Kellogg-Morgan Stanley Sustainable Investing Challenge

ASEAN STORM RESILIENCE FUND

The Association of Southeast Asian Nations (ASEAN) is an established inter-governmental organization that has spearheaded cooperation in the region since 1967. Member states are Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand & Viet Nam.

CHALLENGES

Some of the world's most climate-vulnerable countries are in the ASEAN region. Here, 300 million people live in rural communities where frequent storm damage deepens poverty. Typhoons, already a seasonal threat, are projected to intensify by up to 14% in magnitude and 22% in frequency in the next 80 years. Cyclone Nargis, which killed over 138,000 people in Myanmar in 2008, and Typhoon Haiyan, which struck the central Philippines in 2013 resulting in a death toll of over 10,000, are poignant examples of the gap between needs and action.

SOLUTION & IMPACT

With 80% of ASEAN's population still living in potentially vulnerable rural areas, climate disasters cannot be solved through emergency relief alone. Notably after Cyclone Nargis, the US $95 million pledged in foreign aid fell $25 million short of Myanmar's requirements for shelter, and could not prevent mass migration of displaced populations. Experience shows that resources can be more efficiently allocated to "shrinking the needs", i.e. strengthening communities to withstand multiple bouts of extreme weather. In doing so, countries avoid the socio-economic costs of homelessness and unemployment, and the region avoids downstream humanitarian and security issues posed by food insecurity and climate refugees.

With a fund size of US$11.8 million, the ASEAN Storm Resilience Fund is a financing vehicle that aims to enable the reinforcement of 48,000 homes in starter projects in the most vulnerable areas of the Philippines, via microfinancing (MFI) loans at below market interest rates facilitated by local co-ops.

The approach is made more robust by combining:

- Regional cooperation, oversight, and scalability through the Association of Southeast Asian Nations (ASEAN)
- Local knowledge of farming co-operatives
- Technical expertise of IGOs/NGOs: Engineers Without Borders (EWB), the World Meteorological Organization (WMO) and the Global Environment Facility (GEF)
- Capital and agility of the private sector

HIGH POTENTIAL FOR SCALING

48,000 homes are only the beginning. Similarities in the type of weather extremes experienced, and the prevalence of farming cooperatives throughout the ten ASEAN member states make this initiative highly scalable. Using an iterate-and-proliferate approach, we estimate that subsequent phases of the ASEAN Storm Resilience Fund can service 1 million homes across Lao PDR, Thailand, Viet Nam and Cambodia with a fund size of US$250m. This approach may also prove effective in surrounding regions, particularly Myanmar, Bangladesh, China and the Southwest Pacific islands where a further 200 million people are at high risk from extreme weather. This funding mechanism has further potential to enhance returns and geographical coverage if windbreaks and other forms of physical resilience measures are funded in future phases.

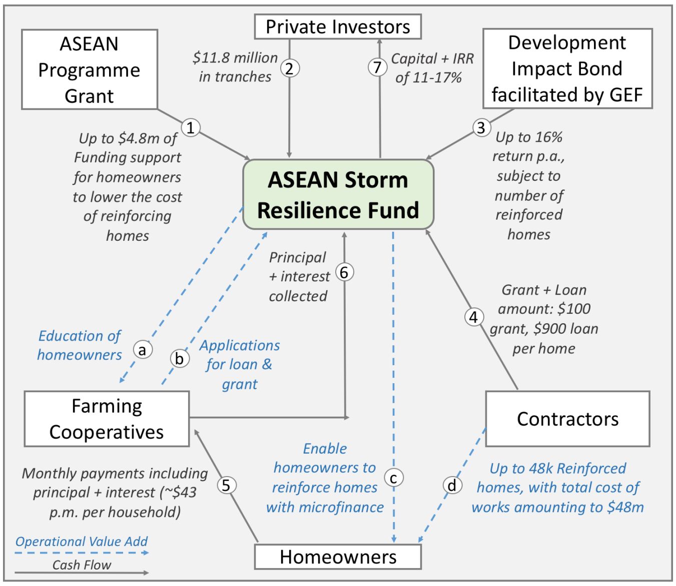
KEY DETAILS

Fund Size	US$11.8 million
Investment Criteria	• Reinforcement projects must focus on homes and farmsteads for weather resilience • Loans and grants will be given to applicants only in groups through a farming co-operative • Co-operatives must engage an accredited contractor
Target Returns	11-17% (gross of fees)
Fees	2% management fee on committed capital, 20% performance fee on returns > 15%
Partners	Association of SE Asian Nations (ASEAN), Engineers Without Borders, World Meteorological Organization, UN Global Environment Facility
Geography	Southeast Asia, focus on the Philippines in early phases
Target Investors	Family Offices, Private Banks, Impact-Oriented Investors
Asset class	Private Equity + Development Impact Bond (DIB) serving as return enhancer
DIB Details	• Size and Tenor: US$11.8 million, 4 year • Estimated Return: Up to US$160 per home reinforced, scaled by % of social impact target achieved
Tenor	6 years (callable commitments to year 4)
Metrics for impact	Number of reinforced homes - target of 48,000
Risk Factors	*See Due Diligence section*

