SEADRIF
SOUTHEAST ASIA
DISASTER RISK INSURANCE FACILITY

Food and Agriculture
Organization of the
United Nations

Southeast Asia Disaster Risk Insurance Facility – Regional Agricultural Insurance and Sustainable Economies Facility (SEADRIF-RAISE)

Investment Case

November 2026

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Program Summary

Basic Information

Program Name	Southeast Asia Disaster Risk Insurance Facility–Regional Agricultural Insurance and Sustainable Economies Facility (SEADRIF-RAISE)
Program Beneficiaries	Communities in Southeast Asian countries
Countries of Operation*	Brunei, Cambodia, Lao PDR, Indonesia, Malaysia, Myanmar, the Philippines, Thailand, Timor-Leste, Viet Nam
Funding Requirement	US$235 million (US$155 million in Year 1, US$80 million phased in over the next four years)

*Financial modeling and consultations are based on the initial six countries that were part of the Green Climate Fund readiness project (Cambodia, Lao People's Democratic Republic, Malaysia, the Philippines, Thailand, and Viet Nam).

Entity Information

Program Owner	SEADRIF Insurance Company
License	General Insurance Company
Date of Incorporation	April 22, 2019
Country of Incorporation	Singapore
Regulator	Monetary Authority of Singapore

Proposed Program Development Objective(s)

The **SEADRIF-RAISE** program aims to increase farmers' climate resilience, strengthen agriculture value chains, and improve food security in Southeast Asia by scaling up sustainable access to insurance and promoting climate-resilient agriculture. SEADRIF-RAISE combines technical assistance, access to sustainable reinsurance capacity, and investments in climate-resilient agriculture to build market infrastructure for more resilient, sustained, risk informed agri-food systems, thereby securing the livelihoods of millions of farmers.

Executive Summary

In the Association of Southeast Asian Nations (ASEAN) region, agricultural insurance reaches less than 8% of farmers, a fraction of the share in other economies. This situation leaves farmers, rural value chains, food security, and ultimately government finances highly exposed to growing climate and market shocks. Premiums as a share of agricultural production value are only 0.06%—far lower, for example, than shares in Japan (2.8%) and the US (3.94%).

Agricultural insurance is a public good, and globally it has scaled only with sustained public support. No commercial actor can or will build this market alone. In ASEAN member states, where coverage has reached national scale, significant government subsidies (30% to 100%) have been required. The same is true in well-established markets: Japan subsidizes approximately 50% of premiums, the Republic of Korea up to 88% through national and local governments, and China approximately 80% across central, provincial, prefectural, and county levels of government.

The Southeast Asia Disaster Risk Insurance Facility–Regional Agricultural Insurance and Sustainable Economies (SEADRIF-RAISE) is a regional facility that has been designed to strengthen climate resilience of smallholder farmers, agriculture value chains, and food security in ASEAN. To build up ASEAN's agriculture insurance market infrastructure, RAISE will provide three things national markets cannot provide by themselves: (i) technical assistance to design and price sound products and build institutional capacity; (ii) concessional reinsurance capacity to make coverage affordable; and (iii) incentives that reward resilience.

RAISE is intended to build the market infrastructure that moves the region from fragmented, donor-funded pilots toward large-scale, sustainable regional agricultural insurance. RAISE is developed jointly by SEADRIF and the UN Food and Agriculture Organization (FAO). It will be hosted by the SEADRIF Insurance Company, a general insurer licensed and regulated by the Monetary Authority of Singapore and owned by ASEAN+3 (ASEAN plus China, Japan, and Republic of Korea) governments through a trust.

RAISE will scale up sustainable access to insurance and promote climate-resilient agriculture through three interlinked windows. A *Technical Assistance Window* helps governments translate insurance market expertise, data, and analytics into decisions about how to invest in and grow national insurance schemes. A *Reinsurance Window* pools agricultural risk across the region to provide more affordable risk capacity to local insurers and a more attractive portfolio to global reinsurance markets, thus mobilizing private risk capital. A *Resilience Window*, co-managed with FAO, directly links climate-smart agriculture investments to insurance cover incentives to build long-term resilience and reduce underlying risk.

Six features distinguish RAISE from any prior intervention promoting financial resilience for agriculture in the region:

1) **For the first time, the full insurance value chain is included in one facility.** The three windows work together to improve protection for vulnerable farmers and agriculture value chains: stronger technical foundations improve products, pooling risks makes cover affordable, and investment in resilience lowers underlying risk over time.

2) **RAISE turns modest capital into eightfold coverage by reducing premium costs and leveraging private risk capital.** Regional diversification within a single aggregated program is projected to cut premiums by over 20% and to expand coverage capacity around eightfold. A first-loss retention of approximately US$100 million can support over US$800 million in coverage every year.

3) **Because RAISE operates as a regional government mutual entity, all savings flow back to countries.** RAISE is member-owned and operates without a profit motive, so the savings from pooling pass through to member countries as lower premiums or other incentives.

4) **RAISE provides a trusted regional operating entity on day one.** Rather than acting as a stand-alone institution, RAISE will be part of SEADRIF, an insurance institution owned and regulated by ASEAN+3 that is already operational. This arrangement enables countries to work through a trusted development partner and provides a bridge to global reinsurance markets on terms governments and insurers could not secure alone.

5) **RAISE gives ASEAN the public reinsurance backstop every mature market has and that is missing in the region.** Markets in Asia that scaled agricultural insurance did so through sustained public investments in premium subsidies and reinsurance backstops to keep cover affordable and stable. Most ASEAN markets have no equivalent and rely fully on commercial reinsurance. RAISE is designed to provide concessional first-loss capital to make reinsurance affordable while making it more sustainable for global reinsurance markets. It also keeps more premiums in the region, reducing hard currency outflows.

6) **RAISE responds to a direct request from the region and was co-designed with its member states.** Its development started with a request from six ASEAN member states that built on the 2022 ASEAN Guideline on Agricultural Insurance Implementation, which had already identified SEADRIF as a regional vehicle. The design was developed and validated in direct consultation with public and private stakeholders, and the development of RAISE was welcomed by the ASEAN+3 finance ministers and central bank governors in May 2026 at their 29th meeting.

The market opportunity for agriculture insurance in ASEAN is vast, with developing market projections reaching up to US$1.8 billion in annual premiums. ASEAN's agricultural insurance premium pool stands at roughly US$220 million today. If it grows to just one-fifth of Japan's insurance penetration levels, which is a conservative estimate for a market with active government subsidy programs, this market could reach around US$1.8 billion. RAISE's Year 5 premium target of US$50 million is grounded in today's observable market and sized to reach operational sustainability, with the achievable medium-term opportunity at least 10 times larger.

With the goal of increasing the financial resilience of ASEAN's farmers and strengthening the food security of its population, this proposal seeks initial concessional funding of US$155 million to establish RAISE. This sum comprises US$70 million in initial concessional equity, guarantee tranches to keep commercial retrocession affordable, US$35 million in grants across operations and the Technical Assistance and Resilience Windows and a US$50 million guarantee . An additional US$80 million of capital is requested over the next four years as the facility scales. Concessional capital will enable RAISE to retain the first-loss layer that lowers country premiums while building the capital base needed to pay claims in adverse years.

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1. Background: The Road to SEADRIF-RAISE

1. **Agriculture in the Association of Southeast Asian Nations (ASEAN) is highly exposed to growing climate and disaster risks, but the region's financial protection and risk management mechanisms are insufficient and fragmented.** Frequent droughts, floods, and typhoons threaten food security, rural livelihoods, and fiscal stability. Insurance coverage remains low, existing programs are limited in scale and sustainability, and governments face rising fiscal burdens from disaster response.

2. **Strengthening agricultural insurance programs and markets is a regional priority.** The ASEAN 2045 Community Vision commits members to "increase the resilience of foods, agriculture, and forestry" against climate change, natural disasters, and other shocks.[1] In October 2022, the 44th ASEAN Ministers on Agriculture and Forestry (AMAF) Meeting formally adopted the ASEAN Guideline on Agricultural Insurance Implementation as the regional framework for delivering on this commitment.[2] The result was a body of practical implementation guidance developed under the ASEAN Secretariat, including a 2024 stocktaking survey and a 2025 Practical Guide for member states.[3]

3. **The 2022 ASEAN Guideline on Agricultural Insurance Implementation identified the Southeast Asia Disaster Risk Insurance Facility (SEADRIF)—established and owned by ASEAN+3 (ASEAN plus China, Japan, and Republic of Korea) countries—as the regional platform for agricultural risk pooling and protection.** The Guideline recommends leveraging SEADRIF to develop insurance solutions that aggregate risks, improve financial sustainability, and scale protection across the region. SEADRIF Insurance Company, a Singapore-licensed and regulated general insurer, co-designs fit-for-purpose insurance solutions with its member governments, enabling affordable and sustainable access to domestic and global private risk capital.

4. **The SEADRIF–Regional Agricultural Insurance and Sustainable Economies Facility (RAISE) is the proposed operational response to these policy decisions.** RAISE aims to strengthen the climate resilience of farmers, agriculture value chains, and food security in Southeast Asia by scaling up sustainable access to agricultural insurance and promoting climate-resilient agriculture. This note sets out the design and investment case for the facility, and it explains why RAISE represents a long-term, sustainable solution to persistent challenges in agricultural insurance across ASEAN.

5. **ASEAN+3 finance ministers and central bank governors formally welcomed SEADRIF-RAISE at their 29th meeting in May 2026, reflecting strong regional support for the initiative.**[4] Developed at the request of six ASEAN countries (Cambodia, Lao People's Democratic Republic, Malaysia, the Philippines, Thailand, and Viet Nam) and the UN Food and Agriculture Organization (FAO) under a Green Climate Fund (GCF) readiness project,[5] the facility was co-designed through consultations with more than 140 public and private sector stakeholders across the participating countries. It was subsequently endorsed as a priority initiative by SEADRIF members in October 2025, recognized by the ASEAN+3 finance deputies in November 2025 as a timely response to rising fiscal exposure, and validated through a regional consultation in February 2026. (See Annex 1. Country Engagement and Support for SEADRIF-RAISE.)

2. Strategic Context: Why and Why Now?

2.1. Agricultural Sector Context in ASEAN Countries

6. **Agriculture plays a critical role in the economy, rural employment, and food security of ASEAN countries.** In 2023, the ASEAN agriculture, forestry, and fishing sector contributed US$364.8 billion to ASEAN's GDP, equal to 9.8%[6] and more than double the 4.1% contributed by the sector to global GDP.[7] This share is significantly higher in most ASEAN countries, such as Myanmar (20.8%), Lao PDR (16.8%), Cambodia (16.6%), Indonesia (12.6%), and Viet Nam (11.9%). In the region, the sector employs over 91 million people. In Cambodia, Lao PDR, Myanmar, and Thailand, over 30% of the labor force still works in agriculture.[8]

7. **The agriculture sector across ASEAN is dominated by smallholder farmers, whose limited scale and reliance on seasonal production make them particularly vulnerable to climate and economic shocks.** Across Southeast Asia, most farmers cultivate less than two hectares and depend on seasonal harvests for their livelihoods: in Viet Nam the share is 94% of farmers,[9] in Cambodia 71%,[10] in the Philippines 71% (for less than three hectares),[11] and in Lao PDR and Thailand 50%.[12] These smallholder farmers operate mostly at subsistence levels, with little surplus for savings or long-term planning and with limited capacity to absorb shocks and invest in more resilient and productive farming systems.

8. **Weather and climate events cost Southeast Asian agriculture an estimated US$200 billion in losses between 1991 and 2023, and the toll is rising.** Asia accounted for 47% of global agricultural losses over that period (US$1.53 trillion).[13] Looking forward at projections, the United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP) models annual average losses in Southeast Asia at US$86.5 billion. This broader measure includes indirect losses and slow-onset drought, with drought alone accounting for 60% (US$51 billion). The region is highly exposed to droughts, floods, typhoons, and other hazards, and climate change and environmental degradation are increasing the frequency and severity of shocks, in turn driving production losses, income volatility, and food insecurity.

9. **The region's reliance on agriculture, combined with the inherent risks of the sector, makes it acutely sensitive to shocks.** At the household level, farmers and fisherfolk face crop and livestock losses, income disruption, and food insecurity. At the macro level, reduced output drives inflation, food security concerns, supply chain disruptions, and fiscal strain. Vulnerable groups, including smallholders, women, ethnic minorities, and coastal communities, are disproportionately affected.

