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## Marine Fisheries Insurance Issues and Strategies for Bangladesh







91, Saint Mary's Road, Abhiramapuram, Chennai - 600 018, Tamil Nadu, India Telephone: # 91 44 42040024, www.bobpigo.org, Email: info@bobpigo.org The marine fisheries sector of Bangladesh is amongst the fastest growing marine fisheries sectors globally. From a subsistence activity, it is in the process of transformation to a key blue economy sector, revitalizing the coastal economy and contributing to national development. However, what lies in the future of the sector is uncertain. The uncertainty stems from rapid changes in the climate that in turn is changing the conventional socio-ecological system in which the fisheries operate.

There is no single solution to the emerging problems but a range of actions are needed. One of the much-needed actions is to mitigate the financial risks faced in the fishing operations and by the fishers. Insurance is a tested measure employed by people and businesses to deal with risks and uncertainties and cut down expected losses from adverse events.

While insurance still remains an enigma to the fisheries sector, there is a renewed thrust on its integration into fisheries policies to deal with the escalation of risks in the sector, globally. However, it's easier said than done.

The big question is what can be done to popularise the adoption of insurance in the sector. This policy brief presents the views of a wide range of stakeholders on insurance and offers an insurance toolbox for the government to consider and act upon as a social welfare measure.





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### **Bay of Bengal Programme** Inter-Governmental Organisation

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Policy Brief: Marine Fisheries Insurance - Issues and Strategies for Bangladesh

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### **Key Messages**

- The marine fisheries in Bangladesh is playing an important role in the national economy both as a source of food and livelihood. Therefore, ensuring that risks are mitigated to the best possible extent is of paramount importance.

- The sector employs about 512 thousand fishers and about 10 times more people are likely engaged in pre-and post-production activities. The nature of fisheries is largely artisanal and small-scale. Addressing the income risks of the fishers will contribute to the SDG 14 Sub goal: "securing sustainable smallscale fisheries".

- Fishers face conventional business disruption risks and elevated climate risks. The risk implications vary in terms of scale, timing, location, and impacts. Therefore, to address different types of risk, an insurance mix is required.

- For wide-ranging and macro-level weather risks, parametric insurance is emerging as an ideal solution. Parametric insurance is also ideal when verification of a claim is difficult since this insurance is based on third-party information.

- It can complement conventional loss & damage insurance for covering risks of personal nature such as business disruption due to technical failure of boats. Further, to address the various issues of conventional insurance (high transaction cost, high premium, unsuitable design, etc.), and targeting different sub-sectors such as artisanal and motorized fisheries

sectors, micro-insurance and mutual insurance may be considered.

- However, the insurance market is yet to be fully developed to address either conventional or parametric risks. Due to lack of exposure, fishers also lack understanding about insurance benefits and how it can be used strategically. Combined, there is an inadequate trust of the fishers in the utility of insurance schemes and loyalty of insurance companies.

- Therefore, a strong public policy is needed to evaluate the scope of insurance and give direction to its design so that the sector finds it beneficial. To address the trust issue, the Government may act as a mediator or aggregator of risks and facilitate reinsurance. The strong NGOs of the country could be incentivized to promote micro and mutual insurance in the country.

- There is a transformational change in the country in terms of remote app-based money transactions. The popular app BKash is accessed by people across economic classes. Such technology can be roped in to develop low-cost insurance for fishers.

Policy Brief: Marine Fisheries Insurance - Issues and Strategies for Bangladesh

### 1. Introduction

This policy brief presents the key findings from a study carried out by the BOBP-IGO with funding from the World Bank. The overall objective of the study was to evaluate the existing mechanisms of risk transfer and risk mitigation concerning climate change in the fisheries sector.

The marine fisheries sector of Bangladesh is a vibrant primary sector activity. The country has an exclusive economic zone of about 118.8 thousand sq. km and a fishing fleet of 67 889 numbers. The total fisheries production is about 671 thousand tonnes. The fisheries sector is largely of small-scale artisanal fisheries (SSAF) in nature. The SSAF sector contributes about 83 percent of the production. It also plays an important role in coastal employment generation, making fisheries the second largest source of employment after agriculture in the coastal areas (Table1).

