

CORVI-ADAPTED SUFIA RISK SURVEY METHODOLOGY

Illegal, unreported and unregulated (IUU) fishing costs the Indo-Pacific region an estimated USD 5.8 billion each year.¹⁶⁶ IUU fishing threatens the food and human security of over five million people living in the ASEAN member states, undermines the rule of law and the sustainable management of the region's fisheries, and is connected to organized crime and forced labor. Foreign vessels from distant water fleets and neighboring states threaten the sovereignty and territorial integrity of ASEAN countries. USAID Sustainable Fish Asia Technical Support (SuFiA-TS) works to promote sustainable fisheries management and marine biodiversity conservation in the Indo-Pacific, address gender and forced labor concerns in the seafood supply chain and provide technical support services and tools to combat IUU fishing.

To develop effective policies aimed at reducing the harm caused by IUU fishing requires critical data and information on IUU fishing activities across the ASEAN region and within the territory and maritime domain of individual countries. However, the inherently clandestine nature of IUU fishing makes it difficult to access adequate local and regional data needed to accurately estimate risks associated with IUU fishing. IUU fishing in the maritime domains of ASEAN member states and regional water bodies is perpetrated by a variety of fishers and other actors in the seafood supply chain: foreign and domestic, artisanal, small-scale, and industrial. In addition, IUU fishing activities are distinct and actions to combat IUU fishing require approaches that are sometimes unique to the offenses requiring different interventions to eliminate them. Yet IUU fishing also requires a combined, all-of-government approach to address the multi-pronged nature of the problem. Each country surveyed by the SuFiA-TS team has distinct enabling economic, environmental, and governance conditions that allow IUU fishing to continue, further complicating a comparative risk assessment.

To address the challenges of a data-scarce environment in the country and subregional waterbody-based IUU fishing risk assessments conducted in SuFiA-TS, the activities which produced this seascape risk profile employ an adapted version of the [Climate and Ocean Risk Vulnerability Initiative \(CORVI\)](#) methodology designed by the Stimson Center's Environmental Security Program. The CORVI method has been applied in 16 coastal cities and Small Island Developing States (SIDS) around the world. CORVI is a data-driven, stakeholder-led process to help governments, businesses, and financial institutions assess climate risks and pinpoint priority areas for building resilience to climate change. The SuFiA-adapted CORVI methodology takes an integrated approach to risk by assessing the economic, environmental, and governance factors that drive IUU fishing in the region. This relies on a mixed method approach to quantify the risk of IUU fishing in each country and regional water body surveyed. The quantitative data generated by this methodology is coupled with qualitative data from semi-structured expert interviews conducted in country and virtually to provide a holistic IUU fishing risk profile.

Figure 32: Seascape IUU Risk Profile



WHAT IS THE SUFIA-ADAPTED CORVI METHODOLOGY AND HOW DOES IT BUILD IUU FISHING RESILIENCE IN DATA SPARSE ENVIRONMENTS?

SuFiA-adapted CORVI is an analytical tool developed by the Stimson Center’s Environmental Security and Southeast Asia Programs to support regional bodies in assessing vulnerabilities to IUU fishing in data sparse environments. It pinpoints areas in need of adaptation by providing a comprehensive understanding of the economic, environmental, and governance risks associated with IUU fishing. SuFiA-adapted CORVI assesses the vulnerability of ASEAN countries within a regional seascape to the impact of IUU fishing by comparing 15 different IUU-related risk factors across 3 different categories, using the structure expert judgement (SEJ) method to quantify risk in data-sparse environments.¹⁶⁷ Through structured interviews and surveys with subject matter experts, accompanied by a weighting process to ensure representative data points, the SEJ method provides quantitative insight. Through this analysis on a diverse range of economic, environmental, and governance risks, SuFiA-adapted CORVI produces robust assessments of the vulnerabilities and resilience of ASEAN countries to current and future IUU fishing impacts and allows for risk-level comparisons between countries within a pre-defined regional seascape.

