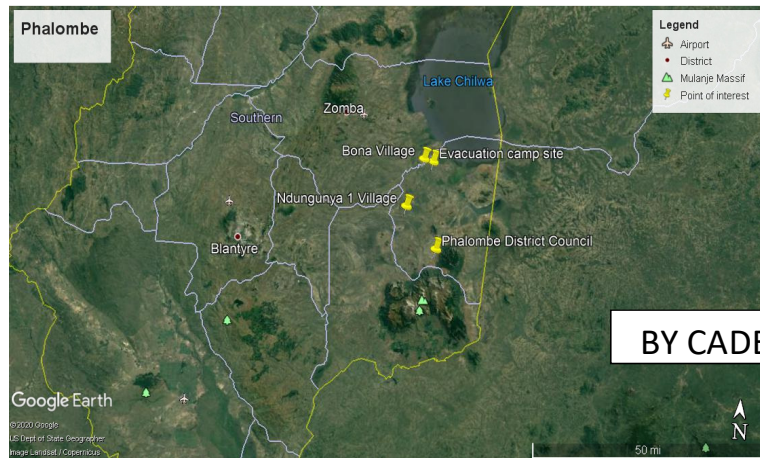


REPORT ON ASSESSMENT OF LOCAL CONSTRUCTION IN PHALOMBE DISTRICT



BY CADECOM BLANTYRE

List of abbreviations

ADC	Area Development Committee
CADECOM	Catholic Development Commission in Malawi
CAMA	Consumers Association o Malawi
CPC	Civil Protection Committee
CLTS	Community Led Total Sanitation
CRS	Catholic Relief Services
GVH	Group Village Head
MERA	Malawi Energy Regulatory Authority
HH	Household
SEP	Social Economic Profile
TA	Traditional Authority

REPORT ON ASSESSMENT OF LOCAL CONSTRUCTION – NOVEMBER 2020

1. SITE

SITUATION

According to the Phalombe Social Economic Profile (23 July, n.d), “Phalombe District is in the Southern Region of the Republic of Malawi, 81 kilometres east of the commercial city of Blantyre. It is bordered by Zomba District in the North, Mulanje District in the west and southern parts and Mozambique on the eastern side.” In addition to that, Phalombe district is on Latitude S15° 48’18.72’ and Longitude E35° 39’2.33’’ (The District lies at Latitude: -15.803333 and Longitude: 35.653333 under UTM format). The SEP also stated that Phalombe covers a total area of 1,323 square kilometres (sq km). The district is named after the river, Phalombe river, that almost runs along the district boarders with Mulanje and Zomba and pours into Lake Chilwa.

In particular, the research site falls under Tradition Authority Jenala, GVH Ndungunya and Village Headman Ndungunya 1 and GVH Bona under Village Head Bona. It was noted that the site lies on Latitudes 15°40'59.99"S and Longitudes 35°32'43.21"E for Ndungunya, whilst GVH Bona lies under S15° 32’10.52’’ and Longitudes E35° 35’ 37.78’’.

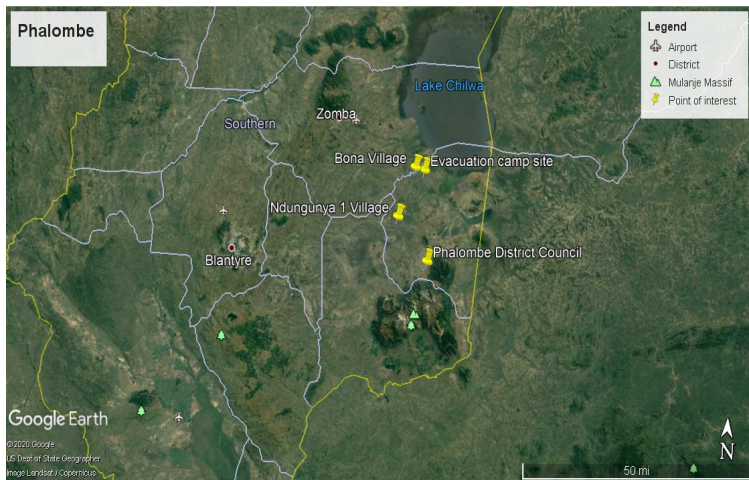
Comentado [ESG1]: Add the name of the location GHV Village District as title of the report

Comentado [ESG2]: Would it be east?

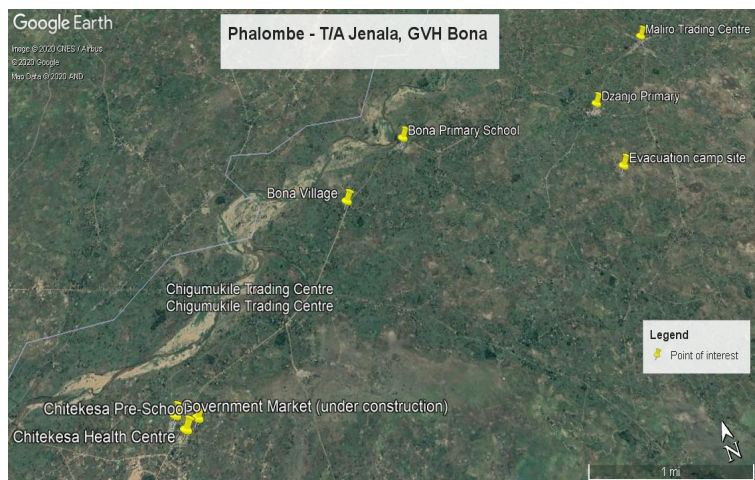
Comentado [ESG3]: Should it be with a minus? (- 15°...) as it is South

Comentado [EC4]: No this is DMS format

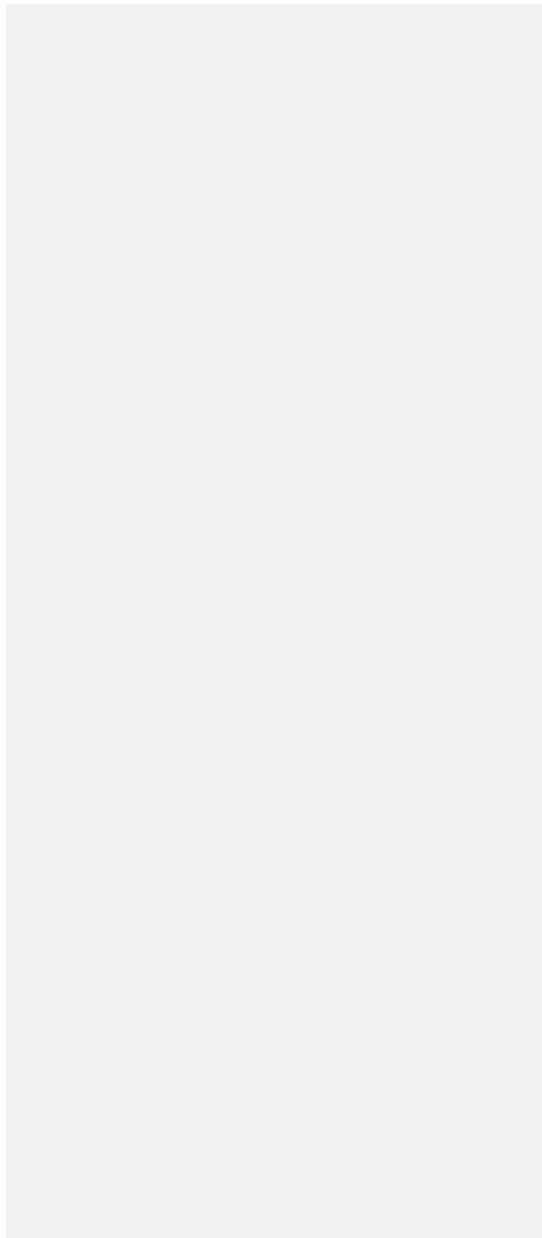
Comentado [ESG5]: -15°...

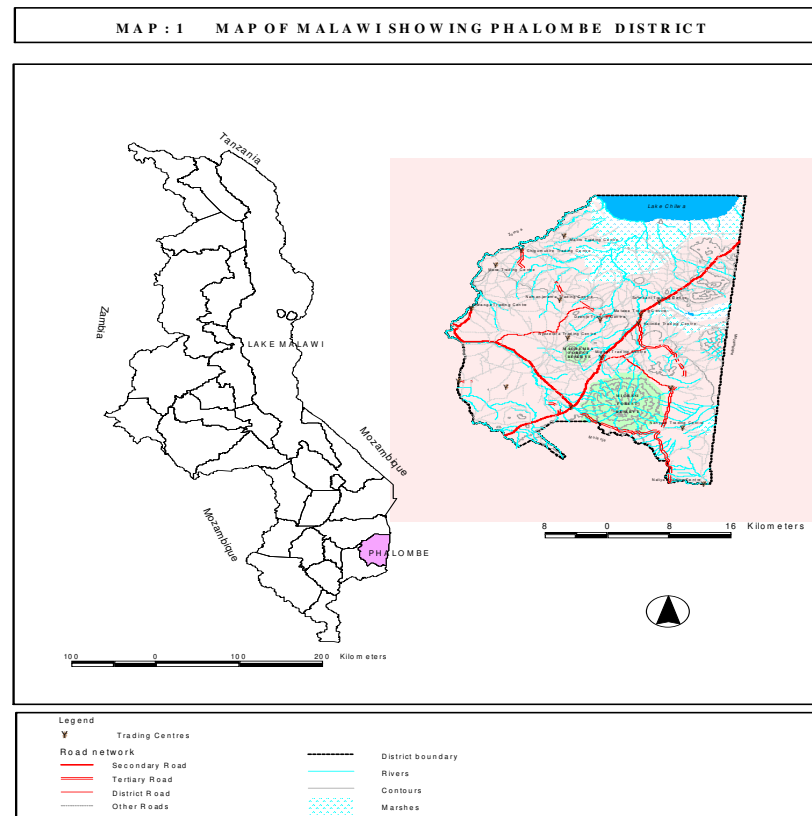


Map Showing Phalombe in relation to other districts (Photo by CADECOM Blantyre)



Map showing GVH Bona in relation to mapped points





Source: Phalombe SEP

Comentado [ESG6]: Proposal to add a map with the situation of the area regarding big cities, frontiers, lakes. If possible try to delimitate the area of the study in this first aerial view.

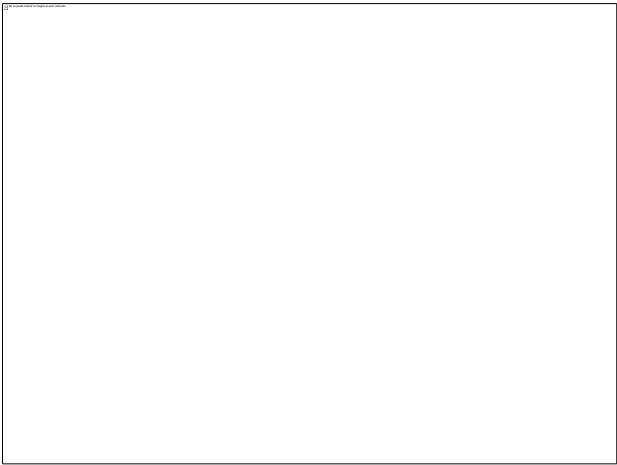
Source is google maps, just have to convert the coordinates from DMS (degrees, minutes, seconds) to DD (decimal degrees) and insert them in the google maps searching bar. For instance here (-15° 40' 59.646'' , 35° 35' 44.44'') would give (-15.6832361, 35.5956777777778). There are websites to easily make these conversions. For example this one: <https://www.fcc.gov/media/radio/dms-decimal>

Comentado [ESG7]: Add legend to the map



ACCESS

In terms of general access to the district, Phalombe can be accessed through the Blantyre via Chiradzulu via a tarmac road to the centre of the district which is 96.3km away or it can be accessed via Mulanje District, which is 32Km away or via Zomba District which is 76Km away. Since all main road networks leading to the district have tarmac road, the districts can be accessed anytime and any season and using all sorts of vehicles and motorcycles.



Tarmac road leading to the Phalombe (Photo by CADECOM Blantyre)

However, this is not the general case of GVH Ndungunya, an area which during the rainy season (Which starts from late October to April) gets water logged and the muddy roads make it impossible to travel with ease this despite all FGD and HH questionnaires highlighting that the area is accessible with vehicles during the all other seasons as it has a series of road networks. As GVH Bona, the research discovered that, during the rainy season, some areas are cut off as the area becomes heavily flooded and as such cannot be accessed by cars or motorcycles but rather by boats or air via helicopters as the water levels are usually high.

Comentado [ESG8]: Proposal to include a closer map of the studied area to see the access, the distribution of houses (disperse or dense), if there are fields among the houses. It gives an image of the environment and settlement patterns. It can be found in google maps following the same procedure as before.

Comentado [ESG9]: Add legend to the map

Comentado [c10]: As these reports may be used by persons unfamiliar with the local area, may be good to specify the date of the rainy season?

Comentado [c11]: Maybe specify the nature of transport that can be used at the different season (big trucks, small, pick up, motorbike, bicycle). This may help logisticians to plan accordingly depending of the nature of the project?

Flooded and water logged road in the rainy season and vehicles get stuck thus unable to reach communities (Photo by CADECOM Blantyre)



Floods in the rainy season (Photo by Phalombe SEP)

Floods in the rainy season damage roads hence cutting access (Photo by CADECOM)

This was complimented during the transect walk as it was noted that due to the flat terrain and the clay loam soils, the area usually retains water and as such, most of the road network becomes submerged during rainy seasons. The soil also creates a slippery surface hence, making other areas inaccessible during this period. Phalombe river, which is the closest river to the area also poses a risk as it floods, creating a barrier of accessibility.

LANDSCAPE

Comentado [ESG12]: Do you have any picture of the landscape to illustrate?

According to Phalombe Social Economic Profile, “Phalombe District has a generally flat terrain of about 2% gradient. However, the south and south eastern part of the District has a gradient exceeding 12%. There are two main mountains; Mulanje and Michesi and several other hills such as Mauzi, Machemba, Chipalanje and Makuwa. Many rivers arise from these hills. There are Thuchila and Muloza rivers which mark the boundary with Mulanje in the Southern and Southeastern parts respectively. There are also Phalombe and Sombani rivers, both flowing into Lake Chilwa from the south. Other economically important streams are Likulezi, Namikobwe and Chipolopoto. The highest point in the district is Michesi Mountain at 2875m above sea level at Nambiro Peak with Lake Chilwa as the lowest point. Lake Chilwa ecosystem consists of a shallow enclosed endorheic saline lake with an average depth of 1- 2m and a maximum depth of 5m in the south east.

