

Marrakech, 11 July 2025

Proposal for financing collective water infrastructure

Background

The earthquake that struck the High Atlas Mountains in September 2023 severely affected the province of Al Haouz, causing significant material damage and heavy loss of life. This disaster highlighted the fragility of local infrastructure and raised major concerns about disaster preparedness and emergency response capacity.

In this context, reconstruction efforts are essential to enable affected communities to recover and rebuild their daily lives. It is with this in mind that the AVERDHA project (Support for Economic Development and Sustainable Reconstruction of Disaster-Stricken Municipalities in the High Atlas) has been launched by VNG International, in partnership with the AMPCC (Moroccan Association of Municipal Council Presidents).

This project supports four particularly affected municipalities (Asni, Talat N'Yaacoub, Ighil and Aghbar) in rebuilding community facilities and revitalising the economy and society in their areas. Through technical and financial support, AVERDHA aims to meet the urgent needs identified by the municipalities, particularly in terms of access to drinking water.

The water infrastructure, which was severely damaged by the earthquake, requires rapid intervention. Among the issues identified are:

- Cracked or completely destroyed reservoirs;
- Relocation of villages to new, more stable sites, but lacking all basic public facilities, including water supply systems.

Faced with this situation, the AVERDHA project, in close coordination with local councils and government departments, has committed to financing the construction and/or reconstruction of certain water facilities. However, the needs expressed by the population far exceed the project's financial capacity.

Aware of this limitation, VNG International is currently seeking to mobilise additional funding. In order to better assess the investments required to carry out these works, a technical study has been commissioned to conduct:

- A detailed technical study for the construction of drinking water reservoirs and other community infrastructure in the affected villages.

Proposed equipment

Drinking water storage tanks play an essential role in the stability of communities and are a crucial link in the water supply system. Aware of their importance, the AVERDHA project proposes to finance the construction of five (5) drinking water reservoirs for the two partner municipalities most severely affected by the earthquake. These two municipalities alone comprise more than 40 villages (douars).

Municipality	Village	Community facilities
Ighil	Amskrajn	Construction of a 40 m3 semi-underground reservoir
	Lbour	Construction of a 40 m3 semi-underground reservoir
	Tazgzaout	Construction of a 40 m3 semi-buried reservoir
Aghbar	Lmkayate	Construction of a 50 m3 semi-underground tank
	Agadir ljanatne	Construction of a 40 m3 semi-buried tank