There is growing evidence that climate change is intensifying extreme weather events and fostering changes in productivity, biodiversity, species distribution, and habitat health in the oceans. Marine capture fisheries is an inherently risky activity. The risk profile is The marine fisheries sector is a key pillar in ushering in increased blue economy potential of the country. The work-plan on Blue Economy1 published by the DoF-

BD proposed a set of measures for modernizing the sector including assessing resource potential and improving deep sea fishing capacity, especially, tuna fishing. One of the thrust areas identified in the work-plan is improving the standard of living of the coastal fishers. Under this thrust area, the Government proposed to implement an insurance scheme for the coastal fishers and also to set up a trust fund for their welfare. In addition, the Government also proposed to take measures to improve awareness of disaster management amongst the coastal fishers.

Table 1. Bangladesh Key Statistics			
Coastline (Km)	720		
EEZ (sq. km)	1,18,813		
Number of fishers (Estimated) (Nos)	5 12 000		
Number of fishing vessels (Nos)	67 889		
- Industrial (mechanized) trawlers among the	e above 220		
- Mechanized gillnetters	32 859		
- Non-mechanized vessels	34 810		
Marine fish production (2019-20) in tonnes	6 71 104		
- Contribution by industrial trawlers	1 15 354 (17% of total)		
- Others	5 55 750 (83% of total)		
Growth rate (%) during 1983-84 – 2019-20	1.70		
- Industrial trawlers	7.57		
- Others	0.56		

Compiled from the Annual report of the Department of Fisheries, Government of Bangladesh (Dof-BD), 2020

worsening further with climate change. Therefore, the traditional risk finance instruments of the fishers, such as personal loans, conditional loans, sale of assets, and investment in fishing capacity are unlikely to be adequate appropriate in the long-term. There is strong evidence now that the spread and magnitude of the climate problems are likely to be such that non-institutional financiers in the fisheries sector, such as relatives, and moneylenders would also be facing substantial risks.

Pragmatic risk management solutions are required to adapt to the changing situation. It is in this context there is a growing recognition of insurance as a risk management measure. Bangladesh has mixed experience in insurance adoption. The industrial trawlers are insured. However, balance 99.99 percent of mechanized and non-mechanized fishing vessels are not insured. There is also no insurance for crew and business disruptions.

There is a growing number of innovations in the insurance sector to improve the coverage of so far uninsured risks. One such innovation is the introduction of parametric insurance. Conventional insurance deals with loss and damage (L&D) from named perils. For example, in the case of a householder policy, theft is a named peril. If subscribing householder notices theft in his house and submits a verified claim to the insurance company, his loss will be mitigated as per the policy terms. On the other hand, parametric (or indexbased) solutions are a type of insurance that covers the probability of a predefined event happening instead of indemnifying the actual loss incurred. It is an agreement to make a payment upon the occurrence of a triggering event, and as such is detached from an underlying physical asset or piece of infrastructure. Consequently, there is also a need to rethink strategies to promote meaningful and adequate insurance in the fisheries sector and address lingering bottlenecks. The Government has already identified itself as the key player in this agenda. The technological progress in the country can further help to boost this endeavor.



### 2. Methodology

This Policy Brief is a result of an exploratory and participatory study conducted by the BOBP-IGO in the South Asia region in 2022. The baseline information was collected through a detailed review and analysis of international policies, government policies, and scientific literature on insurance and climate change. A draft strategy was developed based on the baseline information and critical areas were identified.

In the next step, a participatory approach was adopted and discussions were held with fishers, fisher associations, and insurance companies to understand their perspective and evaluate the draft strategy. The focus group discussions were complemented by a questionnaire survey carried out in selected coastal states in Bangladesh. The final recommendations were arrived at by taking note of the views of the stakeholders and global experience in dealing with risks in the fisheries sector.



# 3 Typology of risks and risk finance mechanism in fisheries

Dimension	Internal/operational risks	Climate risks
Production	The catch is stochastic. Acquired knowledge of the fishers supported by technology is used to meet the risk.	Climate change is likely to obsolete traditional knowledge increasing the production risk.
	Loss of fishing days due to conservation and management measures (CMM). CMM, however, improves stock health and contributes to production. Income support (saving-cum-relief) is provided to cover the lean period.	Loss of fishing days due to bad weather days. Since bad weather days are localized in nature, they do not generate benefits like CMM.
Life/ Health	Collision, man slipping overboard, injury from outboard motors, piracy, etc.	Cyclones, lightning, flood
Asset risk	Engine failure, gear loss, hull damage	Damage due to cyclone
Other business	Non-functional/poor infrastructure, etc.	Damages to infrastructure risks facilities.

