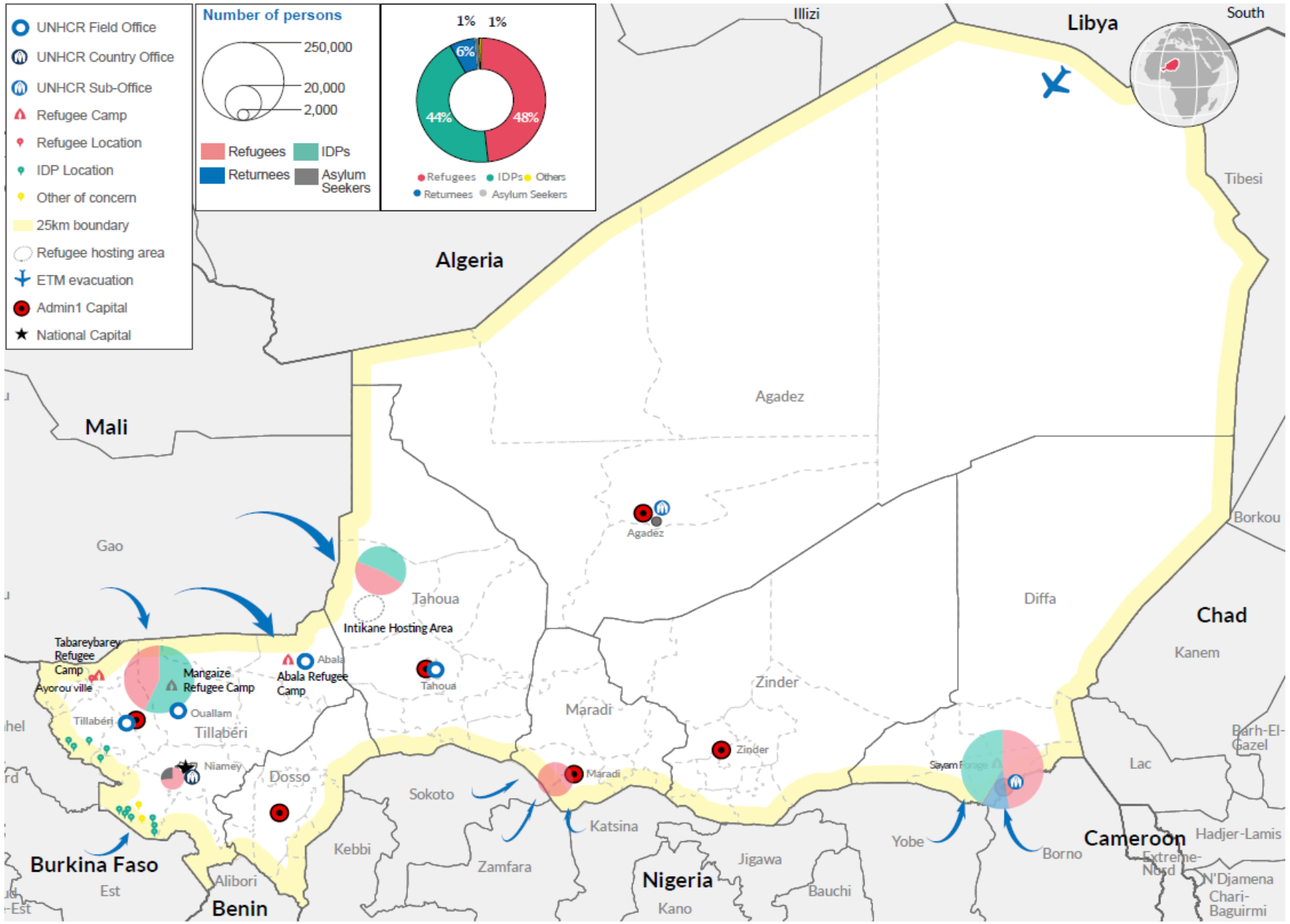
Niger Urbanisation project

UNHCR Niger | Population of Concern

July 31st 2019

UNHCR The UN Refugee Agency



424,120
Persons of Concern in Niger

118,868
Nigerian Refugees in Diffa

104,288
IDPs in Diffa

25,731
Nigerien returnees from Nigeria

35,055
Nigerian Refugees in Maradi

76,634*
IDPs in Tillabéri & Tahoua

1,013
IDPs on the Burkina Faso Frontier

56,343
Malian Refugees

4,608
Asylum Seekers

2,190
Persons of concern from Burkina Faso in Tillabéri

403
Other Refugees

Source: UNHCR proGres *30/06/2019, Monitoring de protection Feedback: mawhinne@unhcr.org Disclaimer: The boundaries, names, and designations shown on this map do not imply official endorsement or acceptance by the United Nations

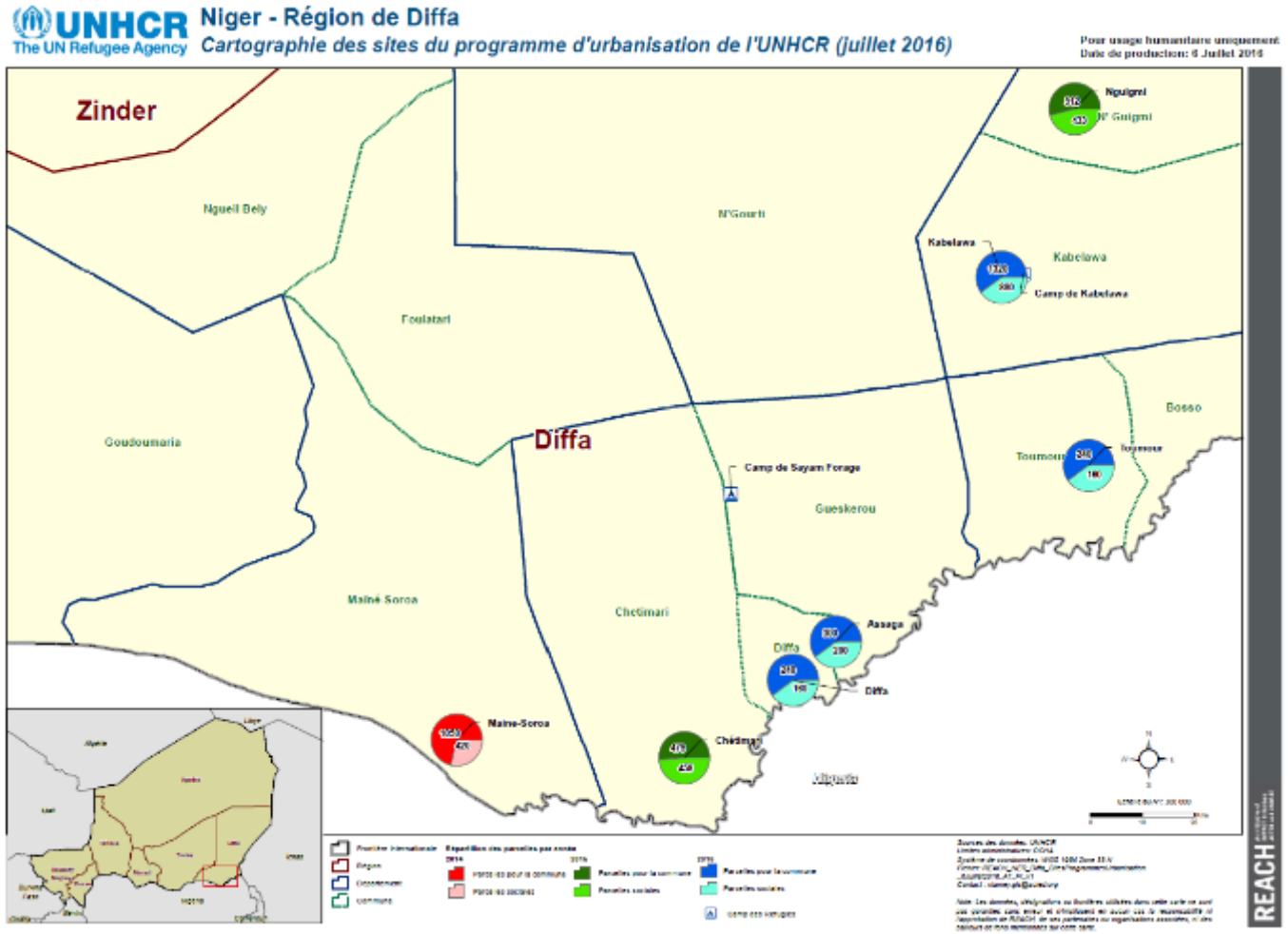
** figures for end June with exception of Maradi Refugees & IDPs in Tillaberi & Tahoua (July 31 2019)