These risk assessments- consisting of SEJ-derived risk scores, semi-structured expert interviews, and literature reviews- help to identify countries’ strengths and weaknesses in addressing IUU fishing resilience and vulnerability mitigation. They also highlight discrepancies between risk scores, existing literature, and subject matter experts. The combination of quantitative risk scores and qualitative insight from experts form the basis of actionable policy recommendations, which, in turn, can be communicated to a broad range of stakeholders through tailored messaging to specific groups in a structured and concise manner. Through the implementation of this process, SuFiA-adapted CORVI can assist in the prioritization of actions, development of targeted policy solutions, and improvement of the decision-making process.

HOW THE SUFIA-ADAPTED CORVI METHOD IS DIFFERENT

The SuFiA-adapted CORVI Method builds on the work of previous indices but is distinct in three ways.

1. Regional Seascape-Based: Unlike many other indices that tend to focus on the national or sub-national level, this method focuses on comparative country-level analysis within the context of IUU fishing within a regional seascape. This focus is based on extensive interviews with key stakeholders and actors who noted the difficulty of applying risk assessments to the regional seascape scale to inform policy action to reduce and address issues of IUU fishing and reduce sustainable fisheries management.

2. Holistic: This method looks across a broad set of governance, environmental, and economic risk factors that are connected to IUU fishing and influence sustainable fisheries management. As part of the category and indicator selection process, indicator inclusion was primarily based on its ability to capture and explain IUU fishing risks within a respective seascape and not on whether data was available. This approach promotes a holistic understanding of risks to IUU fishing.

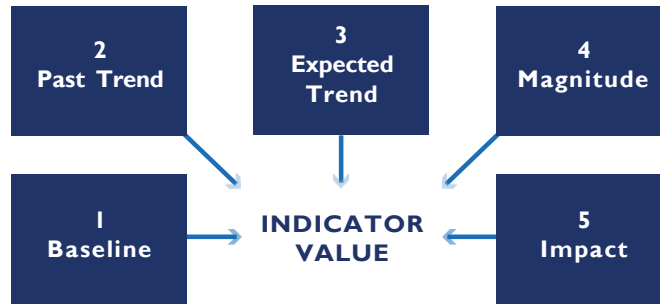
3. Data-Driven: Through its utilization of SEJ, this method is suited to producing actionable insights in data-sparse environments. By combining empirical and survey data across a wide range of indicators, this method fills data gaps to provide a holistic assessment, while reducing data availability bias. This approach provides a contextual and data-driven evaluation of IUU fishing risks.

INDICATORS

To ensure that the SuFiA-adapted CORVI indicator scores provide a holistic risk rating, each comprises five factors: current, past, and expected trends, the rate of change of the risk, and the impact of this risk on the country.

- 1. Baseline** measures the current level of IUU fishing risk for an indicator relative to other countries in the seascape.
- 2. Past Trend** assesses the trend of risk for the past ten years.
- 3. Expected Trend** assesses the anticipated trend of risk in the next ten years.
- 4. Magnitude** measures the degree of expected future trend change relative to other countries in the seascape. Change that happens more quickly than expected are assumed to increase risk when compared to changes that take place over a longer time scale. This assumes that longer periods of change contribute to less risk, as decision makers have more time to adapt and build resilience.
- 5. Impact** assesses the importance of change for an indicator in describing future risk in the country.

Figure 33: Indicator Factors



In the SuFiA-adapted CORVI survey, respondents are asked to answer five questions per indicator derived from the process outlined above. The questions are also informed by extensive desk research and expert interviews carried out during the survey design process. Figure 34 is a representation of the five survey questions related to an individual indicator.

Figure 34

SuFiA TS-CORVI Survey - South China Sea

EC1: Percentage of Population Employed by Fisheries

This indicator measures the workforce of the fishing industry, throughout the seafood supply chain, relative to total population in each country, inclusive of artisanal, small-scale, and industrial fisherfolk. Foreign fisherfolk living in each country are included in this indicator.

* EC1:Q1 - How would you rate the percentage of the population employed in fisheries in your country compared to other countries in the region?

Lowest Compared to Other Countries | Highest Compared to Other Countries

1 2 3 4 5 6 7 8 9 10

○ ○ ○ ○ ○ ○ ○ ○ ○ ○

* EC1:Q2 - How do you think the percentage of the population employed in fisheries in your country has changed over the past 10 years?