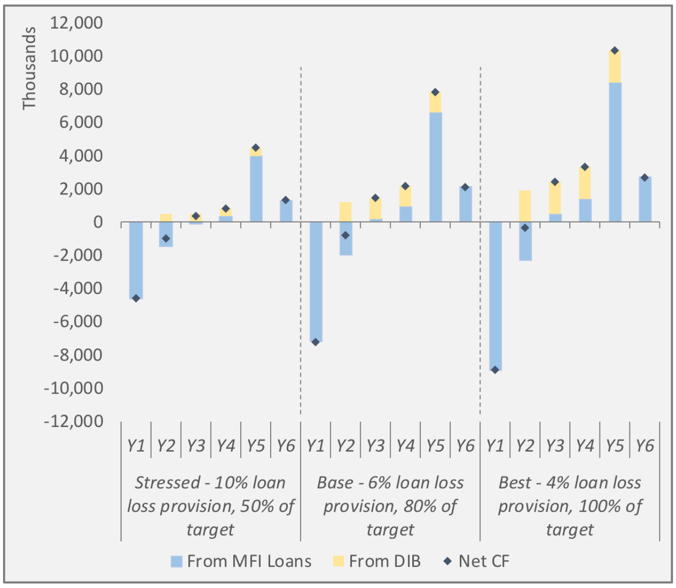
KEY ASSUMPTIONS

- Reinforcement cost per home: US$1,000
- Average number of homes reinforced per month: 800-1000
- Financing of reinforcement: 10% grant, 90% MFI loan
- Interest rate on MFI loan: 15%
- Repayment period for MFI loan: 24 months
- Loan loss rate: 4-10%
- DIB return methodology: DIB payment per home is determined by the difference in interest income that will be earned by the fund from charging market rate for MFI loans versus charging a subsidised rate, scaled by % of social impact target achieved. Annual DIB return = DIB payment per home x number of homes reinforced per annum. *See detailed presentation for more details.*

FUND DIAGRAM



CASHFLOW PROJECTIONS[1] (US $)



INNOVATIVE ELEMENTS

Efficient use of capital to enhance IRR	Investor capital is called only when required (instead of upfront), and is disbursed in monthly tranches to fund MFI loans which are structured as amortising loans - reducing capital at risk and allowing capital to be recycled (i.e. repayments from earlier tranche can be used to finance subsequent tranches, reducing future capital calls).
Development Impact Bond serves as a return enhancer	Returns from the DIB will be earned from meeting social impact metrics, and this return is used to enable cheaper microfinancing loans. This will also serve to align return to investors with the social impact metric of reinforcing more homes. Additionally, DIB payments are based on the difference in interest income earned by charging market interest rates versus charging subsidised rates, and will be paid out in lump sums on an annual basis. As interest income from loans are typically earned over the repayment period, this lump sum payment brings forward some of the returns and further enhances IRR.

DUE DILIGENCE

An infrastructural project of this scale is prone to risk. The table below summarises how key risks will be addressed.

Category	Mitigation
Governance • Corruption, diversion of funds	• High-level oversight and audit will be provided through the ASEAN Secretariat, ensuring that key performance metrics are met. • A lean Programme Office will be created to disburse funds, track project metrics and track that co-operatives are not mismanaging repayments. Funds will be directly disbursed to contractors, to avoid the money being diverted for other use. • Farming co-operatives will be given mechanisms to report errant contractors to the Programme Office. Site visits by ASEAN officials and Programme Office will be scheduled.
Environmental • Possibility that houses undergoing reinforcement are destroyed by sudden and unpredicted storms	• Projects will be undertaken sequentially, such that only a controlled percentage of homes being reinforced are at-risk at any given time. • Payments made up of repayment and interest reduces the outstanding balance over time. • Factored in off-the-scale events to improve robustness of model. • Capital is expected to be preserved due to the above-mentioned mitigation efforts.
Operational / Technological • Lack of on-the-ground know-how • Variability in local conditions, delaying implementation	• Engineering advisories will be sourced through Engineers Without Borders. • To ensure good local integration and ease adaptation to local conditions, contractors will leverage on-the-ground knowledge of the co-operatives.
Market • Foreign exchange rate risk • Commercial risk - lack of demand for reinforced homes, resulting in lower than expected DIB returns and early return of capital	• Relatively predicable cashflow allows for FX hedges to be made effectively. • Feedback sourced from co-ops, as well as the fact that many communities in Southeast Asia are familiar with the aftereffects of weather-induced catastrophes suggest that there will likely be a strong take-up rate. • The ASEAN structure can be used to engage / select reliable farming co-operatives. In turn, the use of co-ops – trusted local institutions familiar to farmsteads – allows benefits to be conveyed and increases take-up rate.
Credit • Homeowners are unable or unwilling to pay	• Loans will be made on a group/community basis, whereby the lack of repayment would potentially cause increase in interest rates or loss of availability of financing for other parties in the community going forward (use of social pressure). • Amortising loan structure to reduce capital outstanding with each payment, with monthly payment to be capped at 15% of household income.

[1] Cashflow profile varies depending on various factors and is for illustrative purposes. For more information, please contact KOPONAN HAIYAN.