Diffa Urbanisation project - EUTF

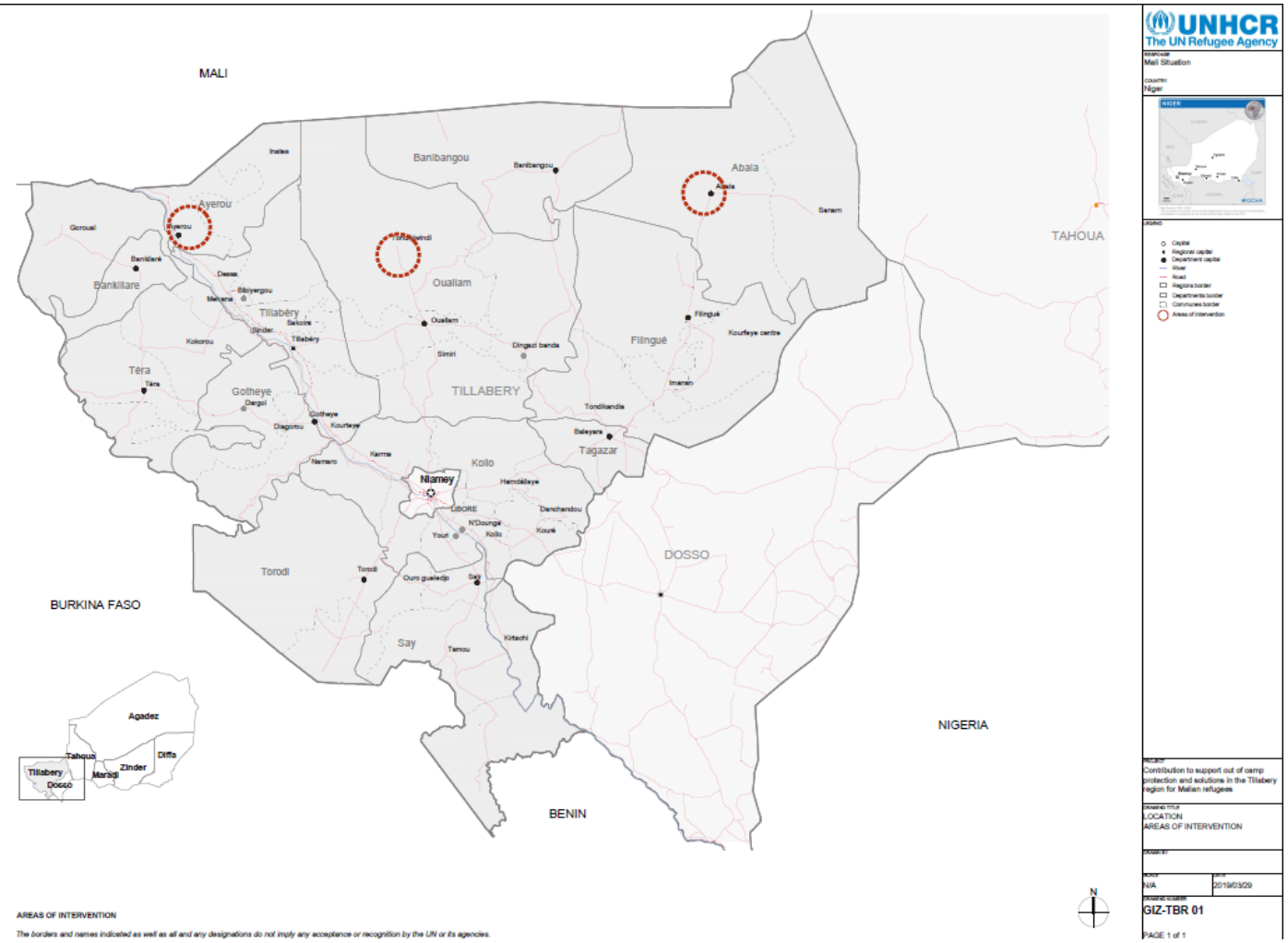
Support Municipalities in Diffa with high POC concentration:

7 communes: Maine Soroa, Chetimari, Nguihmi, Diffa, Kabelawa, Toumour / Bosso, Aassaga

- 6’000 households benefiting from a land parcel & potable water (42’000 poc)
- 4’000 of these households benefiting from social housing (28’000 poc)
- Economic recovery via. construction sector with 2,000 jobs & training
- Mobilization of funds for LA Infrastructure investment via. Income from land sales