The Phalombe basin is mostly covered with Calcium – Morhic soils which are grey to dark brown in colour and are formed from alluviums. The soils are predominantly alkaline with a pH value range of between 6.0 and 8.0.”

It was also noted from the transect walk that the area is also characterized with Savannah vegetation. However, due deforestation, most of the area under Ndungunya is left bare.



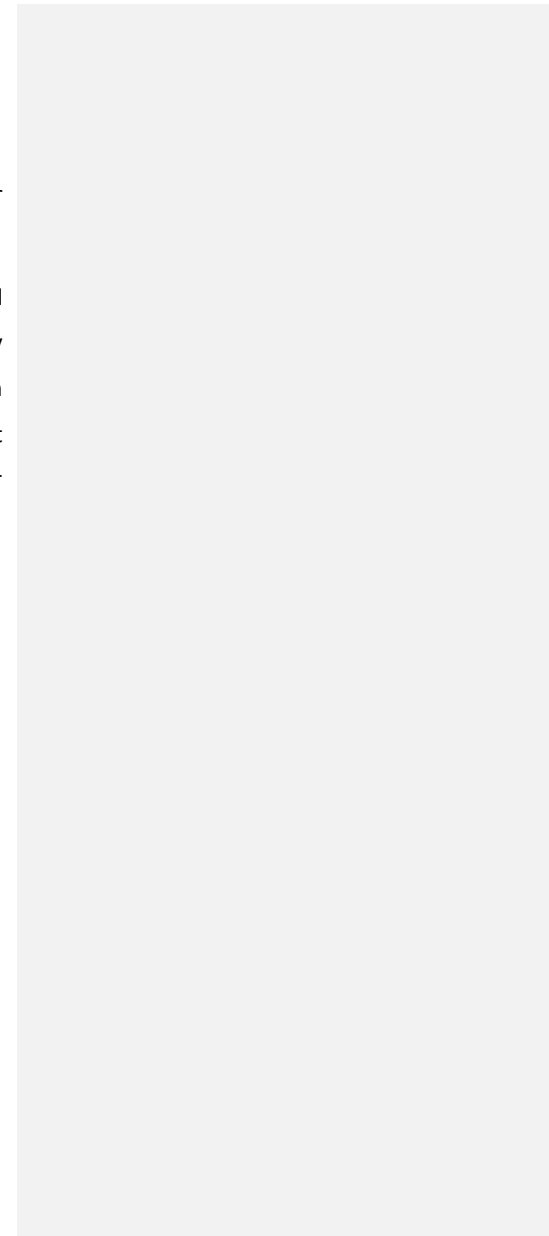
The bare terrain and Calcium-Morphic soils with structures hardly covered by rees making them prone to strong winds and storms (Photo by CADECOM Blantyre)

LOCAL HAZARDS

Through the focus group discussions with the different groups, T/A Jenala and in particular GVH Ndungnya and Bona was mentioned to be prone to a number of disasters (including floods, strong winds and dry spells amongst others) each year. The following are some of the important hazards that were discussed:

Floods: This is the common disaster mentioned amongst the Focus Group Discussions. It was highlighted that each year, due to the terrain of the area and type of soils and it affects a larger population of the area. The overflowing of Phalombe river which surrounds the area negatively impact people's lives by destroying houses and household property, loss of lives, damage to public infrastructure, increased susceptibility to water related diseases as well as wash away of crops and loss of livestock. The focus group discussions as well as the household interviews, revealed that the lack of knowledge on safer/resilient house construction guidelines in the communities is exposing many people especially girls and women to injuries, death and lack of shelter during and after floods.

Flooded Fields in the program catchment (Photo by CADECOM Blantyre)



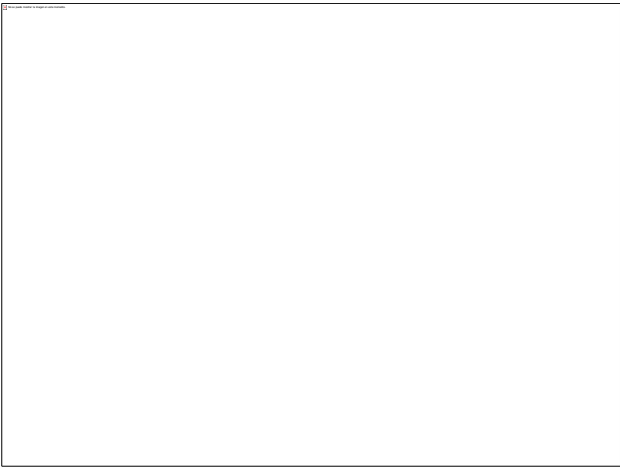
Strong winds: The focus group discussions also revealed that the area also experiences strong winds which damages shelter (partial, mainly roofing is destroyed). To compliment this, the transect walk exposed that the area lost trees due to booming population which has seen people cutting down trees/removing vegetative cover wantonly in search for a place for farming, burning of Charcoal or settlement. Due to this, shelters are exposed to strong winds (since the trees that could act as barriers have been removed).

Comentado [c13]: Important assessment, as it can drive some project response besides the only focus on “house”.



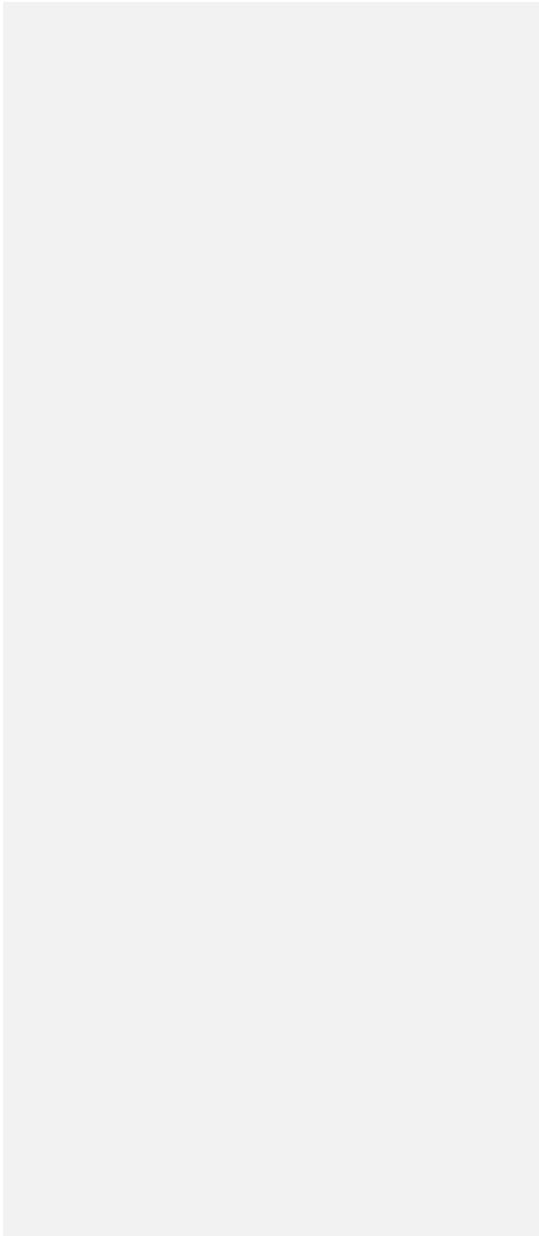
Devastation by strong winds (Photos by Phalombe DRR office)

Prolonged dry spells: The focus group also highlighted that the majority of the area faces dry spells each year. This in turn causes food insecurity as there is inadequate availability of pasture, and due to water scarcity, an increase in number of cases of waterborne diseases as most members’ access unprotected sources.



Phalombe river from GVH Bona during dry season (Photo by CADECOM Blantyre)

Phalombe river from GVH Bona during rainy season (Photo by CADECOM Blantyre)



It was also noted from the collective group discussions that there is high dependency on rain-fed agriculture and also inadequate crop diversification and as such, it further contributes to people’s vulnerability to impacts of dry spells. To cope up with this, there is a high rate of migration by men to Mozambique (mostly) and other nearby trading centres to search for food, labour (piece works). This negatively impacts settlement issues, as families are not able to construct permanent and safer/resilient shelters (due to prioritization of food needs).

Below is the list of hazards and their hotspots in Phalombe in general;

Catchment	Hotspot	GVH	Hot Spot Issues
Migowi River	Naphende River	John	Deforestation along river bank
			River banks erosion
			Drying up of rivers
	Migowi River	Mankhanamba	Extinction of fish and other water species
			Deforestation along river bank
			River banks erosion
			Drying up of rivers
			Extinction of fish and other water species
	Nandio River	Mankhanamba	Deforestation along river bank
			River banks erosion
			Drying up of rivers
	Chipalanje Hill	Chabuka	Extinction of fish and other water species
			Deforestation
			Food insecurity and dry spell
			Loss of soil fertility

Comentado [c14]: So, house improvement will be linked to job creation in the potentially affected areas. This statement will be very important when it will come to decide regarding products and processes to be prioritized within the project. Where the money of the project will go? How long that same money will remain feeding the very local economy, etc... true hence we use local mansions and try to source materials locally

Catchment	Hotspot	GVH	Hot Spot Issues
	Sanjika Hill	Nyezerera	Soil erosion
			Gullies
			Deforestation-Charcoal burning
	Mnuzi River		Food insecurity and dry spell
			Loss of soil fertility
			Soil erosion
		Mtawa	Gullies
			Cultivation within the hill
			Deforestation along river bank
		John	River banks erosion
			Drying up of rivers
			Extinction of fish and other water species
			Food insecurity among the surrounding villages
	Bangala Hill		Cultivation along river banks
			Siltation of the river
		Nyezerera	Food insecurity and Dry spell
		John	Deforestation
		Kaduya	Soil erosion
			Gullies
			Extict of wildlife
			Cultivation within the hill

Catchment	Hotspot	GVH	Hot Spot Issues
Namphende	Gogodera Hill (Chikungumisa hill)	John Kaduya	Deforestation Food insecurity and Dry spell Overgrazing
	Chingazi Hill	Kaduya	Drying up f Boreholes Deforestation
			Food insecurity and Dry spell
			Overgrazing
	Machemba Hill	Kaduya	Drying up f Boreholes Strong winds
			Deforestation Soil erosion Monkeys encroaching the fields
			Gullies and Erosion of river banks
			Drying up of Naminjiwa river Deforestation Food insecurity and Dry spell
	Maphundu Hill	Nyezerera	Overgrazing Drying up f Boreholes Soil erosion

Catchment	Hotspot	GVH	Hot Spot Issues
River	Nasolora Hills	Mankhanamba	Deforestation Food insecurity and Dry spell
			Overgrazing Drying up f Boreholes
			Soil erosion
	Chikuli Hills	Chabe	Deforestation Food insecurity and Dry spell Drying up of rivers
	Chipalanje Hill Chisambala Hills	Chabuka	Shortage of water supply Deforestation and land degradation
		Mankhanamba	Deforestation Food insecurity and Dry spell Drying up of rivers Shortage of water supply
			Loss of soil fertility
	Mithungu Hills	Mankhanamba	Deforestation Food insecurity and Dry spell Drying up of rivers
			Shortage of water supply Loss of soil fertility

Catchment	Hotspot	GVH	Hot Spot Issues
	Michesi Hills	Mankhanamba	Deforestation Food insecurity and Dry spell
	Michesi hill (Namtali)	Mankhanamba	Deforestation
	Michesi hill (Ulolo)	Mankhanamba	Food insecurity and Dry spell Deforestation Food insecurity and Dry spell
	River from Namba-	Chabe	Deforestation
			Food insecurity and Dry spell Drying up of rivers
			Shortage of water supply Loss of soil fertility
	Michesi hill (Nalingula)15 ha	Nalingula	Deforestation and land degradation
	Chilumba (to be verified by councillor)	Misomali	Forest degradation, deforestation, soil erosion, gullies
	Nayurwe (to be verified by councillor)	Mwalala	Forest degradation, deforestation, soil erosion, gullies
	Maganga	Makhonja	Forest degradation, Deforestation, soil erosion
Chiswamaere			

Catchment	Hotspot	GVH	Hot Spot Issues
	Bongwe	Makhonja	Deforestation, Forest degradation, soil degradation
Mulunguzi	Salankhuku	Namalima	Deforestation, land degradation, soil erosion
Songwe	Magomero	Namalima	deforestation, land degradation
	Mpoto	Maoni	Land degradation, deforestation, soil erosion, gullies
	Changa	Maoni	Forest degradation, gullies
	Mpendegwe river	Chitawotawo	Land degradation and deforestation
	Longwe Hill and Nyungünya river		Deforestation, gullies, siltation of rivers, land degradation
Nkhulambe	Mambala hill		Deforestation, gullies, siltation of rivers, land degradation
	Ruo river	Nkhulambe	Forestry degradation and Land degradation
	Nang'ombe river	Nkhulambe	Forestry degradation and Land degradation
	Likhatcha river	Nkhulambe	Forestry degradation and Land degradation
Sukasanje	Chilure hill	Nkhulambe	Forestry degradation and Land degradation
	Bwanje river	Nkhulambe	Forestry degradation and Land degradation
	Sukasanje river under VH Ntalava	Mphweremwe	Forestry degradation and Land degradation
	Mulanje mt under VH	Mphweremwe	Forestry degradation and Land degradation

Catchment	Hotspot	GVH	Hot Spot Issues
	Mulelemba		
Likulezi River Catchment	Mulanje Mt	Nyambalo	Heavy Forest degradation, land degradation
	Mulanje Mt	Nyambalo	Heavy Forest degradation Heavy Land degradation
	Tengani hill	Kaledzera	Deforestation
	Chimbiri hill	Kaledzera	Deforestation and land degradation
	Salumphidwa hill	Kaledzera	deforestation Land degradation,
	Minyenje Hill	Kaledzera	deforestation, land degradation
	Mikomwa hill	Kaledzera	Deforestation Land degradation
	Sanjika Hill	Kaledzera	Deforestation.
	Namangale Hill	Nyambalo	Extensive deforestation, extensive and degradation. People are cultivating in the mountain.
Thuchila River Catchment	Thuchila river		Forest degradation. Due to forest degradation the river has diverted from its normal course.
	Nambiti river	Nyambalo and Kuchombe	Forest degradation. Land degradation. This arises due to poor methods of farming
	Chomba River	GVH Nyambalo	Forest degradation and land degradation
	Chezamwana hill	Kuchombe and Nyambalo	Deforestation and land degradation
	Nalijili hill	Kuchombe	Partial deforestation and land degradation
	Nairobi hill	Kuchombe	Partial deforestation and land degradation
Phalombe River	Nansonga hill	Kuchombe	Partial deforestation and land degradation
	Phalombe river	Mkhumba, Chimenya, Mphonde.	Deforestation river bank cultivation

Catchment	Hotspot	GVH	Hot Spot Issues
	Mulanje mt	Mkhumba, Bwanaisa, Nalingula	Deforestation and gullies
	Chipalombe river	Bwanaisa	Forest degradation and gullies
	Mpata	Bwanaisa	Forest degradation and encroachment into the forest.
	Mwimbi river	Mkhumba	Gullies
	Miyona river	Bwanaisa	Forest degradation and gullies
	Mbembembe river	Mkhumba	Deforestation.
	Nachitukula river	Mphonde	Forest degradation and gullies
	Ming'ambo hill	Manjalende	Forest degradation and gullies
Chinguma	Naminga hill	Manjalende	Forest degradation and gullies
	Mpasa hill	Mkhumba, Chimenya	Deforestation and land degradation
	Chinguma hill	Namasoko	Forest degradation, Gullies
	Chipaloni river	Namasoko, Mphonde	Forest degradation, land degradation.
	Machemba hill	Mkhumbanamasoko	Forest degradation, Gullies
	Mushalala river	Namasoko, Mkhumba.	Deforestation and land degradation.
	Chipaloni river II	Chimenya	Forest degradation.
	Chisawa hill	Namasoko	Deforestation and land degradation.
	Namphasa	Ndungunya	Deforestation, gullies and land degradation.

