allowing adjustments to household organization and community needs

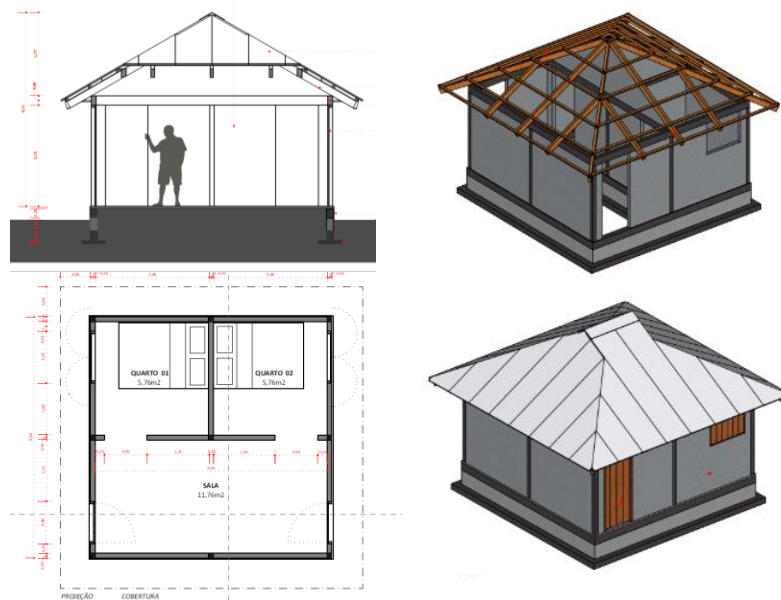
Environmental Consideration

Construction activities were adapted to local weather conditions, prioritizing roofing to protect structures during heavy rains. The use of locally available materials and labour helped reduce transportation needs and environmental impact

Other Information

The model can be replicated in similar contexts, depending on material availability, technical capacity, and adequate supervision. Scalability may vary depending on local resources and availability of skilled labour.

PERMANENT HOUSE



Shelter Typology:
Permanent Shelter – Core

Province(s):
Nampula

District(s):
Corrane

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

This permanent shelter provides safe, durable, and functional housing for internally displaced families, improving living conditions, resilience, and long-term settlement in a rural IDP context.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 26.01 m²

Dimensions: 5.1 x 5.1 m

Internal height: 3.94 m

Foundation: Concrete floor

Implementation & Performance

Workforce: 1 skilled, 2 unskilled

Delivery modality: Community-based/ in-kind

Shelter habitability: 5.22 m² per person/ suitable for 5 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Reinforced concrete frame with load-bearing walls

Main materials:

- **Roofing:** Timber roof structure with CGI sheets
- **Walls:** Masonry Blocks

Bamboo use: No

Material treatment: N/A

Shelter estimated cost

Materials: USD 2733

Labour: USD 758

Cost reference year: 2024-2025

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, reinforced concrete strip footing (70 cm depth)

Floor elevation: Yes, 20 cm above ground level

Bracing: Yes, roof and wall structural bracing

Site layout: Yes, site drainage and spacing between shelters

Advantages & limitations

- Community participation and local acceptance of the design
- Durable and resilient construction suitable for long-term housing
- Flexible design allowing future expansion
- Dependence on external suppliers for some materials

Key considerations

- Ensure reliable material supply chains
- Maintain community engagement during construction
- Ensure quality control and technical supervision

PROJECT DESCRIPTION

Methodology

Implementation follows a structured construction approach, combining standardized designs with locally adapted techniques. Works are carried out by skilled artisans with technical supervision to ensure construction quality and compliance with agreed safety and resilience standards.

Community Engagement / Participation

Community engagement is ensured through coordination with local leaders and information sharing with beneficiary households. Where feasible, community members participate in selected construction activities, supporting ownership and basic capacity for use, maintenance and future upgrading.

Cultural Practices (Sustainability)

Shelter design and construction methods are aligned with local practices and materials familiar to the community. This supports cultural acceptance and allows households to adapt, extend or improve the shelter over time using locally known techniques.

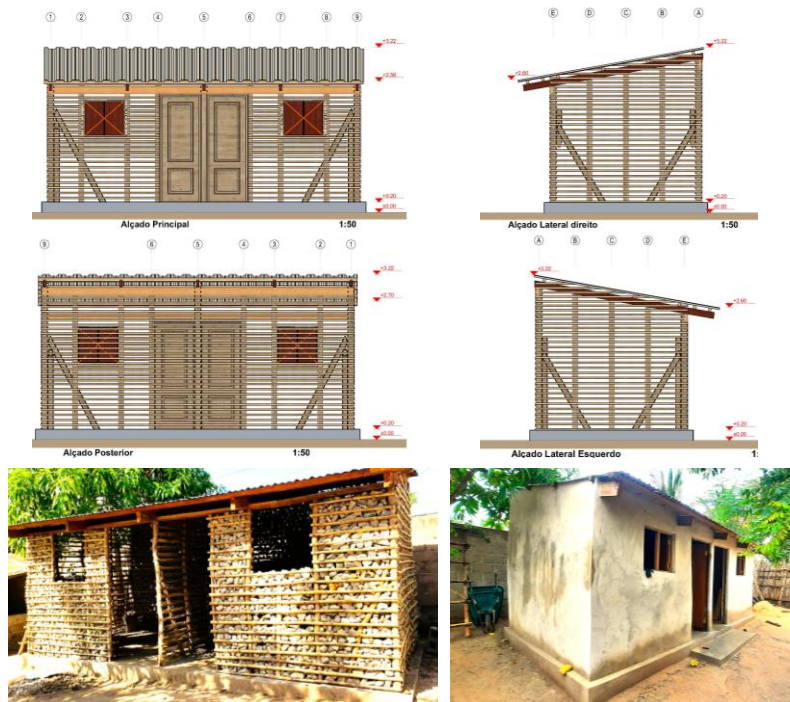
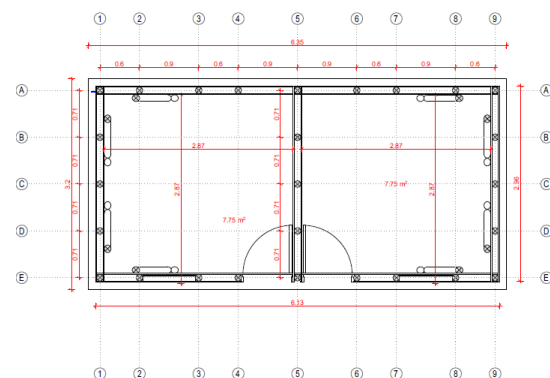
Environmental Consideration

The use of locally available materials reduces transportation needs and reliance on external supply chains. Attention is given to responsible sourcing and minimizing environmental impacts related to natural resource use.