Results of the assessment of the proposed equipment

1. Amskrajn village

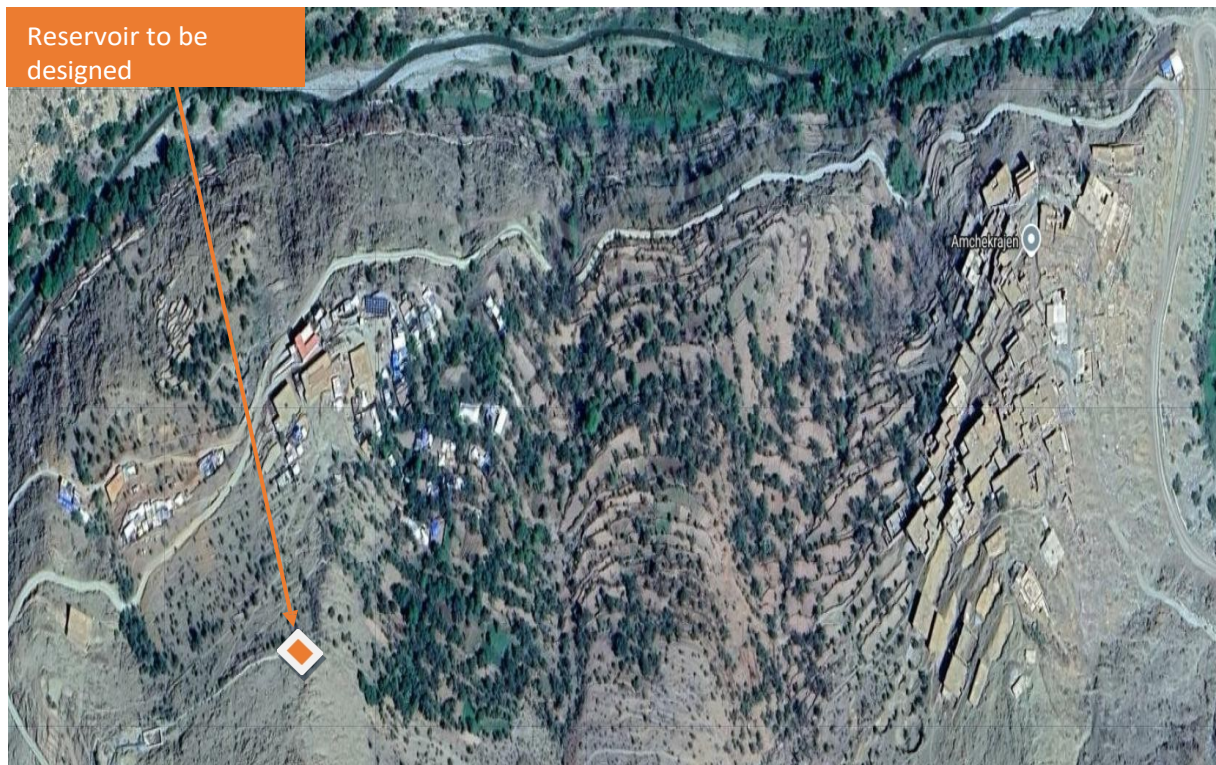
The douar of Amskrajn, which has 40 families, or about 160 inhabitants, is one of the localities that became uninhabitable following the 2023 earthquake. The population is gradually moving to a new site, where 16 houses are being rebuilt. The other households will join them , , fur , and , as appropriate. as needed.

This relocation has required the establishment of new basic social infrastructure, in particular access to drinking water. In this context, the local population has expressed the need to build a



drinking water storage tank on an elevated point on the new site to ensure efficient distribution.

The residents have committed to preparing the ground for the reservoir, demonstrating their active involvement in the success of this project.



■ **Estimated cost breakdown for the work**

No	Designation of works	Unit	Qty	Unit	Total price
I	<u>TANK</u>				
1	Excavation in trenches in solid ground or wells in any type of terrain, even in rock	M	77.7	8	6,220
2	Backfilling or disposal at public landfills	M3	37	5	1,860
3	Clean concrete	M3	2.70	90	2,430
4	Dry stone wall	M	27	4	1,
5	Water-repellent concrete	M3	20	2,300	46,000
6	Rubble masonry	M2	47	700.00	33,488.00
7	HA steel	kg	1973.00	16	31,568.00
8	Water-repellent coating	M2	76	2	15,200
9	Reinforced concrete parapet including smooth render	ML	21	3	6,30
10	Sloping shape for terraces.	M2	27	70	1,890
11	Tile covering	M	74	25	18,500
12	Vinyl paint on exterior walls	M	66.5	2	1,331
1	Manhole cover 0.80 x 0.80	U	1	80	800
14	Galvanised steel ventilation tube	U	1	30	30
15	Sheet metal hatch	U	2	50	1,00
1	Galvanised metal ladder	ML	3	20	60
17	Galvanised steel pipe Ø 63	M	12	20	2,400.00
18	2" gate valve	U	2	80	1,600
SUB-TOTAL RESERVOIR					172,568
TOTAL EXCLUDING TAX					172,568
TOTAL VAT (20%)					34,513.60
TOTAL INCLUDING TAX					207,081.60

2. Lbour Village

The village of Lbour is a new reception site for the disaster-stricken population of the douar of Oddift, classified as uninhabitable following the 2023 earthquake. This displacement led the inhabitants of Oddift to settle in Lbour, where there is a communal hostel and a secondary school.

Currently, displaced families are living in tents, supplied with drinking water via a communal reservoir originally intended for existing public buildings.