2.2. Agriculture Sector Policy Priorities to Strengthen Resilience

10. **The ASEAN 2045 Community Vision positions disaster risk finance and climate resilience as foundations of long-term economic and financial stability.** It calls for strengthened institutional capacity, enhanced regional coordination, and effective resource mobilization in response to escalating climate and disaster risks. It underscores

the need to promote sustainable agriculture practices and forest management, integrate risk financing principles across institutions, and use regional funding mechanisms to deploy innovative response solutions. Specifically, Strategic Measure 5.3.1 expresses the commitment to "increase the resilience of foods, agriculture, and forestry against climate change, natural disasters, and other shocks." [14] (See the accompanying Technical Background report, Section 2.)

Agriculture risk management is central in the climate and sectoral policies of all ASEAN governments. Every ASEAN member state either references or recognizes agriculture as a key sector or as central in its Nationally Determined Contribution (NDC) and National Adaptation Plan (NAP). Indonesia, the Philippines, and Viet Nam have explicitly identified insurance as a means to promote climate-resilient agriculture and reduce fiscal exposures to climate-related shocks. Cambodia and Lao PDR have acknowledged the need for financial protection tools but have not yet identified or established implementation approaches. (See Technical Background, Section 2.)

2.3. State of Agriculture Insurance in ASEAN Countries

11. **Despite this clear mandate, agriculture insurance across the ASEAN region remains unevenly developed, ranging from national-scale programs to no formal coverage at all.** Countries like the Philippines and Thailand have long-established national programs. Cambodia, Lao PDR, Indonesia, Malaysia, and Viet Nam have a range of programs, including national programs and several pilots with development partners. Brunei and Singapore have no agriculture insurance programs.

12. **Across the region, the share of farmers who are insured is estimated at less than 8%,[15] or fewer than 6 million out of the 91 million employed in the sector.[16]** Coverage is concentrated primarily in two large programs in the Philippines and Thailand. Agriculture insurance premiums in ASEAN represent only 0.06% of total agricultural production value, significantly below the share in more developed markets like Japan (2.8% of gross agricultural production) and the US (just under 4.0% of gross agricultural production). Other markets with sustained public programs show what is achievable: relative to agricultural GDP, premiums stand at approximately 0.7% in India, 1.4% in China, and 3.4% in the Republic of Korea.[17]

13. **The demand for agricultural insurance exists, and so does the supply; the market failure arises from the mismatch between them.** Demand is visible in farmers' losses and fiscal exposure, and it is already expressed in national policy: NDCs, NAPs, and sector strategies across the region name agricultural insurance as an instrument. Supply exists in global reinsurance capacity and regional technical capability. Yet the two do not connect at scale, because four structural gaps stand between them: (i) limited awareness and capacity at all levels; (ii) products that do not fit farmers' needs; (iii) weak market infrastructure that limits private sector participation; and (iv) cost barriers. Correcting the mismatch requires an institution that links and builds trust between governments, insurers, and reinsurers by addressing these gaps directly. These gaps are summarized below and discussed in greater detail in Technical Background, Section 3.

In the Philippines and Viet Nam, low awareness of eligibility and concerns over delayed or disputed payouts have weakened farmers' trust in insurance schemes. Governments across Cambodia, the Philippines, Thailand, and Viet Nam have also faced difficulties developing and refining regulatory frameworks for agricultural insurance. In several markets, the private sector has little of the in-house technical expertise needed to design, price, and manage agricultural insurance products effectively.

14. **Product development in ASEAN faces significant barriers due to limited availability of high-quality agricultural and climate data, weak digital systems, and insufficient technical expertise; these make it difficult to design and price products that are suitable for smallholder farmers.** Limited availability of long-term risk data affects accurate pricing, risk modeling, and product innovation, while minimal stakeholder engagement during the design process often results in products that do not reflect smallholder farmers' needs. In addition, the limited use of technologies such as remote sensing and Earth observation for product design in the region further hinders the development of innovative insurance solutions.

Across most countries consulted, insurers pointed to the lack of reliable agricultural and climate data as a key challenge. Members of Thailand's insurance consortium highlighted the challenge of pricing insurance products given limited available data and noted the need to rely heavily on historical experience for pricing. In the Philippines, indemnity-based insurance products are poorly suited to smallholder farmers' needs because of the high administrative burdens they impose, including claims processes that don't work well for families in remote areas on small farms.

15. **Weak market infrastructure limits competition, public-private coordination, and broader private sector participation in agriculture insurance.** Limited coordination between governments and insurers on policy design, subsidy structures, and market regulations has reduced the commercial attractiveness of broader market participation. Many schemes in ASEAN rely on a single risk taker, often a government-owned or -backed entity, resulting in limited product offerings and minimal competition and in turn reducing incentives for innovation, improved service delivery, and cost efficiency. In addition, regulatory frameworks for agriculture insurance are often unclear or underdeveloped and thus create uncertainty and large barriers to entry.

In the Philippines, private insurers are ineligible for government-funded premium subsidies for smallholder farmers. This constraint limits their ability to compete with the state insurer and has resulted in minimal private sector participation over the last three decades. In Thailand, private insurers participate in the national scheme via a coinsurance arrangement, but they have limited control over pricing and product design. Regulatory gaps further weaken market development. Cambodia cited its lack of a formal agriculture insurance framework as limiting uptake and participation, despite government interest.

16. **High risks and costs associated with agricultural insurance, combined with other demand-side barriers, make programs unattractive without government support; to**

be sustainable, programs must demonstrate clear value for money to government and be structured to remain viable and continue protecting farmers even as subsidy levels fluctuate. The inherent volatility of the agriculture sector, exacerbated by climate risks, results in high coverage costs. Even in markets with public subsidy support, farmers may be unwilling or unable to pay their share in the absence of education, appropriate and trustworthy products, accessible distribution, and incentives. In most developed markets globally, government subsidy is a common and expected feature of agricultural insurance. But the level of support governments are willing to sustain often tracks the value for money they perceive the program to deliver, and/or the level of fiscal space available.

Across ASEAN, several governments continue to provide substantial premium subsidies to maintain programs. When governments are forced to reduce subsidies (as occurred in Thailand and Indonesia), the number of insured farmers sharply declines. In Cambodia, agriculture insurance has grown less attractive to private insurers because of high development costs, inadequate pricing, and low uptake. In Thailand, the Thai General Insurance Association (TGIA) transfers risk internationally due to the low volume of agriculture risk, and it often accepts high prices set by reinsurers with little to no room for negotiation.

17. **International experience in scaling agricultural insurance provides relevant lessons for addressing these persistent challenges and has directly informed the design of SEADRIF-RAISE.** Evidence shows that agricultural insurance is most effective when embedded within broader agricultural priorities, including improving productivity, strengthening value chains, and enhancing food security. Successful programs have targeted public support to expand coverage while maintaining market discipline, and they have leveraged private sector capacity for delivery, invested in data systems to enable credible and scalable products, and integrated insurance within agriculture value chains and sector programs to drive uptake and impact. The lessons offered by this experience highlight the opportunity for a regional mechanism that can address market gaps, strengthen existing national programs, and enable greater scale across ASEAN. These lessons are elaborated in Box 1.

Box 1: Lessons for Implementing Agricultural Insurance Programs and Regional Initiatives

Lesson 1: Premium subsidies and government support are essential for scale, but they must be targeted, partial, and fiscally disciplined. International experience shows that subsidies are most effective when targeted, partial, and designed to balance affordability for farmers with long-term fiscal sustainability, affordable reinsurance, and private sector participation.[18] In the Republic of Korea, government support extends beyond premium subsidies to program administration and public reinsurance, enabling coverage of more than 548,000 farms in 2023.[19]

Lesson 2: Risk pooling can significantly reduce costs and fiscal volatility. Pooling risks across countries or regions can reduce premium volatility, improve access to reinsurance, increase capital efficiency, and keep prices stable during catastrophe events. Following the 2017 hurricane season, the Caribbean Catastrophe Risk Insurance Facility was able to limit

premium increases to around 5%, compared with increases of around 40% observed in the market.[20]

Lesson 3: Public-private partnerships are essential to balance risk, scale delivery, and sustain markets. Governments anchor affordability and crowd in coverage through subsidies, while the private sector brings the technical discipline (actuarial pricing, product design, claims management) that keeps programs financially sound and that mitigates the fiscal strain purely public schemes tend to accumulate over time. Japan's agricultural insurance system, which provides coverage through local mutual associations and government-backed reinsurance support, demonstrates this model.

Lesson 4: Market segmentation in product design is critical: one size does not fit all. Agriculture insurance products must be tailored to different farmer segments, as products suitable for commercial farmers are often administratively costly and inefficient for smallholders. India's experience with high-cost and complex farm-level loss assessments for smallholders led to the adoption of area yield index insurance approaches and weather index–based products, which offer faster and streamlined claims settlement.

Lesson 5: Data and technical capacity are a constraint to scale. Robust data, technical expertise, and the use of technologies such as satellites and remote sensing are essential for pricing products, reducing basis risk, improving claims processing efficiency, and scaling. Beyond product design, these same tools help governments better understand underlying risk and the value of insurance; they thus help inform policy decisions and build the political will needed to scale programs.

Lesson 6: Linking agricultural credit and insurance can improve uptake and sustainability. Bundling agriculture insurance with credit can improve uptake by farmers, increase access to finance, reduce lender risk, and support greater investment in productivity and resilience.[21]

Lesson 7: Agriculture insurance must be integrated in broader risk management. Insurance is most effective when complemented by climate-smart practices, early warning systems, and resilient infrastructure. Any insurance product should be designed to incentivize better risk management more broadly.

Lesson 8: Regional cooperation shares risks and infrastructure to enhance resilience. Regional cooperation can strengthen insurance markets by enabling countries to share technical infrastructure, and it can build institutional capacity more efficiently and cost-effectively, and with less duplication, than countries acting alone.

3. Program Description

18. **Transformation of the agricultural insurance market requires the presence of market infrastructure that gives governments the confidence to invest in public resources, in line with policy commitments.**

19. **SEADRIF-RAISE is proposed as a country-owned platform that will scale agriculture insurance across ASEAN countries by building regional market infrastructure to support national schemes.** Its objective is to help countries strengthen food security, protect rural livelihoods and jobs, support the growth of resilient agricultural value chains, and improve the efficiency of fiscal spending on agricultural protection.

20. **The facility will be established and delivered through three interlinked windows**: (i) a *Technical Assistance Window* to address data, analytics, and capacity gaps; (ii) a *Reinsurance Window* to provide sustainable and affordable reinsurance capacity; and (iii) a *Resilience Window* to incentivize and support risk reduction. Individually they cannot solve the challenges facing agriculture insurance, but when integrated within a holistic risk-management approach and combined with well-designed insurance, they can address these challenges effectively.

3.1. Component 1: Technical Assistance Window

21. **The Technical Assistance Window strengthens domestic agricultural insurance systems by closing a demand-side gap, not a supply-side one.** Private technical expertise, market data, and product design capability already exist in the region. The binding constraint is that governments are not spending on agricultural insurance at the scale the sector needs. Governments are not being offered fit-for-purpose and trusted products or data, and they lack the information that would justify committing scarce fiscal space to agricultural insurance, or provide confidence that it represents value for money. The Technical Assistance Window helps translate private sector expertise and data into the fit-for-purpose products and the evidence base needed to make and defend a spending decision.

22. **As described below, this component will provide targeted expertise to address critical areas such as data collection and analysis, risk modeling, insurance product design, and institutional capacity building.** It thus supports the foundational capabilities for developing insurance schemes, accessing the facility's reinsurance window, and growing sustainable markets.

    - **Data collection and analysis** support countries' efforts to improve the availability, quality, and use of agricultural and climate data for insurance and decision-making purposes. This area includes collecting, managing, and analyzing data, as well as deploying digital technologies and new partnerships.
    - **Risk modeling and insurance product design** help countries and domestic insurers implement robust risk assessment, modeling, and actuarial analysis to inform product development and ensure that products are structured and tailored to local conditions and farmers' needs. This area addresses common issues associated with product mismatch, enhances uptake and trust, and promotes the

long-term sustainability of agricultural insurance programs. Beyond product design, the same risk assessment and modeling outputs give governments a stronger evidence base to understand underlying risk and program value; they in turn support the policy decisions—and build the political will—needed to sustain and scale support.