Other Information

The shelter model is suitable for replication in similar contexts, subject to material availability, technical capacity and adequate supervision. Scalability may vary depending on local resources and access to skilled labour.

PERMANENT SHELTER



Shelter Typology:

Permanent Shelter – Core

Province(s):

Cabo Delgado

District(s):

Pemba

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

Permanent core shelter solution based on pau-a-pique construction with mud-cement plastering and CGI roofing. The model is locally adapted, provides improved durability compared to emergency shelters, and allows incremental upgrading while supporting household stability in urban host communities.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 15.5 m²

Dimensions: 6.35 x 3.2 m

Internal height: 2.4 m

Foundation: Reinforced concrete foundation

Implementation & Performance

Workforce: 4 skilled

Delivery modality: Community-based construction with skilled labour and technical supervision

Shelter habitability: 3.8 m² per person/ suitable for 4 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Traditional pau-a-pique system with plastered walls

Main materials:

- **Roofing:** Timber, CGI
- **Walls:** bamboo, timber, rocks, mud-cement plastering
- **Floors:** Simple concrete with burnt cement finish

Bamboo use: Yes (walls)

Material treatment: Wood treatment

Shelter estimated cost

Materials: USD 1750

Labour: USD 169

Cost reference year: 2023

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, strong foundations

Floor elevation: Yes

Bracing: Yes, wall bracing and roof connections

Materials: Use of local materials with wood treatment

Advantages & limitations

- Allows upgrading and expansion over time, supporting recovery and stability
- Costs may be high for the most vulnerable households
- Requires wall plastering for rain protection, increasing costs, and offers limited internal space for average household size

Key considerations

- Best suited for permanent shelter solutions in host community contexts
- Requires skilled labour and adequate technical supervision
- Scalability depends on availability of local materials and household capacity to upgrade

PROJECT DESCRIPTION

Methodology

Implementation is based on standardized shelter designs adapted to the local context and delivered through a structured construction process. Works are carried out by trained artisans under technical supervision to ensure construction quality, correct application of materials and compliance with agreed safety and resilience standards.

Community Engagement/ Participation

Community engagement is ensured through coordination with local leaders and information sharing with beneficiary households. Where feasible, households and community members are involved in selected construction activities, supporting ownership, understanding of the shelter model and basic capacity for use, maintenance and future upgrading.

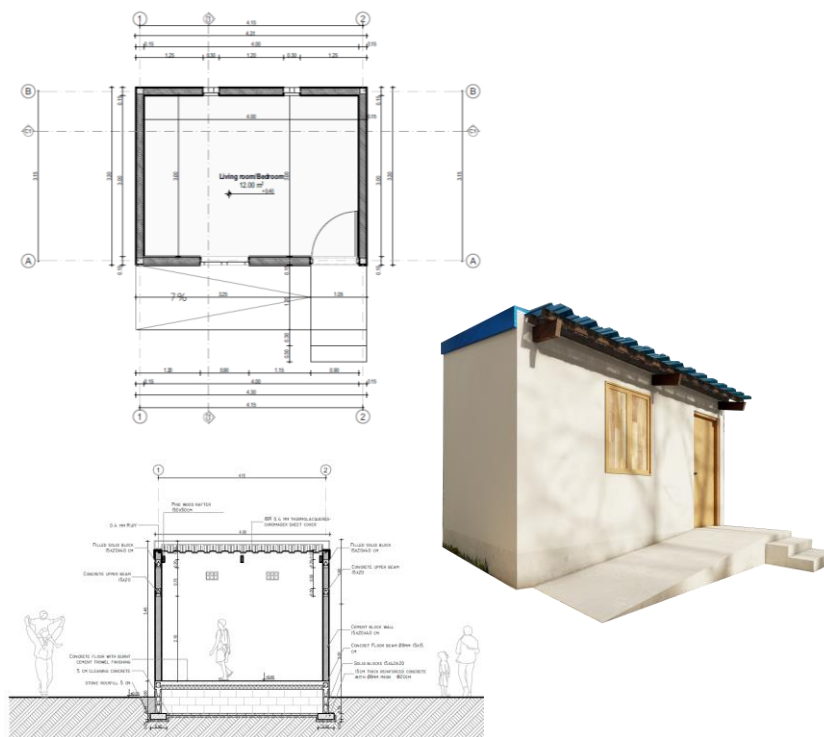
Environmental Consideration

Environmental considerations focus on the use of locally available materials to reduce transportation needs and dependence on external supply chains. Attention is given to responsible sourcing of materials and to minimizing environmental impacts related to natural resource use.

Cultural Practices (Sustainability)

Shelter design and construction methods are aligned with local building practices and materials familiar to the community. This supports cultural acceptance, facilitates community uptake and enables households to adapt, extend or improve the shelter over time using locally known techniques.

PERMANENT SHELTER



Shelter Typology:

Permanent Shelter – Core

Province(s):

Sofala

District(s):

Dondo

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

Permanent core shelter solution using reinforced concrete block masonry, concrete flooring and IBR metal roofing. The model provides a durable housing solution, supports incremental upgrading and contributes to long-term recovery and household stability.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 12 m²

Dimensions: 3 m x 4 m

Internal height: *Not specified*

Foundation: Reinforced concrete foundation

Implementation & Performance

Workforce: 1 skilled, 4 unskilled

Delivery modality: Community-based construction with skilled labour and technical supervision

Shelter habitability: 3 m² per person/ suitable for 4 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Load-bearing concrete block masonry with reinforced elements

Main materials:

- **Roofing:** IBR sheet metal (4 mm thick)
- **Walls:** Concrete block masonry (400x200x150 mm) with cement render on both sides
- **Floors:** C25/30 concrete floor finished with trowel-fired screed

Bamboo use: No

Material treatment: Wood treatment

DRR/ Resilience techniques used

Anchoring: Yes, strong foundations

Floor elevation: Yes

Bracing: Yes, wall bracing and roof connections

Materials: Reinforced concrete blocks and cement plastering

Advantages & limitations

- Locally adapted construction approach allowing upgrading and expansion
- Higher costs and logistical constraints may affect scalability
- Requires continuous training and availability of skilled artisans

Key considerations

- Requires strong technical supervision and skilled labour
- Small initial footprint requires planned future expansion

Shelter estimated cost

Materials: USD 3200

Labour: USD 355.7

Cost reference year: 2023-2024

Exclusions: Logistics not included

PROJECT DESCRIPTION

Methodology

Implementation follows a structured and standardized construction approach, adapted to the local context. Works are delivered by trained artisans under continuous technical supervision, ensuring construction quality, correct application of materials and compliance with agreed safety and resilience standards.