The site is designed to accommodate all 57 affected families, or approximately 288 inhabitants. Several houses are already under construction, making it essential to install a new drinking water storage tank to meet growing needs.

The residents have committed to preparing the land for the construction of the tank, demonstrating their commitment to improving their living conditions in the long term.



■ Estimated price list for the work

No	Designation of works	Unit	Qty	Unit	Total price
I	TANK				
1	Excavation in trenches in solid ground or wells in any type of terrain, even in rock	M	77.7	8	6,220
2	Backfilling or disposal at public landfills	M3	37	5	1,860
3	Clean concrete	M3	2.70	90	2,430
4	Dry stone wall	M	27	4	1,
5	Water-repellent concrete	M3	20	2,300	46,000
6	Rubble masonry	M2	47	70	33,488
7	HA steel	kg	1973	20	39,460.00
8	Water-repellent coating	M2	76	2	15,200
9	Reinforced concrete parapet including smooth render	ML	21.00	300.00	6,300.00
10	Sloping shape on terrace.	M2	27	70	1,890
11	Tile covering	M	74	25	18,500
12	Vinyl paint on exterior walls	M	66.5	2	1,331
1	Manhole cover 0.80 x 0.80	U	1	80	800
14	Galvanised steel ventilation tube	U	1	30	30
15	Sheet metal hatch	U	2	50	1,00
1	Galvanised metal ladder	MI	3	20	60
17	Galvanised steel pipe Ø 63	M	12	20	2,400
18	2" gate valve	U	2	80	1,600
SUB-TOTAL RESERVOIR					180,460
TOTAL EXCLUDING TAX					180,460
TOTAL VAT (20%)					36,092
TOTAL INCL. VAT					216,552.00

3. Tazgzaout village

The village of Tazgzaout has around sixty families, or nearly 240 inhabitants. Following the 2023 earthquake, the village is gradually being relocated to the other side of the wadi. Currently, 20 houses are under construction on the new site, while the other families follow.



The douar benefits from a water source located in the wadi, equipped with a pumping system powered by solar panels. The only thing missing to ensure the supply of drinking water is the construction of a reservoir on a raised point on the new site.

The local population has committed to uprooting the almond trees on the identified site and preparing the ground for the construction of the reservoir.