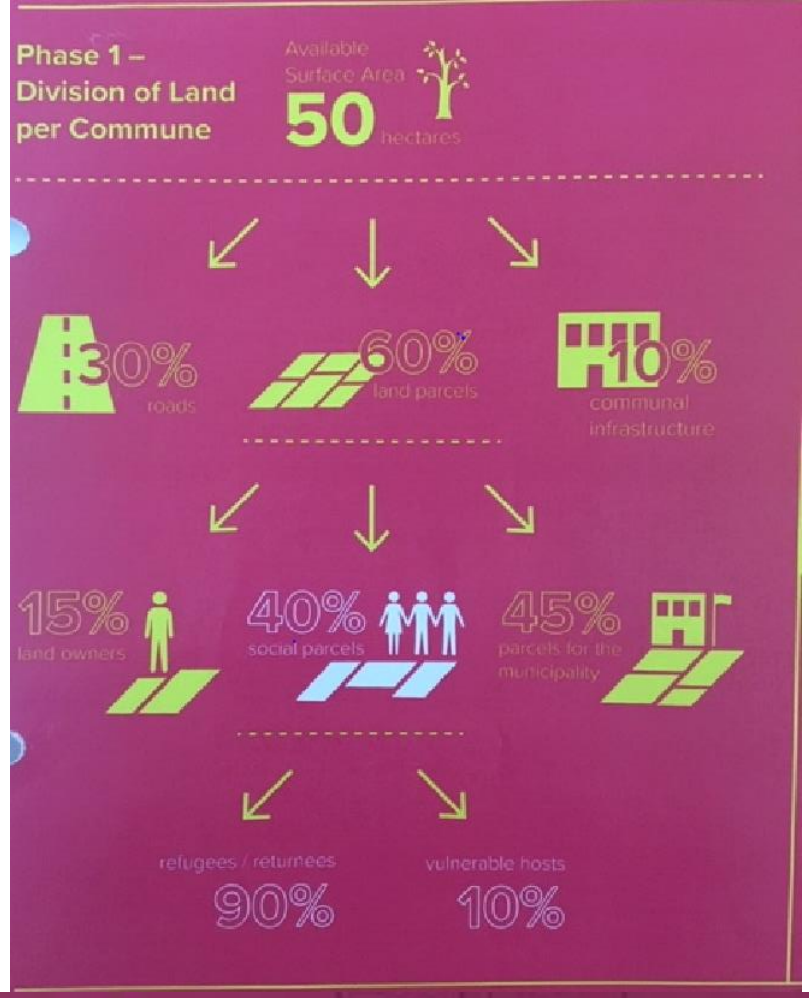


Tillabery Urbanisation project- Giz



- Abala, Ayorou & Ouallam
- 6’000 households benefiting from a land parcel & potable water (42’000 poc)
- 4’000 of these households benefiting from social housing (28’000 poc)
- Economic recovery via. construction sector with 2,000 jobs & training
- Mobilization of funds for LA Infrastructure investment via. Income from land sales

Land division & construction phases



50 hectares
Available Surface Area

30% Roads

60% Land parcels

10% Communal infrastructure

15% Land owners

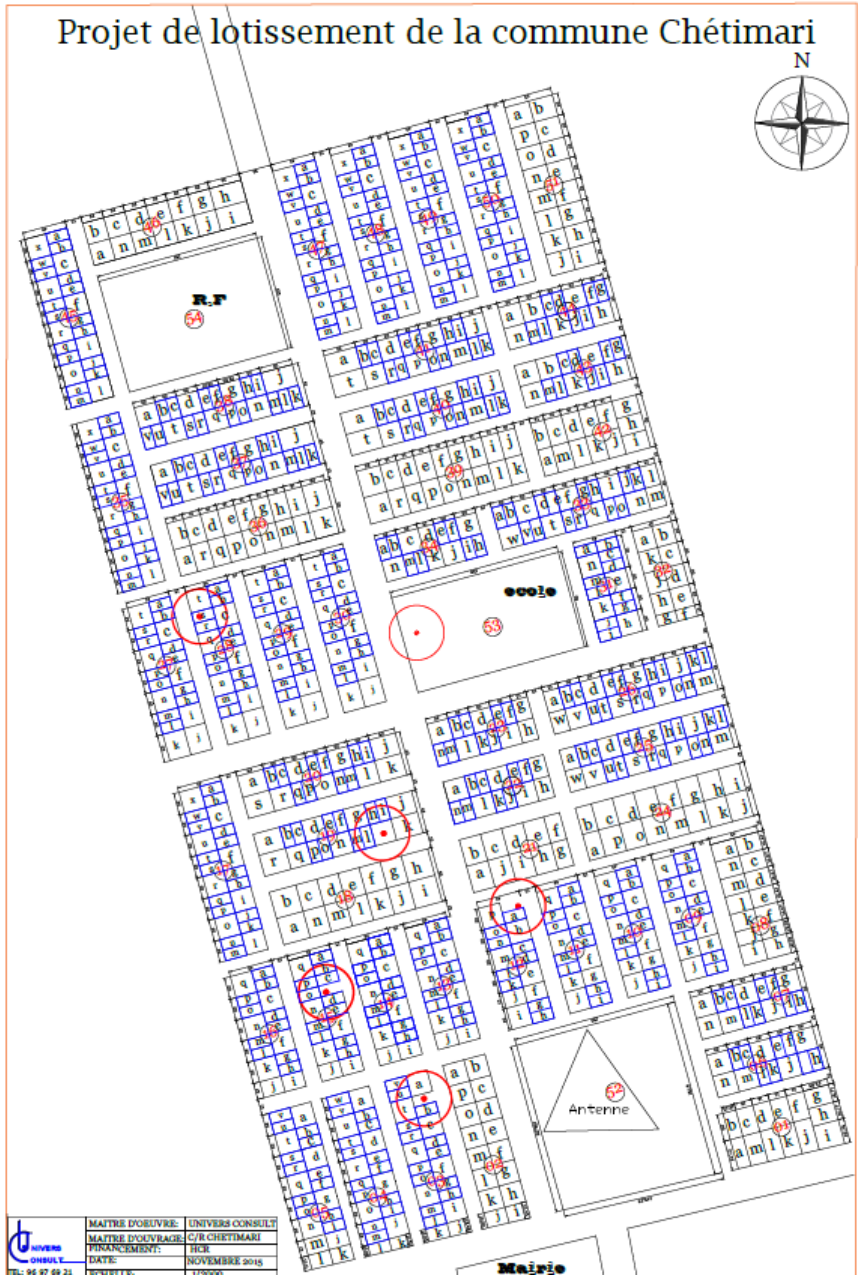
40% Social parcels

45% Parcels for the municipality

90% Refugees /returnees

10% Vulnerable hosts

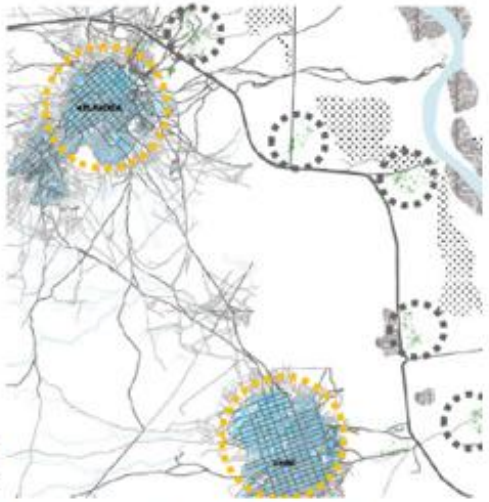
Lotissement – Direction General du Urbanisme