The results from stakeholder consultations show that non-institutional finance, such as loans from moneylenders, friends, and relatives is the major source of finance in the fisheries sector. The SSAF vessel owners do not qualify for bank credit as they are not insured. Therefore, they have to look for a personal loan at a higher interest rate to finance fishing operations. Crew, boat owners, money lenders, and other similar categories are a major source of credit. Unlike the agriculture sector, micro-credit and SHGs are not much developed in the marine fisheries sector.

### 4. Emerging Climate Risks

The earth will face different climate scenarios from moderately bad to extremely bad in the coming days depending on the emission levels of greenhouse gases. To measure the possible changes, the Intergovernmental Panel on Climate Change (IPCC) has developed Representative Concentration Pathways (RCPs) models. This model-based analysis showed that the surface air temperature would increase by 2.0 and 2.4oC under RCP 4.5; and by 2.7 and 4.4oC under

RCP 8.5 during 2040-2069 and 2070-2099, respectively (Krishnan et al., 2021). Bangladesh is the world's largest delta and is very susceptible to climate change. The Government has listed various natural calamities as disasters including cyclones, drought, floods, and lightning. Various climate change phenomena which can affect the fisheries sector in Bangladesh include:

- Sea surface temperature (SST) of the Indian Ocean has risen by 1°C on average during 1951–2015, markedly higher than the global average SST warming of 0.7°C, over the same period. The projected increase in SST is likely to change fish distribution further in the Indian Ocean, with the possibility of negatively changing population abundance.
- Changes in precipitation are likely to influence fish breeding. Results of the increased variability of monsoon precipitation and increased water vapor demand in a warmer atmosphere and climate model projections indicate a high likelihood of an increase in the frequency of drought intensity (>2 events per decade) in arid and semi-arid zones. The area under drought conditions will increase in Bangladesh by the end of the twenty-first century under RCP8.5 scenarios.

- Sea-level rise in the North Indian Ocean (NIO) occurred at a rate of 1.06–1.75 mm per year during 1874–2004. It has accelerated to 3.3 mm per year in the last two and a half decades (1993–2017). Therefore, many lowlying areas along the coast are likely to be inundated in the future.
- Ocean acidification projections are still at a nascent level for the Bangladesh seas. However, it may lead to a decrease in survival, calcification, growth, development, and abundance of various categories of marine organisms, such as shellfish.

### 4.1 Intensifying cyclonic activities in the Bay of Bengal Region

The Bay of Bengal (BOB), the largest bay in the world with an area of 1 million square miles, accounts for 0.6 percent of the global ocean area. During 1990-2021, 190 disturbances were recorded in the BOB region (an average of 6-7 cyclonic disturbances per year, Figure 1). About 110 tropical disturbances remained as depressions/deep-depressions (58% of the total); 25 percent of tropical disturbances converted into severe cyclonic storms; and 17 percent turned into cyclonic storms. Given the probabilities, the BOB region has a 25 percent chance of witnessing a severe cyclone of all the cyclonic disturbances forming in the BOB. Moreover, when we consider the entire severe cyclone formed in the last 31 years, for every two years there is a chance to receive three severe/very severe cyclones. In the case of cyclones, specific to Bangladesh, there were 19 cyclones during the last 30 years (1990-21) (Figure 2) excluding Cyclone Sitrang, which hit Bangladesh on 25 October 2022.



#### Figure 1: Cyclonic disturbance in BOB during 1990-2021

Source: Calculations by authors based on IMD-Web Cyclone eAtlas database (2022)



Figure 2: Cyclonic disturbance in BOB during 1990-2021

### 5. Sea piracy & Armed Robbery

Piracy and armed robbery of ships and fishing vessels is a long-standing issue in (Figure 3). A suite of measures was undertaken to bring down the number of incidences. Bangladesh is also a member of the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP), which is the first regional government-to-government agreement to promote and enhance cooperation against piracy and armed robbery of ships in Asia. Consequentially, there is a decline in the number of incidents in Bangladesh. However, the risk is still there. Insurance against piracy could be an entry point to bring the uninsured SSAF fishing vessels within the fold of insurance. The premium is expected to be low given the low risk. However, the trauma and damage met by a fishing crew when met with the pirates are well known, which is likely to make an insurance policy worth considering for the boat owners. The insurance policy should cover life risks, risks of injury, compensation for mental stress, compensation for loss of gear, catch, etc. The piracy incidents are reported to the police and therefore, equipped with third-party verification. There could be a cap on total compensation to meet any risk of spurious claims or over-reporting.



