

Rebuilding Traditional Houses After Disasters

By Florian Steinberg

- **On Nias Island, ADB's Earthquake and Tsunami Emergency Project reconstructed and rehabilitated seven villages damaged by the 2004 and 2005 earthquakes.**
- **The houses that were rebuilt preserve architectural traditions and ensure principles of earthquake resistant construction.**
- **Residents worked within a limited budget, personally managed the reconstruction, and benefited from an innovative, cost-efficient, and direct community contracting method.**

Background

The earthquakes of 26 December 2004 and 28 March 2005 demolished entire villages in Nias Island, Indonesia. Through the ADB-assisted Earthquake and Tsunami Emergency Project, houses were rebuilt using traditional designs while incorporating earthquake-resistant construction principles of interlocking pillars and beams that had been essential to Nias' traditional architecture. The project struck a balance between budget constraints (utilizing cost-efficient construction methods) and the island's rich culture and heritage. The reconstruction experience showcased the benefits of direct community contracting and direct participation of residents in the post-earthquake rehabilitation of the island.

Preserving Architectural Traditions

The project covered seven traditional and remote villages. A total of 196 traditional houses were repaired or rebuilt in Hilisimaetano, Botohilitano, Hilinamozaua, Lahusa Fao, Hilizoroilawa and Onohondro. The distant locations of these traditional villages became one of the Project's most significant challenges. A key design element was the preservation of essential architectural features while allowing some degree of modernization, such as improved in-house sanitation and use of the ground floor for additional living space.

Speedy Implementation Through Community Contracting

The reconstruction effort benefited from direct participation of the residents. The community-contracting approach

- provided much-desired employment opportunities within the villages,
- facilitated the procurement of materials, and



Ceremony of appreciation for the project team in Bawogosal, South Nias.

- overcame the issue of fluctuating material costs and allowed the project to stay within the limited budget available.

By giving residents ownership and control of the reconstruction process, community contracting avoided the typical problems associated with conventional contractor-built projects. The outcome was "housing built by the people."

Constraints

The typical challenges associated with infrastructure work of any scale that were overcome through community contracting relate to:

- **Quality control** — Residents do not have sufficient technical knowledge, and supervision by the project implementation consultants are at times difficult due to the distance of locations.
- **Remote locations** — Difficulties in transporting materials and late disbursement of funds are caused by communication problems, resulting in delays and higher costs.

Conclusion

The rehabilitation work on Nias contributed to substantial improvement in the level of earthquake resistance in traditional houses. More importantly, the beneficiaries appreciated the effort that went into preserving their architectural traditions, evidenced by the rows of rebuilt or repaired buildings and structures. Ownership, the procurement method selected, and reliance on traditional construction skills contributed to success.

For further information

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Photographs by Esa Paaso and Johan Silas, and Ariel Javellana.



Samples of traditional housing — Lahusa Fao (top), Hilinawalo Mazino (middle) and Bawogosali (bottom) in South Nias