Community Engagement/ Participation

Community engagement is ensured through coordination with local leadership and information sharing with beneficiary households. Where feasible, beneficiaries participate in selected construction activities, supporting ownership, strengthening local capacity and improving understanding of shelter use, maintenance and future upgrading.

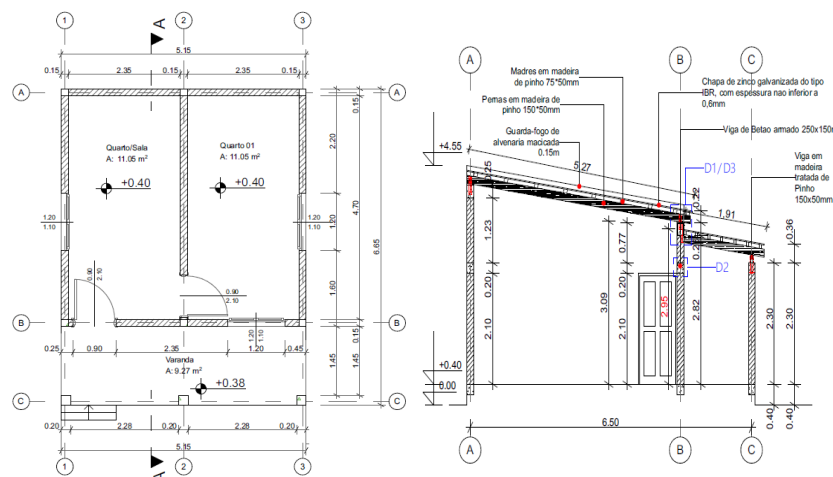
Cultural Practices (Sustainability)

The shelter design and construction methods are grounded in local building practices and materials familiar to the community. This supports cultural acceptance, facilitates uptake and enables households to adapt, expand or improve the shelter over time using locally known techniques.

Environmental Consideration

Environmental considerations prioritize the use of locally available materials to reduce transportation impacts and dependence on external supply chains. Attention is given to responsible sourcing and to minimizing negative environmental impacts related to natural resource use.

PERMANENT HOUSE



Shelter Typology:
Permanent Shelter – Full

Province(s):
Sofala

District(s):
Beira

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

Permanent core shelter solution using cement block masonry, concrete flooring and CGI roofing. The model supports durable housing provision, promotes incremental upgrading and contributes to long-term recovery and stability at household level

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 34.25 m²
Dimensions: 5.15 m x 6.65 m
Internal height: 3 m
Foundation: Reinforced concrete strip footing

Implementation & Performance

Workforce: 2 skilled, 3 unskilled
Delivery modality: Community-supported construction with technical supervision
Shelter habitability: 6 m² per person/ suitable for 5 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Load-bearing cement block masonry with reinforced concrete elements

Main materials:

- **Roofing:** CGI sheet
- **Walls:** Cement blocks
- **Floors:** Concrete pavement

Bamboo use: No

Material treatment: Wood treatment

Shelter estimated cost

Materials: USD 7000

Labour: USD 3000

Cost reference year: 2019-2024

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, Robust concrete foundations

Floor elevation: Yes

Bracing: Yes, Wall bracing and roof connections

Materials: Use of local materials and resilient construction techniques

Advantages & limitations

- Engagement of local beneficiaries in the construction process, supporting capacity-building and the transfer of resilient construction practices
- Evolutive housing model that allows future expansion and incremental upgrading over time
- High construction costs may limit accessibility for the most vulnerable households
- Quality and availability of local materials can affect construction timelines and overall performance.

Key considerations

- Requires strong technical supervision and skilled labour
- Beneficiary ownership and tenure security should be clearly ensured
- Scalability depends on funding availability and local implementation capacity

PROJECT DESCRIPTION

Methodology

The shelter is implemented through a standardized design adapted to the local context. Construction is carried out by trained artisans under continuous technical supervision, ensuring quality workmanship, correct application of materials and compliance with agreed safety and resilience standards.

Community Engagement/ Participation

Community engagement is ensured through coordination with local authorities and neighbourhood structures. Beneficiary households are informed throughout the process and, where feasible, involved in selected construction activities, supporting ownership and basic understanding of shelter use, maintenance and future upgrading.

Cultural Practices (Sustainability)

The design and construction approach are aligned with local building practices and culturally familiar materials. This supports community acceptance and enables households to adapt, expand or improve the shelter over time using locally known techniques.

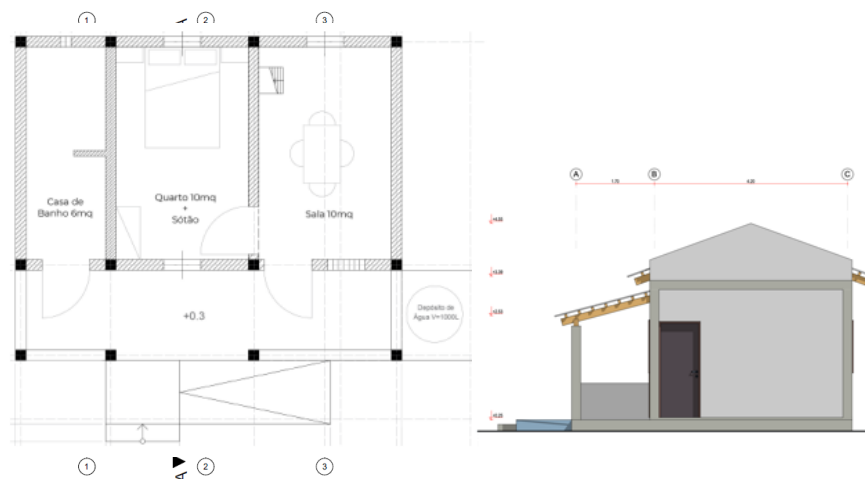
Environmental Consideration

The construction approach prioritizes the use of locally available materials to reduce transportation needs and reliance on external supply chains. Responsible sourcing is encouraged to minimize environmental impacts associated with material extraction and use.

Other Information

The shelter model is suitable for replication in similar contexts, subject to material availability, technical capacity and adequate supervision. Scalability depends on funding availability, contractor capacity and access to skilled labour.