Figure 3. Sea piracy and armed robbery at sea in Bangladesh in recent years

### 6. Quantifying the risks

### 6.1 Production risks

### **Hilsa fishery**

Tenualosa ilisha (Hamilton, 1822) is the national fish of Bangladesh and the lifeline of the fisheries sector. The hilsa fishery provides a living for about 3 million (2%) of the nation's total population. A total of 184,000 families, or nearly 500,000 individuals, are directly employed in hilsa fishing. In various regions of Bangladesh, 68% of workers are of full-time, while 32% are part-time. The majority of these fishers are extremely underprivileged, illiterate, and without access to land for use such as crop cultivation. Therefore, even without any other sources of income, hilsa fishers can support themselves by catching and selling hilsa (Khan et al. 2020).

Hilsa has a very high vulnerability (84 of 100) to climate change. Its preferred temperature range is 21.3°C - 28°C. Thanks to its high fecundity, hilsa has a relatively lower fishing vulnerability (29 of 100). The hilsa action plan, currently implemented by the Government in protecting hilsa habitats and juvenile hilsa, has already started showing the positive results.

With the warming of the water, hilsa may have to compete for space with sardines. Sardines were uncommon in Bangladesh water a decade ago but its fishery is becoming common now.

Hilsa may show fluctuation in production due to various weather events such as El Nino.

However, conclusive evidence is not there.

### 6.2 Life and income risks

Global death rate while fishing is estimated at 80 per 100 000 people. The lifetime risk of fishers is likely to increase further due to various reasons that include:

Increasing intensity of extreme weather events and rough sea conditions while fishing.

Fishing while there is a depression.

Sea level rise and stronger sea waves.

Inclusion of migrant workers in the crew who have little experience of the local sea conditions.

An increasing number of lightning strikes.

The operational issue, poor boat design, etc.

Migration of fish to deeper waters is causing fishers to spend more time and cover distance at sea to locate fish. The risk exposure is also increasing accordingly.

### 6.3 Asset risks

Apart from normal operational risks, fishing assets face elevated risks during bad weather. Such risks include damage/loss of gear; damage/loss of boat; damage to the hull; damage to the engine, etc. Usual marine insurance policies are based on hull insurance and cover total damage only. Hence, the boat owner does not receive any compensation in case of damage to the gear. However, from the boat owner's perspective, damage to a fishing gear is highly likely while complete damage to the vessels is least likely. Therefore, the fishers usually complain that insurance does not meet their need and hence there is not much advantage buying them.

Table 2, shows the extent of investment in the gill-netters in Bangladesh as an example of asset risk and insurance gap in the fisheries sector of the country. Approximately, about USD 1,591 million is invested in gillnet fishery in Bangladesh initial investment value). It could generates a gross revenue of about USD 3 million and creates employment for about 450 thousand people directly. However, the whole fleet is uninsured pointing out the large gap in marine fisheries asset insurance in Bangladesh. Similarly, Table 3 shows the gap in life insurance for an active fisher of median years of age. Without an adequate insurance instrument, ex-gratia measures available in the country covers only about two percent of his insurance need. In case where the victim is the sole earner, such gap will push his family towards poverty.

Item	Average investment in a gillnetter (USD)	Total number of craft	Total investment (Million USD)
Vessel (hull)	50,160	32,859	1,648
Main engine(s)	11,232		369
Equipment on deck (e.g., cranes, beams)		NA	-
The equipment below deck (e.g., cold storage, ice making, freezers)		NA	-
Fishing gear with a lifespan of 3 years or more	14,040		461
Electronic devices (navigation, fish finding, and communication)	336		11
Other items	2,400		79
Total investment in USD	78,168		2,569
Average gross revenue	1,57,791		5,185
Approx. number of crew	22		7,22,898
Labor income	57,175		1,879

### Table 2: Investment risks in mechanized gillnetters in Bangladesh (in USD)

Source: Mukherjee R & Y S Yadava (2020) in van Anrooy et. al. (2020).

