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)

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

- 2,391 Nubian Vaults built, combining ancient techniques with local materials
- Provided housing to 11,955 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 47,820 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

Replication potential

- Market-based approach can support large-scale dissemination of the technique with sustainable funding within and beyond West Africa
- Currently expanding operations in Côte d'Ivoire with support from UNDP
- 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 grants: US$250,000 (first grant: $125,000; scaling grant: $125,000- under implementation- data still unavailable)
- French Facility for the Global Environment (FFEM): $820,000
- AlWaleed Philanthropies: $250,000
- Merdiam: $65,000
- Miscellaneous donors: $377,000

Investability	
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 learn more, visit UNDP-AFCIA

To contact the organization, visit the AVN website