PERMANENT HOUSE



Shelter Typology:

Permanent Shelter – Full
(Expandable)

Province(s):

Sofala

District(s):

Dondo

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Urban
- Rural

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

Permanent core shelter with an expandable layout, combining a reinforced masonry core unit with a covered veranda. The model provides a durable and resilient housing solution, allowing phased expansion over time while supporting long-term household stability and recovery.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area:

- **Core:** 21 m²
- **Expanded:** 33.2 m²

Dimensions:

- **Core:** 5.0 m × 4.2 m
- **Expanded:** 8.0 m × 4.2 m

Foundation:

Reinforced concrete foundation

Implementation & Performance

Set-up: >15 days

Workforce: 3 skilled artisans, 5 labourers

Delivery modality: Contractor-led construction with technical supervision

Shelter habitability: 4-5.3 m² per person/ suitable for 6-8 occupants

Construction System

Structural system: Reinforced cement block masonry with concrete beams and columns

Main materials:

- **Roofing:** Galvanized IBR roof sheeting with hurricane clips, treated timber, umbrella nails, gable roof
- **Walls:** Cement block walls with reinforced concrete beams and columns, cement mortar plaster
- **Floors:** Simple concrete with burnt cement finish

Bamboo use: No

Material treatment: Wood treatment

Shelter estimated cost

Materials: USD 3850

Labour: USD 1100

Cost reference year: 2020

Exclusions: Logistics not included (approx. 10% ≈ USD 550)

DRR/ Resilience techniques used

Anchoring: Yes, strong foundations

Floor elevation: Yes

Bracing: Yes, wall and roof reinforced connections

Roofing: Gable roof improving wind resistance

Materials: Use of local materials and resilient construction techniques

Advantages & limitations

- Durable and resilient permanent housing solution with a locally adapted construction system using familiar materials
- Expandable core design allows phased upgrading over time
- Higher costs and the need for plastering to protect walls from rain may limit accessibility for the most vulnerable households and increase construction time
- Internal space may be limited for larger households prior to expansion

Key considerations

- Expansion phase should be planned in line with household needs and plot size
- Requires skilled labour and continuous technical supervision
- Scalability depends on funding availability and contractor capacity

PROJECT DESCRIPTION

Methodology

Implementation follows a standardized shelter design adapted to the local urban context and delivered through a structured construction process. Works are carried out by trained artisans under continuous technical supervision, ensuring construction quality, correct use of materials, and compliance with agreed safety and resilience standards.

Community Engagement/ Participation

Community engagement is ensured through coordination with neighbourhood leadership and regular information-sharing with beneficiary households. Where feasible, beneficiaries are involved in selected construction activities, promoting ownership, strengthening local capacity, and supporting basic knowledge for use, maintenance, and future upgrading.

Cultural Practices (Sustainability)

The shelter design and construction approach align with local building practices and familiar materials. This supports cultural acceptance, facilitates adaptation by households, and enables incremental improvements over time using locally known techniques.

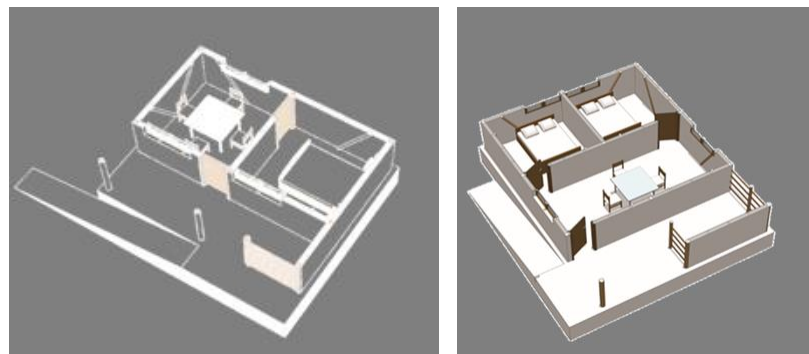
Environmental Consideration

Environmental considerations prioritise the use of locally available materials to reduce transport needs and reliance on external supply chains. Attention is given to responsible material sourcing and minimising environmental impacts related to natural resource use.

Other Information

The shelter model is suitable for replication in similar urban contexts, subject to material availability, technical capacity, funding, and adequate supervision. Scalability may vary depending on contractor capacity and access to skilled labour.

PERMANENT HOUSE



Shelter Typology:

Permanent Shelter – Full

Province(s):

Cabo Delgado

District(s):

Pemba (Chuiba)

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

Permanent housing solution adapted to the urban context of Cabo Delgado, using locally available materials and construction techniques. The model provides durable housing conditions and supports long-term household recovery and stability.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area:

- T1: 24 m²
- T2: 36 m²

Dimensions:

- T1: 6 m x 4 m
- T2: 6 m x 6 m

Internal height: Not specified

Foundation: Strong concrete foundations

Implementation & Performance

Construction time: >15 days

Workforce: 4 skilled artisans/5 labourers

Delivery modality: Contractor-led implementation

Shelter habitability: 3.65 m² per person/ Suitable for 5–8 occupants

Construction System

Structural system: Load-bearing masonry or mixed system depending on typology

Main materials:

- **Roofing:** Galvanized IBR roof sheeting with hurricane clips, treated timber and umbrella nails
- **Walls:**
 - Option 1: Mixed materials (coconut wood structure, bamboo, mud and cement plastering)
 - Option 2: Cement block walls with reinforced concrete beams and pillar
- **Floors:** Simple concrete floor with burnt cement finish

Bamboo use: Yes (in mixed material option)

Material treatment: Wood treatment

Shelter estimated cost

Materials:

- T1: USD 2440
- T2: USD 4660

Labour:

- T1: USD 840
- T2: USD 1010

Cost reference year: 2017-2019

Exclusions: Logistics not included (Approx. 10% = USD 360 / 690)

DRR/ Resilience techniques used

Anchoring: Yes, Strong foundations

Floor elevation: Yes

Bracing: Yes, reinforced wall and roof connections

Additional measures: Reinforced roof connections, 4-slope roof

Advantages & limitations

- Durable housing solution adapted to local materials, skills and cultural practices
- Allows incremental upgrading and expansion, contributing to improved household well-being and longer-term recovery
- Construction costs and the need for wall plastering for rain protection may limit accessibility for the most vulnerable households
- Internal space may be limited for larger household sizes

Key considerations

- Requires skilled labour and strong technical supervision
- Scalability depends on funding availability and contractor capacity
- Veranda inclusion should be considered based on plot size and household needs

PROJECT DESCRIPTION

Methodology

Implementation follows a structured construction approach based on standardized designs and technical specifications. Works are carried out by trained artisans under on-site technical supervision, ensuring construction quality, correct application of techniques, and compliance with agreed safety and resilience standards.