### Table 3. Illustrative Example: Life Insurance Coverage Gap in Bangladesh

(This example takes into consideration a typical fisher who is 40 years old, has dependent children, spouse, and parents, and normally retires at 60 years of age)

Heads	Value	Notes
Estimated annual household income of a gillnet fisher	T263328	Single source of income
Current life insurance coverage	-	Nil
Insurance required (HPV method)	T 28 83 368	https://lifeinsurance.adityabirla capital.com/tools-and-planners/ human-life-value-calculator
Approximate premium per year (Term insurance)	т	15 108 https://www.policybazaar.com/life- insurance/term-insurance-calculator/
Death compensations		
- With personal life insurance	T 28 83 638	
<ul> <li>Without personal insurance fishers.</li> </ul>	T 50 000	Ex gratia from DoF to the registered for registered fishers

### Fintech innovation in Bangladesh: bKash

bKash Limited (bKash) is a Bank-led Mobile Financial Service Provider in Bangladesh operating under the license and approval of the Central Bank (Bangladesh Bank) as a subsidiary of BRAC Bank Limited. bKash provides safe, convenient, and easy ways to make payments and money transfer services via mobile phones to both the unbanked and the banked people of Bangladesh. While less than 15% of Bangladeshis are connected to the formal banking system, over 68% have mobile phones. bKash can be accessed via all the mobile networks operating in Bangladesh.

#### **BKash Charges**

Currently, bKash is running a network of more than 200,000 agents throughout urban and rural areas of Bangladesh with over 50 million verified accounts. To open a bKash account, new customers need only to visit a bKash agent who checks their identity papers and sets up an electronic wallet (e-wallet). This is a virtual account linked to the customer's mobile phone number for unique identification. Customers add electronic money (e-money) to their e-wallets through remittances and salary payments. They can also give bKash agents physical cash to convert into e-money, called 'cash-in.' Remittances and cash-in are the most common ways for the unbanked to fund their e-wallets.

Sources: https://www.bkash.com/about/company-profile; IFC INCLUSIVE BUSINESS CASE STUDY: bKash

TYPE OF TRANSACTION	FEE
Account opening	Free
Cash-in at an agent	Free
Cash-out from an agent	1.85% flat fee
Person-to-person money transfer	BDT 5 (\$0.06)
Bill and merchant payments (fee to customer)	Free
Merchant payments (cost to merchants)	1.3% to 1.8%
Business-to-person disbursement (fee to business)	0.5% (negotiable)

### **BKash Charges**

# 7. Taking insurance to people- Findings from the stakeholder consultations

The BOBP-IGO jointly with the Marine Fisheries Office (MFO), Chittagong, Department of Fisheries, Government of the People's Republic of Bangladesh organized an online stakeholder's consultation meeting on "Insurance as a Tool for Managing Marine Fisheries and Building Resilience in Bangladesh" on 28th July 2022. Mechanized and artisanal fishing boat owners from Chittagong, Officials from MFO, Chittagong, Bangladesh, took part. Findings:

- **Uninsurable wooden vessels:** Insurance is not provided for wooden fishing vessels. Views of the insurance companies are not available. However, it is indicated that problems in valuation and damage assessment are the main reasons. However, elsewhere in the world insurance for wooden boats is available.
- **No coverage for piracy or crew:** There is also no insurance for crew or against piracy/robbery. In case of an accident, the crew is at the mercy of the boat owner to provide some compensation. It was reported that the boat owners usually provide compensation of 50 000 and 200 000 Taka for injury and death, respectively to the crew. However, in cases, when the whole boat is sunk and human casualty is high, the boat owners find it difficult to compensate. Registered fishers get an ex-gratia payment of Taka 50 000 from the Government in case of accidental deaths.
- **Two is better than one:** A boat owner needs at least two boats to cover business risks. There is a higher chance that a single boat owner would go out of business. Lack of risk mitigation measures is adding to the perils of fishing efforts. It is also marginalizing less affluent fishers who cannot invest in two boats!
- Insurance is a drain of income: However, boat owners are reluctant to purchase an insurance policy as they consider it an investment without return/profit. They viewed that the premium should be refunded

in case of claim-free years or adequate credit should be given.

- Loss of fishing days: The number of bad weather days seems to increase over time.
   However, boat owners often ignore low-level signals and send the boats for fishing.
- **Insistence on the role of the Government:** Boat owners viewed that the Government of Bangladesh should issue a guideline on insurance and facilitate the insurance of fishing vessels.
- **Government as an insurer:** The Government of Bangladesh may consider buying an insurance scheme on behalf of the boat owners collectively and recover the premium through a surcharge on the license fee or through a tax on sales. It is assumed that the premium in such a case will be lower than that of the possible premium for individually buying the policies.
- **Need for a holistic policy:** The boat owners suggested that the Government may consider a holistic policy covering perils faced by the crew and the vessels. The fishers also welcomed the concept of a Bay of Bengalwide insurance program to cover perils faced by the fisheries sector of its member countries.
- Poor experience in group Insurance: In 2012, the Government of Bangladesh through nationalized insurance agency Jiban Bima Corporation introduced Group Life insurance for fishers (crew members). The annual per capita premium was BDT1240 (approx. about \$ 16) for a sum assured of BDT 200 000 (approx. \$ 2500). The scheme covers normal death, accidental death, and permanent disability. While the scheme was welcomed by all initially it did not sustain as: [1] Setting up of groups was difficult (minimum 50 people); [2] Owners were not ready to pay for the crew; and [3] crew found the premium high.