- **Capacity building** supports the institutions that design and deliver schemes in various ways: it supports targeted training and stakeholder engagement; aids in design of distribution systems (such as bundling of insurance with credit and inputs); assists regulators in developing enabling policies and frameworks; helps insurers improve product development, underwriting, and delivery capabilities; and builds insurance literacy where it supports program delivery.

3.2. Component 2: Reinsurance Window

23. **Reinsurance, or insurance for insurers, makes agricultural insurance for climate risks possible at scale, mobilizing private risk capital for agricultural resilience.** The Reinsurance Window, the risk-taking facility of SEADRIF-RAISE, operates as a not-for-profit regional reinsurer that provides countries and their domestic insurers with affordable and predictable reinsurance coverage at terms they cannot achieve individually. The facility accepts cessions from national programs and insurers, aggregates risk across countries into a single diversified portfolio, and structures optimized outward reinsurance for the pooled program to global private reinsurance markets. The geographic spread of risk reduces portfolio volatility and associated capital charges, while pooling generates economies of scale, lowers transaction costs, and strengthens negotiating power with global reinsurers, resulting in lower premiums.

24. **SEADRIF-RAISE further enhances these benefits by absorbing the first-loss position on the whole portfolio with its concessional public capital; this reduces costs for cedants (national programs and domestic public and private insurers), policyholders, and government budgets.** Through this core blended-finance mechanism, public capital takes the layer that is too frequent or uncertain and that commercial markets would price most expensively. The mechanism also enables commercial reinsurers to participate more efficiently in the upper layers of risk, thereby mobilizing private reinsurance capacity while reducing the overall cost of coverage.

25. **By providing a reinsurance layer, the Reinsurance Window supports national schemes, state-owned or private insurers, agricultural cooperatives or mutuals, and government entities retaining risk directly.** An example from Thailand is relevant here: the Senate of Thailand's 2024 study on agricultural insurance reform explicitly recommends an Agricultural Disaster Insurance Fund through which the government would enter as reinsurer for high-damage risk layers, with the option of retroceding to foreign reinsurers in order to expand national underwriting capacity. [22] This recommendation identifies from a national perspective the problems that RAISE addresses regionally: domestic markets cannot absorb agricultural catastrophe risk by themselves, commercial reinsurance is expensive and volatile, and governments subsidize premiums yet still absorb residual losses. The World Bank's reform

recommendations for the Philippines reach a parallel conclusion on the unreinsured exposure of the Philippine Crop Insurance Corporation (PCIC).[23]

3.3. Component 3: Resilience Window

26. **The Resilience Window, co-managed with FAO, strengthens the link between insurance and risk reduction.** It enhances the long-term resilience and insurability of agricultural systems by supporting countries' efforts to invest in climate-resilient agriculture practices, technologies, and risk-reducing interventions. By offering upstream technical support, it helps identify and prepare physical investments that measurably reduce risks in production systems; these then lead to insurance incentives (like premium discount or coverage top-ups) that reward achievement of measurable resilience outcomes.

27. **RAISE will provide insurance incentives for achieving predefined and agreed milestones in risk reduction.** Countries define and commit to resilience targets developed with FAO support, such as expanding climate-smart agriculture practices or implementing early warning systems. Countries that meet these targets receive premium discounts or coverage top-ups when accessing reinsurance through SEADRIF-RAISE. Milestones are verified by FAO using an agricultural resilience framework grounded in established measurement, reporting, and verification (MRV) protocols aligned with NDCs, NAPs, and Climate-Smart Agricultural Investment Plans (CSAIPs). This process creates a transparent, performance-based structure that rewards sustained risk reduction and addresses moral hazard, which can exacerbate maladaptation.

28. **The window is designed to create a virtuous cycle: as risk reduction improves insurability, premiums are reduced and markets attract participants.** Insurance is most effective when deliberately linked to risk reduction and resilient practices, yet no program has so far scaled agricultural insurance in a way that consistently promotes them together. This window is designed to address this gap.

3.4. Funding Requirement

29. **To establish RAISE, the facility seeks concessional funding of US$155 million, rising to US$235 million over five years as capital is phased in alongside country onboarding:** as shown in Table 1, the concessional funding includes equity of US$70 million, growing to US$150 million; a guarantee of US$50 million; and grants of US$35 million. By the end of Year 5, RAISE will support approximately US$50 million in annual agricultural reinsurance premium across six ASEAN countries. At this volume, the facility achieves the projected diversification, retention efficiency, and commercial reinsurance leverage.

Table 1. Proposed Funding Mix

Item	Amount	Type	Purpose
Initial capital for Reinsurance Window	US$70 million	Equity	Seed capital to begin risk retention
Additional capital phased in over the next four years	US$20 million per year (US$80 million total)	Equity	Capital phased in over the next four years as countries enter and portfolio grows
Guarantee for Reinsurance Window	US$50 million	Guarantee	Two tranches: working layer and catastrophe layer
Technical Assistance Window	US$15 million	Grant	Advisory services and capacity building over five years
Operational expenses for Reinsurance Window	US$10 million	Grant	Setup and operational costs during build-up phase
Resilience Window	US$10 million	Grant	Technical assistance for project identification, planning, and implementation
Total (initial funding)	US$155 million		
Total (over five years)	US$235 million		With phased-in capital

30. **RAISE is capitalized through three types of funding, each utilized for a different role in the structure: grants, equity, and guarantees.** Grants provide the concessional funding needed to establish the facility and build the capacity around it: they cover the one-time cost of setting up RAISE within SEADRIF, its operating expenditure through the establishment phase before premium income is sufficient to cover it, and the Technical Assistance and Resilience Windows. Equity is the risk-bearing capital that allows RAISE to retain agricultural risk on its own balance sheet. It is provided on concessional terms: investors accept a below-market financial return, which enables RAISE to price cover affordably rather than at the commercial cost of capital. Guarantees are contingent capital and represent a commitment to provide funds if losses reach a defined level, rather than capital paid in up front. A guarantee performs the same function as reinsurance—it absorbs a defined slice of loss and lets RAISE seek a higher reinsurance attachment point, which then lowers the premium paid to commercial markets.

3.5. Institutional and Implementation Arrangements

31. **SEADRIF and FAO will jointly prepare and implement RAISE, working closely with national governments, regional and international organizations, and private sector partners.** RAISE will be established under the existing SEADRIF governance arrangements

and institutional setup, with decision-making flowing through SEADRIF governance mechanisms, in coordination with FAO for the Resilience Window. Governance will be guided by principles of voluntary participation, country ownership, and transparency. Commercial reinsurance agreements with standard terms and conditions, in line with international best practice, will govern any insurance transactions.

32. **The SEADRIF Insurance Company will host and manage the Technical Assistance and Reinsurance Windows.** Housing the facility within SEADRIF leverages its established operational infrastructure, insurance license, credibility with ASEAN governments, and partnerships with development institutions to accelerate implementation. RAISE could either be managed on SEADRIF's current balance sheet or be established as a subsidiary entity or a protected cell, depending on member or funder requirements. SEADRIF will be responsible for negotiating with international commercial reinsurers to cede the top layer of risk.

33. **The Resilience Window will be implemented jointly by SEADRIF and FAO.** FAO will lead technical and policy support through a regional support hub to be established, which will provide end-to-end technical assistance for resilience investment planning and evaluation, results verification, and alignment with national policies and complementary regional programs. SEADRIF will provide the insurance incentives for meeting milestones in the form of premium discount or coverage top-up, as agreed and validated by FAO.

34. **The Reinsurance Window operates a reinsurance layer to backstop national agricultural risk carriers, rather than holding any direct relationship with farmers.** RAISE can reinsure a national scheme, a state-owned or private insurer, an agricultural cooperative or mutual, or a government entity retaining risk directly. In each case, the national-level entity distributes the product to farmers, handling enrollment, premium collection, and settlement, while RAISE reinsures the layer of risk that is too big to be retained by the national actor. Premiums flow upward: farmers, or aggregators acting on their behalf, pay the national carrier, which cedes the reinsured portion of premium to SEADRIF-RAISE. When a reinsured loss is triggered, the flow reverses and RAISE pays the ceding entity.

3.6. Theory of Change

35. **SEADRIF-RAISE's Theory of Change rests on a central premise: agricultural insurance in ASEAN cannot scale through isolated interventions but instead requires shared regional infrastructure connecting risk to capital.** By removing the structural barriers that have kept agricultural risk markets fragmented and small in scale, and by aligning financial incentives with risk reduction, the facility is expected to shift the region away from disconnected pilots and toward integrated, market-based systems for agricultural risk financing. Over time, this approach is expected to deliver more resilient and financially protected agricultural systems.

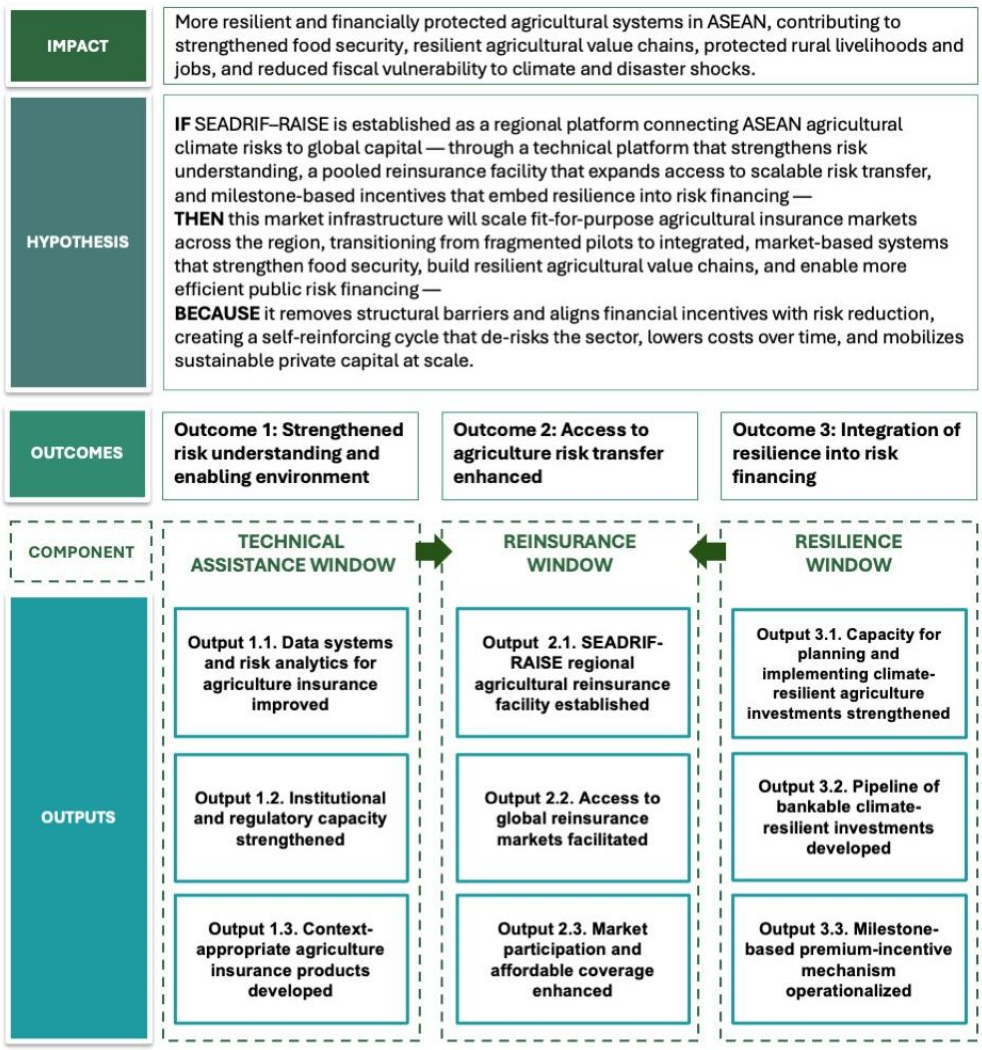
36. **Scaling depends on government decisions to fund and expand programs.** Governments across the region have already stated this intention in their NDCs, NAPs, and sector strategies. To act on this intention, they need sound pricing and products, a counterparty their ministries trust, and evidence that risk reduction works. These are

provided by the Technical Assistance and Resilience Windows; the Reinsurance Window turns the resulting commitments into affordable cover.