■ **Estimated price list for the work**

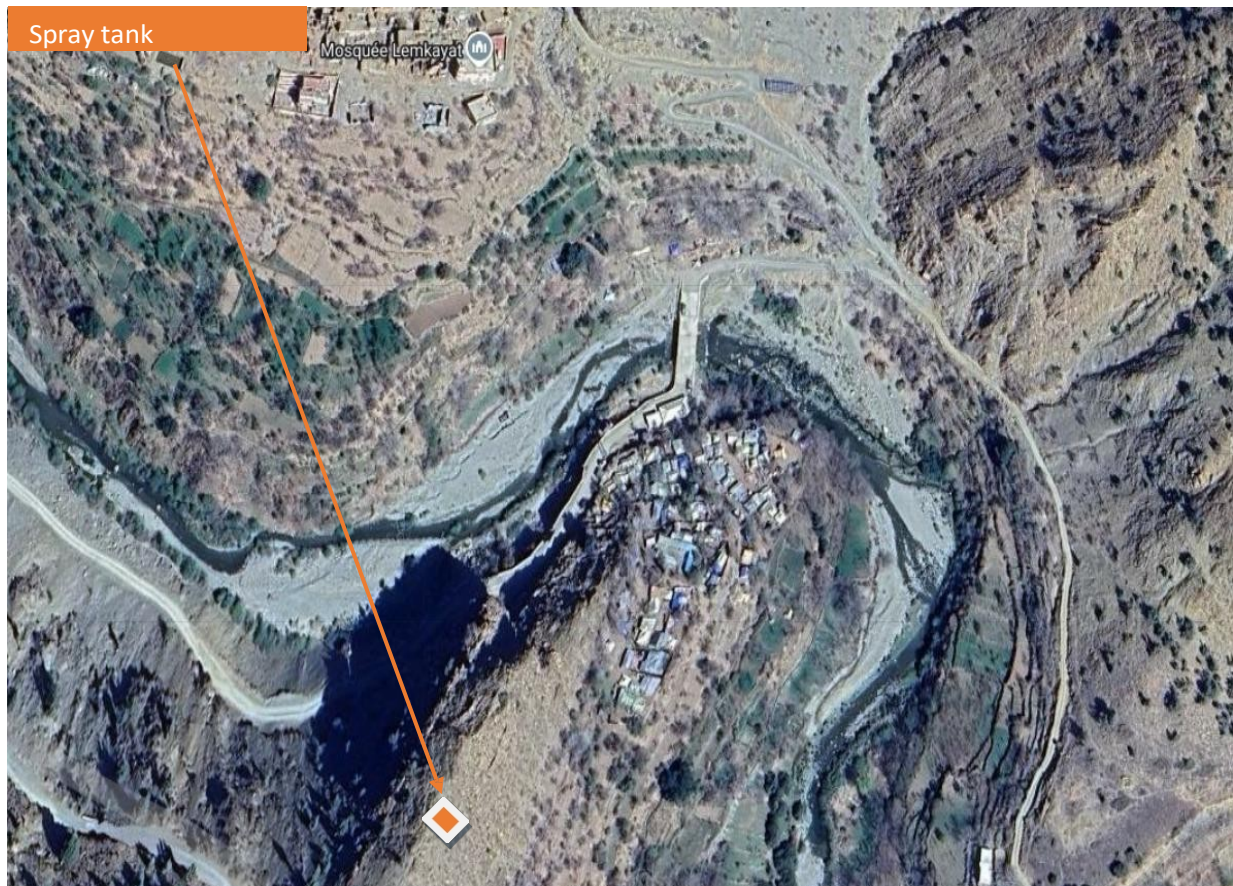
No	Designation of works	Unit	Qty	Unit	Total price
I	TANK				
1	Excavation in trenches in solid ground or wells in any type of terrain, even in rock	M	77.7	8	6,220
2	Backfilling or disposal at public landfills	M3	37	5	1,860
3	Clean concrete	M3	2.70	90	2,430
4	Dry stone wall	M	27	4	1,
5	Water-repellent concrete	M3	20	2,300	46,000
6	Rubble masonry	M2	47	70	33,488
7	HA steel	kg	1973.00	16	31,568.00
8	Water-repellent coating	M2	76	2	15,200
9	Reinforced concrete parapet including smooth render	ML	21	3	6,30
10	Sloping shape for terraces.	M2	27	70	1,890
11	Tile covering	M	74	25	18,500
12	Vinyl paint on exterior walls	M	66.5	2	1,331
1	Manhole cover 0.80 x 0.80	U	1	80	800
14	Galvanised steel ventilation tube	U	1	30	300.00
15	Sheet metal hatch	U	2	50	1,00
1	Galvanised metal ladder	MI	3	20	60
17	Galvanised steel pipe Ø 63	M	12	20	2,400
18	2" gate valve	U	2	80	1,600
SUB-TOTAL RESERVOIR					172,568
TOTAL EXCLUDING TAX					172,568
TOTAL VAT (20%)					34,513.60
TOTAL INCLUDING TAX					207,081.60

4. Lmkayate Village

The village of Lmkayate, severely affected by the earthquake, has about a hundred families, or nearly 400 inhabitants. Classified as a high-risk seismic zone and identified as an uninhabitable red zone, the village has been relocated to the other side of the wadi.



This relocation requires the construction of a new reservoir on high ground on the new site reserved for the reconstruction of dwellings. It also involves the installation of water supply pipes from the well located in the wadi, as well as the installation of a drain and a water return channel to the douar.