Catchment	Hotspot	GVH	Hot Spot Issues
	river		
Phalombe river	Chisugulu hills	Maluwa	Deforestation, Gullies
	Phalombe river	Maluwa	Erosion and siltation in river banks
	Phalombe river	Ndungunya	Siltation, River bank cultivation, deforestation
	Phalombe river	Ndungunya	Siltation, Gully formation, unprotected river banks, borrow pits
			Soil erosion, gullies and siltation in river banks
Mitekete Mikongoni hills	Mikongoni hills	Khando	Land degradation, deforestation, Soil erosion and gully formation
	Chisengeleni River	Kasongo	Soil erosion and gully formation, deforestation, river bank cultivation.
Phalombe river	Mianga hill	Tamani	Land degradation, deforestation, gully formation
	Dzanje hill	Tamani	Deforestation, siltation, gully formation,
	Phalombe river	Bona	Soil erosion, siltation, deforestation, river bank cultivation
	Phalombe river	Chimombo	Soil erosion, siltation, deforestation, river bank cultivation
	Phalombe river	Njobvu	Soil erosion, siltation, deforestation, river bank cultivation, overgrazing.
Mpoto-Sombani	Chimwere River	Mtemanyama	Siltation, river bank cultivation, deforestation.

Catchment	Hotspot	GVH	Hot Spot Issues
Chisengeleni River	River	Nambera	River bank cultivation, gully formation, deforestation, flooding.
	Mulerankhwazi River	Chiwalo	Deforestation, soil erosion, land degradation.
	Chisengeleni River	Mpinda	Deforestation, soil erosion and river bank cultivation.
	Mulekeni River	Nthambula	River cultivation, siltation deforestation and overgrazing.
	Nthambula hills	Nthambula	Soil erosion, gully formation, deforestation.
	Mulambala hills	Mpinda	Deforestation, gully formation, land degradation
	Mpwisi River	Chinani	Deforestation, soil erosion and gully formation
	Chigwagwaru hill	Nambazo	Deforestation, soil erosion
	Makhanga hills, Nyalugwedambo	Chimbalanga	Deforestation, overgrazing, soil erosion
	Dyerayekha River	Chimbalanga	Soil erosion, gully formation and deforestation
	Thumbulu hills	Chimbalanga	Deforestation, soil erosion, siltation and land degradation

2. HUMAN CONTEXT

HISTORY

“Phalombe is a district which was declared independent from Mulanje District on 6th November, 1996 (Phalombe SEP draft). The main tribe in the District is Lhomwe which is in five (5) Traditional Authorities (Jenala, Mkhumba, Kaduya, Nazombe and Nkhulambe) and the other tribe is Mang’anja which is mostly found in Traditional Authority Chiwalo. Despite the two tribes having different backgrounds, the two cultures share more similarities as their housing designs and structure are the same and they are both matrilineal and having co-existed for many years, the Mang’anja in Phalombe have turned to share the Lhomwe values as such, no notable differences can be seen just from observation. One has to delve deep in research to really understand the differences, otherwise most of the Mang’anja in Phalombe underwent cultural erosion. But as for TA Jenala, according to the key informant interview, the village was founded in 1906 by the founding fathers and the area now has 7875 people in total.

POPULATION

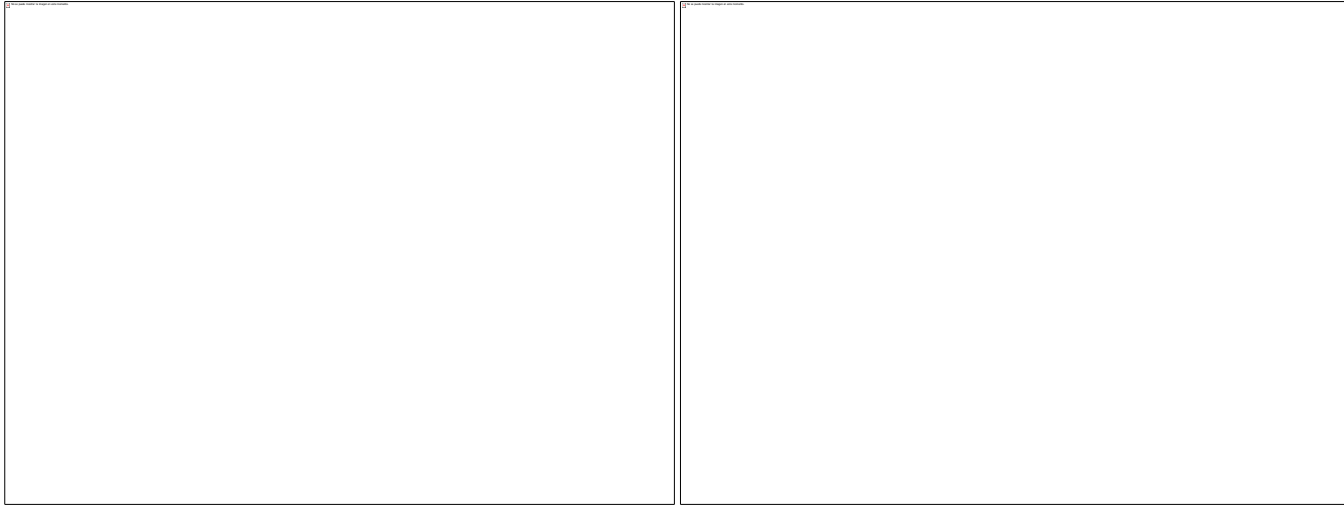
Population of Phalombe district was 383,273. Projected population for the fiscal year 2017/2018 is at 393,385.

MAIN ECONOMIC ACTIVITIES

In general, it was found that majority of the population in the area get their income from farming and casual labour. However, few others were also reported to be self-employed and providing skilled labour (artisans) in the community. Farming/agriculture was reported to be the most common and dependable means of income for the majority of the populations despite being hampered by the effects of climate change as are prone to dry spells, drought and floods annually. Both men and women also depend on casual labour (Piece work) which are mostly found outside their community. However, casual labour is mostly seasonal since they mostly do the casual labour in the agricultural fields hence common during the rainy season. Men from the area, at times, move to Mozambique in search of casual labour to support their families. During community visit exercise (transect walk) few businesses such as selling of dry fish (in hips), groceries and selling of construction materials were also observed. It should be emphasized that during the focus group discussion it was mentioned that petty businesses are mostly for those who are middle income earners in the community as the majority live on hand-to-mouth hence cannot afford to start a business.

Comentado [c15]: Any difference in the architectures produced by the two communities (Lhomwe and Mang’anja). This in term of spatial organisation, or any other issues. This to avoid the project to focus on one building style, and may be create some social issues between the two communities...

Comentado [c16]: Very good statement, so the project should take care that the products and processes it is promoting will have the minimum impact to the global warming. Industrialized materials are well known to impact strongly on it. Good balance between local and industrialized materials to be done accordingly...



Business centres accessible to GVH Bona (Maliro Trading Centre) (Photo by CADECOM Blantyre)

GOVERNANCE

The institutional set-up of Malawi’s LGS is woven and based on the existing local development planning structures. This means the Council (with its Service Committees) is linked with development committees at the local level. These include Area Development Committees (ADC) and Village Development Committees (VDC) for District Councils. Another element of the LGS in Malawi is the Council Secretariat. The Council Secretariat is responsible for implementing council resolutions and provides technical guidance on all aspects of the council operations. Local Government financing is another key element of the system. The LGA and the Decentralisation Policy outline three main sources of funding namely: central government transfers, locally generated revenues and ceded revenue. These will be discussed in more detail in Chapter 9 of this document. Currently, there are discussions to introduce Ward Committees within the Local Government System. The activities of Ward Committees shall be guided by the elected Councillor of a particular Ward.

However, at community level, the highest Authority is the Traditional Authority, in this case TA Jenala. Group Village Headmen follow second in the hierarchy and from that, you have Village Heads. Committees run parallel to the structure of chieftaincy. There are the Development Committees, Civil Protection Committees and these are on every level of the hierarchy.

Area Development Committee (ADC), Village Development Committee (VDC) Village Civil Protection Committee (VCPC) and Local Leaders (Chiefs, Councillors during Briefing meetings (Photo by CADECOM Blantyre)

STAKEHOLDERS

Stakeholder Group (groups can be modified based on the context; add as much lines as needed)	Stakeholder Name	Role, Title, Department, etc.	Contact Details (Phone, Email, Address, etc.)	Role (what is their task or job related to the affected community)	Stake (what role could this stakeholder play in the project)	Additional comment
Affected Community (include also vulnerable groups)	Jenala	Traditional Authority	Formal physical village locations like Traditional Authority Jenala, Group Village Headmen Bona and Ndungunya	Alerting communities when disaster has happened Community overseer, responsible for making bi-laws for a the particular community, delegates to GVHs and VHs	The stakeholder can influence communities to under devepment and also key in making bylaws and enforcing change	
	Bona and Ndungunya 1	Group Village Headmen	0996112024	Overall overseer to a group of villages as delegated by the Tradional Authority	Has the ability to make bylaws and enforce them on communities,	
Authorities	Njobvu	Group Village Head		The role of hoseholds is to locally mobilise low cost resources, man power	Currently, the evacuation camp that is in Phalombe is under the area of GVH Njobvu and as such will host all affected communities.	Households that are affected prepare their own rescue operating procedures by vacating to better places like schools, churches that are created as evacuation centres. Other affected
	District Council	Council with its Service Committees, Secretariat, DRR Office, Housing, Water	Ministry of Local Government Capitol Hill, Private Bag 338 Lilongwe 3.	<ul style="list-style-type: none">Ensuring that communities are taken care of during a disaster by moving members and	<ul style="list-style-type: none">A key partner in planning and executingHelp in mobilising communities when disasters happen.	

Comentado [ESG17]: Proposal to add this table to the report in order to inform next stages.

Already filled in with some of the information found in the report. If more information is available thanks to the visit, it would be great to add it here.

Providers, Suppliers, Constructio n workers		Department, Social Welfare	P.O. Box 30312, Capital City, Malawi (+265) 01 745 362 info@mlgrd.gov.mw	<p>their belongings to safety.</p> <ul style="list-style-type: none"> Mobilising resources to provide portable water, food security as well as mainstreaming sanitation and hygiene to reduces illnesses that are associated with disasters like diarrhoea and malaria 	<ul style="list-style-type: none"> Mobilising resources to help communities from government as well as Non-governmental Organisations, They also safegurd materials when assistance come from external donars. 	
		Area Development Committees (ADC), Village Development Committees (VDCs) and Civil Protection Committees	Formal physical village locations like	<p>Taking tasks assigned to affected households is done collaboratively amongst all sectors. The core duty of operations at field level is directed by sectors through VCPCs and local leaders</p> <p>implementing council resolutions and provides technical guidance</p>	Important in reaching individuals at grassroots and noting the right beneficiaries for the program	
				To provide materials and services to demanded situation	Key in constructing recovery structures	
		SORISTIPA artisan association (TEVETA)		training to local artisans	Identifying skilled labour for sustainable structures	
	Indian shops, local suppliers, local builders and other district and relevant officers who	Indian shops, builders and designers provide services and materials to help in the work	Limbe, Blantyre and Phalombe shops.	To provide materials and services to demanded situation.	The role of providers is to timely provide timely resources within a stated period.	Providing quality materials for the project for sustainance

Local organisations or associations	defines plans for structures.					
	WFP through ADRA	Non-Governmental Organisation		Food for Asset creation through catchment management	Will help in creating road drainages, dykes, check dams and terraces to control flooding	
	Evangelical Lutheran Development Services	Non-Governmental Organisation		Food Security, Enhancing Income at Household Level and Renewable Energy	Will be key in recovery programming for affected individuals	
	CADECOM	Non-Governmental Organisation	P.O Box 5565, Limbe	Ensuring food security, WASH and Protection mainstreaming is done and distributing food and non-food items	Part and parcel of planning and coordination of shelter activities in line with partners	
Influencers , opinion leaders	Members of Parliament	Political figures		Provision of emergency support to the affected population	Influence relocation of people from hot spots to safe spots Influence structural designs adoption	
	Ward counsellors	Political figures		Provision of emergency support to the affected population	Influence relocation of people from hot spots to safe spots Influence structural designs adoption	
	Civil Protection Committees			Registering affected people Custodians of relief items	Coming with early warning systems Registering affected people Promoting human rights of affected individuals Information hub between DoDMA office and grassroots	

Communic ation Media	Phones, church leaders, leaflets, public address systems, drama, songs, poetry, one on one, radios, mobile vans, mobile screen.	Publicity of the messages on the impending and occurring disasters	MBC, Radio Maria, Mzati radio.	Alerting people on rescue operations by making awareness meetings, sensitizations and other notification strategies.	Does communication at all levels where communication is done when need arises.	Communications provides a tool of safety to affected households.
		Primary school		Basic child education	Basic child education Assembly point for communities	
Other		Private Clinic		Health Care	Providing basic medications Health talks on outbreak (Cholera) prevention Provision of psycho-social support	
		Miseu Folo market 5km away		Provision of material basic need	Provision of material basic need	
		Public Hospital (10 km)		Health Care	Providing basic medications Health talks on outbreak (Cholera) prevention Provision of psycho-social support	

Security was highlighted as a main issue for the women and PWD groups. This was a major concern as most of the women in the area are either single mothers or widowed. Because of this, women live in constant fear of perpetrators violating their spaces. Because of this, most houses have a population of 4 to six members living within the households as a security measure. As such, the safest place that was stated across the FGD was individual homes. In terms of structural security, Household interviews revealed that security mostly lies in the strength of the door as such, most houses opt to have a proper lockable door.