37. **The three components of SEADRIF-RAISE are mutually reinforcing.** The Technical Assistance Window supports stronger technical foundations, which improve product quality. The Reinsurance Window pools risk, which enhances affordability and sustainability and attracts private capital. The Resilience Window supports investments that reduce underlying risk, which improve insurability over time.

38. **Figure 1 shows the Theory of Change.** It traces how the three windows and their outputs feed the three outcomes (stronger risk understanding and an enabling environment, enhanced access to agricultural risk transfer, and resilience embedded in risk financing) and how those outcomes deliver the intended impact (more resilient, financially protected agricultural systems across ASEAN). The accompanying hypothesis states the logic in full: if the facility is established as a regional platform linking ASEAN agricultural risk to global capital, then it will scale fit-for-purpose insurance markets across the region, because it correctly aligns incentives and removes the structural barriers that have kept those markets from scaling.

Figure 1. Theory of Change



4. Market Opportunity

39. **ASEAN's agriculture insurance market is structurally underserved by an order of magnitude.** The region's agriculture, forestry, and fishing sector produced approximately US$365 billion in 2023, yet agricultural insurance premiums represented only 0.06% of that figure—an implied premium pool of approximately US$220 million across the entire region. However, if the market penetration rates from Japan (2.8%) and the United States (3.94%) were applied to ASEAN's production base, the resulting premium market would be approximately US$10–15 billion.

40. **The agricultural reinsurance market in the ASEAN region is currently concentrated in three countries: Thailand, Malaysia, and the Philippines.** In 2024, Thailand ceded approximately US$24 million in reinsurance premium through the Thai General Insurance Association. In 2025, Malaysia's Agro Captive Takaful Limited (ACTL) placed approximately US$5 million in reinsurance. Based on 2025 figures, PCIC in the Philippines writes approximately US$95 million in gross premium but currently purchases no reinsurance. At a conservative 20% cession ratio, this implies a latent reinsurance placement of approximately US$19 million from PCIC. Together, the current placements described here and the identified latent reinsurance demand represent a near-term addressable reinsurance market of approximately US$48 million—before any growth in program scale, before new market development in earlier-stage countries, and before the policy-driven expansion already underway in several member states.

41. **Based on potential cessions to the RAISE facility from today's observable market, RAISE has projected a Year 5 target of covering US$50 million in gross written premiums.** Premium growth at this scale depends on stakeholders' decisions to fund, expand, and mandate programs—decisions that sit outside the facility's control. What the facility controls is its response to those decisions; if they are defendable and justified, RAISE supplies the pricing, products, and pooled capacity that a finance ministry needs before committing recurrent budget.

42. **Applying to RAISE the cession assumptions (based on latest cessions and latent placement) yields approximately US$14 million from the three established programs at current scale.** Achieving the projected US$50 million Year 5 target requires both growth in those programs and successful onboarding of Cambodia, Lao PDR, Viet Nam, and Indonesia as domestic schemes in these countries develop.

43. **Assessed against the trajectory toward total addressable market, at 0.5% penetration ASEAN agricultural insurance premiums reach approximately US$1.8 billion.**[24] For this penetration scenario, at typical reinsurance cession ratios of 30–40%, the implied reinsurance market is approximately US$540–720 million, and a 50% share implies potential annual premium income to RAISE of approximately US$270–360 million (see Table 2). The US$50 million Year 5 target is the volume needed to get the facility operational and sustainable. The addressable market is about 10 times larger.

Table 2. Potential Premium Volume Ceded to RAISE

Penetration scenario	ASEAN penetration (% of production value)	Implied market premium	Reinsurance market (assumed 35% cession)	RAISE share (assumed 50%)
Current	0.06%	~US$220 million	~US$75 million	~US$40 million
Developing market	0.5%	~US$1.8 billion	~US$640 million	~US$320 million
Established market	1.0%	~US$3.65 billion	~US$1.3 billion	~US$640 million

5. Economic Analysis

5.1. Economic Rationale

44. **The reinsurance facility generates measurable returns to member countries across the following dimensions:** it leverages concessional capital to mobilize commercial reinsurance at a scale and on terms that individual national programs cannot secure on their own; offers premium savings from pooling and diversification; insulates countries from reinsurance market cycles (price volatility); and improves fiscal predictability. A dollar of concessional capital deployed through RAISE produces substantially more protection for member countries than the same dollar deployed through fragmented national programs or post-disaster relief.

45. **Assuming full participation by the six countries by Year 5, pooling and diversification can achieve premium savings of over 20%.** By aggregating in a single portfolio the agricultural risks faced by geographically and seasonally diverse countries, RAISE significantly reduces the overall volatility of claims. RAISE can support over US$800 million in coverage to individual member countries by retaining a first-loss layer of about US$100 million at the SEADRIF level. Diversification makes this eightfold expansion in capacity possible: because hazard losses in one country rarely coincide with losses in all others, a given amount of retained capital supports much larger limits. This is the blended-finance principle applied to regional reinsurance: concessional public capital takes the riskiest layer that commercial markets price least efficiently, and the cover above it becomes more cost-effective and attractive to commercial reinsurers. See Technical Background Section 7.11 for further details.

46. **The modeled figure captures capital efficiency from diversification only; the total benefits are likely significantly larger.** It excludes further savings that pooling delivers through several means: more efficient placement of a single consolidated program; lower transaction, brokerage, and commission costs; stronger negotiating power with global reinsurers; and economies of scale in administration. Thus the combined benefit to members is likely to be larger than the modeled saving.

47. **Insulation from commercial reinsurance market cycles and pricing volatility supports budget stability for governments and national programs.** Countries paying premium to RAISE are shielded from post-disaster price spikes, which occur when a large regional loss event simultaneously drives up renewal premiums for all affected countries at precisely the moment fiscal positions are most stretched. Consolidated purchasing power secures placement terms that no single country can achieve alone. Faster payouts generate more welfare per dollar than ad hoc post-disaster relief; evidence from prearranged sovereign risk financing indicates that each dollar delivered through such a facility generates a benefit for affected households that is 1.28–1.90 times greater than if the same dollar was delivered through late emergency assistance.[25]

5.2. Sustainability and Capital Adequacy

48. **Donor support is designed to be transitional, and a self-sustaining operating model is core to the program.** RAISE is designed to transition from a donor-supported entity to an operationally independent regional reinsurer within five years. After this period, premium income generates a modest underwriting surplus in an average loss year, which covers operational costs without continued donor support. Funding for the Technical Assistance Window shifts from grants to surplus as the reinsurance pool matures.

49. **The Reinsurance Window is designed to operate sustainably, without pursuing profit as a goal.** As a member-owned pool, the facility exists to deliver protection to its members at the lowest sustainable cost, so accumulating surplus is not an objective and would signal members are overpaying. The concessional capital contributed during establishment becomes the facility's permanent working capital: phased in alongside country onboarding, it thereafter supports underwriting on a self-sustaining basis, with premium income generating a modest surplus over claims and operating costs in an average year.

50. **The facility is deliberately structured to minimize financial return on invested capital and maximize economic benefit to members.** A commercial reinsurer prices a target return on its capital, and that cost passes to members as higher premiums. RAISE instead converts concessional capital into permanent working capital that underwrites member risk at the lowest sustainable cost. The value the capital produces is delivered to members as lower premiums, faster payouts, and reduced fiscal volatility, not extracted as investor income. This is the reason that the financial internal rate of return and the economic rate of return differ significantly. The financial internal rate of return over the five-year establishment window is approximately -40%, reflecting capital deployed and retained as a permanent asset rather than returned to investors if the facility maximizes member benefits. It does not reflect operating losses or any need for recapitalization; the facility generates a modest surplus over claims and operating costs in an average year. The economic internal rate of return, which measures the return to members, is estimated at up to 18%. For a member-owned facility, the EIRR is the relevant measure of success because it operates as a de facto non-profit mutual, returning all surplus profit to members rather than to donors. This can be adjusted to meet any required donor returns or repayments. Further details on the calculation of financial metrics can be found in Annex 6. Financial Analysis.

51. **Stress testing confirms that the structure withstands adverse loss years without impairing its solvency or ability to pay claims.** Across the loss scenarios tested, capital is drawn down but stays within solvency thresholds, and the capacity to pay claims is preserved. Three capitalization scenarios were considered: Market Transformation, Market Making, and Pilot.[26] The Market Transformation scenario (initial equity of US$70 million, scaling to US$150 million) is recommended. The choice of capitalization matters directly for affordability: compared to the recommended Market Transformation scenario, under the Market Making scenario, reinsurance premiums paid by countries would be approximately 15% higher and under the Pilot scenario they would be approximately 25% higher. In addition to the loss scenarios, the capital model is stressed for a common regional shock, such as a strong El Niño–Southern Oscillation (ENSO) event driving simultaneous losses across the pool; this step tests the sensitivity of the premium saving and the coverage multiple at different correlation scenarios. See Technical Background sections 7.5, 7.7 and 7.15 for further details.

52. **A core design principle of the funding structure is that member governments are not required to make up-front fiscal contributions during the establishment phase.** The facility is capitalized through concessional equity, guarantees, and grants, with member contributions arising through premium once programs are operational. RAISE is capitalized to retain losses up to the 1-in-10-year level and absorb two consecutive maximum-retention loss years without requiring additional capital mid-cycle. The guarantee supports an attachment point above the 1-in-10-year level, which makes the pool more affordable. Premium paid to commercial markets is projected to fall to half because the expected loss is in the more frequent layers and lifting the attachment point removes a portion of the working layer from the ceded programme. The guarantee is one means of supporting a higher attachment point (an equivalent amount of paid-in capital would achieve the same effect), so the saving comes from the structure, not from the guarantee instrument itself.

53. **Affordable pricing during the establishment phase is not a premium subsidy.** Cedants pay premiums from the outset, which can be set below commercial terms because the facility's concessional capital accepts a below-market financial return and does not need to earn a commercial profit. The surplus that later supports the Technical Assistance Window arises from the maturing scale and diversification of the pool, not from members' overpayment; pricing continues to be set at the lowest sustainable level as the capital base is established.

6. Endnotes

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Annex 1. Country Engagement and Support for SEADRIF-RAISE

1. **Between July and August 2025, SEADRIF and FAO conducted consultations across the six participating countries (Cambodia, Lao People's Democratic Republic, Malaysia, the Philippines, Thailand, and Viet Nam) and engaged over 140 stakeholders from the public and private sectors.** This process ensures that the facility design reflects country and industry needs and readiness. Participants included farmer representatives as well as representatives from ministries of agriculture and finance, state-owned enterprises, insurance associations, and development partners across ASEAN. These consultations determined the facility's objectives and structure by identifying key constraints to scaling agricultural insurance in the ASEAN region and determining countries' priorities around design options. A final regional consultation in February 2026 validated the proposed design of SEADRIF-RAISE.
2. **ASEAN+3 finance ministers formally welcomed the development of RAISE in May 2026 during the 29th ASEAN+3 Finance Ministers' and Central Bank Governors' Meeting.** SEADRIF members endorsed it as a priority initiative in October 2025, and at the November 2025 ASEAN+3 Finance Deputies' Meeting, deputies highlighted the facility as a timely response to rising fiscal exposure and reaffirmed their support for its development.

Table 3. Development and Endorsement Timeline

Date	Activity
Jan 2025	FAO and six ASEAN countries ask SEADRIF to prepare a pre-feasibility study and first-stage funding proposal for a regional agricultural risk finance facility under a Green Climate Fund Readiness Project.
Mar–Apr 2025	SEADRIF members welcome the collaboration with FAO during the 7th SEADRIF Technical Meeting and endorse the work program during the 3rd SEADRIF Council of Members Meeting.
Jul–Aug 2025	In-country consultations in the six countries present the key gaps identified and introduce the concept. These sessions identify national and shared regional priorities for a regional mechanism and determine the objectives and design of the proposed facility.
Oct 2025	SEADRIF members endorse the development of an agriculture risk finance facility under SEADRIF as a priority initiative at the 8th SEADRIF Technical Meeting in Kyoto, Japan.
Nov 2025	SEADRIF presents the progress on the agriculture risk finance facility at the ASEAN+3 Finance and Central Bank Deputies Meeting, where the facility is officially named the Regional Agricultural Insurance and Sustainable Economies Facility (RAISE). Deputies recognize the initiative as a timely and essential response to the rising fiscal exposure across the region, particularly in agriculture, and reaffirm strong support for continued regional collaboration to advance the development of SEADRIF-RAISE.[a]
Feb 2026	A regional consultation with ASEAN government representatives and development partners validates the proposed SEADRIF-RAISE concept. The consultation reaffirms support for RAISE and confirms priorities reflected in

Date	Activity
	the design of SEADRIF-RAISE. Participants also discuss how to change SEADRIF-RAISE from concept to reality, including how it might be funded.
May 2026	Finance ministers and central bank governors welcome the development of SEADRIF-RAISE during the 29th ASEAN+3 Finance Ministers and Central Bank Governors' Meeting in Samarkand, Uzbekistan.[b]

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3. **SEADRIF has received written expressions of support from government agencies and from market participants** on both sides of the prospective cession relationship; the letters are attached in Technical Background, Section 8.