Community Engagement/ Participation

Community engagement is integrated through coordination with neighbourhood leadership and information-sharing with beneficiary households. Where feasible, limited beneficiary involvement in construction activities supports ownership, understanding of the shelter model, and basic capacity for use, maintenance and future upgrading.

Cultural Practices (Sustainability)

Shelter design and construction methods align with local building practices and familiar materials. This supports cultural acceptance and enables households to adapt, extend or improve the shelter over time using locally known techniques.

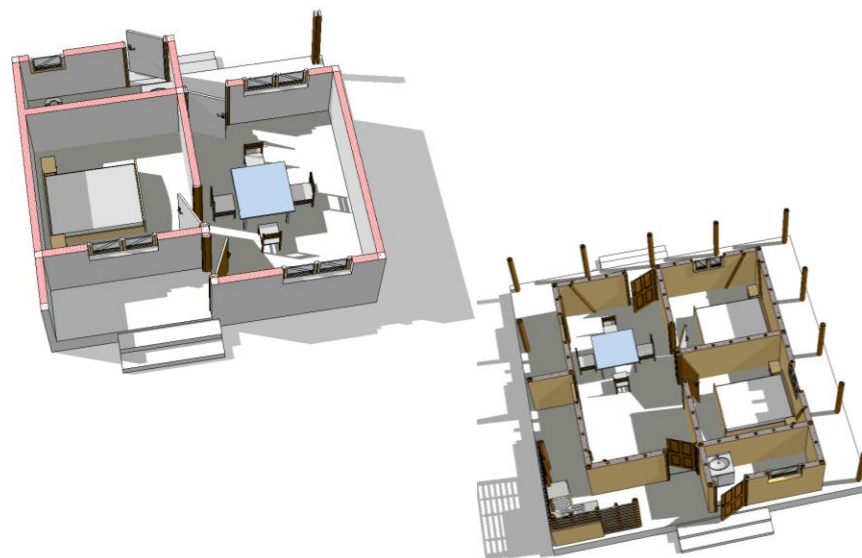
Environmental Consideration

The use of locally available materials reduces transport requirements and reliance on external supply chains. Attention is given to responsible sourcing and minimising environmental impacts related to natural resource use.

Other Information

The shelter model is suitable for replication in similar contexts, subject to material availability, technical capacity, funding and adequate supervision. Scalability may vary depending on contractor capacity and access to skilled labour.

PERMANENT HOUSE



Shelter Typology:
Permanent Shelter – Full

Province(s):
Cabo Delgado

District(s):
Pemba (Chuiba)

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

Permanent housing solution adapted to urban contexts in Cabo Delgado, using a combination of reinforced masonry and locally familiar construction techniques. The model provides durable housing conditions and contributes to long-term household recovery and stability.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area:

- T1: 24 m²
- T2: 36 m²

Dimensions:

- T1: 6 m x 4 m
- T2: 6 m x 6 m

Internal height: Not specified

Foundation: Concrete foundation

Implementation & Performance

Set-up: >15 days

Workforce: 4 skilled artisans/5 labourers

Delivery modality: Contractor-led

Shelter habitability: 3.65 m² per person/ Suitable for 5-8 occupants

Construction System

Structural system: Load-bearing masonry or mixed structural system depending on typology

Main materials:

- **Roofing:** Galvanized IBR roof sheeting with hurricane clips, treated timber and umbrella nails
- **Walls:**
- Option 1: Mixed material walls using coconut wood structure, bamboo, mud and cement plastering
- Option 2: Cement block walls with reinforced concrete beams and pillars
- **Floors:** Simple concrete floor with burnt cement finish

Bamboo use: Yes (Option 1)

Material treatment: Wood treatment

Shelter estimated cost

Materials:

- T1: USD 2590
- T2: USD 4340

Labour:

- T1: USD 740
- T2: USD 1,240

Cost reference year: 2017-2019

Exclusions: Logistics not included (Approx. 10% = USD 370 / 600)

DRR/ Resilience techniques used

Anchoring: Yes, strong foundations

Floor elevation: Yes

Bracing: Yes, reinforced wall and roof connections

Roofing: 4-slope roof

Advantages & limitations

- Durable housing solution adapted to local materials, skills and cultural practices
- Allows incremental upgrading and expansion over time, supporting household recovery
- Construction costs and the need for wall plastering for rain protection may limit accessibility for the most vulnerable households
- Internal space may be limited for larger household sizes

Key considerations

- Requires skilled labour and adequate technical supervision
- Scalability depends on material availability, funding and contractor capacity
- Plot size and household needs should be considered when planning future expansion

PROJECT DESCRIPTION

Methodology

Implementation follows a standardized permanent housing approach, combining resilient construction techniques with locally available materials. The model is designed as a core or expandable unit, allowing phased upgrading according to household capacity and needs.

Community Engagement/ Participation

Beneficiaries are engaged throughout the construction process, including site preparation and basic construction activities, supporting skills transfer, local capacity building, and ownership of the housing solution.

Cultural Practices (Sustainability)

The housing design and construction system reflect local building practices and spatial needs, using familiar materials and layouts to ensure cultural acceptance and long-term use.

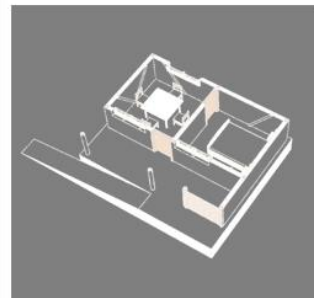
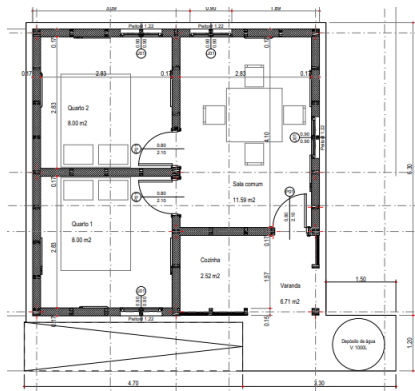
Environmental Consideration

Use of local and mixed materials reduces transportation impacts and pressure on external supply chains. Construction techniques promote durability, efficient use of resources, and reduced maintenance over time.

Other Information

The model requires skilled labour and technical supervision to ensure quality and compliance with resilience standards. Construction timelines and costs may vary depending on material availability and local capacity.