It was also noted that most crimes that are committed in the area are petty theft which mostly involve stealing livestock, poultry and food items. As such, it was exposed that most of the community members sleep with their livestock and poultry as well whatever food (bags of maize or rice) they have in their households as a security measure despite the community policing structure being in place. It should be noted that most households are resource constrained and such, share the same room with the items.

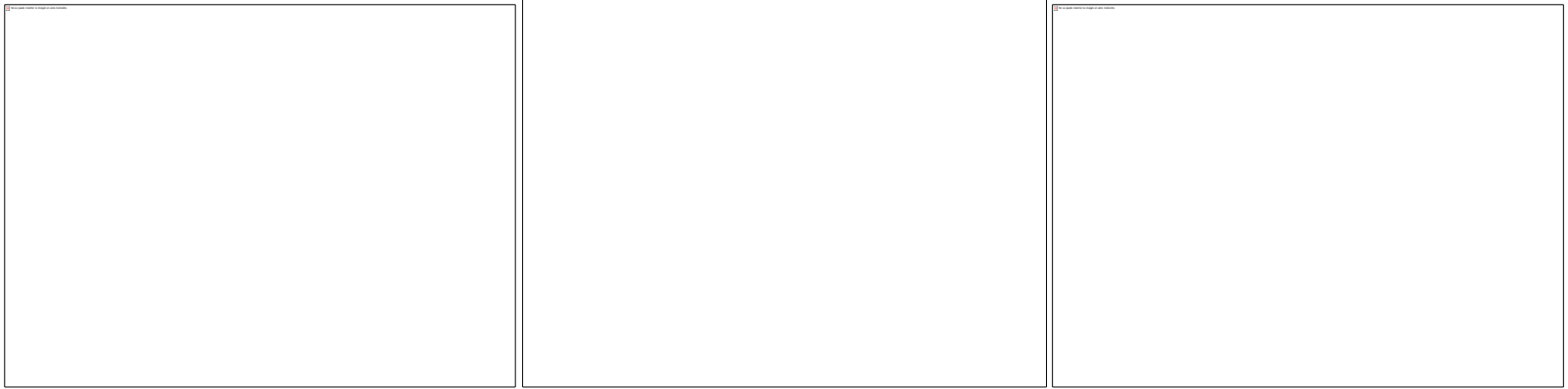
Through transect walk it was noted that there is no police around and the nearest police station is situated 10km away and as such, crimes are presented to the village head who has the authority to pass on judgement. But in a scenario whereby the crimes are beyond petty theft (defilement, rape, murder etc.) then law enforcers are called to the area. The community also has the Community Policing Structure in place.

SERVICES (ADMINISTRATION, EDUCATION, HEALTH, MARKETS, ETC.)

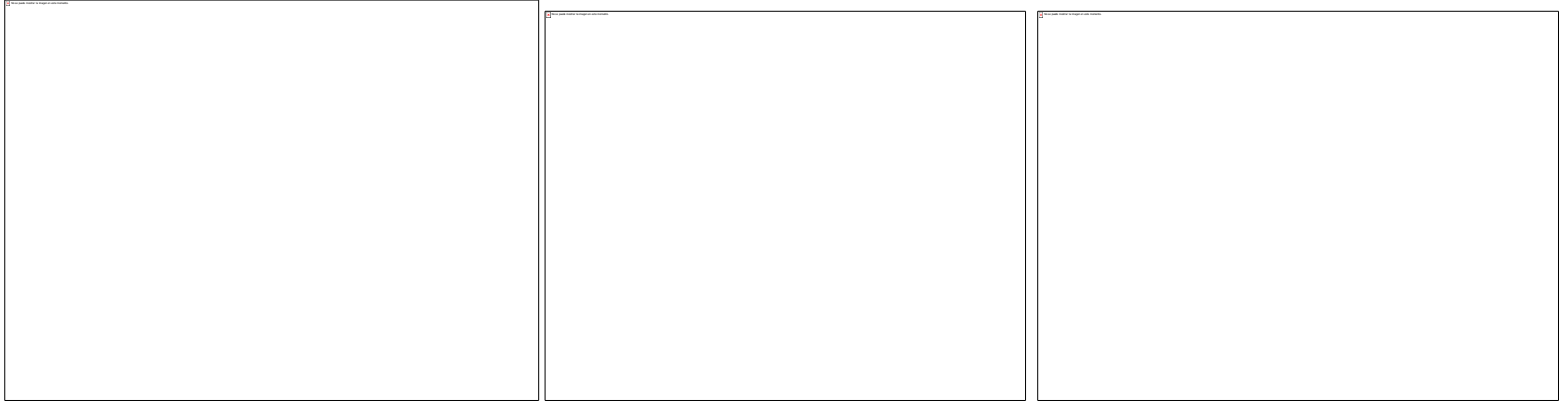
In terms of services, it was noted through transect walk that the area has one CBCC, 1 primary school and a health facility that is around is a private clinic that does not have a lot to offer and it is not affordable by most community members. It was also noted that the nearest big market is *Miseu Folo* market which is about 5 Km away. The Public Hospital is located about 10 kilometres away. Whilst in Bona, there were two primary schools, 2 CBCCs, a health centre and an evacuation camp (though under construction)

Comentado [ESG18]: Important to try to find solutions from the health perspective in the stage of project strategy?

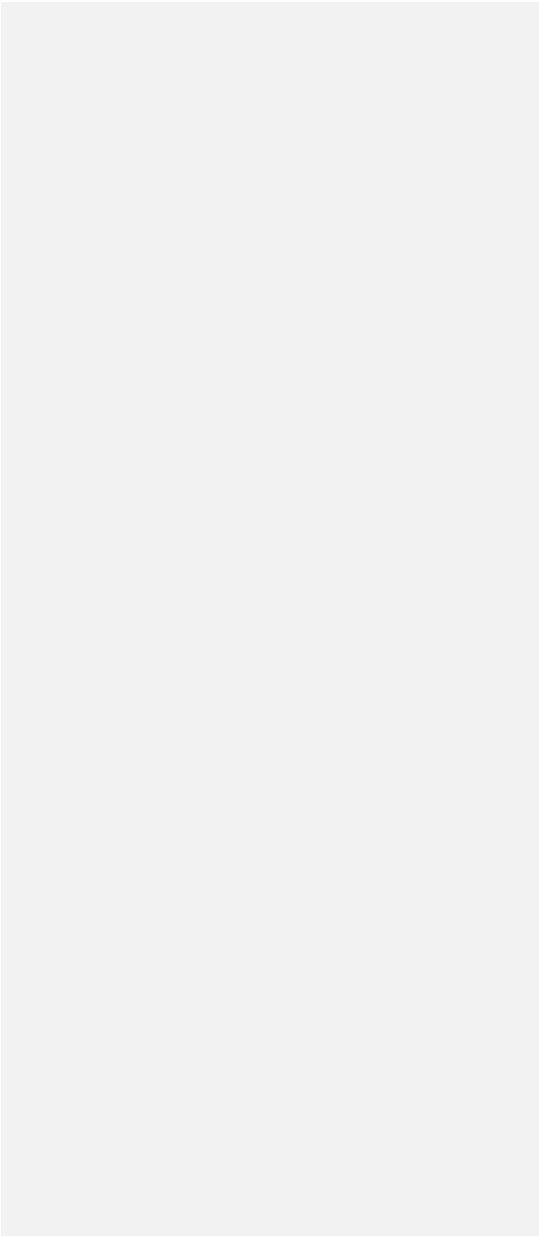
Comentado [c19]: Maybe interesting to assess potential of existing facilities to serve for welcoming affected population in case of a disaster to occur?

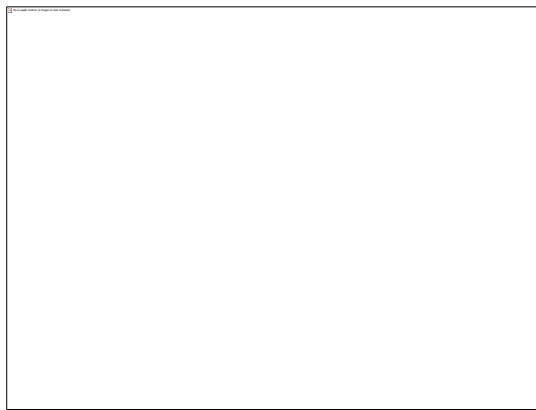


Evacuation camp in Phalombe under TA Jenala (Photo by CADECOM Blantyre)



Chitekesa health Centre (Photo by CADECOM Blantyre)





CBCC (Photo by CADECOM Blantyre)



Bona Primary school (Photo by CADECOM Blantyre)

SITUATION OF WOMEN

Women in the area, like most of the women in Malawian society, though are active participants of development activities, do not play key roles when it comes to community development activities in decision making. It was noted through women focus group discussions that only a few women are involved in decision making position. However, when a meeting is called for, women are given an equal opportunity to voice out their opinions but they however take the passive role. The Lhomwe and the Mang'anja cultures are matrilineal and as such, women have more rights than men. Access to land is a birth right to all women under the systems as men are expected to move into the women's' home land (Chikamwini). The male child is expected to move out of the land. Because of this, women have access to land. This however may in some cases, have a negative implication as the men may often be reluctant to develop the area in fear of being kicked out after divorce or separation. In terms of access to loans, the group discussions highlighted that everyone is entitled to loans from the shop owners as long as they have the capacity to pay back. However, most women live beyond the poverty line and as such, are do not have the capacity to loans.

Comentado [c20]: What about the Mang'anja one? Both cultures

Comentado [ESG21]: Maybe specify "women are given more rights than men in terms of access to land", because it seems that it is the only aspect in which they have more rights (women do not play key roles in decision making...)

It was observed that because of the matrilineal system, men feel less entitled to assets and as such some, face abuse because they all the entitlements are left with the women. This in turn has led to most women being single mothers.



A women’s Focus Group discussion at the CBBS (Photo by CADECOM Blantyre)

Comentado [ESG22]: When changing the size of an image, if you want to maintain proportions, you can press shift key while you change the image's size and it will maintain the proportion of the picture and not deform it

Comentado [ESG23]: Same image with no deformation

Woman preparing food for the family (Photo by CADECOM)

SITUATION OF PERSONS WITH DISABILITIES

Phalombe district has a relatively large number of persons with disabilities an observation notices i most districts bordering with Mozambique though not yet researched. So the resons could be either the previous war, or long distances to health facilties which in the past resulted in home births or late deliveries.

The major challenges that people with disabilities experience access to infrustructure as most building do not include disability friendly utilities like the ramps, guiding rails and brail facilities. In addition to that, those with speech impedement face a major challenge in communication as the sign language they developpe is mostly with those that are around them and as such, experience a hard time communicating with strangers. Other challenges include the cost of accessing health care, long distances to health facilities, lack of transport, hilly terrains and flooding of rivers during the rainy season, communication challenges with the health providers and poor attitude of health workers. Some of these challenges are not unique to people with disabilities, but constitute more of a problem among people with disabilities.

Comentado [ESG24]: Do you have any information on this topic?



***Children with disability undergoing physiotherapy. With efforts to include Ramps in construction considered to ease mobility for person with disabilities
(Photo by CADECOM)***

COMMUNICATION

Despite the area having good network reception for mobile network, the preferred mode of communication was community meetings. Members stated this as the most reliable source of information at community level. The community members are invited to these meetings through trusted messengers who verbally disseminate the message through the village. Whatever information is spread during the meeting is passed on across the members.

Another source of information that the communities have access to is the radio network Phalombe District listens to several radio stations on Frequency Modulation; Zodiac, Mzati, Chanco, Times 1&2, Malawi Institute of Journalism (MIJ), Angaliba, Malawi Broadcasting Corporation 1&2, Radio Maria, Blantyre Synod, Mibawa, YONECO, British Broadcasting corporation (BBC), Timveni and Joy. Percentage of people age 15-49 years who, at least once a week, read a newspaper or magazine or listen to the radio or watch television (any media) is 50.8 for women and 75.9 for men (MES2004).

ENGAGEMENT CHANNEL REGISTER

Engagement Channel Register				
Most common means of communication	Used mainly by....	Advantage reported	Challenges reported	Comment
Community meetings	whole community	most reliable source for communicating at village level	Emergency meetings might not draw all community members	preferred option
Mobile phone	Most parts of the communities	Reliable resource as many houses	Only a few places have the ability to charge the phones and as such members have to go distances to get their phones charged	good coverage

Comentado [ESG25]: Proposal to add this table to the report in order to inform next stages

Already filled in with some of the information found in the report. If more information is available thanks to the visit, it would be great to add it here.

		have it	which means they are not always available	
Radio	Most parts of the communities	Reliable resource	Mostly used by Catholics	radio stations on Frequency Modulation; Zodiac, Mzati, Chanco, Times 1&2, Malawi Institute of Journalism (MIJ), Angaliba, Malawi Broadcasting Corporation 1&2, Radio Maria, Blantyre Synod, Mibawa, YONECO, British Broadcasting corporation (BBC), Timveni and Joy
Newspaper / Magazin	men	Reliable source	Rarely used by community members as it takes money to buy and also requires literacy to use	
TV	Smaller coverage	Not reliable	Most places dont have it	
Trainings for artisans (TEVETA)	artisans	Not reliable	The courses are expensive as such, members prefer learning through apprenticeship	

ACCESS TO LAND

Generally, land in the visited site is under customary tenure system which is passed on within the clan. Chiefs distribute land to community members through Group Village Heads and Village Heads. Despite impact of population which has recently boomed in the area, community members still have access to land for both settlement and farming. However, it is imperative to mention that the land that is available is never enough in regard to the land needs of the families/households hence more pressure is put on land use. Similarly when a disaster strikes finding idle or free land to relocate is not easy as each land at least belongs to someone. The area is predominantly matrilineal and as such most of its customary land is owned by women (or acquired through maternal side). This also follows that mostly decision on land access and use is controlled by women. However, due to more civic education on gender roles and equality among men and women, both women and men in some households do make decisions on land use and access.