- **Agrobank** (Bank Pertanian Malaysia Berhad) has expressed its intention, in principle, to participate as a cedant. It envisages ceding a portion of its agricultural takaful portfolio on a phased basis, subject to due diligence, regulatory approvals, and commercial considerations.
- **The Philippine Crop Insurance Corporation** (PCIC), the state agricultural insurer of the Philippines, has formally endorsed the facility's establishment and designated a technical focal point for continued engagement.
- **The Philippine Insurers and Reinsurers Association** (PIRA), which represents the licensed non-life insurers underwriting agricultural and catastrophe risk in the Philippine market, has expressed institutional support for RAISE and a commitment to facilitate engagement between RAISE and its member companies, while also noting that participation decisions rest with individual members.
- **The Philippines Department of Agriculture** (DA) has expressed its support for SEADRIF-RAISE through the Improving Agricultural MSME Access to Finance and Resilience to Climate Shocks (PRIME) Project, which it is developing with the World Bank and which aims to establish the country's first agricultural co-insurance pool with PIRA and PCIC. The DA noted that RAISE is aligned with its priority agenda and welcomed further meetings to discuss avenues for collaboration.
- **The Philippines Department of Finance** (DOF) has conveyed its concurrence for SEADRIF to continue and deepen its engagement with the DA on SEADRIF-RAISE, recognizing its potential to support DA priorities, including the PRIME Project's proposed co-insurance pool. The DOF noted that agricultural insurance is a medium-term priority under the 2024 SEADRIF-Philippines Workplan and that any specific arrangements remain subject to the relevant government processes and approvals.
- **The Department of Planning and Cooperation of the Lao PDR Ministry of Agriculture and Environment** has expressed support for the continued development and establishment of RAISE, noting the priority its NDC and NAP place

on expanding access to risk financing and insurance for farmers and agribusinesses. It has designated a focal point for technical engagement.

- **The Thai General Insurance Association** (TGIA), which represents non-life insurers in Thailand, including participants in national crop insurance schemes, has expressed support for the establishment of RAISE and its intention to facilitate engagement between RAISE and eligible member companies that may consider participating as cedants once the facility is operational. It has designated a focal point for further coordination and noted that any participation remains subject to due diligence, regulatory requirements, and definitive reinsurance agreements.
- **Cambodia's Ministry of Agriculture, Forestry and Fisheries** (MAFF) has formally endorsed the development of the SEADRIF-RAISE regional project. MAFF noted the initiative's alignment with national priorities, including Cambodia's NDC 3.0 and NAP, and its potential to strengthen the capacity of Commune Agriculture Officers to deliver climate risk advisory services and facilitate insurance uptake.

4. **The industry letters agree on the same practical conditions for participation:** confidence in the facility's governance and financial standing, compatibility of coverage terms with existing portfolios, reliable placement and claims arrangements, and pricing competitive with commercial reinsurance.

Annex 2. Facility Design Principles, Criteria, and Trade-offs

Facility Principles

1. **The RAISE design reflects three core principles:** it is to be (i) country-led and nationally integrated, (ii) regionally efficient and catalytically financed, and (iii) built to last. The design features for each principle are described in Table 4.

Table 4. Principles Guiding Facility Design

Principle	Description
Country-led and nationally integrated	
Sovereign ownership	Sovereign ownership entails voluntary participation, decision-making, and full beneficial ownership of the mechanism through the existing SEADRIF structure and governance.
Integration with national systems and needs	The facility complements existing national programs and local insurance markets rather than duplicating or displacing them. It has a modular architecture that allows countries to engage with relevant components based on readiness.
Regionally efficient and catalytically financed	
Regional efficiency through shared infrastructure	A shared technical platform delivers data, product development, and analytics services at a scale no single country could achieve alone.
Layered and blended risk financing	Financial instruments are aligned with risk severity and frequency through a layered structure. Concessional first-loss capital is used to mobilize commercial reinsurance around a public risk–absorbing core.
Built to last	
Market development and private sector mobilization	The design fosters an enabling environment through technical expertise and regulatory support, while absorbing first-loss risk and deploying structured incentives to crowd in private capital and sustain commitment.
Long-term financial sustainability	Transparent, actuarially sound pricing that avoids cross-subsidization between members is combined with a scalable design that fosters increasing self-sufficiency and gradually reduces reliance on external grant funding.

2. **Translating these principles into practice requires navigating inherent trade-offs across the diverse policy, financial, and operational realities of participating countries.** Three tensions central to the design are set out below, along with an explanation of why each one arises. The "Design Trade-Offs" section below explains how the facility is structured to resolve these trade-offs.

    - **Near-term affordability versus long-term sustainability:** The facility must offer cover that is cheap enough for farmers and governments to take up today, but must also build the capital base and exercise the pricing discipline needed to sustain itself without permanent external support. Pricing for immediate affordability and pricing for long-run solvency point in different directions.

- **Regional standardization versus national autonomy:** A regional pool needs enough shared structure to aggregate risk and act as a single counterparty, while member countries differ in market maturity and policy and expect to keep control of their own programs. Regional efficiency and national ownership can pull against each other.
- **Speed of deployment versus system strengthening:** Countries need protection quickly, but sound agricultural insurance rests on data, actuarial capacity, and regulation that take years to build. Moving fast risks weak foundations, and building the foundations first delays the cover countries need now.

Design Criteria

3. **The facility design presented here is assessed against the criteria shown in Table 5.** These reflect the conditions determined at the beginning that a proposed regional agricultural insurance facility should have.

Table 5. Design Criteria for the Development of SEADRIF-RAISE

Criterion	What this means in practice
Scale and sustainability	Expands agricultural insurance coverage with financially viable, market-consistent products
Affordability and access	Reduces reinsurance costs through risk pooling and improves farmers' access through shared technical and operational services
Country fit	Enables country-specific solutions within a modular regional framework
Fiscal efficiency	Ensures government spending on public agricultural protection is efficient and optimizes results for the government
Innovation	Strengthens technical capacity and promotes better product design across governments and insurers
Institutional sustainability	Builds long-term regional capacity, institutionalized in a member-owned, sustainable facility that does not depend on donor-driven projects

Design Trade-offs

4. **Table 6 sets out the trade-offs entailed in operationalizing the design of the SEADRIF-RAISE program and explains how the facility design resolves them.**

Table 6. Design Trade-offs

Trade-off	How the design resolves it	What this means for countries
Affordability versus long-term sustainability	Concessional capital and regional risk pooling reduce near-term reinsurance costs. Actuarially sound pricing and a phased capital scaling structure build long-term financial independence. External support is transitional by design, reducing as premium income grows and the capital base accumulates.	Governments access reinsurance at costs materially lower than individual commercial placement, with pricing stability increasing as the portfolio diversifies. The facility is not for profit, member-owned structure buffers market volatility and ensures predictable coverage terms.
Standardization versus customization	The modular architecture maintains a coherent regional framework while enabling countries to engage with the Technical Assistance Window, Reinsurance Window, and Resilience Window at different levels of depth depending on market readiness and institutional capacity.	The facility delivers value at every stage of market maturity. For early-stage markets such as Lao PDR, it offers data systems, product design support, and awareness-raising. For countries with pilot programs such as Cambodia and Viet Nam, it offers strengthened product design, data gap resolution, and limited pooled reinsurance. For established schemes such as the programs of Malaysia, the Philippines, and Thailand, it offers reduced reinsurance costs through regional pooling, concessional first-loss layers, and support for product and distribution diversification.
Speed of deployment versus system strengthening	A phased onboarding approach enables early operational activity and reinsurance placement in pilot countries, while the Technical Assistance Window builds institutional foundations—data infrastructure, actuarial capacity, and regulatory frameworks—in parallel.	Countries are not required to achieve full institutional readiness before accessing risk transfer. Technical assistance and reinsurance capacity are made available concurrently, with depth of engagement increasing over time as market foundations strengthen.

Annex 3. Facility Options Considered

1. **Three facility design options were developed and subsequently discussed with government officials and industry representatives during the country consultations held in 2025.** The options represent progressively deeper levels of political commitment and regional cooperation, ranging from purely technical support through a Technical Support Facility (Option A), to a reinsurance facility in the form of a Regional Reinsurance Pool (Option B; this option received the most interest and was the model ultimately selected), to a Mutualized Facility (Option C). Each option builds on the previous configuration by expanding the scope of services and regional risk sharing/pooling, while requiring correspondingly greater financial, institutional, and political commitment from participating countries.

2. **Option A, the Technical Support Facility,** represents the most basic configuration, requiring minimal investment while establishing the foundational elements for future scale-up. It focuses on improving data, risk analytics, product design, and institutional capacity, thereby strengthening the enabling environment and supporting regional learning, innovation, and development of country-specific solutions. This option aligns with key facility objectives related to capacity building, product improvement, and strengthening of domestic markets. However, it does not include risk-taking or risk transfer functions, limiting its ability to improve affordability, expand coverage, or reduce fiscal exposure. As a result, while it supports market readiness and long-term sustainability, it has limited immediate impact on financial protection or insurance scale, particularly in countries with existing government-supported schemes. Its low-cost, no-capital structure makes it accessible but insufficient as a stand-alone solution.

3. **Option B, the Regional Reinsurance Pool,** builds on Option A by introducing risk-taking capacity and regional risk pooling, and thus directly addresses constraints related to affordability, access, and scale. By aggregating risks and leveraging concessional financing, this option reduces costs, improves pricing, and enhances access to reinsurance, thereby supporting the expansion of sustainable agricultural insurance markets and improving fiscal predictability for governments. It also enables an integrated approach to resilience by linking risk transfer with technical support, climate-smart agriculture, and the development of bankable programs; in this way it aligns closely with the facility's objectives on scaling coverage, improving affordability, and promoting innovation. While this option requires greater financial commitment, particularly in terms of capitalizing the risk pool, it delivers significantly higher impact than Option A by unlocking private sector participation and enabling meaningful scale in both insurance coverage and resilience-building efforts.

4. **Option C, the Mutualized Facility,** represents the most ambitious configuration; it builds on Option B by requiring direct government participation and cofinancing. This structure increases country ownership, strengthens alignment with national priorities, and enhances long-term financial sustainability. With a larger and more stable capital base, the facility can retain greater levels of risk, reduce reliance on external reinsurance, and achieve improved cost efficiency over time, further advancing objectives related to affordability, sustainability, and regional collaboration. However, this model requires

significant upfront commitments from participating countries, including financial contributions and institutional readiness, which may limit participation or delay implementation. While offering the greatest potential for scale and efficiency, it is also the most complex and requires the greatest commitment. This makes it unsuitable as an immediate entry point for all countries, though over time the chosen facility might evolve into something similar.

Comparative Analysis of Options

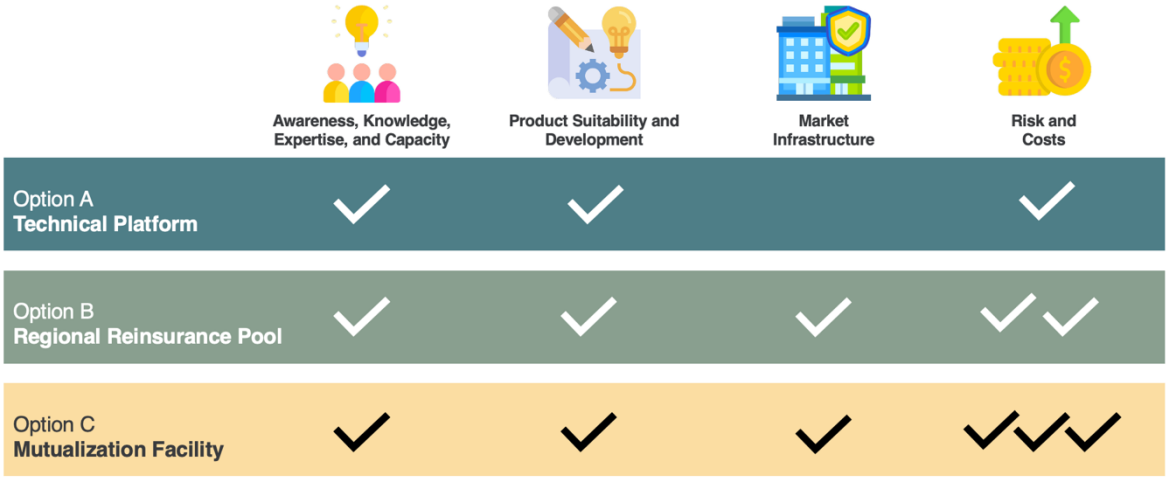
5. **In conceptualizing a facility to support the vision, the three design options described above were considered and evaluated.** As indicated above, each option builds on the previous configuration; costs and government commitment are greater in Option B than in Option A, and greater in Option C than in Option B. Table 7 summarizes each of the options.