▾

* EC1:Q3 - How do you think the percentage of the population employed in fisheries in your country will change over the next 10 years?

▾

* EC1:Q4 - Over the next 10 years, how do you think that change in the percentage of the population employed in fisheries in your country will compare to other countries in the region?

Lowest Change Compared to Other Countries | Highest Change Compared to Other Countries

1 2 3 4 5 6 7 8 9 10

○ ○ ○ ○ ○ ○ ○ ○ ○ ○

* EC1:Q5 - How much do you think the change in the percentage of the population employed in fisheries contributes to increased IUU fishing risk for your country?

Least Impactful | Most Impactful

1 2 3 4 5 6 7 8 9 10

○ ○ ○ ○ ○ ○ ○ ○ ○ ○

Prev Next

DATA COLLECTION AND STRUCTURED EXPERT JUDGEMENT

To overcome data gaps, SuFiA-adapted CORVI employs structured expert surveys to collect data that is otherwise unavailable. This primary data is combined with secondary data using SEJ to produce a comparative score for each category in the assessment. SEJ is a well-established social science technique that seeks to quantify risk when preexisting secondary data is inadequate. Through interviews and surveys, and a series of weighting procedures to ensure data is representative, SEJ allows researchers to quantify topics that might otherwise be challenging to study systematically.

To apply SEJ to SuFiA-adapted CORVI, subject matter experts across academia, government, civil society, and the private sector were identified by the SuFiA-TS Regional Experts Technical Team (RETT). These experts were interviewed by the research team and then asked to complete the survey. To guard against confirmation bias, survey answers are compared to a regional secondary empirical dataset to weigh the expert responses by utilizing a coherence check.¹⁶⁸ The coherence check ensures that experts whose answers do not match secondary data are not weighed as highly as those who do and are adjusted accordingly. Weighted survey answers per question are then averaged to determine a weighted mean score per indicator. The five weighted indicator scores are then averaged to determine a mean score for each respective category.

Figure 35: Survey Participants

Who Took the Survey?	Academic Expert	Government Official	Private Sector Representative	NGO representative	Total
# of respondents	5	17	4	19	45

This approach has several strengths. First, SuFiA-adapted CORVI incorporates the views of subject matter experts and local stakeholders at each stage of its implementation. This allows the final product to better reflect the specific context it is seeking to measure and provide more focused information for end users. Second, pairing primary survey data with secondary data through SEJ allows SuFiA-adapted CORVI to provide insight into risks relating to IUU fishing that existing secondary datasets do not cover. While the use of SEJ allows SuFiA-adapted CORVI to assess a diverse range of risks, it should not be regarded as a substitute for empirical data collection. Rather, SEJ is best viewed as an alternative research technique specialized to analyzing topics with significant data gaps.¹⁶⁹

ENDNOTES

¹⁶⁷ Tracy Rouleau et al., “Closing the transparency gap: Global perspectives on technology and policies to harmonize traceability and transparency across the seafood supply chain,” *Frontiers in Sustainable Cities* no. 4: (September 2022), <https://doi.org/10.3389/frsc.2022.884212>.

¹⁶⁸ Abigail Colson and Roger Cooke, “Expert Elicitation: Using the Classical Model to Validate Experts’ Judgements,” *Review of Environmental Economics and Policy* 12, no. 1 (2018): 113-132.

¹⁶⁹ H. Kunreuther, S. Gupta, V. Bosetti, R. Cooke, V. Dutt, M. Ha-Duong, H. Held, J. Llanes-Regueiro, A. Patt, E. Shittu, and E. Weber, “Integrated Risk and Uncertainty Assessment of Climate Change Response Policies,” *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. O. Edenhofer, R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel, and J. C. Minx (Cambridge: Cambridge University Press, 2014). <https://www.preventionweb.net/news/wwf-bpicomplete-climate-adaptation-study-16-philippinecities>

¹⁷⁰ M. Eko Rudianto, “Implementation of MCS in RPOA-IUU,” RPOA-IUU Secretariat, 24 August 2022, http://www.seafdec.or.th/mcs/mcs-workshop-2022/presentations/Agenda_3_RPOA-IUU_MCS.pdf.