Comentado [ESG26]: Maybe these images would be good to illustrate the section on Access and landscapes? (In chapter 1)

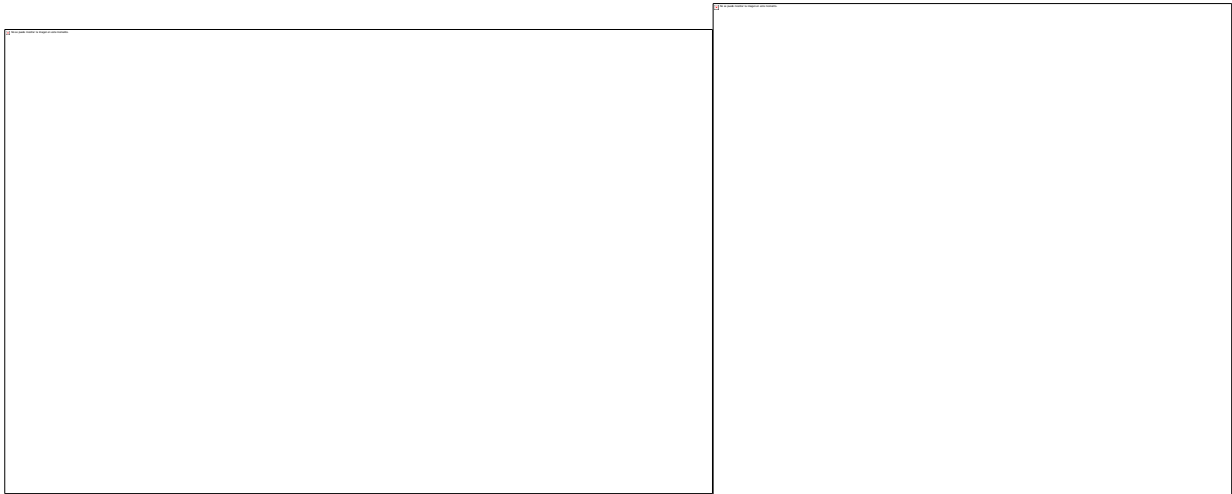
Comentado [ESG27]: Same comment as in precedent image to try not to deform images (and for the rest of the report)

Damaged and flooded road (Photo by CADECOM Blantyre)

WASTE MANAGEMENT

Under waste management, it was uncovered that the community doesn't have a communal disposal site. This was also noted during the transect walk. Mostly, individuals have rubbish pits within their compounds or some use pit latrines to dispose of their unwanted items. The absence of a communal waste site was noted that it wasn't an issue of major concern at community level as most of the waste accumulated at community level is biodegradable. However liquid waste around some water point could overflow.

The management of liquid waste is a great challenge around water points as though soak pits are also used to feed animals they often are breeding grounds for mosquitos.



A Water point with a filthy soak pot iused from livestok and construction (Photo By CADECOM Blantyre)

SEASONAL CALENDAR

Event		Time											
Area		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Weather	hottest months												
	Rainy season												
	Coldest months												
Social	Main holidays, school holidays												
	Main social events												
Construction	Main Construction time												
	Production of specific construction material (e.g. brick)												
	Collection of specific construction material (e.g. thatch, bamboo)												
Agriculture	Soil preparation												
	Planting												
	Weeding												

Comentado [ESG28]: Proposal to add here the seasonal calendar. Not necessary to add all the information, but you can maybe fill it in with the information you already have

	Harvest (green, maize, sorghum, etc.)												
	Harvest (green, , rice, etc.)												
	Harvest (green, cassava, , etc.)												
Other income	Fishing												
	Fruit collection (e.g. mango, avocado, tomato, , etc.)												
	Fruit collection (e.g. banana, etc.)												
	Tabacco sales and auctions												
	Cattle/Livestock sales or auctions												
	Casual Labour												
	Flooding season/peak												
	Dry season/peak												
Hazards	Hurricane/Thyphoon season/peak												
	Maize/Rice price peak												
	Lean season (Hunger)												
	Main illnesses (diarrhoea, vomiting, malaria, dengue, etc.)												
	Main illnesses (dengue, cough/cold, measles, etc.)												
Other	Fire wood collection												

3. HOUSING

GENERAL DESCRIPTION OF SETTLEMENT

Generally, the area's settlement pattern is unplanned with scattered settlements with different orientations to slope or wind. It was clearly mentioned during a collective focus group discussion that there is no settlement plan that is followed when constructing shelters in the communities. Each family chooses the direction that their houses should face or the position of the structures on their plot according to their own preferences. In most cases, there were many structures on a plot including the pit latrines, kitchen, bathroom and in some cases a smaller house for children (children sleeping in their own house apart from the main house especially the boys called *Gowe/o*). It was also noted during the transect walk that most of the settlers in the area have their houses built close to where they do farming (part of the plot is for farming).



Unplanned settlement (Photo by CADECOM Blantyre)

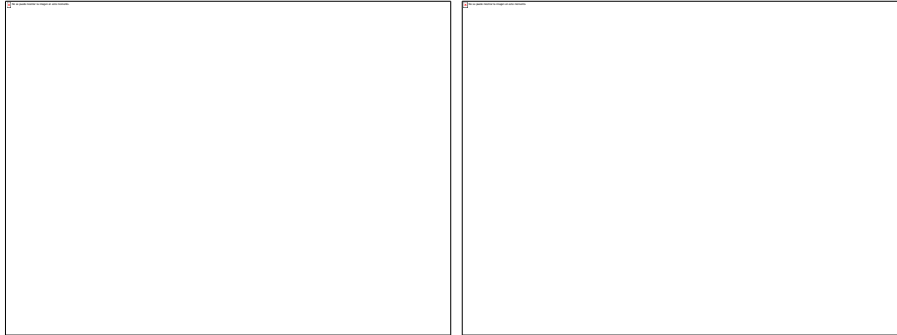
In the area there are mainly two types of designs for shelters, namely: Ngome and Libanda (in local language) with four slopes and two slopes respectively. The design of the houses also defines the type of construction materials used for the shelters. With most iron sheet houses having liband (Two Slopes) as having four slopes the community feels they are wasting iron sheets. The research team observed that almost all Libanda houses were constructed of expensive construction materials such as Corrugated Iron Sheets, burnt bricks, cement and glass windows. On the other hand, the Ngome type of shelters with only two slopes(which is the most common type in the area) were mostly constructed using locally sourced materials such as thatch grass for roofing, adobe bricks, mud floor and grass windows. While the ngome type do have four slopes for each side of the structure.

FUNCTIONS OF DIFFERENT BUILDINGS

Houses (living spaces/sleeping rooms): The living spaces are either used as sleeping rooms or store rooms as most inhabitants prefer to keep utensils, food and livestock and poultry within their households as this enhances security towards the items.

Kitchen: From Women Focus Group, it was revealed that they mostly cook on open spaces such as veranda or the yard in general. This is mostly because they usually use maize or sunflower stalks as a main source of energy and it produces a lot of smoke as well as firewood which is hazardous to their health as they often cough and sneeze from inhaling the smoke. Those that have kitchens, at times use them as bedrooms especially for big families.

Comentado [ESG29]: Is it only about materials or also about number of slopes in the roofs? I have understood in CRS's report, that Ngome houses have four slopes and Libanda only 2. If this is the case, please specify here



Kitchens either built of just a veranda being used for cooking with a collection of sunflower and maize husks for firewood. (Photo by CADECOM Blantyre)

Latrines: They are normally pit latrines mostly used for urinating and defecation at times used as disposal sites for sensitive materials.

Comentado [c30]: Picture down left is showing very nice use of natural soil for improving the aesthetic of the house. Good aspect to be promoted in a shelter project? Maybe it is already a project?



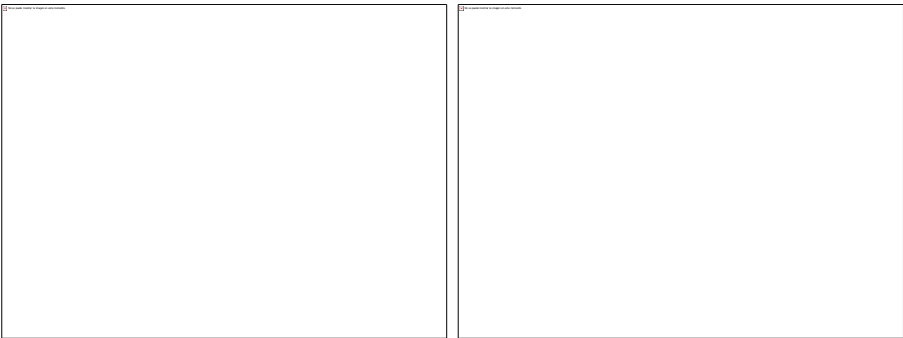
Latrine designs in the Catchment often not roofed thus prone to collapse and they fill up with water as well as the raising water table (Photo by CADECOM Blantyre)

Bathroom: For bathing

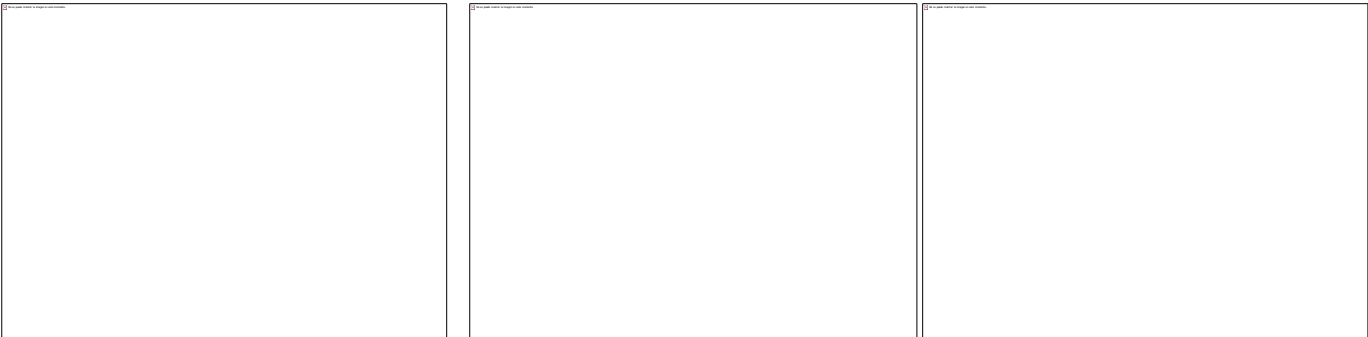


Different bathroom designs found in the program catchment (Photo By CADECOM Blantyre)

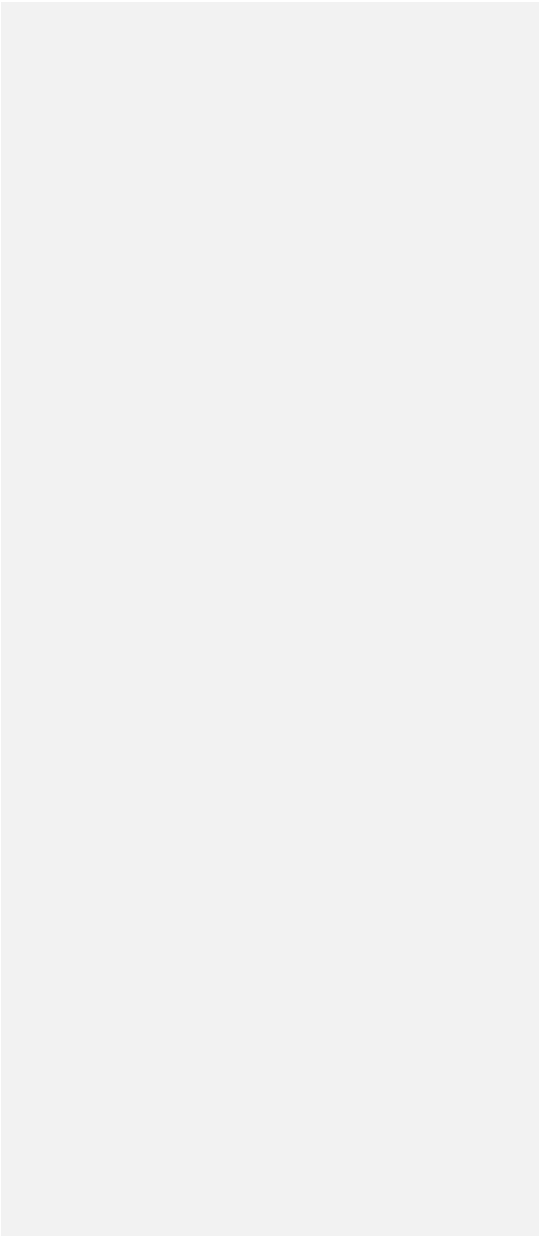
External covered spaces: Mostly used as places of relaxing and at times as cooking places during rainy season



Granaries/stables (Kraals): Mostly not available at households for security reasons but used for livestock thus causing diseases such as eye infection like trachoma and other respiratory diseases and the breeding of flies for the animal dropping and worse in the rainy season where cattle kraals are filled with water mixed with cow dung. In general the livestock being close to the household makes the yard to look untidy.



Other



GENERAL DESCRIPTION OF EXISTING HOUSING NGOMEDESIGNS

DESIGN 1: BONNET ROOF NGOME?HEAPED ROOF

Description

Average dimensions: Heigh ; 3m, Length : 5m and width : 4m

Construction process: Foundation (1 week to make)

Wall (maximum 2 weeks)

Roofing (1 week)

(This is possible if all resources are available and masons are the ones doing the job)

Origin of materials: locally found

Average lifetime: 20 years with the wall and verandas needing plastering each year

Maintenance: Mostly roofing material

Cost: Mk50,000.00



The actual photo of the house

Construction elements

Foundation/base course: Mostly not available

Structure: Timber,

Walls and partitions: Bricks (burnt or unburnt), earth masonry

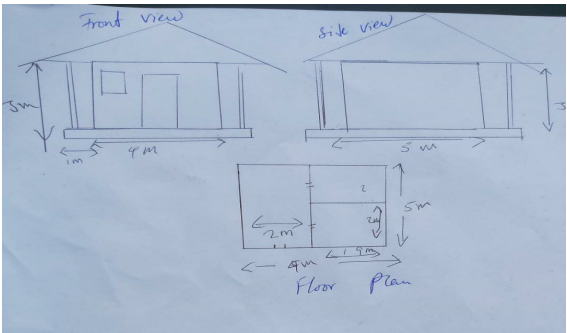
Roof structure: bamboo supported on the wall plate thus collapses with the wall when the wall falls

Roof covering: straw

Floors: Rammed earth

Openings: Windows and doors

Finishing: mud smearing




Comentado [ESG31]: You were speaking before about Ngome and Libanda models of housing... I think it is about 4 slopes -Ngome- or 2 -Libanda- in the roof? -> if yes, please specify in the description. You analyse here two designs, a Ngome first and a Libanda secondly. Maybe you could have also analysed a third design completely built with “expensive construction materials such as Corrugated Iron Sheets, burnt bricks, cement and glass windows” as you described before.

Also if there are any other kind of houses (for example wattle and daub or houses with grass walls as in other parts of Malawi) it would be necessary to add them as separate designs.

Comentado [c32]: Is the roof supported by the poles, or by the mud walls. In case the walls collapse due to flood, will the roof structure be affected? Very good picture illustrating many strengths such as platform, drainage, maybe trees protection from wind, maybe double structure preventing the roof to collapse while the walls are collapsing...Very good protection of the walls against rain thanks to the overhang and veranda...