PERMANENT HOUSE



Shelter Typology:
Permanent Shelter – Core
(Models T1 & T2)

Province(s):
Zambézia

District(s):
Quelimane

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

Permanent core shelter solution implemented through two housing models (T1 and T2), combining a reinforced structural system with mixed local materials. The design is locally adapted, supports incremental upgrading and provides durable housing conditions contributing to long-term household recovery and stability.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area:

- T1: 24 m²
- T2: 36 m²

Dimensions:

- T1: 6 m x 4 m
- T2: 6 m x 6 m

Foundation: Reinforced concrete foundation

Implementation & Performance

Set-up: >15 days

Workforce: 4 skilled artisans, 5 labourers

Delivery modality: Contractor-led construction with technical supervision

Shelter habitability: 3.65 m² per person/ suitable for 5-8 occupants

Construction System

Structural system: Mixed construction system with reinforced structural elements

Main materials:

- **Roofing:** Galvanized IBR roof sheeting with hurricane clips, treated timber and umbrella nails
- **Walls:** Mixed material wall using coconut wood structure, bamboo, mud and cement plastering
- **Floors:** Simple concrete with burnt cement finish

Bamboo use: Yes (mixed wall system)

Material treatment: Wood treatment

Shelter estimated cost

Materials:

- T1: USD 2240
- T2: USD 4550

Labour:

- T1: USD 640
- T2: USD 980

Cost reference year: 201-2019

Exclusions: Logistics not included (approx. 10% ≈ USD 320/ 650)

DRR/ Resilience techniques used

Anchoring: Yes, strong foundations

Floor elevation: Yes

Bracing: Yes, wall and roof reinforced connections

Flooring: 4-slope roof configuration improving wind resistance

Materials: Treated timber and reinforced roofing system

Advantages & limitations

- Durable and locally adapted permanent housing solution using mixed construction systems and local materials, supporting cultural acceptance and reduced reliance on external supply chains
- Flexible design allowing incremental upgrading and expansion over time
- Higher costs and the need for plastering to protect walls from rain may limit accessibility for the most vulnerable households and increase construction time
- Internal space may be limited for larger households depending on the selected model

Key considerations

- Availability and quality of local materials influence construction timelines and overall performance
- Requires skilled labour and continuous technical supervision to ensure construction quality and resilience standards

PROJECT DESCRIPTION

Methodology

Implementation follows a standardized shelter design adapted to the local context and delivered through a structured construction process. Works are implemented by trained artisans under continuous technical supervision, ensuring construction quality, correct use of materials and compliance with agreed safety and resilience standards.

Community Engagement/ Participation

Community engagement is ensured through coordination with local leadership and regular information sharing with beneficiary households. Where feasible, beneficiaries are involved in selected construction activities, promoting ownership, strengthening local capacity and supporting basic knowledge for use, maintenance and future upgrading.

Cultural Practices (Sustainability)

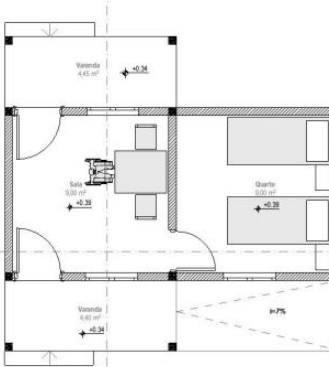
The shelter design and construction approach are aligned with local building practices and materials familiar to the community. This supports cultural acceptance, facilitates uptake and enables households to adapt, expand or improve the shelter over time using locally known techniques.

Environmental Consideration

Environmental considerations prioritize the use of locally available materials to reduce transportation needs and reliance on external supply chains. Attention is given to responsible sourcing and minimizing environmental impacts related to natural resource use.

Other Information

The shelter model is suitable for replication in similar contexts, subject to material availability, technical capacity and adequate supervision. Scalability may vary depending on local resources, funding availability and access to skilled labour.



PERMANENT HOUSE



Shelter Typology:

Permanent Shelter – Full

Province(s):

Sofala

District(s):

Dondo, Buzi

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

Permanent housing solution using stabilized block masonry with reinforced concrete elements and IBR roofing. The model is locally adapted, provides durable housing conditions and supports incremental upgrading and long-term household recovery.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area: 36 m² (including verandas)

Dimensions: 6 m x 6 m

Internal height: *Not specified*

Foundation: Reinforced concrete foundation and columns

Implementation & Performance

Set-up time: >15 days

Workforce: 4 skilled artisans, 5 labourers

Delivery modality: Contractor-led implementation

Shelter habitability: 4.5 m² per person/ suitable for 4-8 occupants

Construction System

Structural system: Load-bearing stabilized block masonry with reinforced concrete beams, columns and veranda structure

Main materials:

- **Roofing:** Galvanized IBR roof sheeting with hurricane clips, treated timber and umbrella nails
- **Walls:** Conventional stabilized block walls with concrete beams and pillars
- **Floors:** Simple concrete with burnt cement finish

Bamboo use: No

Material treatment: Wood treatment

Shelter estimated cost

Materials: USD 8400

Labour: USD 2400

Cost reference year: 2023-2024

Exclusions: Logistics not included

DRR/ Resilience techniques used

Anchoring: Yes, strong foundations

Floor elevation: Yes

Bracing: Yes, Reinforced wall and roof connections

Materials: Stabilized masonry, treated timber and reinforced roofing system

Advantages & limitations

- Durable and resilient housing solution using reinforced construction techniques
- Locally adapted design allowing upgrading and expansion over time
- Higher construction costs may limit accessibility for the most vulnerable households
- Requires plastering for rain protection and skilled workmanship, increasing construction time and cost
- Internal space may be limited for larger households

Key considerations

- Requires skilled labour and strong technical supervision
- Scalability depends on funding availability and contractor capacity
- Veranda inclusion should be considered in relation to plot size and household needs

PROJECT DESCRIPTION

Methodology

Implementation is based on standardized shelter designs adapted to the local context and delivered through a structured construction process. Construction is carried out by trained artisans under continuous technical supervision, ensuring quality, correct use of materials and compliance with agreed safety and resilience standards.

Community Engagement / Participation

Community engagement is ensured through coordination with local leadership and regular information sharing with beneficiary households. Where feasible, beneficiaries participate in selected construction activities, supporting ownership, strengthening local capacity and improving understanding of shelter use, maintenance and future upgrading.

Cultural Practices (Sustainability)

The shelter design and construction approach are aligned with local building practices and materials familiar to the community. This supports cultural acceptance, facilitates uptake and allows households to adapt, expand or improve the shelter over time using locally known techniques.

