West Africa



Organization: Association La Voûte Nubienne (AVN)
Location: Burkina Faso, Mali, Ghana, Benin
Solution: Reintroducing Nubian Vaults in the Sahel for affordable, climate-resilient housing
Factsheet Period: First round of UNDP AFCIA funding (18 months); Second round of UNDP AFCIA funding (14 months)



The Nubian vaults technique is highly climate adaptative and does not require any wood or timber - @AVN

Over 60% of sub-Saharan Africa's population live in informal housing, leaving them highly vulnerable to extreme weather events (UNICEF, 2020). AVN addresses this challenge by promoting the ancient Nubian Vault (NV) construction technique, which provides affordable, climate-resilient housing in the Sahel using only natural, locally sourced materials like earth and water. To support communities, the programme covers 15-20% of construction costs, with homeowners contributing the rest. The initiative seeks to scale through partnerships with community-based organizations and aims to leverage carbon credits to finance future initiatives, reducing pressure on local wood resources and advancing locally led adaptation efforts. AVN is actively working toward carbon credit certification to enhance the sustainability and impact of these eco-friendly housing solutions.

Key achievements

- 2,616 Nubian Vaults built, combining ancient techniques with local materials
- Provided housing to 29,247 people, with 50% being women and girls
- Completed feasibility study for carbon credits, business plan and certification roadmap for the next five years
- Successfully avoided 52,243 tonnes of carbon emissions
- Funded 48.5 construction incentive coupons through carbon credit sales, valued at US$490 each
- Job creation and upskilling of 1,051 local masons, injecting $6.3M into local economy
- Submitted a Methodology Concept Note to Gold Standard, GCC and BioCarbon
- Renewal of purchase of Nubian Vault carbon credits for the next 3 years with Meridiam

Replication potential

- Market-based approach can support large-scale dissemination of the technique with sustainable funding within and beyond West Africa
- Built a demo pilot Nubian Vault building in North Côte d'Ivoire which is included in the Climate Change Programme portfolio presented by the Ivory Coast government
- Growth of Nubian Vault market incentivized by carbon credit mechanism



Adaptation benefits

- Nubian Vaults improve thermal comfort, reducing indoor temperatures by 7 degrees Celsius during the daytime
- Strong weather resistance of structures
- Built entirely with locally sourced mud bricks, resulting in a zero-carbon footprint and reducing energy needs by 5,677 megawatts per hour
- Utilizes local materials (stones, earth, and water) to eliminate reliance on unsustainable resources like timber, sheet metal and cement

Innovation

- Revival of ancient techniques: Utilizes an ancient construction method to create affordable, climate-resilient housing solutions
- Cost efficiency: Increases affordability by using locally sourced materials instead of expensive imports
- Sustainable funding: Implements a funding mechanism that generates and sells carbon credits to self-finance financial incentives for construction of Nubian Vaults

Social impact

- Created access to affordable, climate resilient housing
- Job creation and upskilling of local masons





Funding snapshot

- UNDP-AFCIA grant: US$265,000 (initial grant: $125,000; scaling grant: $140,000)
- French Facility for the Global Environment (FFEM): $820,000
- AlWaleed Philanthropies: $250,000
- Merdiam: $65,000 and Common Ground: $7,000
- Miscellaneous donors: $377,000
- Crowdfunding campaign: $8,411
- Fondation SIG: $14,988
- JEF Solidarity Fund: $7,068
- CITI Foundation: Funding support for the Nubian Vault programme in Côte d'Ivoire, including training local masons in Nubian Vault construction techniques and piloting a women-led tontine scheme designed to facilitate access to Nubian Vault housing

Investability	
Revenue per year	USD 65,000 local revenue generated by Nubian construction.
Sustaining criteria	The initiative is projected to achieve financial sustainability by 2028, enabling the self-financing of incentives to support the construction of 2,600 Nubian Vaults each year.
Financial innovation	The initiative employs a novel financing model for eco-construction through carbon credits in the voluntary carbon market and has developed crowdfunding strategies to support funding efforts.
Expected return	$1.64M annually from 2027 onwards.





ADAPTATION FUND Climate Innovation Accelerator

ADAPTATION FUND

To read their story, visit UNDP-AFCIA

To watch their video, click here

To contact the organization, visit the AVN website