■ **Estimated price list for the work**

No	Designation of works	Unit	Qty	Unit	Total price
I	TANK				
1	Excavation in trenches in solid ground or wells in any type of terrain, even in rock	M3	84	8	6,720
2	Backfilling or disposal at public landfills	M3	39	5	1,950
3	Clean concrete	M3	3.2	90	2,880
4	Dry stone wall	M	3	4	1,210
5	Water-repellent concrete	M3	21.95	2,000	43,900
6	Rubble masonry	M2	57.12	70	39,984
7	HA steel	kg	2,199	16	35,184
8	Water-repellent coating	M2	85	2	17,000
9	Concrete acroterion including smooth render	ML	22	30	6,60
10	Sloping shape on terrace.	M2	27	70	1,890
11	Tile covering	M	85	25	21,250
12	Vinyl paint on exterior walls	M	70	20	1,400
1	0.80 x 0.80 manhole cover	U	1	80	800
14	Galvanised steel ventilation tube	U	1	30	30
15	Sheet metal hatch	U	2	50	1,00
1	Galvanised metal ladder	MI	3	200	60
17	Galvanised steel pipe Ø 63	M	12	20	2,400
18	2" gate valve	U	2	80	1,600
SUB-TOTAL TANK					186,668.00
II	PIPES				
1	Excavated material, rocky ground	M	4	1	5,760
2	Excavated fill	M3	4	8	3,200
3	Installation bed	M3	20	300	6,000
4	Pipe DN63 PN16	ML	200	50	10,000
7	Suction cup manhole cover	U	1	12,000.00	12,000
SUB-TOTAL PIPE					36,960
TOTAL EXCLUDING TAX					223,628
TOTAL VAT (20%)					44,725.60
TOTAL INCLUDING TAX					268,353.60

5. Agadir Village

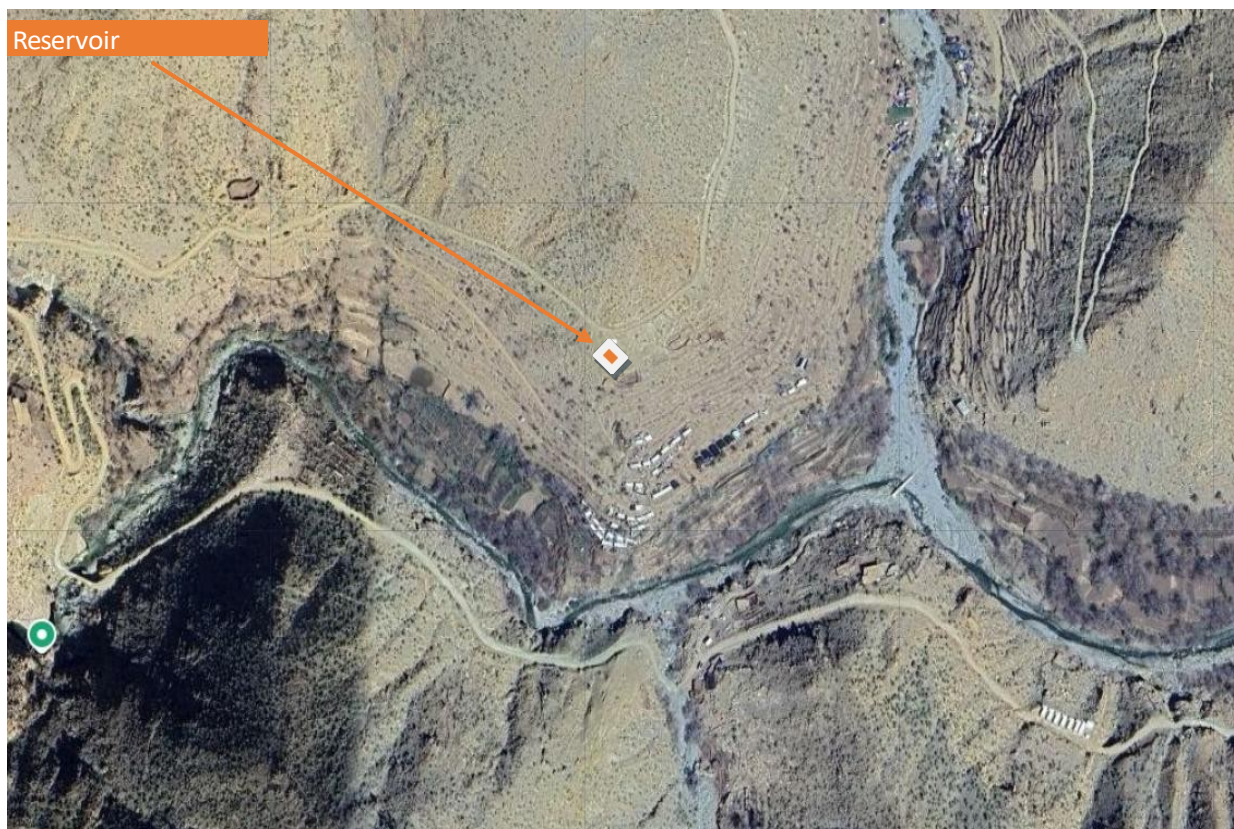
Located at the edge of the municipality of Aghbar, on the border with the province of Taroudant, the village of Agadir has 85 families, or approximately 340 inhabitants. The population lives mainly from subsistence farming and extensive sheep and goat farming.