	Interior/exterior furniture: Chairs	Figure of the household showing dimensions
+ Strengths	Withstands floods, the walls are protected from the rains They provide shade all around the house	
- Weaknesses	Using unburnt bricks mostly attract termites	

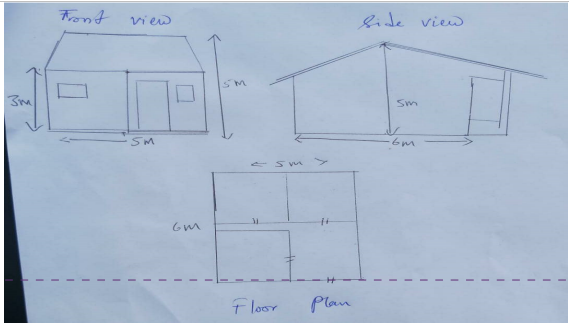
Comentado [ESG33]: Maybe add these strengths? Raised platform, drainage, maybe trees protection from wind, maybe double structure preventing the roof to collapse while the walls are collapsing...Very good protection of the walls against rain thanks to the overhang and veranda...

DESIGN 2: GABLE ROOF		
Description	<p>Average dimensions: Length: 5m, width: 4.5m Height gable side 5m Height: 3m</p> <p>Construction process: Foundation (1 week to make)</p> <p>Wall (maximum 2 weeks)</p> <p>Roofing (1 week)</p> <p>(This is possible if all resources are available and masons are the ones doing the job)</p> <p>Origin of materials: Locally purchased</p> <p>Average lifetime: 7 years</p> <p>Maintenance: Mostly roofing and wall on the gable side</p> <p>Cost: Mk80,000.00</p>	 <p>Photo of actual household</p> <p>The veranda is not always present</p>
Construction elements	<p>Foundation/base course: compacted earth</p> <p>Structure: burnt bricks, timber</p> <p>Walls and partitions: burnt bricks</p> <p>Roof structure: bamboo or timber</p>	

Comentado [c34]: Is a veranda always present in all types of houses?


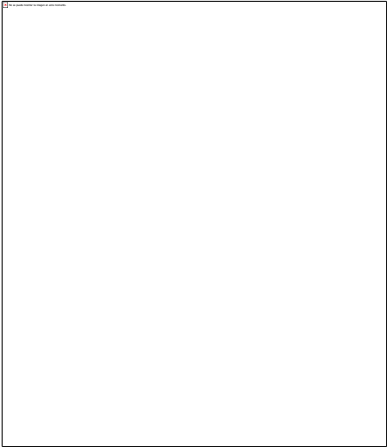
The picture is showing an interesting detail regarding on how to prevent the thatch roof to be blown off by the wind, with two poles at the edge of the veranda.

	<p>Roof covering: straw or iron sheet</p> <p>Floors: compacted earth or concrete masonry</p> <p>Openings: windows and doors</p> <p>Finishing: painting or mud</p> <p>Interior/exterior furniture: chairs and/or benches</p>
+ Strengths	Burnt bricks provide more strength to the walls however the mortar plays a great part as often even burnt bricks structures collapse as the mortar used is not mixed well making it wash away with rains
- Weaknesses	The gable side usually collapses as it is exposed to the rain and the roof is easily blown off.



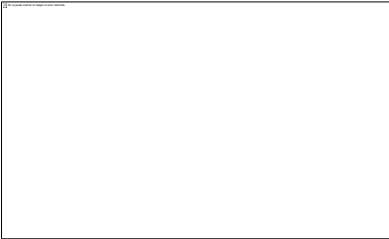
Sketch of the household

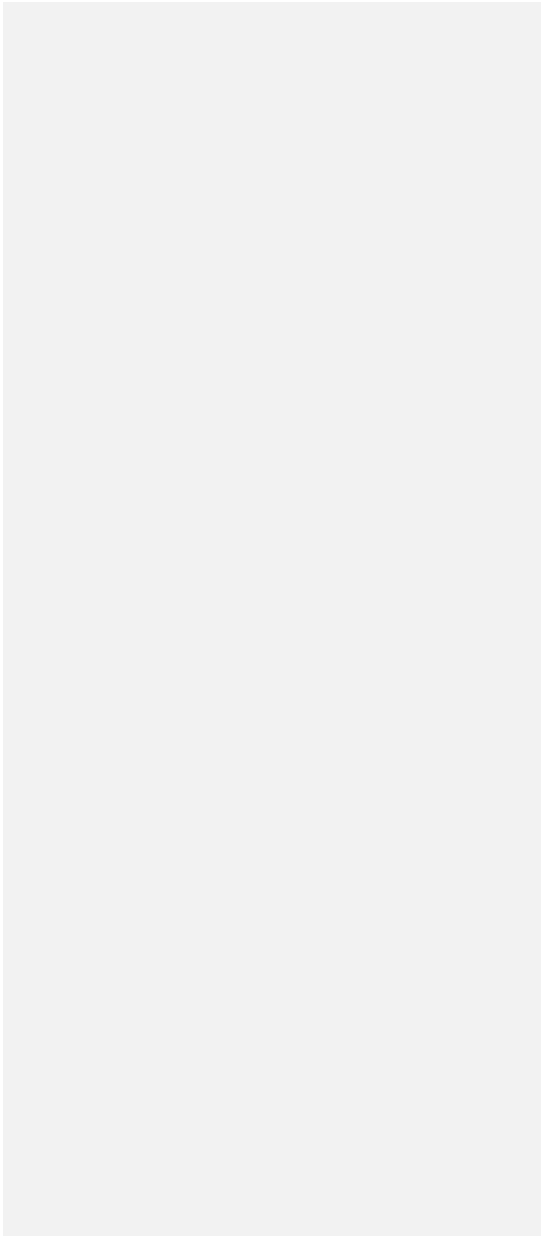
Comentado [ESG35]: Doesn't it depend on the quality of construction of the walls and the characteristics of the walls themselves (wall width, connections...)?

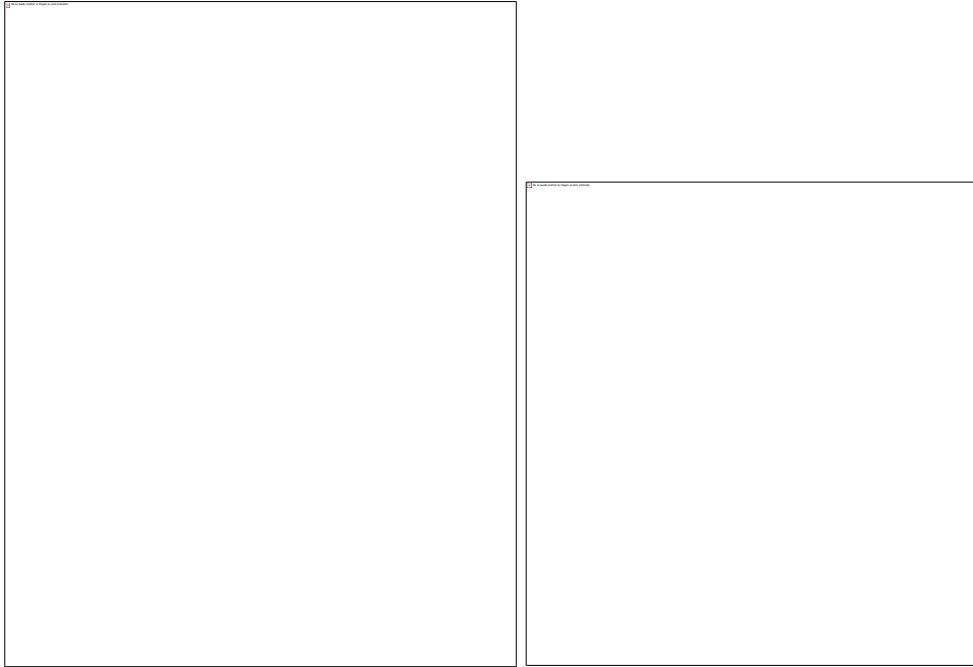
DESIGN 3: GABLE ROOF		
Description	<p>Average dimensions: Length: 5m, width: 4.5m Height gable side 5m Height: 3m</p> <p>Construction process: Foundation (1 week to make)</p> <p>Wall (maximum 3 weeks)</p> <p>Roofing (1 week)</p> <p>(This is possible if all resources are available and masons are the ones doing the job)</p> <p>Origin of materials: Locally purchased</p> <p>Average lifetime: 15 years</p> <p>Maintenance: Mostly roofing and wall on the gable side</p> <p>Cost: Mk100,000.00</p>	 <p><i>Photo of actual household</i></p>  <p><i>Sketch of the household</i></p>
	<p>Construction elements</p> <p>Foundation/base course: compacted earth</p> <p>Structure: burnt bricks, timber</p> <p>Walls and partitions: burnt bricks</p> <p>Roof structure: timber</p> <p>Roof covering: iron sheet</p> <p>Floors: concrete masonry</p> <p>Openings: windows and doors</p> <p>Finishing: plastering</p>	

	Interior/external furniture: chairs and/or benches	
+ Strengths	Burnt bricks provide more strength to the walls	
- Weaknesses	The gable side usually collapses as it is exposed to the rain and the roof is easily blown off.	

DESIGN 4: GABLE ROOF		
Description	<p>Average dimensions: Length: 5m, width: 4.5m Height gable side 5m Height: 3m</p> <p>Construction process: Foundation (1 week to make)</p> <p>Wall (maximum 2 weeks)</p> <p>Roofing (3 days)</p> <p>(This is possible if all resources are available and masons are the ones doing the job)</p> <p>Origin of materials: Locally purchased</p> <p>Average lifetime: 1 year (without maintenance)</p> <p>Maintenance: Mostly roofing and wall on the gable side</p> <p>Cost: Mk10,000.00</p>	<div></div> <p><i>Photo of actual household</i></p> <div></div>
	<p>Foundation/base course: compacted earth</p> <p>Structure: mud, timber</p> <p>Walls and partitions: timber and mud</p> <p>Roof structure: bamboo or timber</p>	

	<p>Roof covering: straw and paper sheet</p> <p>Floors: compacted earth</p> <p>Openings: windows and doors</p> <p>Finishing: mud</p> <p>Interior/exterior furniture: chairs and/or benches</p>	<p><i>Sketch of the household</i></p> 
+ Strengths	Compacted earth adds more strength to the walls	
- Weaknesses	<p>The gable side usually collapses as it is exposed to the rain and the roof is easily blown off.</p> <p>The mud walls easily wears off</p> <p>Note: This housing design is usually considered temporary but some may overstay due to poverty.</p>	





POOR MORTAT MIXTURE MAKES EVEN BURNT BRICK STRUCTURES TO COLLAPSE AND THE MORTAR WASHES OFF WHEN IT RAINS (PHOTO BY CADECOM BLANTYRE)

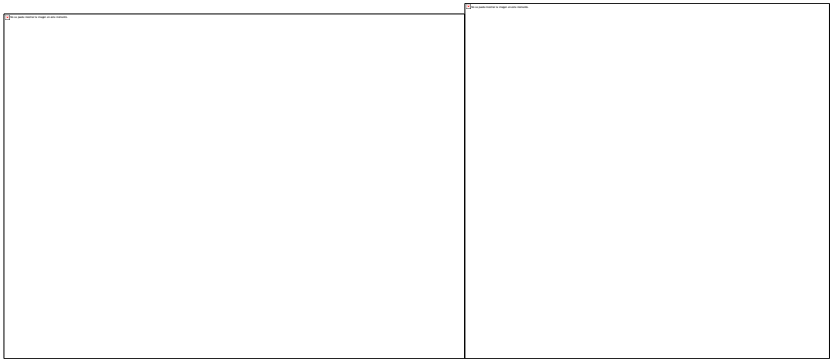
WATER

In terms of portable water sources, some women have to travel as long as 4 hours to access boreholes with good water quality as the majority have salty water . The Collective, Women and PWD Focus Group Discussions highlighted that during rainy seasons, some areas become inaccessible. Especially water collection points which are usually submerged during this season. In general, access to safe water in the area is a challenge. Access to safe water in the area is mainly affected by water quality, and distance to safe water points. The main water sources in the area are unprotected wells, boreholes and rivers/streams (unprotected). Water quality is a major problem as most of the mentioned water sources provide poor quality water (saline water). There are only two boreholes in the area that provide safe water for drinking. These two boreholes are further apart, meaning that families have to cover long distance to access safe water for drinking. Due to this, there has been a change on gender roles for women and men as regards to drawing water for household use (especially for drinking) in some households. Mostly, men do cycle to fetch water in jerrycans for the use of

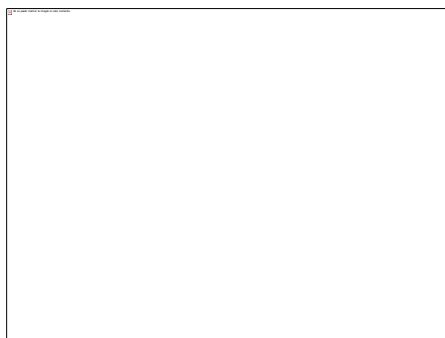
Comentado [ESG36]: What about water for construction purposes?

their household because women cannot manage to carry water on their heads for such long distances. Apart from water for drinking, water for other domestic use (including construction) is fetched from the other unprotected sources. The water is usually treated with either boiling or chlorination

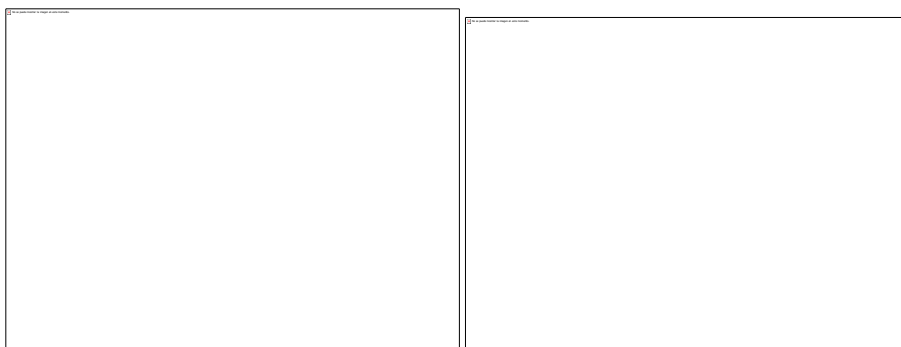
Though soak pit water is used for livestock and construction the water is usually very filthy thus considered that the mixing during construction is done by hand or feet the water also poses a health hazard to the builders.