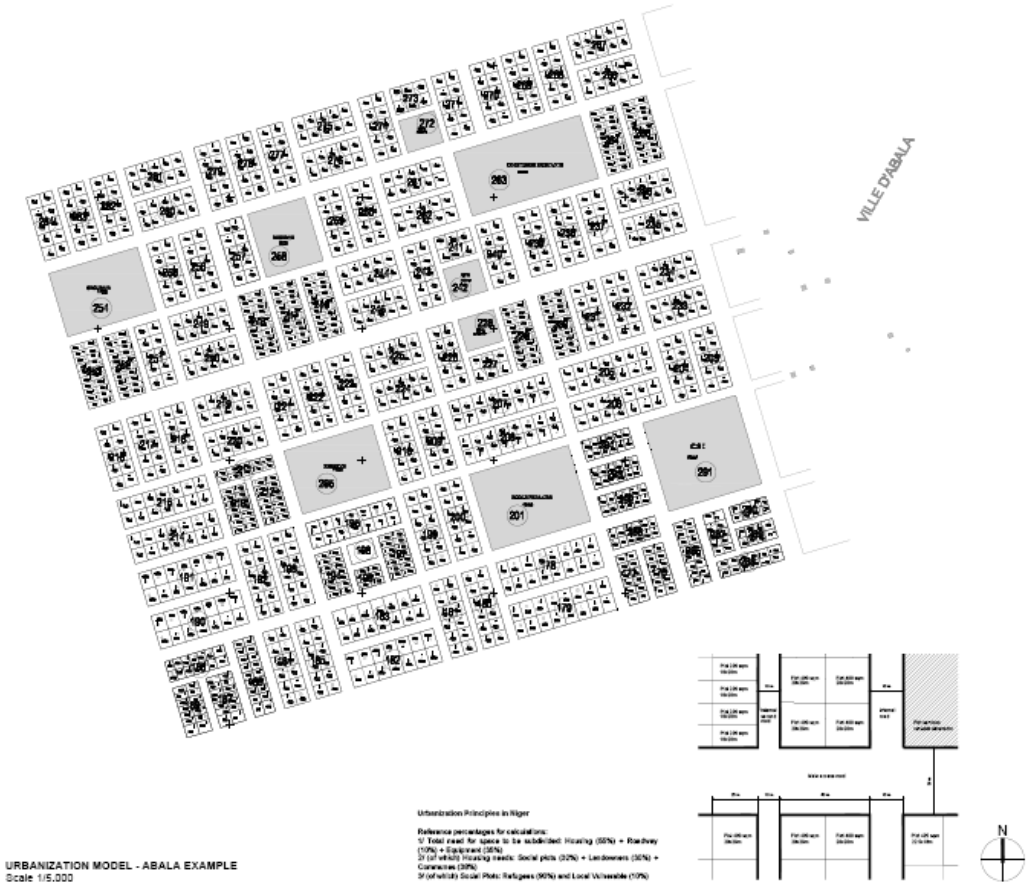
Masterplan approach to settlement planning

The definition…

Master plan is an integrated **settlement planning** process …



- **Long-term planning** (humanitarian and development)
- **Unique response vision** aligned with dev. plans
- **Minimizing conflict** between displaced and host
- **Integrating service** and infrastructure delivery for both displaced and host population
- **Provide spatial framework** for new and existing interventions (upgrades)



URBANIZATION MODEL - ABALA EXAMPLE
Scale 1/5.000

Urbanization Principles in Niger

Reference percentages for calculations:
1/ Total need for space to be subdivided: Housing (55%) + Roadway (10%) + Equipment (35%)
2/ (of which) Housing needs: Social plots (32%) + Landowners (30%) + Commerces (38%)
3/ (of which) Social Plots: Refugees (90%) and Local Vulnerable (10%)

UNHCR
The UN Refugee Agency

RESPONSE
Mali Situation

COUNTRY
Niger

LEGEND

PROJECT
Contribution to support out of camp protection and solutions in the Tillabery region for Malian refugees

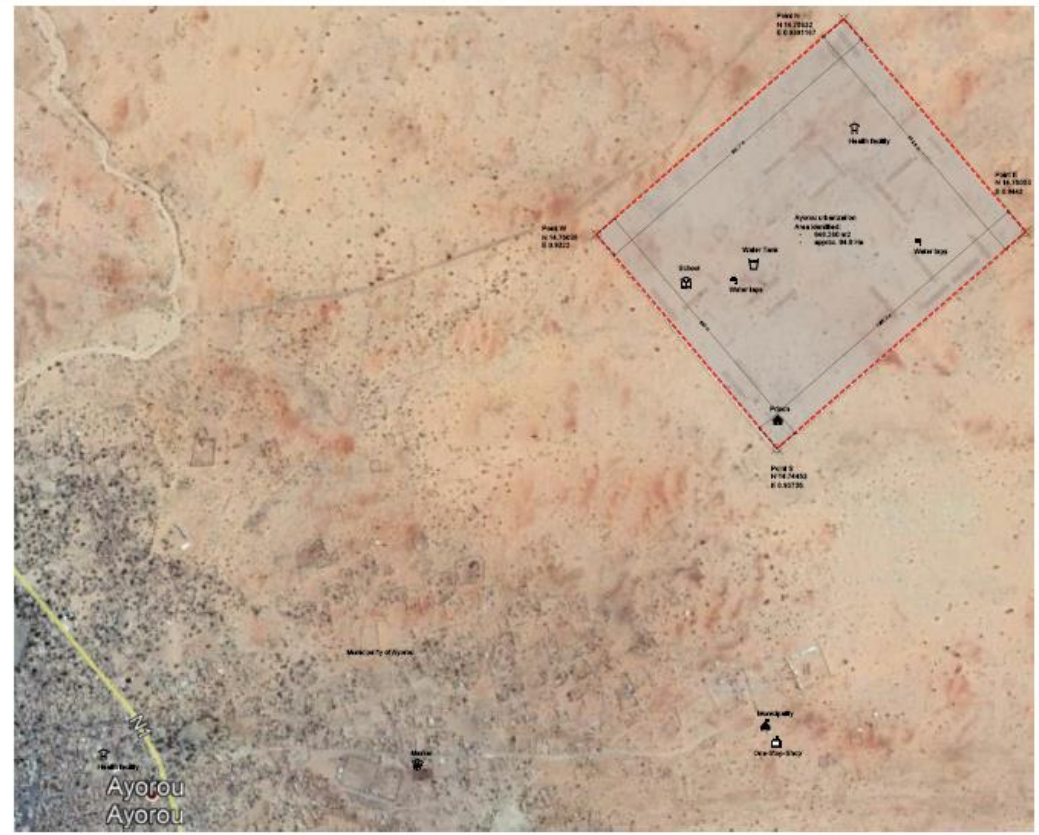
DRAWING TITLE
URBANIZATION MODEL
based on Abala previous urbanization