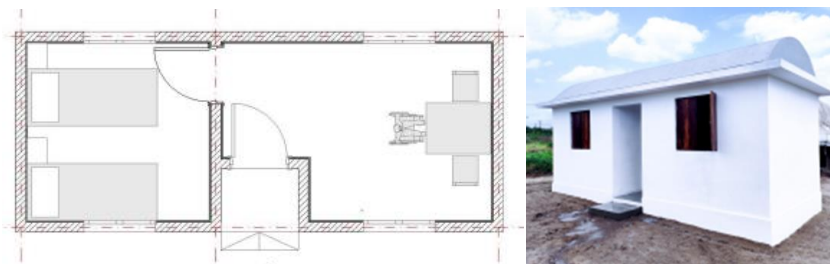
Environmental Consideration

Environmental considerations prioritize the use of locally available materials to reduce transportation impacts and dependence on external supply chains. Attention is given to responsible sourcing and to minimizing environmental impacts, particularly related to the use of natural resources.

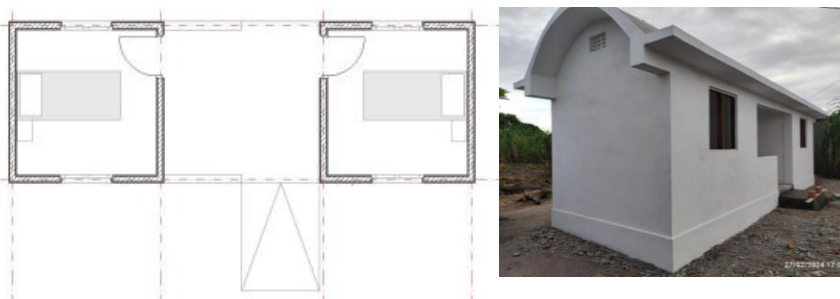
Other Information

The shelter model is suitable for replication in similar contexts, subject to material availability, technical capacity and adequate supervision. Scalability may vary depending on local resources, funding availability and access to skilled labour.

PERMANENT HOUSE



Model T1



Model T2

Shelter Typology:

Permanent Shelter – Full
(Models T1 and T2)

Province(s):

Sofala

District(s):

Dondo, Nhamatanda

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

Permanent housing solution with reinforced masonry walls and a ferrocement vault roof. The model is locally adapted, provides durable housing conditions and supports incremental upgrading and long-term household recovery. Two layouts (T1 and T2) allow adaptation to household size and site constraints.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area:

- o **Model T1:** 21 m²
- o **Model T2:** 30 m²

Dimensions:

- o **T1:** 3 m x 7 m
- o **T2:** 3 m x 10 m

Internal height: *Not specified*

Foundation: Reinforced concrete foundation

Implementation & Performance

Workforce: 4 skilled artisans, 5 labourers

Delivery modality: Contractor-led implementation

Shelter habitability: 3.5 m² per person/ suitable for 6-8 occupants

Shelter set-up time

- 1-2 days
- 3-5 days
- >5 days
- >15 days

Construction System

Structural system: Load-bearing masonry with reinforced concrete beams and columns and ferrocement vault roofing

Main materials:

- **Roofing:** Ferrocement vault
- **Walls:** Stabilized blocks with concrete beams and pillars
- **Floors:** Simple concrete with burnt cement finish

Material treatment: *Not Specified*

Shelter estimated cost

Materials: USD 8400

Labour: USD 2400

Cost reference year: 2023-2024

Exclusions: Logistics not included (approx. 10% ≈ USD 1200)

DRR/ Resilience techniques used

Anchoring: Yes, Strong concrete foundations

Floor elevation: Yes

Bracing: Yes, Reinforced wall and roof connections

Materials: Reinforced masonry and ferrocement roofing

Advantages & limitations

- Durable and resilient housing solution using reinforced construction techniques
- Locally adapted design allowing incremental upgrading and expansion
- Higher construction costs may limit accessibility for the most vulnerable households
- Requires plastering and skilled workmanship, increasing construction time and cost
- Limited internal space may not fully meet the needs of larger households

Key considerations

- Requires skilled labour and strong technical supervision
- Scalability depends on funding availability and contractor capacity
- Model selection (T1 or T2) should consider household size and plot constraints

PROJECT DESCRIPTION

Methodology

Implementation follows standardized shelter designs adapted to the local context and delivered through contractor-led construction. Works are carried out by trained artisans under continuous technical supervision, ensuring construction quality, correct material use and compliance with agreed resilience and safety standards.

Community Engagement/ Participation

Community engagement is ensured through coordination with local authorities and neighbourhood structures.

Beneficiary households are informed throughout the process and, where feasible, involved in selected construction activities, supporting ownership and basic knowledge for shelter use, maintenance and future upgrading.

Cultural Practices (Sustainability)

Shelter designs and construction techniques are aligned with local building practices and culturally familiar materials. This supports community acceptance, facilitates long-term use and allows households to adapt, expand or upgrade the shelter using locally known methods.

Environmental Consideration

The construction approach prioritizes the use of locally available materials to reduce transportation needs and reliance on external supply chains. Attention is given to responsible sourcing and minimizing environmental impacts related to material extraction and use.

Other Information

The shelter model is suitable for replication in similar contexts, subject to material availability, technical capacity and adequate supervision. Scalability depends on funding levels, contractor capacity and access to skilled labour.

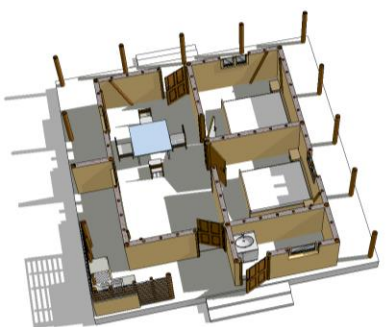
PERMANENT HOUSE



Model T3



Model T2



Shelter Typology:

Permanent Shelter – Core T2,
Full T3

Province(s):

Cabo Delgado

District(s):

Ancuabe, Metuge (T3)

Context/Trigger of response

- Conflict
- Cyclone
- Floods

Setting

- Rural
- Urban

Type of site

- Temporary site
- Relocation site, Resettlement sites
- Host areas/affected areas
- Return/origin location

General Description

Permanent core shelter solution implemented through two housing models (T2 and T3), using a combination of reinforced masonry and mixed construction systems. The design is locally adapted, supports incremental expansion and upgrading, and contributes to durable housing solutions for medium to large households.