Table 7. Summary of Initial Facility Designs

Option	Option A: Technical Support Facility	Option B: Regional Reinsurance Pool	Option C: Mutualized Facility
Services provided	Data and technology deployment		
	Product design and development		
		Risk transfer	
			Mutualization of profits and losses
		Support for risk management and resilience-building initiatives	
Risk transfer for ASEAN governments	Status quo risk transfer	Reinsurance placed through pooled facility with commercial reinsurance backing	Reinsurance through pooled facility + mutualized loss/profit Commercial reinsurance for severe loss years
Operating cost of facility	Low	Medium to high (depending on scale)	Medium to high (depending on scale)
Government commitment	Low	Medium	High

6. **Each option addresses progressively more gaps, as illustrated in Figure 2 and discussed below.**

Figure 2. Mapping of Options to Gaps Addressed



7. **The Technical Platform (Option A) does not take any risk directly, though it can support product design and pricing through improved data and technical assistance.** As such, it cannot address the core constraints of affordable products, the lack of affordable reinsurance in many ASEAN markets, and premium volatility due to market cycles.

8. **The Regional Reinsurance Pool (Option B) introduces risk-taking capacity by aggregating and structuring risk across countries.** This enables more efficient reinsurance purchase, reduces reliance on expensive commercial reinsurance, and acts as a buffer against market volatility—making it a practical solution for countries struggling with cost and placement challenges.

9. **The Mutualization Facility (Option C) goes further by allowing member countries to retain more risk internally through pooled capital contributions.** This structure offers the greatest potential for cost savings, pricing stability, and long-term sustainability, while also reinforcing country ownership and control.

10. **Only Options B and C are equipped to directly address the risk placement and cost barriers that currently limit the scale and effectiveness of agricultural insurance programs in the region.** By enabling regional risk sharing and retention, these models support the development of local market infrastructure and reduce dependence on external reinsurance.

11. **Likewise, the Resilience Window—a key component for transforming the program into a more holistic agriculture resilience initiative—is feasible only in Options B and C.** Both options involve risk-taking structures and capitalization, which are essential for linking resilience investments to financial incentives such as premium discounts or coverage enhancements.

Financial and Institutional Requirements

12. **The three options differ significantly in terms of financial and institutional commitment.** The Technical Support Facility requires the least investment. It mainly needs grants to carry out technical support and data services for members. As risk-taking facilities, the Regional Reinsurance Pool and Mutualized Facility have a capital requirement, which would significantly increase funding needs. Notably, the Regional Reinsurance Pool does not require direct country contributions—unlike the Mutualized Facility, which needs them. This makes the Mutualized Facility more demanding for governments in terms of fiscal commitment, institutional capacity, and political will. The requirement for country contributions elevates the level of ownership and long-term engagement but presents a higher barrier to entry.

Feedback from Country Consultations

13. **In consultations held during July and August 2025 with six countries—Cambodia, Lao PDR, Malaysia, the Philippines, Thailand, and Viet Nam—participants expressed strong support for the development of a facility that would help address challenges in implementing agriculture insurance.** Each session brought together government representatives, private sector actors, and development partners to review national experiences and priorities in agricultural insurance. See Technical Background, Section 5, for a summary of consultations undertaken.

14. **All six countries consulted had similar priorities:** they wished to have (i) technical support and capacity building, (ii) access to better data and analytics, (iii) insurance products tailored to farmers' needs, and (iv) more affordable and stable reinsurance options.

15. **Countries emphasized technical support, improved data systems, and farmer-centric products as their most immediate needs to advance agricultural risk management.** During the consultations, stakeholders consistently highlighted that limited domestic understanding and awareness of agriculture insurance have resulted in low uptake by farmers and a challenging regulatory environment. Government representatives from Cambodia, the Philippines, Thailand, and Viet Nam noted that they are actively reviewing their agriculture insurance regulations, but said progress is hindered by a lack of sector-specific expertise. This gap also affects the ability to design products that better address the needs of smallholder farmers. Across all countries, there is a strong demand for building the institutional and technical capacity needed to develop more responsive, inclusive, and effective agriculture insurance solutions.

16. **Affordability remains a critical concern for both governments and risk-taking entities and is a key barrier in closing the current protection gap in agricultural insurance.** Government representatives noted that, given limited fiscal resources and programs that often subsidize up to 100% of premium costs, it is essential to keep premiums affordable to maximize coverage for farmers. Hence making the most of public funds—both in terms of the value protected and the number of farmers reached—is a top priority. Among risk-taking entities, such as state-owned agricultural insurers (e.g., PCIC in the Philippines) and private sector providers (e.g., Forte in Cambodia, TGIA consortium in Thailand), having

a small portfolio relative to other markets leaves them with little negotiating power. This constraint leaves them as price takers, highly exposed to market volatility and unable to influence pricing to improve affordability.

17. **During consultations, countries identified several key implementation considerations for a risk-taking facility.** These include arrangements with domestic insurers (especially where state-owned entities are involved, as in the Philippines and Thailand), mandatory cession requirements for national reinsurers (Cambodia and the Philippines), restrictions on assumption of risk by foreign insurers (Cambodia), and expectations for takaful-compliant products (Malaysia). Addressing these issues in the facility's design—in part by ensuring sufficient capital and operational resources—is essential for credibility and effective implementation.

18. **Overall, the consultations revealed countries' strong interest in the Regional Reinsurance Pool as a practical and catalytic option that addresses several of their priorities.** Countries with more advanced programs welcomed the potential for regional pooling to reduce costs and improve affordability. While stakeholders acknowledged the Mutualized Facility's long-term strategic value, they noted that it required greater trust building, increased fiscal space, and institutional readiness than other options, and they considered it as a vision for the future. By contrast, they saw the Regional Reinsurance Pool as a workable and catalytic mechanism that could be operationalized under current conditions, deliver immediate impact, and lay the groundwork for deeper regional collaboration over time.

Annex 4. Program Description and Implementation

1. **The budget covers the grant-funded expenditure of US$35 million over five years.** Of the US$235 million funding requirement, US$200 million is capital deployment—that is, equity and guarantees held on the facility's balance sheet to retain risk and lower the cost of commercial reinsurance. These funds are drawn on to pay claims, not spent. The figures and assumptions underlying this capital are set out in Annex 6. Financial Analysis. The remaining US$35 million is grant expenditure. The budget below covers this grant expenditure by component and activity line, with indicative five-year phasing tied to the pace of country onboarding. Figures are indicative at this stage; a full budget by cost category with unit costs will be prepared at full proposal stage.

2. **Component 1, Technical Assistance Window: US$15 million.** The allocation funds the delivery of technical assistance across participating countries: support to national data systems, including collection, management, digital tools, and partnerships that make agricultural and climate data usable for insurance; risk modeling and actuarial analysis to underpin pricing and product structuring; insurance product design and adaptation to country contexts and farmer needs; capacity building for governments, regulators, and insurers, including training, insurance literacy, and support to enabling regulation; and the program management needed to coordinate delivery across countries. Spending ramps up with country onboarding, peaking in Years 3 and 4.

3. **Component 2, Reinsurance Window Operational expenses: US$10 million.** This funds the incremental cost of operating RAISE within SEADRIF's existing licensed platform. It funds one-time establishment costs covering legal and regulatory engagement, systems, and recruitment; the dedicated RAISE team spanning underwriting, program management, technical engagement with countries, and market engagement with commercial reinsurers; RAISE-specific governance, compliance, and audit; operating systems; and travel. The grant requirement tapers as premium income progressively covers operating costs, consistent with the sustainability pathway set out in Annex 6. Financial Analysis. The US$10 million operational expense budget over five years funds the incremental cost of expanding SEADRIF's mandate to host RAISE rather than the full cost of establishing a stand-alone regional risk finance facility. The figure is significantly lower than would be required for a stand-alone entity, and this difference reflects the operational and institutional infrastructure that SEADRIF already provides.

4. **SEADRIF operates as a licensed general insurance company in Singapore and is regulated by the Monetary Authority of Singapore.** It has established governance, systems, and operational infrastructure for its existing line of business. Locating RAISE within SEADRIF lets the new facility draw on this platform and avoid the most capital-intensive start-up costs that a stand-alone vehicle would incur, including the licensing of a new regulated insurance entity in a credible jurisdiction (with the time, cost, and regulatory engagement this entails) and the duplication of core governance, compliance, and prudential reporting frameworks. RAISE will nevertheless require its own dedicated staff and operational capacity as a new regional entity with a distinct mandate. The US$10 million over five years is therefore primarily directed at operating expenditure; it funds the team needed to run RAISE across underwriting, program management, technical

assistance for countries, market engagement with commercial reinsurance counterparts, and RAISE-specific governance. The synergies from SEADRIF's existing setup mean that this funding focuses on operating the new mandate rather than on rebuilding institutional infrastructure that already exists.

5. **Component 3, Resilience Window: US$10 million.** The US$10 million allocation to the Resilience Window over five years funds the technical advice and operational support required to establish and operationalize the window across the six initial participating countries. The funding will support the identification of climate-resilient agriculture (CRA) activities at country level, capacity building for the institutions responsible for implementation, and impact evaluation where this is required to verify resilience outcomes against agreed milestones.

6. **The allocation works out to approximately US$1.5–2.0 million per country over the five-year period.** This allocation is calibrated to the technical advisory model rather than to direct investment in physical resilience activities. The Resilience Window is structured as a results-based vehicle in which milestone-linked premium discounts incentivize countries to invest in their own resilience activities through their existing budgets and programs; the US$10 million supports the technical scaffolding that enables countries to identify, design, implement, and verify those activities, rather than financing the activities themselves. Per-country amounts may vary depending on country context, the maturity of existing CRA programs, and the complexity of the Climate-Smart Agricultural Investment Plans (CSAIPs) being supported within each country.

7. **The category-level breakdown with unit costs, together with the treatment of SEADRIF's and FAO's in-kind contribution as cofinancing, will be developed for detailed funding preparations.**

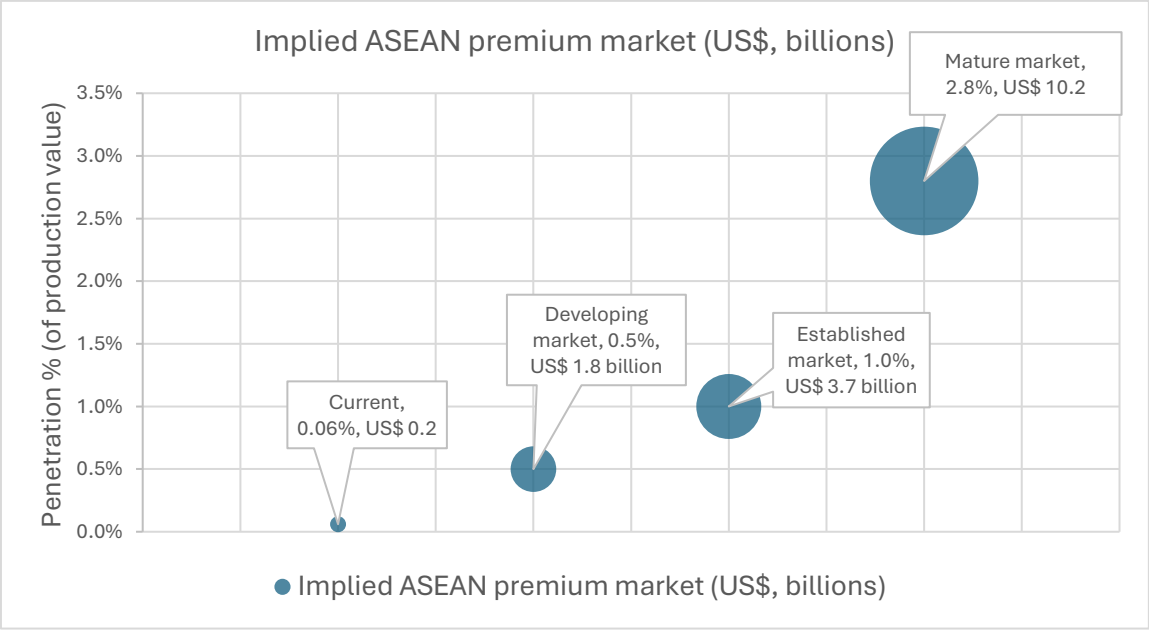
Annex 5. Market Opportunity: Detailed Analysis

1. **ASEAN's agriculture insurance market is structurally underserved by an order of magnitude.** RAISE has a Year 5 premium target of US$50 million based on assumptions about countries' insurable markets and expected onboarding of countries to SEADRIF-RAISE over five years. This section considers this assumption in today's observable market. The medium-term opportunity is at least 10 times larger than the addressable market and is already supported by policy commitments at both the regional and national levels.