DRAWN BY

SCALE	DATE
1/5.000	2019/04/11

DRAWING NUMBER
GIZ-TBR 05

PAGE 1 of 1



AYOROU URBANIZATION
Scale 1/10.000

0 100 200 300 400 500m

N

UNHCR
The UN Refugee Agency

RESPONSE
Mali Situation

COUNTRY
Niger

LEGEND
Borehole
Boutique
Coal House
Solid waste
Mosque
Food warehouse
NGO office
Government office
Police station
Health facility
School
Market
One-Stop-Shop

PROJECT
Contribution to support out of camp protection and solutions in the Tillabery region for Malian refugees

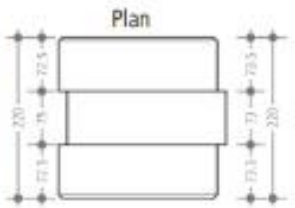
DRAWING TITLE
AYOROU URBANIZATION
land already secured with Opt authorities and land owners by 31st March

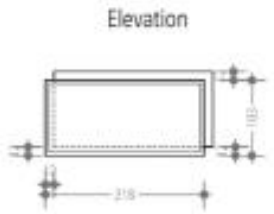
DRAWN BY

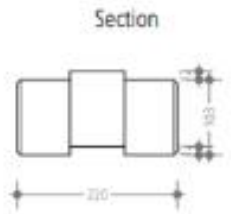
SCALE	DATE
1/10.000	2019/04/29

DRAWING NUMBER
GIZ-TBR 03

PAGE 1 of 1







5 house types – Planning w'shop Nov. 2017

Woodless construction (Chétimari and N'Guigmi model): low cost, requires maintenance on the part

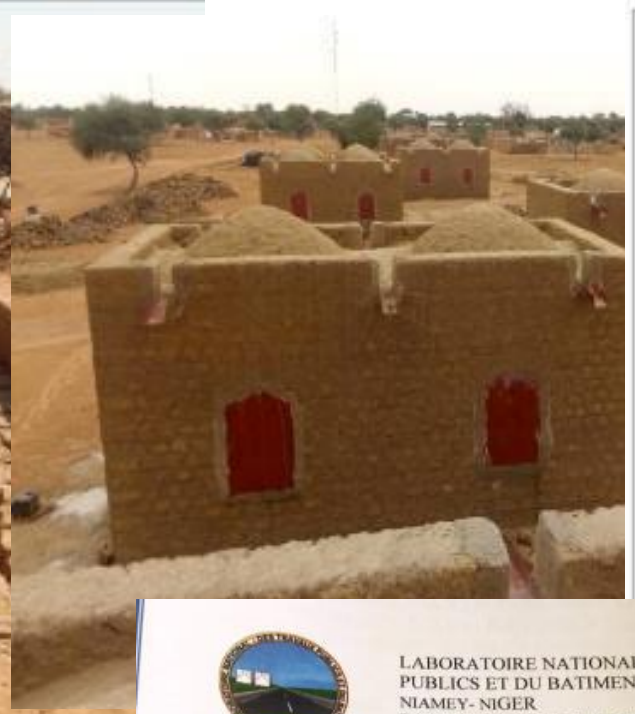
Terracotta construction: high cost, low maintenance, lack of local expertise;

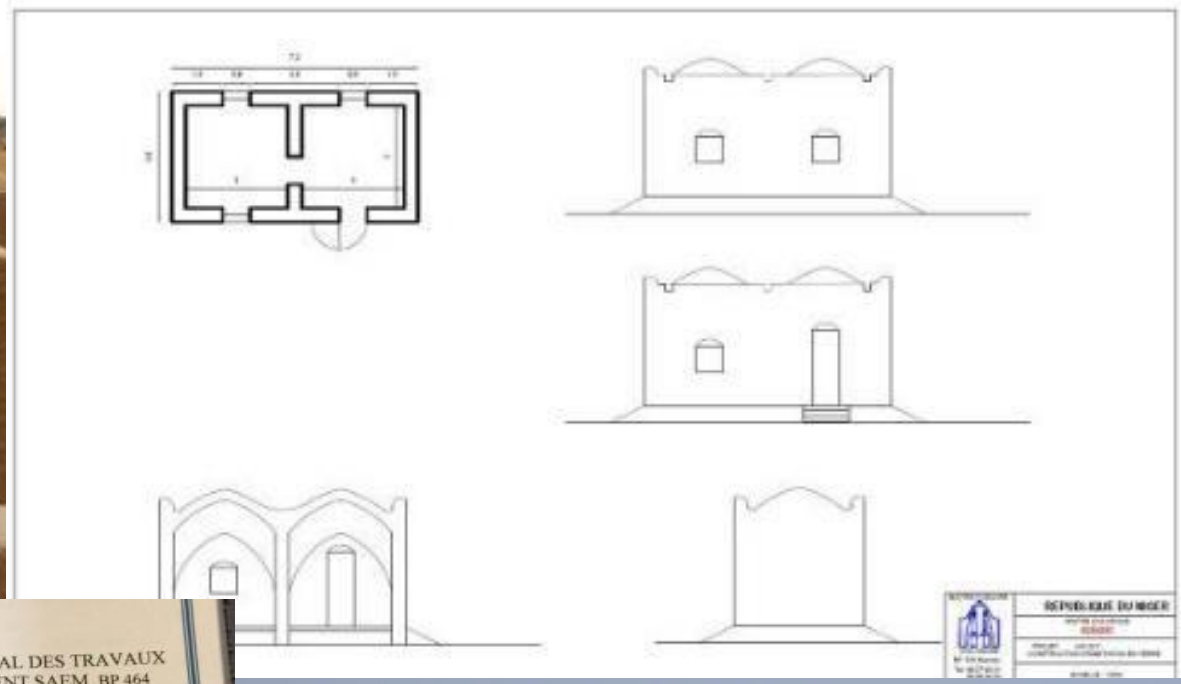
Stabilized earth construction: high cost, low maintenance, lack of local expertise;

5. Rammed earth construction: high cost, lack of local expertise.
6. Construction in cement + sheet: very high cost mainly due to the imported materials.

* Decided at that stage to proceed with option 1.