Following the 2023 earthquake, the former site of the douar was classified as a seismic risk zone, forcing residents to rebuild their homes on a new, safer site.

This displacement involves the place of basic infrastructure, in particular access to drinking water.



A project to build a drinking water storage tank is planned on high ground at the new site to ensure efficient distribution. The local population has committed to cleaning and preparing the site for the tank.



■ Estimated price list for the work

No	Designation of works	Unit	Qty	Unit	Total price
I	<u>TANK</u>				
1	Excavation in trenches in solid ground or wells in any type of terrain, even in rock	M	77	1	9,331
2	Backfilling or disposal at public landfills	M3	37	50	1,860
3	Clean concrete	M3	2.70	90	2,430
4	Dry stone wall	M	27	4	1,
5	Water-repellent concrete	M3	20	2,000	40,000
6	Rubble masonry	M2	47.84	70	33,488
7	HA steel	kg	1973.00	16	31,568
8	Water-repellent coating	M2	76	2	15,200
9	Reinforced concrete parapet including smooth render	ML	21	3	6,30
10	Sloping shape for terraces.	M2	27	70	1,890
11	Tile covering	M	74	25	18,500
12	Vinyl paint on exterior walls	M	66.5	2	1,331
1	Manhole cover 0.80 x 0.80	U	1	80	800
14	Galvanised steel ventilation tube	U	1	30	30
15	Sheet metal hatch	U	2	50	1,00
1	Galvanised metal ladder	MI	3	20	60
17	Galvanised steel pipe Ø 63	M	12	20	2,400
18	2" gate valve	U	2	80	1,600
SUB-TOTAL RESERVOIR					169,678.40
II	<u>PIPES</u>				
1	Excavated material	M3	4	8	3,840
2	Excavation fill	M3	4	50	2,00
3	Installation bed	M3	20	30	6,000
5	Pipe DN63 PN16	ML	20	5	10,00
SUB-TOTAL PIPE					21,840
TOTAL EXCLUDING TAX					191,518.40
TOTAL VAT (20%)					38,303.68
TOTAL INCLUDING TAX					229,822.08

Summary table of the budget required for the municipalities of Aghbar and Ighil

Municipality	Village	Community facilities	Cost in MAD Including
Ighil	Amskrajén	Construction of a 40 m3 semi-underground reservoir	207,081.60
	Lbour	Construction of a 40 m3 semi-underground reservoir	216,552
	Tazgzaout	Construction of a 40 m3 semi-underground tank	£207,081
Aghbar	Lmkayate	Construction of a 50 m3 semi-underground reservoir	268,353.60
	Agadir Ijanatne	Construction of a 40 m3 semi-underground reservoir	229,822.08
Total in MAD including VAT			1,128,890

The budget required for the construction of these community facilities is approximately **1,128,890.00 Moroccan dirhams including VAT**. This is equivalent to approximately **107,514.00 euros including VAT**.