Total Addressable Market: The Scale of Unmet Need

2. **ASEAN's agricultural insurance penetration is one-fiftieth of Japan's and one-seventieth of the United States'.** The region's agriculture, forestry, and fishing sector produces approximately US$365 billion in value annually,[1] yet agricultural insurance premiums represent only 0.06% of that figure—an implied premium pool of approximately US$220 million across the entire region. In mature markets, agricultural insurance is a substantial industry: Japan's agricultural insurance premium volume is 2.8% of agricultural production value, and that of the United States is around 4.0%.[2] Applied to ASEAN's production base, these benchmarks imply a premium market of approximately US$10 billion at Japan-equivalent penetration and approximately US$15 billion at US-equivalent penetration (Figure 3). Even at a fraction of mature market levels, the implied opportunity is an order of magnitude larger than what currently exists.

Figure 3. Implied ASEAN Premium Market



[1] Paul Teng, "Outlook for Agriculture and ASEAN's Role in Southeast Asia's Food Security," Fulcrum, February 14, 2024, https://fulcrum.sg/outlook-for-agriculture-and-aseans-role-in-southeast-asias-food-security/.
[2] Sanyu Consultants Inc., "Promotion of Crop Insurance in ASEAN Through the Public and Private Partnership: Stock-taking Survey Report," Japan-ASEAN Integration Fund/ASEAN Secretariat, June 2024, https://asean.org/wp-content/uploads/2025/03/02-Stock-taking-Survey-Report.pdf.

3. **The total addressable market is a measure of structural unmet need that justifies building regional market infrastructure now.** Reaching even the developing-market scenario (assumed at 0.5% penetration) would require a roughly eightfold expansion of current premium volume. The policy environment is supportive in principle and actively moving as described in Section 2.2.

4. **Mature agricultural insurance markets reach scale through two public mechanisms:** sustained premium subsidies that keep cover affordable, and a public reinsurance backstop that absorbs the catastrophe risk commercial markets price most expensively. For example, in the United States (the world's largest market), the federal Risk Management Agency (RMA) both subsidizes farmers' premiums and acts as reinsurer to the private insurers delivering the program, thus sharing catastrophe risk that would otherwise be ceded to commercial markets in full.[3] Most ASEAN markets have neither an equivalent public reinsurance mechanism nor the scale to place cover competitively, and rely on fully commercially priced reinsurance.[4] RAISE supplies this missing reinsurance layer regionally: concessional first-loss capital provides the catastrophe backstop that larger economies fund through national institutions. In this way, RAISE enables affordable, stable reinsurance for member programs.

Serviceable Addressable Market: What Currently Exists

5. **The agricultural reinsurance market in ASEAN is currently concentrated in three countries: Thailand, Malaysia, and the Philippines.** Thailand cedes approximately US$24 million in reinsurance premium annually through the Thai General Insurance Association, which retains 20% of the risk and cedes 80% to commercial reinsurers. Malaysia's Agro Captive Takaful Limited (ACTL) places approximately US$5 million in reinsurance annually.[5] The Philippine Crop Insurance Corporation writes approximately US$95 million in gross premium [6] but currently purchases no reinsurance; at a conservative 20% cession ratio, this implies a latent placement of approximately US$19 million. PCIC identified the need to secure reinsurance capacity for its agricultural insurance portfolio as a priority area to strengthen the program's sustainability and risk management. [7] This is consistent with the World Bank's 2023 review, which also highlighted the importance of developing appropriate reinsurance arrangements for the portfolio.[8]

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[3] USDA Risk Management Agency, "How the Program Works," https://www.rma.usda.gov/about-rma/history-rma/how-program-works; US Congressional Research Service, "Federal Crop Insurance: A Primer," R46686, February 18, 2021.
[4] Erin Leonard, Maggie Monast, Peter Hazell, and Anne Timu, "The State of Agricultural Insurance: A Global Review of Agricultural Insurance in a Changing Climate," Environmental Defense Fund, 2026, 28, https://business.edf.org/insights/the-state-of-global-agricultural-insurance-under-a-changing-climate/.
[5] Figures for Malaysia and Thailand are from national and regional consultations.
[6] PCIC, *Annual Report 2024* (PCIC, 2024), https://pcic.gov.ph/pcic-transparency-seal-2-4/.
[7] PCIC, "Philippine Crop Insurance Corporation—Roadmap, Priorities, & Strategies," paper presented at the Philippines Country Consultation Workshop on Regional Agricultural Risk Finance Facility, Quezon City, August 7, 2025.
[8] World Bank, *Reforming Agricultural Insurance in the Philippines: Policy Summary and Recommendations* (World Bank Group, 2023), 27–28, http://documents.worldbank.org/curated/en/099011124112021299.

6. **Together, current placements and this identified latent demand represent a near-term addressable reinsurance market of approximately US$48 million.** Indonesia operates a scaled program covering approximately 600,000 farmers, but comparable premium data were not available at the time of writing. Based on Indonesia's market size and the number of its farmers, the inclusion of Indonesia would increase the serviceable addressable market materially. Cambodia, Lao PDR, and Viet Nam operate pilot or early-stage programs. Thus the consideration of what currently exists reflects only the most developed segment of the regional market—before any growth in program scale, before new market development in earlier-stage countries, and before the policy-driven expansion already underway in several member states.

Serviceable Obtainable Market: How Much Premium RAISE Could Support

7. **Based on today's potential market, RAISE has set a Year 5 target of covering US$50 million in gross written premiums ceded to the facility.** Applying illustrative cession shares to the current national programs (see Technical Background, Section 7.9) shows that the existing reinsurance cessions of Thailand (10% of its commercial cession) and Malaysia (50% of its US$5 million commercial cession) would deliver approximately US$5 million to RAISE. The Philippines adds a prospective placement: if PCIC follows the World Bank's recommendation and begins to purchase reinsurance, an illustrative share to RAISE is approximately US$9.5 million (50% of a 20% share ceded to the reinsurance market). This brings the total from the three most developed programs to approximately US$14 million before any growth in those programs or onboarding of additional countries. The US$50 million Year 5 figure requires both growth in those programs and successful onboarding of Cambodia, Lao PDR, Viet Nam, and (in time) Indonesia as their domestic schemes develop. The premium pipeline assumption will be recalibrated at each country onboarding milestone.

8. **Assessed against the trajectory toward total addressable market, the market becomes materially larger.** At 0.5% penetration (roughly one-fifth of Japan's penetration, a level reached only over a long horizon and contingent on sustained subsidy and policy support), ASEAN agricultural insurance premiums reach approximately US$1.8 billion (Table 8). At typical reinsurance cession ratios of 30–40%, the implied reinsurance market is approximately US$540–720 million. RAISE is the only regional not for profit reinsurance aggregator purpose-built for this market. It is backed by member governments and through SEADRIF has regulatory standing under the Monetary Authority of Singapore. RAISE has credence in the market, given that it operates as a commercially structured institution, but it has no commercial profit motive and deploys concessional capital on first-loss pricing to stand between national schemes and commercial markets. National programs have a clear economic reason to cede risk to RAISE.

9. **A 50% share of a reinsurance market worth US$540–720 million implies annual premium income to RAISE of approximately US$270–360 million.** This share is an assumption for sizing the opportunity, not a market-share projection; the actual share will depend on cession terms negotiated once the facility is operational. The US$50 million Year 5 target is the volume needed to get the facility operational and sustainable. The addressable market is about 10 times larger. RAISE is the only regional infrastructure for

the agriculture insurance market in ASEAN countries that looks to support government priorities while growing the private sector.

Table 8. Potential Premium Volume Ceded to RAISE

Penetration scenario	ASEAN penetration (% of production value)	Implied market premium	Reinsurance market (assumed 35% cession)	RAISE share (assumed 50%)
Current	0.06%	~US$220 million	~ US$75 million	~US$40 million
Developing market	0.5%	~US$1.8 billion	~US$640 million	~US$320 million
Established market	1.0%	~US$3.65 billion	~US$1.3 billion	~US$640 million

10. **Illustrative penetration scenarios show the market potential and should not be deemed forecasts.** The "RAISE share" column in Table 8 applies an illustrative 50% share assumption to show market sizing. The "Current" row figures apply the penetration, cession, and share assumptions to the full implied market at a high level. The bottom-up sense check is detailed in Technical Background, Section 7.9. It shows that if today's possible placements are used as a sense check in three established programs, the possible amount ceded to RAISE is approximately US$14 million.

Annex 6. Financial Analysis

1. **The facility seeks concessional funding of US$155 million to establish RAISE.** Funding rises to US$235 million over five years as capital is phased in alongside country onboarding; this includes equity of US$70 million growing to US$150 million, a guarantee of US$50 million, and grants of US$35 million.

2. **Supporting the expected growth in premium volume (as set out in Section 5 on market opportunity) and the associated risk transfer requires US$235 million of layered funding over five years**: equity to retain risk, guarantees to lower the cost of commercial reinsurance, and grants for operations, technical assistance, and resilience investment.

3. **RAISE is capitalized through three types of funding, each utilized for a different role in the structure: grants, equity, and guarantees.** This annex explains what each instrument funds; why it is the appropriate form of capital for that role; how much funding each instrument represents; and how that may vary under different capitalization scenarios.

    - **Grants** provide the concessional funding needed to establish the facility and build the capacity around it. Grant funding covers the one-time cost of setting up RAISE within SEADRIF, its operating expenditure through the establishment phase before premium income is sufficient to cover it, and the Technical Assistance and Resilience Windows that build national capacity and reduce underlying risk. A grant is the appropriate instrument here because the benefits are public goods—a functioning regional facility, stronger national programs, better data and products, and lower underlying risk. Grant funding keeps these functions running during establishment so that affordability and capacity building are not traded off against each other. It continues until premium income can carry operating costs and the facility becomes self-sustaining.

    - **Equity** is the risk-bearing capital that allows RAISE to retain agricultural risk on its own balance sheet. The facility draws on equity to pay claims in the risk layer it retains, and the amount of equity directly determines how much risk RAISE can hold, how much premium saving it can pass to members through pooling, and how many consecutive bad years it can absorb without recapitalizing. Equity is the right instrument because retaining risk requires capital that is genuinely at risk—that is, funds that can be drawn down to meet losses and rebuilt from surplus in good years. It is provided on concessional terms: investors accept a below-market financial return, which is what enables RAISE to price cover affordably rather than at a commercial cost of capital. The concessional element is an acceptance of lower returns, in exchange for the development impact the facility delivers.

    - **Guarantees** are contingent capital; they represent a commitment to provide funds *if* losses reach a defined level, rather than capital paid in up front. In normal and moderate years, the guarantee is never called and no cash moves; it sits behind the facility as callable backing. In a severe year, if losses breach the guaranteed layer, the guarantee is triggered and the funds flow in to cover claims that would otherwise erode the capital base. In this sense, a guarantee performs the same function as reinsurance: it absorbs a defined slice of loss and lets RAISE seek a higher reinsurance attachment point, which is what lowers the premium paid to commercial markets.