Properties	Interlocking Stabilised Soil Block	Sun-dried Mud Block	Burned Clay Brick	Stabilised Soil Blockb	Concrete Masonry Unit
GENERAL INFO					
Block Apperance					
Wall Apperance (not rendered)					
Dimension (L x W x H) (cm)	26.5 x 14 x 10 cm	25 x 15 x 7 cm to 40 x 20 x 15	20 x 10 x 10 cm	29 x 14 x 11.5 cm	40 x 20 x 20 cm
Weight (kg)	8-10 kg	5-18 kg	4-5 kg	8-10 kg	12-14 kg
Texture	Smooth and flat	rough and powdery	rough and powdery	smooth and flat	coarse and flat
Blocks needed to make up a sq.m.	35	10 to 30	30	21	10
PERFORMANCE					
Wet Compressive Strength (mps)	1 - 4	0 - 5	0.5 - 6	1 - 4	0.7 - 5
Thermal Insulation (W/m C)	0.8 - 1.4	0.4 - 0.8	0.7 - 1.3	0.8 - 1.4	1 - 1.7
Density (kg/m3)	1700 - 2200	1200 - 1700	1400 - 2400	1700 - 2200	1700 - 2200



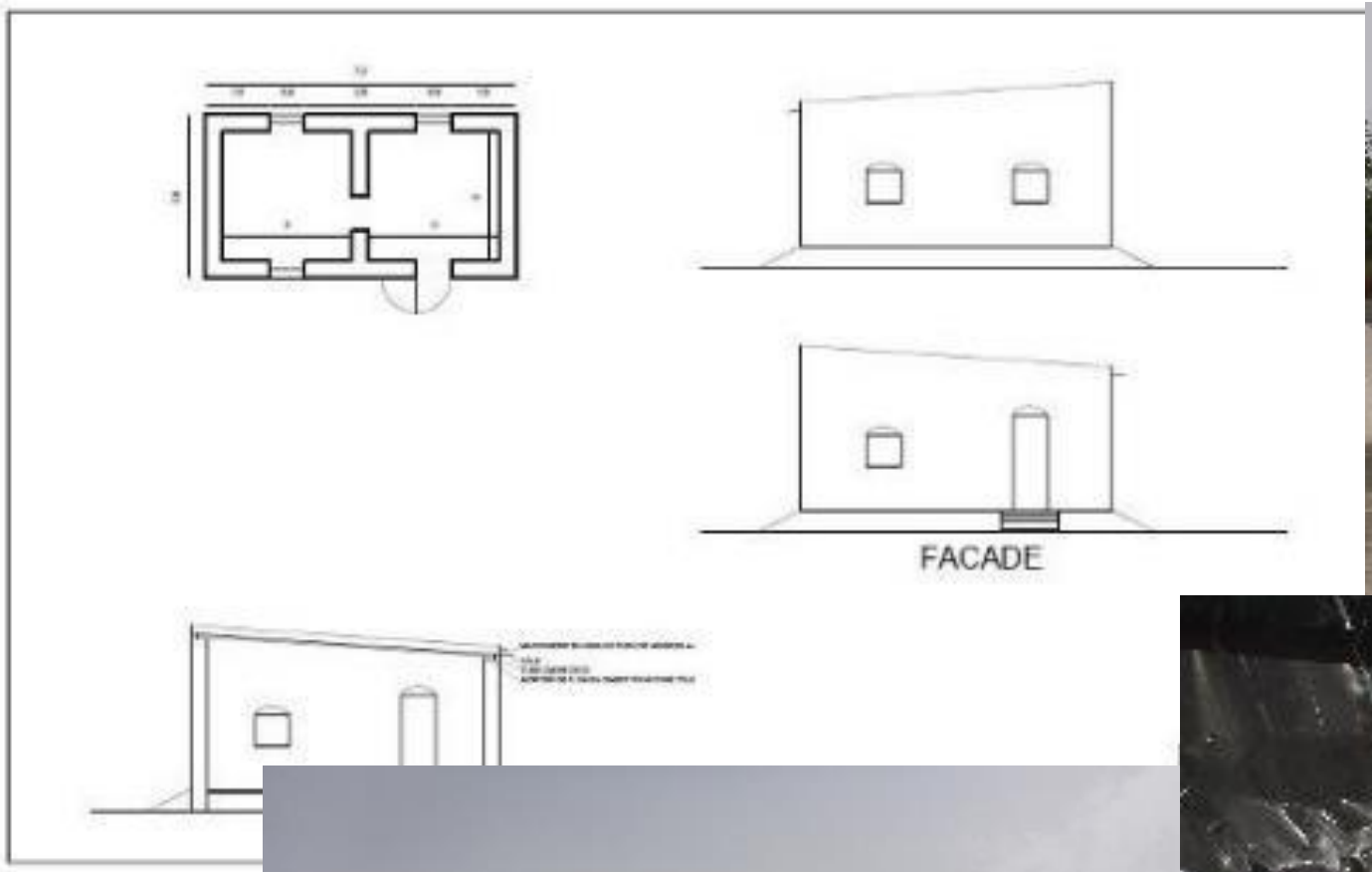


LABORATOIRE NATIONAL DES TRAVAUX PUBLICS ET DU BATIMENT SAEM BP 464
NIAMEY- NIGER
Tel (00227) 20732562 E-mail: lntp@intnet.ne

RAPPORT D'ETUDES GEOTECHNIQUES

PROJET DE CONSTRUCTION DE LOGEMENTS SOCIAUX DANS LA REGION DE DIFFA (CARRIERE DE BANCO DE DIFFA)

CLIENT: UNHCR


FACADE

ISSB production and hardware

HYDRAFORM

M7MI Super Machine à bloc autobloquant (M7M1)

Spécifications

- Produit 2200 blocs par poste de 8 heures*
  = 57m² de mur/jour*
  = 12 x 50m² maison/mois*
- Une chambre de compression
- Machine à bloc mobile
- Idéal pour les projets de moyennes et grandes envergure.
- Moteur diesel (électrique en option)
- Malaxeur intégré 150L