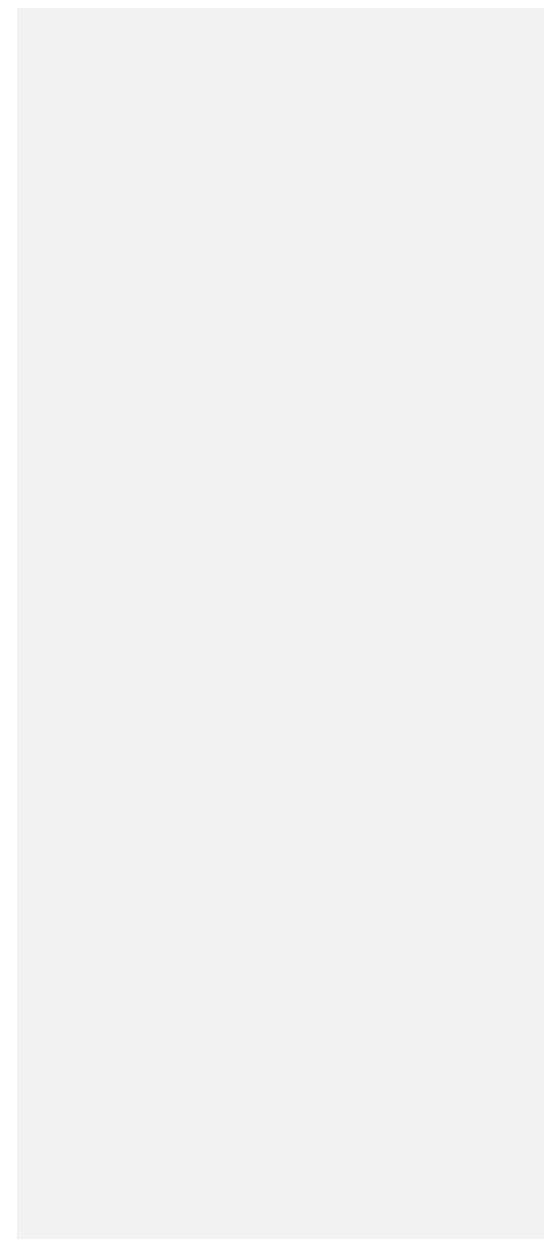
Boreholes as one of the water sources in the catchment with soak pit water used for livestock and construction (though filthy and hazardous to the health of the builders too) (photo by CADECOM Blantyre)

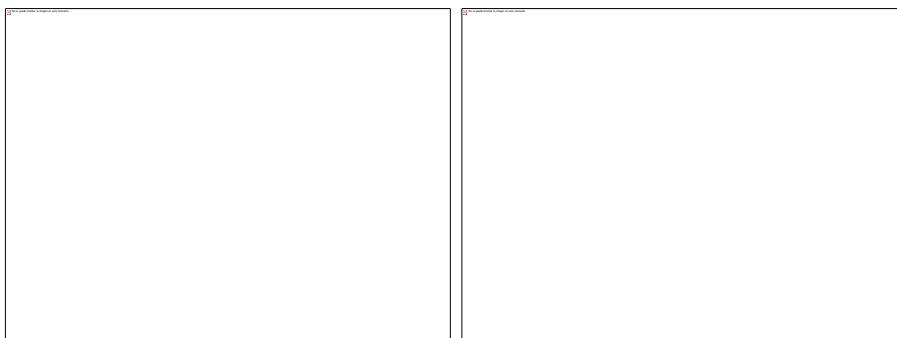


A lady drawing water for construction (photo by CADECOM Blantyre)



The drying of rivers forces community members to dig shallow wells (photo by CADECOM Blantyre)





Open water sources that communities drink from in are with no boreholes (photo by CADECOM Blantyre)

SANITATION

In this research sanitation was tackled with regard to availability and access to pit latrines at household level and in the community at large. Most households in the visited area have adopted the use of toilets/pit latrines. Pit latrines were observed almost on every household throughout the community. The only challenge that was reported is that most of the latrine's constructed of mud bricks fall down every year during the rainy season. However, latrines with proper pit lining are known to withstand the season but only a few can afford to build latrines with pit lining. This is mainly attributed to poor soil structures (soils with cracks) in the community. Due to this, most of the latrines are constructed of grass than bricks to reduce the labour for making bricks every year for latrine construction. It was reported that increased use of latrines in the area has been through the effort of Phalombe district council alongside other organizations that have been promoting the availability of latrines and coupled with hand washing facilities using the Community Led Total Sanitation (CLTS). Other hygiene messages were also disseminated, this was clearly observed in the visited households that were clean with proper waste disposal.

Latrine Designs with hand washing facilities (Photo by CADECOM Blantyre)

IMPROVEMENT / EXTENSION OF CONSTRUCTION

Most respondents stated that having iron sheet roofing, burnt bricks and cement would improve their houses as most use unburnt brick, mud for cementing and have thatched roofs.

HOWEVER MAKING IMPROVEMENT IN TERMS OF EXPANSION HAVE PROVEN DISASTROUS AS THE HOUSES WITH WEAK OR NO FOUNDATIONS HAVE DEVELOPED SERIOUS CRACKS AND DEFORMED



MODIFICATION TO IMPROVE THE STRUCTURE WITH BRICKS PLACED ON THE ROOF TOPS TO PROTECT IT FROM STRONG WIND A HAZARD TO THE FAMILY TOO (PHOTO BY CAECOOM)

ORIENTATION

Respondents across the FDG did not really prioritise much on the orientation of the households. This was mostly highlighted as an individual preference as some preferred the front should face the east whilst others preferred the other locations. Some preferred the front of the household to face the road others preferred having the path at the back of the house. However, wind direction was usually taken into account when deciding the location of the house.

4. PRODUCTION OF HOUSING

SOLIDARITY MECHANISMS IN CONSTRUCTION

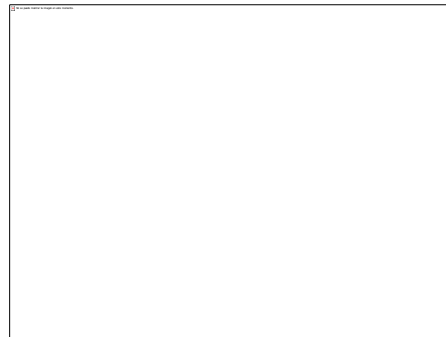
It was pointed out that construction of households is an individual task by the collective and women FGDs. As such each household has to construct their own house even after disasters. In a scenario where the owner of the household is an elderly or a person with disability, then at times, the church that the individual belongs to may request a group effort in constructing the house for their church member or through the local leaders the community can construct the shelter for them.



Community Elderly members supported with a house by the community

(Photo By CADECOM Blantyre)

It is only under this circumstance that duties are segregated. Women are in charge of drawing water for moulding bricks whilst the men are responsible for moulding bricks and construction.



A woman drawing water for construction

SEASON FOR CONSTRUCTION

According to the women focus group, construction of houses was stated to start in August to November whilst the artisans stated the time frame from April to December.

AVAILABLE SKILLS

Number of masons / bricklayers / labourers / carpenters...: The focus group contained 10 skilled masons. However, the artisans are numerous in the area.



Local masons being trained in Building bank Bette (Photo by CADECOM Blantyre)

Training: Some artisans have received formal training from a technical college and others have received informal training through mentorship.

Participation of tradespeople in design: They do not participate in the designing.

Association of tradespeople: through the TEVETA system there is an association called SORISTIPA of artisans under TEVETA who arranged in training of other student artisans however the same is not known by all and apart from this there is no other association in the catchment.

Payment system: The payment for materials is on cash basis. As for artisans, payment modalities are flexible depending on agreement. One can either choose to pay in phases, after foundation, walls and roofing or pay as the artisan requires in bits or at the end of the job having agreed on the figure for the completion of the whole task.

Comentado [ESG37]: Are the artisans payed per task or per day for example?

Cost of labour: On average it was MK40,000.00 to complete a household.

MATERIALS

ANOTHER POINT THAT WAS WORTH NOTING WAS ACCESS OF BUILDING MATERIALS BY THE SUPPLIERS AND BUILDING ARTISANS. IT WAS POINTED THAT MATERIALS SPECIFICALLY, BAMBOOS ARE NOT LOCALLY AVAILABLE IN THE AREA AS SUCH THEY EITHER HAVE TO BE SOURCED IN MOZAMBIQUE, WHERE THE MATERIAL IS ABUNDANT, OR IN ZOMBA DISTRICT, WHICH ARE A BIT SCARCE THUS THE MAJORITY BUILD WITH POLES WHICH ARE ALSO HARD TO FIND DUE TO RAMPANT DEFORESTATION

Type and dimensions	Origin	Price	Quality (good/bad/medium)	Availability year-round	Other information
Unburnt brick (15x7.5cm)	Bought within the area	K10	medium	Throughout the year	
Unburnt brick (15x7.5cm)	Self-made by the household	K3	medium		
Burnt Brick (15X7.5cm)	Bought within the area	K30	good	Throughout the year	
Doors (190x80)cm	Available locally	20,000.00	Good	Throughout the year	Usually two 2 doors required
Window frame (90x50)cm	Locally available	4,000.00	good	Throughout the year	
Poles(Wall plate; 5.5x3, Bozo 180cm, veranda support 7.5m)	Locally available	1500	good	Throughout the year	
Bamboos	Mostly imported	200	good	Throughout the year	

Comentado [ESG38]: Is it unburnt brick? yes

Nails(5 inch, 3 inch and 2inch)	Locally purchased	1kg @ 1600	good	Throughout the year	
Lineared lines (linya) (20cm)	Locally available	200	good	Throughout the year	
Soft wire (1 roll)	Locally available	1500	good	Throughout the year	
Black plastic sheet (70m)	Locally available	3500	Good	Throughout the year	
Lime (50kg)	Locally available	7500	Good	Throughout the year	
River sand (hip)	Locally available	5000	Good	Throughout the year	
Grass (bundle)	Locally available	K50 each	Good		200 bundles required
Solignum	Locally available	7500	good	Throughout the year	



A MAN COLLECTING HIS BUILDING GRASS IN BITS ON HIS BICYCLE HOWEVER WHEN I S RAINS IT IS ALMOST IMPOSSIBLE TO TRANSPORT ITEMS(PHOTO BY CADECOM)

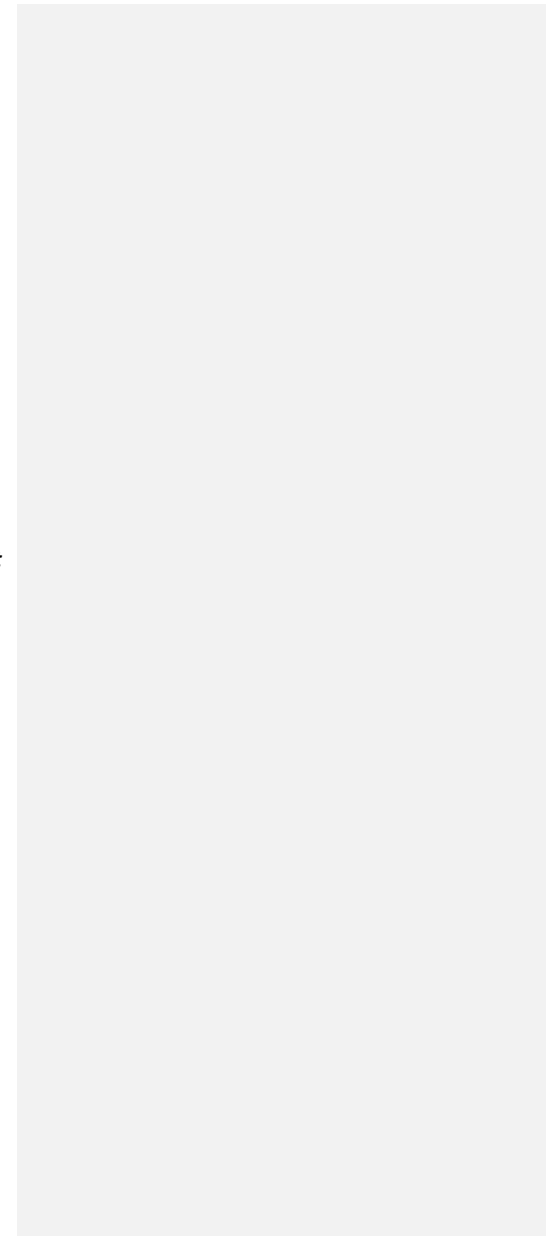
MAINTENANCE

Under maintenance, the general consensus for the different individuals was that women are responsible for mud smearing (*Kuzila*) as a routine maintenance which happens weekly depending on availability of resources (time, labour and soil) whilst major maintenances such as roofing or fixing of walls and doors is

done by men in the community annually. In a scenario where the women don't have any male figure around, they have to use hired labour. The moulded floor requires frequent application to prevent dust which results in respiratory diseases and ticks breeding in the walls. However some women in some communities use sponge or sweet potato vines to make the floor more smooth and not have dust quickly.

Women Maintaining the floor and wall of the house with clay to protect the brick above while men maintained the roof with Grass Straw and Plastic Sheet below (Photo by CADECOM Blantyre)

While men maintained the heaped roof with thick layer of grass roof with grass straw and plastic sheet (photo by CADECOM Blantyre)



5. LESSONS LEARNT FROM LOCAL ARCHITECTURE

WEAKNESSES

It was noted from the local masons that houses with no foundations usually collapse as the houses normally do not have a supporting base and since the area usual has a 0.5m depth of floods, the walls usually absorb moisture and easily collapse as the brick is usually made with tops soil which is rich in manure. It was also stated that lime, proper roofing and foundation are the basis of a strong structure and as such, much attention need to be paid these structures.

Images with captions

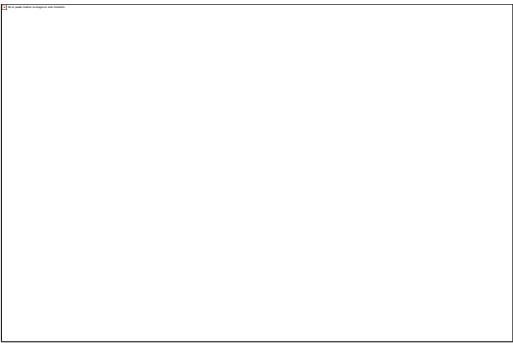
Houses with unprotected wall *Poor Mortar Mixture drainage AND NO FOUNDATION OR VERANDA* *POOR BRICK WUALITY FOUNDATION* *Houses without foundation UN PRETECTED WALL* *FOUNFDATION makes the walls weak*

Comentado [ESG39]: Maybe also a matter of quality of bricks related to unequal burning in traditional clamps...?