TECHNICAL DESCRIPTION

Average Shelter life span

- 1-3 months
- 3-6 months
- 1-2 years
- 2-5 years

Dimensions & Layout

Area:

- T2: 36 m²
- T3: 48 m²

Dimensions:

- T2: 6 m X 6 m
- T3: 8 m X 6 m

Foundation: Strong concrete foundations

Implementation & Performance

Set-up: >15 days

Workforce: 4 skilled artisans, 5 labourers

Delivery modality: Contractor-led construction with technical supervision

Shelter habitability: 4.5 m² per person/suitable for 6-10 occupants

Construction System

Structural system:

- **Option 1:** Reinforced cement block masonry with reinforced concrete beams and columns
- **Option 2:** Mixed construction system using timber/bamboo structure with cement plaster finish

Main materials:

- **Roofing:** Galvanized IBR roof sheeting with hurricane clips, treated timber and umbrella nails
- **Walls:** Cement block masonry or mixed local material system (stakes, bamboo, cement plaster)
- **Floors:** Simple concrete with burnt cement finish

Material treatment: Wood treatment

Shelter estimated cost

Materials:

- T2: USD 2520/ T3: USD 3360

Labour:

- T2: USD 720/ T3: USD 960

Cost reference year: 2023

Exclusions: Logistics not included (approx. 10% ≈ USD 360 / 480)

DRR/ Resilience techniques used

Anchoring: Yes, strong foundations

Floor elevation: Yes

Bracing: Yes, Wall and roof reinforced connections

Materials: Treated timber and reinforced roofing system

Advantages & limitations

- Permanent and resilient housing solution supporting household recovery in urban contexts
- Shelter allows for future expansion and is locally adapted
- Higher costs and longer construction time compared to emergency or transitional shelters
- Requires advanced construction skills and materials, and provides limited space as a single-room unit

Key considerations

- Best suited for urban return or reconstruction contexts
- Requires skilled labour and technical supervision
- Small initial footprint necessitates planned future expansion

Mozambique Shelter Cluster
www.sheltercluster.org



SHELTER CATALOGUE

For more information, please contact
Shelter Cluster Technical Officer
Thais Pires Helena tpires@iom.int
Shelter Cluster Coordinator
Manahil Qureshi mqureshi@iom.int

PROJECT DESCRIPTION

Methodology

xxxxx

Community Engagement / Participation

xxxxx

Cultural Practices (Sustainability)

xxxxx

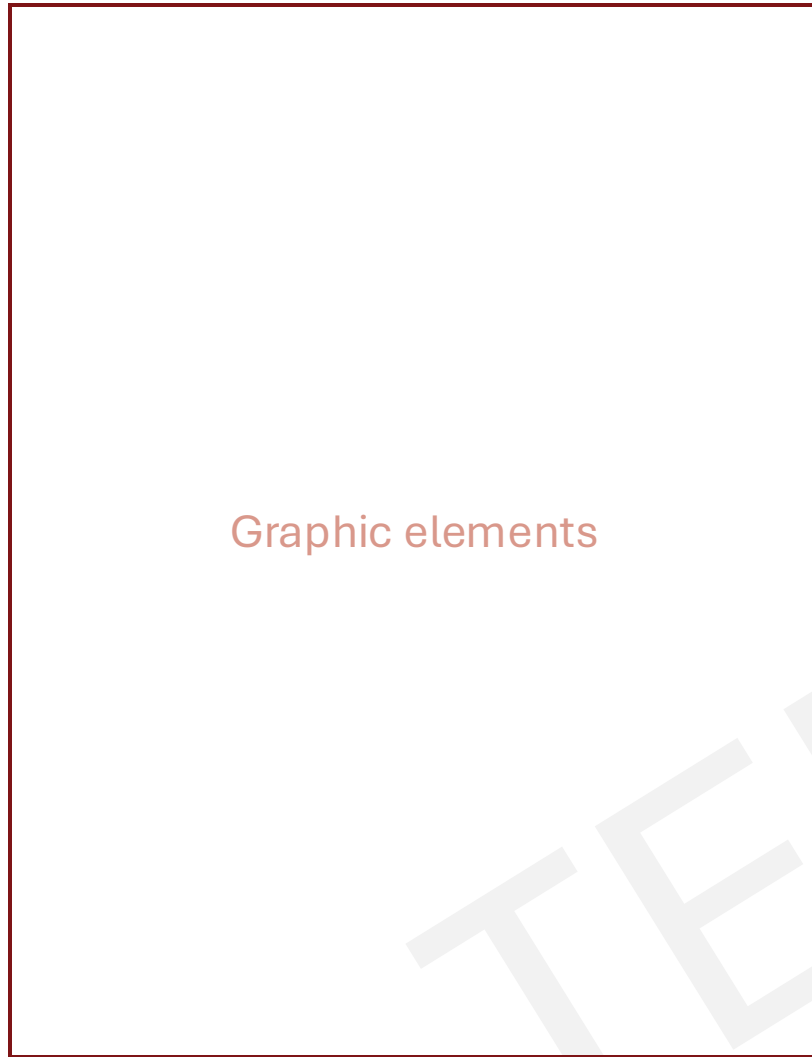
Environmental Consideration

xxxxx

Other Information

xxxxx

TYPOLOGY (EMERGENCY/ TRANSITIONAL/ PERMANENT)



Graphic elements

Shelter Typology:
xxxxx

Province(s):
xxxxxx

District(s):
xxxxxx

Context/Trigger of response
 Conflict
 Cyclone
 Floods

Setting
 Rural
 Urban

Type of site
 Temporary Site
 Relocation site, Resettlement sites
 Host areas/ Affected areas
 Return/origin location

General Description
 (Objective/ Context of application/ Target population)

TECHNICAL DESCRIPTION

Average Shelter life span
 1-3 months
 3-6 months
 1-2 years
 2-5 years

Shelter set-up time
 1-2 days
 3-5 days
 >5 days
 >15 days

Dimensions & Layout
 Area:
 Dimensions:
 Internal height:
 Foundation:

Implementation & Performance
 Construction time
 Workforce
 Delivery modality
 Shelter habitability: x m²/person |
 x occupants

Construction System
 Structural system
 Main materials
 Bamboo use
 Material treatment

Shelter estimated cost
 Materials
 Labour
 Cost reference year
 (Flag exclusions e.g logistics)

DRR/ Resilience techniques used
 Anchoring: Yes No Partial
 Floor elevation: Yes (cm) No
 Bracing: Yes No – xxx
 Site layout: Yes No – xxxx

Advantages & limitations
 xxxx
 Xxx
 xxx

Key considerations
 Xxx
 Xxxx
 xxx

LOGO

Year