### A model for consideration

### Government's role in reinsuring damage and loss occurrence to fishing assets in Japan

The most successful and unique underwriting characteristic is certainly the one observed in the subsidy insurance program in Japan.

### How it operates:

- The condition for obtaining the subsidy is that all the fishers operating vessels with a gross tonnage between 1 and 100 tonnes should be part of a fishing cooperative and enter a contract with the insurance association.
- This arrangement provides an incentive to maximize the coverage of insurance with better sharing of risks and reduction of costs.
- The government reinsures the fishing vessel insurance association by a "Stop Loss" method.
- The government reinsurance activates when the insurance association has paid out claims, which exceed 109 percent of the net premium income of one fiscal year. The government will reimburse 85 percent of the amount of pay-out exceeding 109 percent.
- Besides providing reinsurance and subsidizing the insurance premiums, the government provides tax exemption and approves the articles of the associations and the insurance stipulations including the insurance premium rates. The government also supervises the association and the central society or apex body.

### 8. Recommendations

Issuance of Policy statement: At this point of time, there is a lack of mutual trust between the fishers and the insurance companies and both parties want the Government to play the role of a mediator. Therefore, a policy statement of the Government's view on insurance is of foremost importance.

**Creating Awareness among Stakeholders on Insurance:** Many fishers do not understand how insurance works. Therefore, there is a need to educate them so that they can take informed decisions. To do this, a two-pronged approach may be taken. On one side, the fisher associations and unions can be roped in and a tri-party dialogue amongst the fishers, insurance companies and the government may be arranged.

India has a boat owner's association in every landing centre and educating their leaders is likely to trickle down to the other members. On the other side, the local government institutes (village councils/panchayats) shall be roped in to arrange Insurance Mela. This is especially to target the artisanal fishers who do not belong to any association. The insurance agencies should also be educated about the need of the fisheries sector and measures to build confidence should be worked out.

**Designing insurance mix for improved access at low cost:** The Government should consider various forms of insurance including micro-insurance, community-based insurance, and marketbased insurance apart from public insurance schemes. The insurance companies should design insurance products that adhere to the principles of SUAVE (Simple, Understood, Accessible, Valuable, and Efficient) (Microinsurance Centre) **Extending insurance cover to the migrant crew:** Allperil insurance for "unnamed crew" for all fishing vessels may be made mandatory, by linking it to licensing. This is to support the migrant crew.

**Developing need-based vessel insurance:** All-peril fishing vessel insurance may be made mandatory for all fishing vessels by linking it to licensing, using the data collected by the Government about details of fishing vessels (including price during registration) to buy an all-peril insurance cover for the fishing vessels.

**Developing parametric insurance program:** Develop a Model Parametric Insurance Scheme to guide the insurance sector and implementation at a pilot scale. Parametric or Index-based insurance can meet the business loss due to climate change. One example of parametric insurance could be Cyclone Insurance, where the fishing units (e.g., a boat owner) would be compensated at a fixed rate, once the event is triggered (i.e., on the actual event of a cyclone happening). The fixed rate will depend on the fund size. A specially designed parametric insurance (based on cyclonic disturbance) will be helpful for the fishers.

**Supporting reinsurance:** The Government may consider using tax revenue to buy reinsurance products from the market for risk coverage. For this purpose, there can be an imposition of National/Central Cess on the Licensing Fee to generate funds, which can be used for the purchase of "an all-peril" insurance policy.

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The role of the Government to safeguard the interest of the fishers is well recognized in international and national policies. The Code of Conduct for Responsible Fisheries and the subsequent Small-Scale Fisheries Guidelines have highlighted the role of the state to promote insurance access to fishers.

Subsequently, the relevance of insurance is highlighted in the 2015 Paris Agreement and Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts.

The working plan for Blue Economy 2019 also identifies the need and calls for building resilience in the fisheries sector.

Fisheries is an integral part of the coastal rural economy and building resilience in fisheries would have a multiplier effect in harnessing substantial coastal development in the country.





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