Brick Made with top soils rich in Manure

Brick Dried in the open Sun

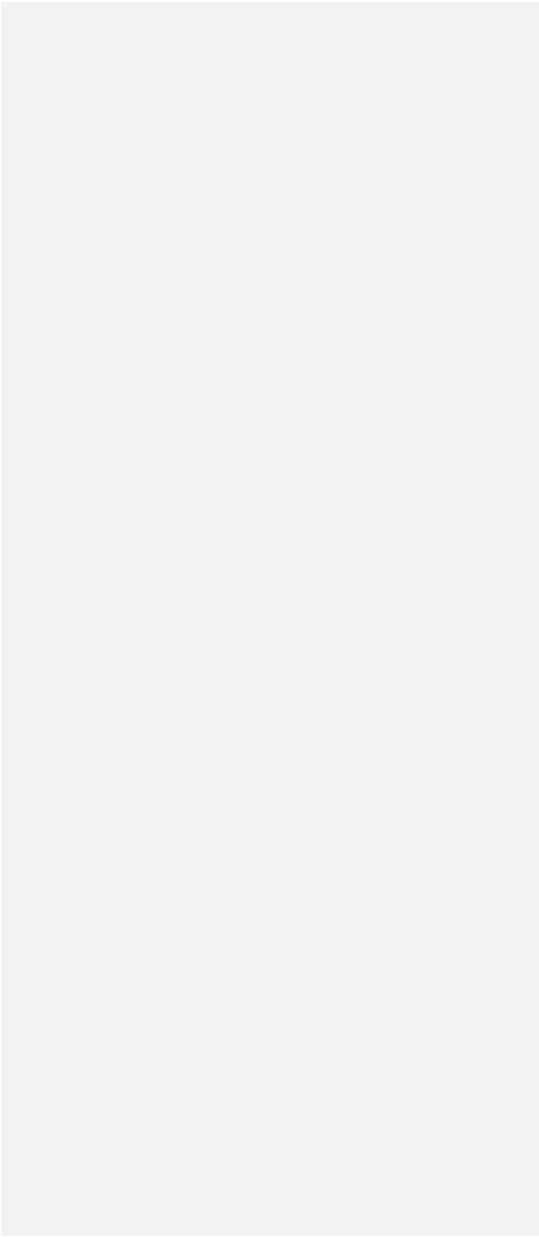
Burning of Brick promoting Deforestation

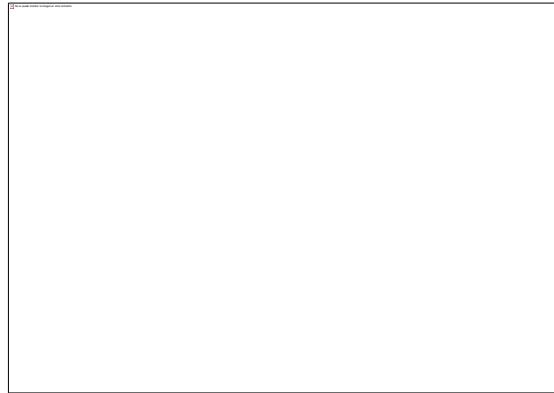


Thin layer of grass covered with bricks to protect from strong winds and a hazard to the households

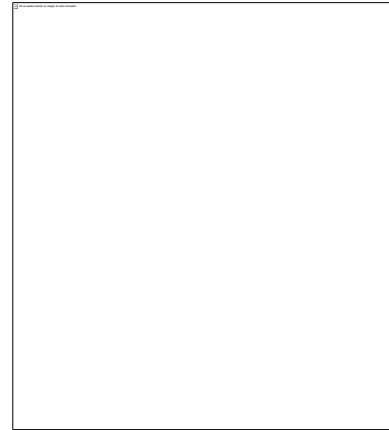
A house without foundation with the wall soaked which will lead to The wall collapsing now covered with plastic

Iron Sheet house with bricks to protect strong winds



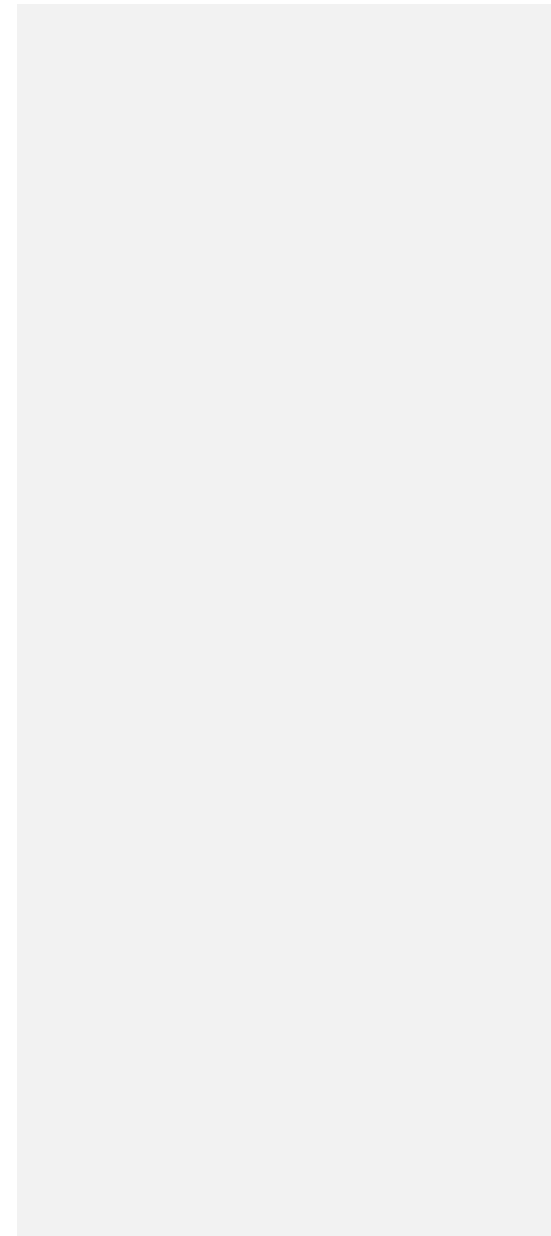


Grass just thrown on the roof without being bound to the structure thus prone to strong winds



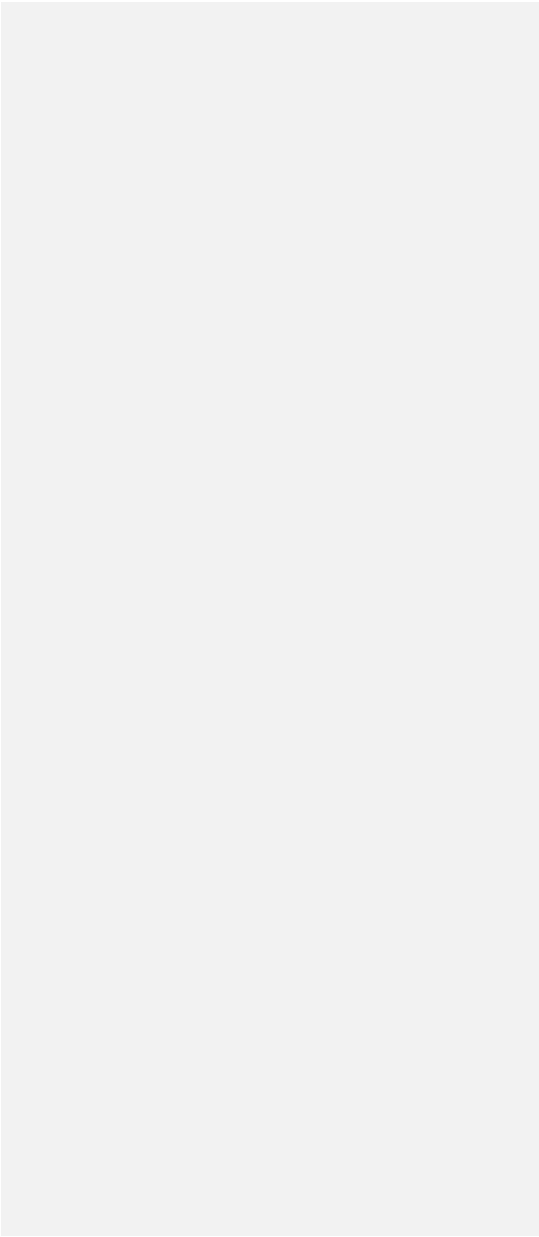
Only one line binding the grass leaving the rest still rest still exposed to strong winds

House with no foundation





Crackes on most cement and burnt brick structures due to earth movement Poor workmanship also results in cracks in mud build strucutres



STRENGTHS / GOOD PRACTICES

It was pointed out that the Bonnet roof house provides more shelter to individuals and also that the roofing style protects the walls from the rains and wind. This in turns gives the Bonnet roof a more resilient stand to harsh condition than the gable roof. The communities use indigenoues approaches such as the poles are burnt to protect them form Termites where wood termites is not available. The roof is protected with Plastic sheet and the reeds are close together. The Walls and veranda are frequently smeared with clay to protect the brick. Finally construction begins at foundation level for some houses now.

Veranda and Walls Smeared with Clay. Hipped roof protecting the wall from the rain and wind. Iron sheet Houses adopting the hipped roof model
Neatly PLASSED STRALL AND TIED DOWN

Comentado [c40]: A lot of very good practice in these 3 pictures. Elevated platform, drainage, double structure to support the roof (to be confirmed) two different material for basement and walls, adapted to the constraint they are facing, global architecture features...

Roof annually repaired and protected with Plastic sheet and grass Straw



Well layed foundation and plastered with Lime to protect the mud brick



Houses being constricted with Foundations

Thick Waals being protected with Clay



Poles being burnt to prevent Termites before being inserted (Indigenous Practices)

Strong winds

Images with captions

Comentado [ESG41]: Hipped roofs are a good practice for strong wind areas



HEAPED ROOF WITH BOUND GRASS TO PROTECT FROM STRONG WINDS



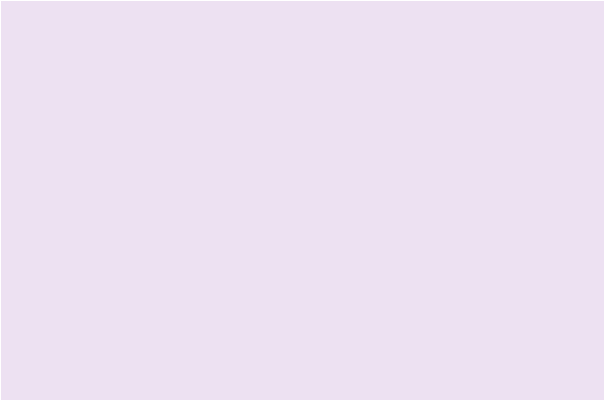
TOILET ROOF FIRMLY BOUND AND PRETECTED FROM WIND

Floods

Comentado [ESG42]: This picture is actually a strength, but maybe not the others?

Mare road becomes flooded such that canoes have to be used. Crop Fields Flooded and damaged (Photo by CADECOM Blantyre)

Images with captions



Mare road becomes flooded and water logged. (Photo by CADECOM Blantyre)

Other details

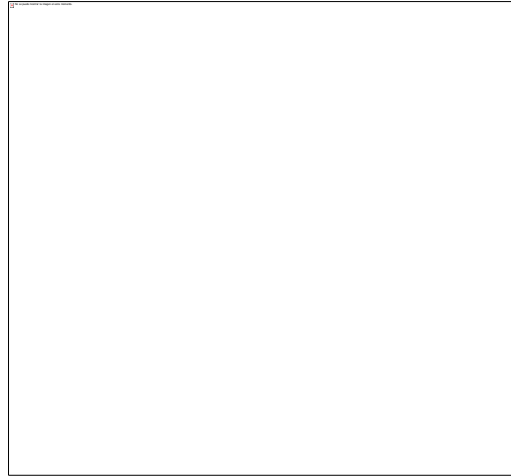
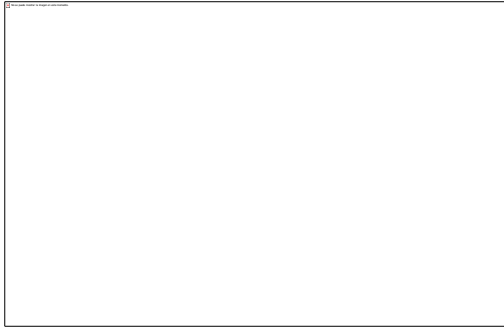
Images with captions

Bioclimatic / Use / comfort / aesthetics

Images with captions

Comentado [ESG43]: All these images would be more appropriate in the weaknesses section or to illustrate the section on local hazards

Comentado [ESG44]: Verandas, decorations in walls, plants, etc. would be good practices regarding bioclimatic measures, comfort, aesthetics



Two Kilometer dyke constructed by Ministry and trees planted Large verandas for relaxing and drainage House surrounded by trees though on a water

logged place

PESTEL Analysis

A good tool to use to help you identify all your stakeholders is PESTLE. By considering each of these categories and how they relate to your project, you can then identify stakeholders. For example when thinking about the Legal aspect, you may realise a contract for services is needed. This will require input from our Legal team, so clearly they are a stakeholder. (from the 'Stakeholder analysis and management toolkit' , University of Manchester; <https://www.alnap.org/help-library/stakeholder-analysis-toolkit>)

The factors explored in a PESTLE Analysis include:

THEMATIC		COMMENT	STAKEHOLDERS
P	Political	Extent to which political factors influence the market and accordingly the project. This would include new taxes, regulations, construction codes, political strategies, etc.	MRA, Suppliers, Members of Parliament, Ward Concillors
E	Economic	This includes overall economic forces that could affect the project, such as inflation rates, interest rates, foreign exchange rates, or economic growth patterns.	Banks, CAMA, MERA Village Banks
S	Social	These factors look the social environment of the market, such as cultural trends, demographics and population analysis. Also important to this part of the analysis are attitudes and shared beliefs of the target consumer, including those around health, work, leisure, money, family and religion.	District Council, Traditional Leaders,
T	Technological	These factors include advancements in technology which could influence your product, either positively or negatively. Examples include communication technology, automation, legislation around technology and intellectual property, as well as competitor technology development.	CAMA, Telekom Networks Malawi plc (TNM), Airtel Malawi plc and Mobile money agents
L	Legal	This includes current and future legal and regulatory requirements impacting a product. These factors can include laws around consumer protection, labour, health and safety, taxes and trade regulations in the individual countries where the product will be sold.	Traditional Leaders, courts, Labour Office, Police, Community Bye Laws

E

Environmental

These factors include all those that influence or are determined by the surrounding environment. This aspect of the PESTLE is most important for industries such as tourism, farming, and agriculture. Examples of factors to analyse from an environmental angle are climate, weather, geographical location, and climate changes.

Forestry Department, Environment Health Office, DADOs, MERA Forestry laws