AUTOMATISATION DISPONIBLE

Augmenter la production de blocs de 2200 à 3000 blocs

Information Additionnelle

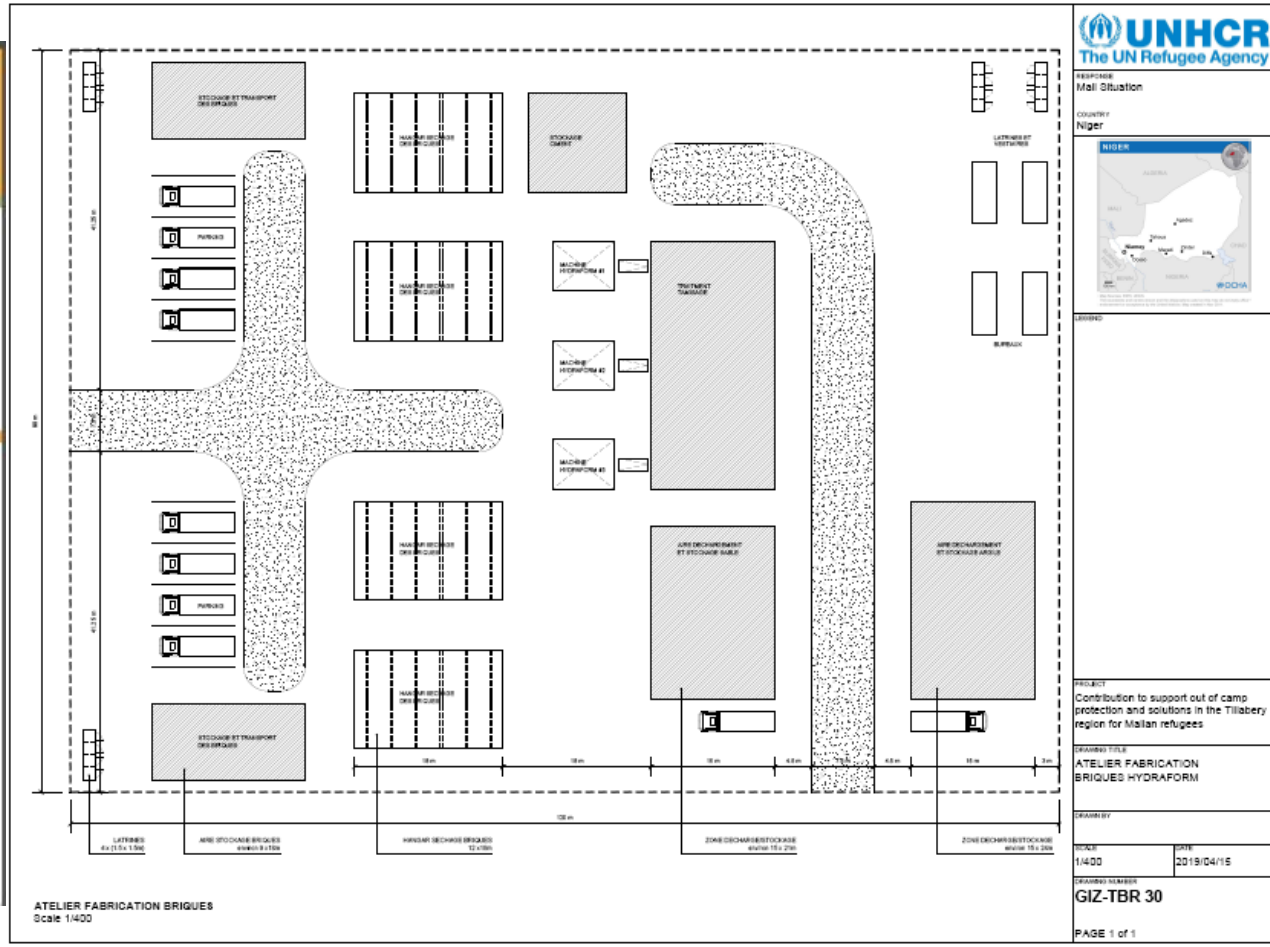
Personnel d'exploitation: +/- 7-9 personnes
Moules: Moules Standard 220mm

Accessoires en option :

- Divers moules comme indiqué ci-dessous
- Pièces de rechange et de maintenance pour une année
- Outils pour la production des blocs et la construction
- Articles de protection pour sécurité sanitaire sur site
- Coupeur de bloc
- Testeur de bloc

Produits accessoires :

- Broyeur à mâchoires pour les pierres et débris de matériaux
- Tamis rotatif pour la préparation du sol



ISSB video

ISSB do not need to be fired in order to gain weatherproof capability.	This technology provides an alternative to commonly used fired bricks.
ISSB reduces the amount of cement needed for mortar	The interlocking nature of the block increases the structural stability of the wall.
ISSB have high insulation properties	The block has higher thermal capacity than full cement block as it relies on the thermal properties of the soil.
ISSB have a high quality finish.	The use of plastering is optional.
ISSB blocks have acceptable bearing capacity. From 4 to 10 MPa depending on the amount of cement.	The blocks can be used for structural and/or infill purposes.
ISSB machinery is portable	The machine has wheels and can be moved by hand or towed.

Performance: Manufacturer states single machine (M7 model) production rate of 1,300 blocks per day however output seems ambitious, based on conditions encountered in field the daily production rate is closer to 500 blocks.	**4.4 machine days are needed to produce 2,200 ISSB required to build a typical house.** **(1 machine produces sufficient blocks to build up to 82 houses per year)**
Type and quantity of soil required per shelter: Soil test are mandatory in order to determine the soil composition. Suitable soil type should have clay content of between 15% and 35%. High-clay soils will require the addition of sand, and a higher cement content, to prevent blocks from cracking. Low clay soil may not sufficiently bind the block. Each m3 of soil produces approximately 110 blocks.	**20 m3 of soil are needed to produce 2,200 ISSB required to build a typical house. The above is the equivalent of a 5m X 4m X 1m depth hole.**
Cement required per shelter: 1 bag of 50Kg will produce 76 blocks.	**29 bags - 50Kg - cement are needed to produce 2,200 ISSB required to build a typical house**
High level of skills is needed: Block making and laying require high level of expertise. Based on previous experiences at least 8 workers will be needed to operate in a block production yard. 4 will require specialist training.	**1 Team leader, 1 Trained foreman, 1 Trained mechanic and 1 Trained senior and assistant supervisor are needed to produce ISSB required to build a typical house**
Machine cost: 1 machine (M7 model) including a pan mixer, spare parts and other accessories such as trailer.	**USD 32,000 is the approximate cost of one machine that should be able to support the production of the equivalent to 82 houses per year** **(The estimate has been taken from Tanzania 2014 proforma invoice)**

Methodology

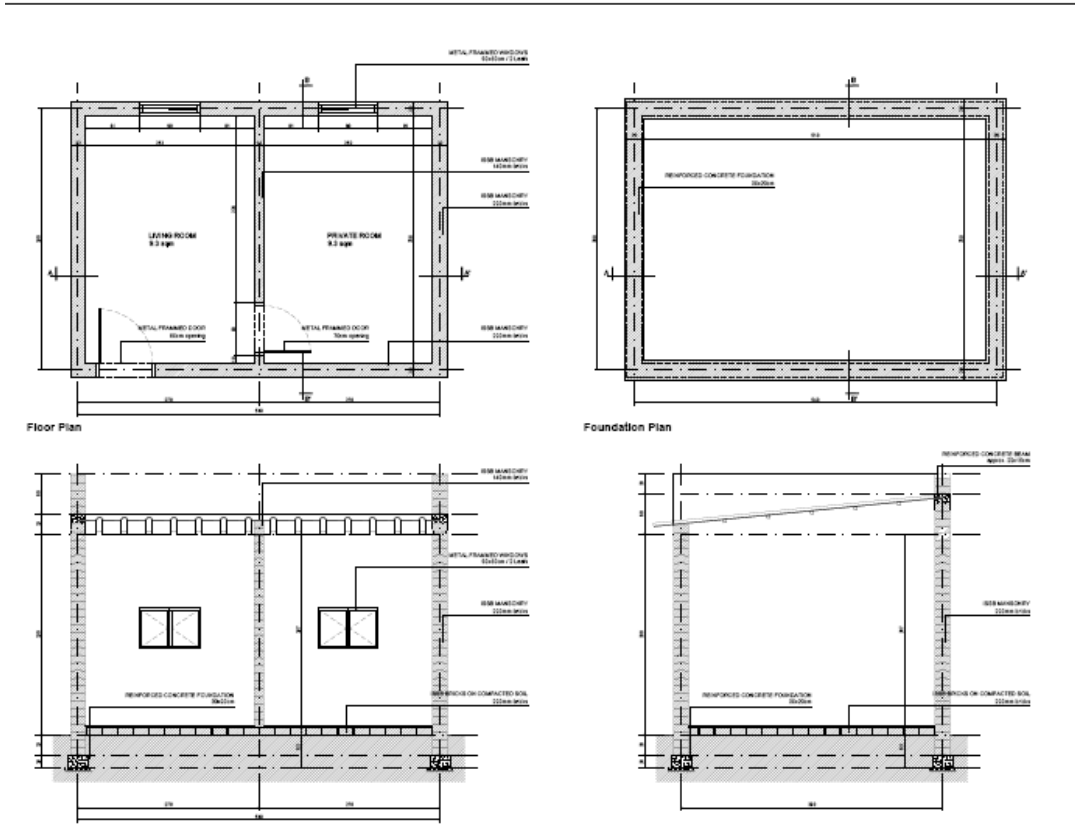
The following initial actions were carried out:

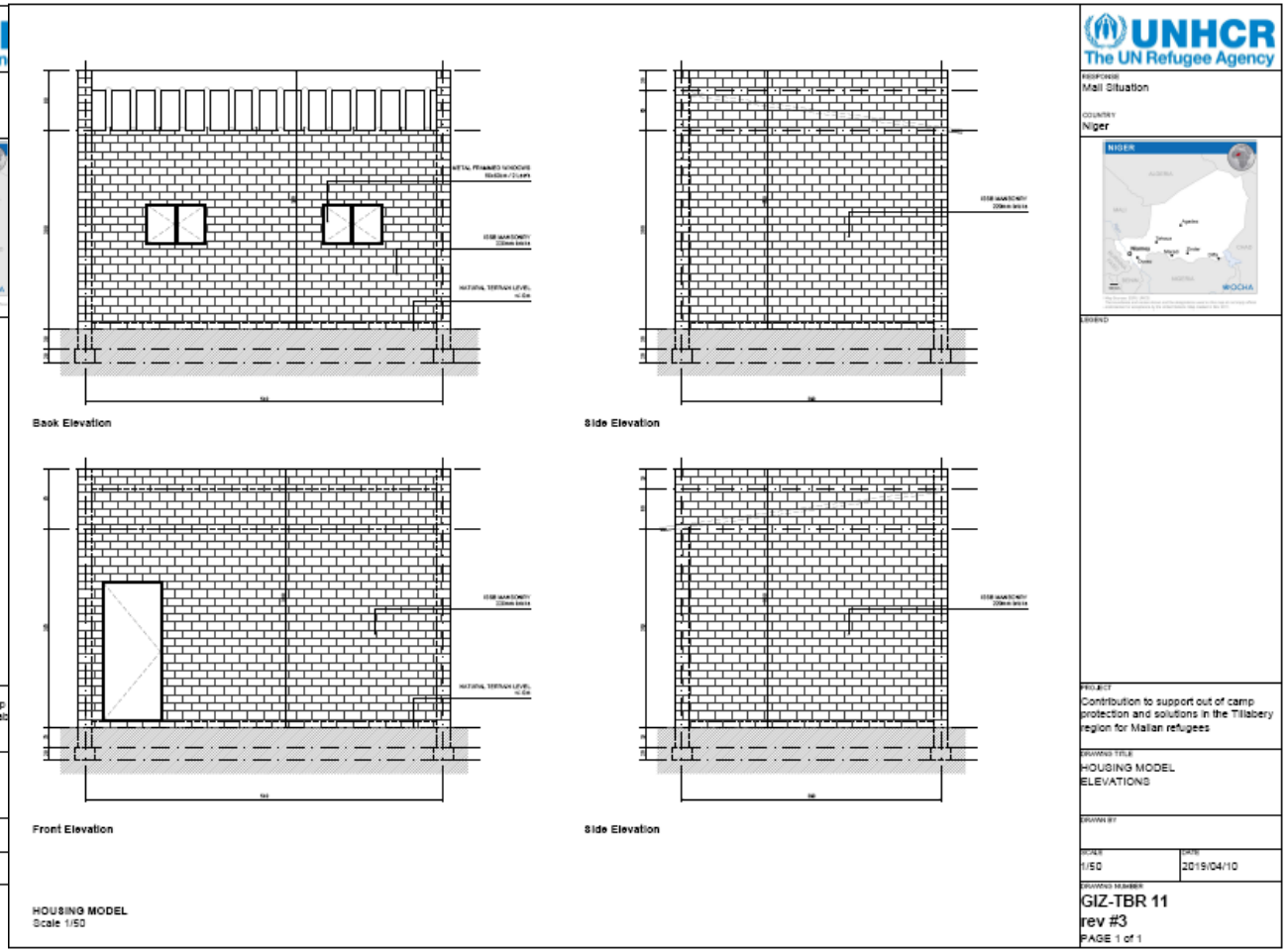
- Purchase of the four Hydraform machines
- Purchase of three trucks
- Design of the standard housing plan
- Geotechnical study of identified quarries from which the clays taken have been approved by the national public works laboratory of Niamey.
- Construction of a Hydraform brick production center in Diffa.
- Hydraform brick production training
- Contracting a team of technical supervisors and work supervisors - PPA
- Strengthening the collaboration of state technical services (DRUH, DRGR and DRM)
- Consolidation of building standards and standards
- Formalization of mining exploitation licenses
- Construction of demonstration dwellings
- Launch of tenders necessary to maintain the pace of construction (materials)
- Launch tender for the construction of the brick production center
- Identification of multi-sector partners / collaborators (WASH, Livelihoods, etc..)


www.hydraform.com


UNHCR
UNHCR

Designs


Floor Plan
Foundation Plan
Section AA'
Section BB'
HOUSING MODEL
Scale 1/50
UNHCR
The UN Refugee Agency
Mali Situation
Niger
Contribution to support out of camp protection and solutions in the Tillaberi region for Malian refugees
HOUSING MODEL
PLANS AND SECTIONS
1/50
2019/04/10
GIZ-TBR 10
rev #3
PAGE 1 of 1


Back Elevation
Side Elevation
Front Elevation
Side Elevation
HOUSING MODEL
Scale 1/50
UNHCR
The UN Refugee Agency
Mali Situation
Niger
Contribution to support out of camp protection and solutions in the Tillaberi region for Malian refugees
HOUSING MODEL
ELEVATIONS
1/50
2019/04/10
GIZ-TBR 11
rev #3
PAGE 1 of 1

Relevance:

- Technical capacity - Masterplan, enhance indigenous solutions
- Strategy – Sustainable & environmentally friendly, H-D Nexus, Inclusion / inter-sector
- Response
- Effectiveness
- Time to listen to our kids, no one is too small to make a difference.

Thank you