4. **A core design principle of the funding structure is that member governments are not required to make up-front fiscal contributions during the establishment phase.** Because the facility is capitalized through grants, concessional equity, and guarantees, countries can access coverage on the strength of pooled, donor-supported capital rather than sovereign outlay, with member contributions arising through premium once programs are operational.

5. **By end of Year 5, RAISE will support approximately US$50 million of annual agricultural reinsurance premium across six ASEAN countries**. At this volume, the facility achieves the projected diversification, retention efficiency, and commercial reinsurance leverage.

6. **RAISE is capitalized to retain losses that are predicted to happen up to the 1-in-10-year level and absorb two consecutive maximum-retention loss years without requiring additional capital mid-cycle.** The US$70 million of initial equity with US$20 million annual injections is phased to increase with exposure growth as countries are onboarded. Retention mechanics, the capital-at-risk ratio, and the prudential buffer rationale are described in Technical Background, Section 7.4.

7. **Using the guarantee moves up the reinsurance attachment point beyond the 1-in-10-year level and makes the pool more affordable.** RAISE can already offer savings by retaining risk up to the 1-in-10-year level and ceding everything above it directly to commercial reinsurers; but a guarantee would allow RAISE to retain more risk, and it would halve the premium paid to commercial markets because the layer immediately above the retention is the most expensive to cede. The guarantee is one means of supporting a higher attachment point (an equivalent amount of paid-in capital would achieve the same effect), so the saving comes from the structure, not from the guarantee instrument itself. The facility uses two guarantee tranches: the first sits just above SEADRIF's retention and absorbs the expensive working-layer cession that would otherwise go to the commercial market; the second sits above the commercial layer to support solvency in severe years, with a drop-down feature if the first is exhausted. Tranche structure, attachment points, and drop-down mechanics are described in Technical Background, Section 7.6.

8. **Grants and operational funding cover the incremental operational cost of running RAISE within SEADRIF for the first years, plus the Technical Assistance and Resilience Windows.** US$10 million can fund initial operations over five years because RAISE need not duplicate the licensing, regulatory, and staffing infrastructure that are already part of SEADRIF. Over the same period, US$15 million supports the Technical Assistance Window and US$10 million supports the Resilience Window.

9. **Stress testing confirms that the structure absorbs adverse loss years without impairing solvency or the ability to pay claims.** Three stress scenarios and one upside scenario have been modeled against the projected portfolio (see Table 9). Instead of a single-year probability, the model describes probabilities for the full loss sequence across five years. Methodology, country phasing assumptions, and the statistical loss distribution used to model the frequency of extreme years (a gamma distribution, chosen because it fits the pattern of insurance losses) are presented in Technical Background, Sections 7.7 and 7.8.

10. **The facility is not calibrated to a single expected outcome but rather designed to keep operating through adverse years**. Across the loss scenarios tested, capital is drawn down but stays within solvency thresholds, and claims-paying capacity is preserved. The scenarios are illustrative, not predictive: they show how capital would respond to specific shocks over the five-year period, not which outcome is expected. Actual performance will depend on realized losses, country onboarding pace, and cession volumes.

Table 9. Loss Scenarios

Scenario	Description	Approximate probability as a five-year outcome	Implication for SEADRIF-RAISE
Upside	Favorable loss experience across all five years	~ 1-in-20-year best case over five years	Capital base grows by more than US$100 million above starting position
Moderate losses	Average-size loss in each of the five years	1-in-2-year over five years	Capital base grows by more than US$50 million above starting position
Large shocks	Two high-loss years: one 1-in-10-year event and one 1-in-25-year event	~ 1-in-25-year worst case over five years	Capital base absorbs losses but is reduced by US$40 million; guarantee tranches provide solvency protection
Severe shocks	One 1-in-25-year event and one 1-in-100-year event	~ 1-in-100-year worst case over five years	Capital is reduced by US$70 million but held within solvency thresholds through the layered guarantee and reinsurance structure; retention levels will likely need to be changed to maintain capital at risk levels

11. **Three capitalization scenarios were considered.** The Market Transformation scenario (initial equity of US$70 million, scaling to US$150 million) is recommended; the Market Making scenario (US$50 million) and Pilot scenario (US$10 million) establish operational presence but constrain the facility's ability to retain risk and deliver premium savings at scale. For simplicity, the scenarios assume the same amount of premium to be ceded to RAISE; what varies is the RAISE retention and amount of premium charged to the countries. Trade-offs across the three scenarios are summarized in Technical Background, Section 7.5. The detailed scenario analysis is in the same section. The choice of capitalization matters directly for affordability: under the Market Making scenario, reinsurance premiums paid by countries would be approximately 15% higher than under the recommended Market Transformation scenario, and under the Pilot scenario they would be approximately 25% higher. The detailed scenario comparison is presented in Technical Background, Section 7.5.

12. **The financial internal rate of return (IRR) is derived from the facility's modeled cash flows over the five-year establishment window.** The cash-flow profile has three elements: phased equity injections (US$70 million at establishment, rising to US$150 million by Year 5 through annual injections), the annual operating result (premium retained by RAISE, less commercial reinsurance cost, claims on the retained layer, and operating expenses), and the capital position at the end of the window. The financial IRR is the discount rate that sets the present value of these flows to zero from the capital provider's standpoint. It is negative—at approximately -40% in the mean scenario—because the injections are front-loaded and cover is priced at concessional levels so operating surpluses are modest (a cumulative US$54 million over five years in the mean scenario). Note that no distributions are made within the window; capital is treated as permanently committed to the facility rather than recoverable at the horizon, so the terminal capital position (capital and accumulated operating income at the end of five years) does not enter the calculation as an inflow.

13. **Operating results are modeled under three loss scenarios, and the return metrics are reported across all three.** Scenario 1 reflects mean modeled losses; Scenarios 2 and 3 reflect progressively more adverse loss sequences, including consecutive years with large losses corresponding to approximately 1-in-25-year and 1-in-100-year return periods over the five years. Under the adverse scenarios, operating results turn negative in loss years and the financial IRR is less meaningful, which is the expected behavior of a start-up reinsurer absorbing severe years on a still-small premium base.

14. **The economic IRR applies the same cash-flow logic from the member countries' standpoint.** The outflows are the same resources deployed; the inflows are the benefit streams to members: premium savings relative to standalone commercial placement (modeled at just over 20%), the welfare value of faster post-disaster payouts (1.3 assumed, using the assumption of the 1.28–1.90x benefit multiplier from the African Risk Capacity cost-benefit literature), and reduced fiscal volatility. Across the three loss scenarios, the **economic** IRR ranges from -1% to 18%, highest in the severe scenario because high-payout years are the years members derive the greatest value. The full year-by-year metrics and the interpretation of each measure are set out in the Technical Background report, section 7.7.

Annex 7. Risks and Mitigation Measures

1. **Proactive risk management is essential to the facility's success and sustainability.** Strategic, operational, and financial risks must be identified and addressed early to ensure effective implementation and long-term viability. Risks and mitigation measures will be regularly reviewed throughout the implementation period to ensure they remain relevant and effective. Ongoing monitoring and feedback mechanisms will enable timely adjustments to strategies, supporting the facility's long-term success and resilience. Table 10 outlines key anticipated risks and corresponding mitigation measures designed to safeguard the facility's performance and resilience.

Table 10. Risks and Mitigation Measures

Potential risk	Mitigation measure
Political commitment and policy continuity: Despite confirmed government commitment to establish the facility, changes in government priorities or lack of sustained support could affect facility implementation and long-term sustainability.	**Strengthen policy dialogue, awareness, and country ownership:** Enhance engagement with member governments, align with national priorities, and establish country focal points or steering committees to create continuous collaboration. Increase policymakers' and senior staff's awareness of the benefits of climate and disaster risk insurance, including its potential to incentivize the transition toward climate-resilient agriculture (CRA).
Product suitability and design: Insurance products may not align with the actual needs, preferences, or risk exposures of the intended beneficiaries, leading to low uptake and dissatisfaction.	**Develop tailored insurance products:** Design and refine products through an iterative, evidence-based process using scientific data, risk modeling, and participatory needs assessment. Conduct stakeholder consultations, analyze exposure and loss data, and integrate user feedback into product design to address risks effectively.
Robust data availability: Inadequate or unreliable data for risk modeling, pricing, and claims assessment could undermine product accuracy and trust.	**Invest in data systems and technology:** Support national and regional data platforms, remote sensing tools, and digital claims processing to improve accuracy and efficiency. Provide harmonized support for data sharing, analytics, data-driven product design, and quality assurance to enable reliable risk assessments and responsive insurance solutions.
Insurance market interest: Interest from private insurers may be limited due to perceived low profitability, high volatility and costs, or regulatory constraints.	**Promote private sector incentives and partnerships:** Promote coinsurance, risk-sharing, and public–private partnerships; encourage private sector participation by reducing risks and costs. Support enabling regulatory and institutional environments to sustain engagement and long-term market viability.

Operational and governance complexity: Multicountry coordination, complex fund flows, and diverse regulatory environments may create operational challenges.	**Streamline governance and operations:** Adopt modular, flexible operations with clear roles, financial controls, and transparent reporting. Ensure local contexts are assessed, with dedicated staff proactively identifying bottlenecks, implementing mitigation measures, and coordinating with government and private sector partners.
Stakeholder engagement and capacity: Low awareness, limited technical capacity, and weak local engagement could hinder uptake and effectiveness.	**Conduct capacity building and outreach:** Invest in training, technical assistance, and awareness campaigns for governments, private sector partners, and farmers to promote insurance integration into CRA practices through planning and demonstration, including incentives, and ensure sustained in-country funding for long-term capacity development.
Financial sustainability: Limited participation by member states and private actors could constrain SEADRIF-RAISE's scale and pooling benefits, making it harder to optimize risk sharing and maintain competitive pricing.	**Build on existing commitments and raise awareness:** Ensure participation by member states and private actors by building on the initial commitments and consultation processes already carried out; provide awareness-raising, training, and product design support to demonstrate the value of reinsurance pooling, reduce costs and risks, and support national agricultural priorities to crowd in public and private capital.
Large regional losses from correlated events in the region: Agricultural risks across member countries are correlated, such that multiple countries could experience large losses simultaneously, affecting the facility's capital position.	**Ensure robust pricing, reinsurance, and capital setting:** Price premiums on an actuarially sound basis that accounts for loss potential; transfer losses above the facility's retention via outward commercial reinsurance; ensure capital is set to withstand such shocks by having two consecutive maximum-retention loss years, with the capital model stressed for a common regional shock.
Financial and regulatory risks: Financial irregularities, money laundering, and terrorism financing pose financial and regulatory risks.	**Ensure regulatory compliance:** Ensure that SEADRIF, a Monetary Authority of Singapore–regulated entity, complies with policies and procedures to address risks; with Singapore's standards for licensing, supervision, consumer protection, anti-money laundering, and risk management; and with the World Bank's fiduciary, compliance, and oversight procedures.

Annex 8. Environmental and Social Safeguards

1. **The safeguards assessment presented below is based on the initial SEADRIF-RAISE concept.** It provides an initial assessment of the program's anticipated environmental and social risks to inform concept development and identify key safeguards considerations. A comprehensive safeguards assessment will be undertaken during full project preparation in accordance with the requirements of the financing partner. An Environmental and Social Management System (ESMS) for SEADRIF-RAISE will also be developed, aligned to SEADRIF's overall safeguards approach and the financing partner's requirements.

2. **The environmental and social risks associated with SEADRIF-RAISE are anticipated to be low to moderate.** Most activities under the facility, particularly those associated with the Technical Assistance Window and Reinsurance Window components, are expected to present low environmental and social risk, as they are limited to capacity building, advisory services, risk modeling, and pooled reinsurance. Such activities do not involve physical works, land acquisition, or other interventions that would be expected to generate direct environmental or social impacts. While the facility's direct operations are considered low risk, it is acknowledged that activities financed or supported using resources or payouts by beneficiaries may entail moderate environmental and social risks.

3. **Both the Resilience Window, which provides grants and milestone-based incentives for climate-smart agriculture investments, and the payouts from the reinsurance facility may introduce some environmental and social risks.** Given that communities and governments will make decisions regarding which climate-smart agriculture investments to implement, the environmental and social risks of the specific activities to be supported cannot be determined at this stage. Furthermore, the facility will have only limited direct engagement with on-the-ground environmental and social management. In this context, the facility will disseminate and promote SEADRIF environmental and social policies and safeguard principles among governments and relevant stakeholders to strengthen awareness and support responsible implementation as an additional safeguard measure.