

# Livelihood Resilience Assessment in Karachchi, Sri Lanka

March, 2024 | Karachchi, Kilinochchi District

## KEY MESSAGES

- As reported by KIs and FGD participants from Karachchi, **heavy rains with floods, droughts, human-elephant conflict (HEC), and conflict with other animals** were the main hazards impacting the communities.
- Damage or loss of crops, an increase in diseases and pests, and damage to agricultural and fishing equipment, infrastructure, and irrigation systems** caused a reduction in livelihood activities, according to KIs and FGD participants. These impacts reportedly caused a **loss of income and investments, increased food prices, school dropouts, and alcohol and drug abuse among youth and adults.**
- According to reports from KIs and FGD participants, a **lack of land ownership** for farmers along with **poor infrastructure** such as **structurally weak illegal housing** contributed to community vulnerability, particularly for farmers. **Low education and technical knowledge on Disaster Risk Reduction (DRR) and livelihood resilience** measures also **aggravated vulnerability.**
- The priority mitigation activity **recommended** by respondents for **floods** included **improving and maintaining drainage systems.** While for **droughts, constructing accessible drinking water facilities** was suggested by respondents. To address **HEC**, the construction of **elephant fences** was recommended as a priority.

## CONTEXT & RATIONALE

Located in the Northern province, Karachchi Divisional Secretariat Division (DSD) has a total population of 73,150 individuals, 50,3% female, living across 42 Grama Niladhari Divisions (GNDs). It is estimated that the dependency ratio reaches 42%, which is the population below 15 and above 60 years old. According to local authorities, 3797 families are engaged in agriculture, 3403 employed by the government, 1800 in the private sector, 668 in fishing, and 619 in local businesses. Karachchi experiences significant rainfall during the northeast monsoon (Maha season) from November to February, while the southwest monsoon (Yala season) from May to September is relatively dry. During heavy monsoon rains, lower areas in Karachchi may be prone to flooding, leading to property damage, coastal erosion, and disruption of livelihood activities, especially agriculture. Periods of drought can affect water availability for agriculture, impacting crop yields and livestock health. Karachchi is surrounded by forests used in the migration path of elephants, which may result in human-elephant conflict, loss of lives, and damage to infrastructure and agricultural land.

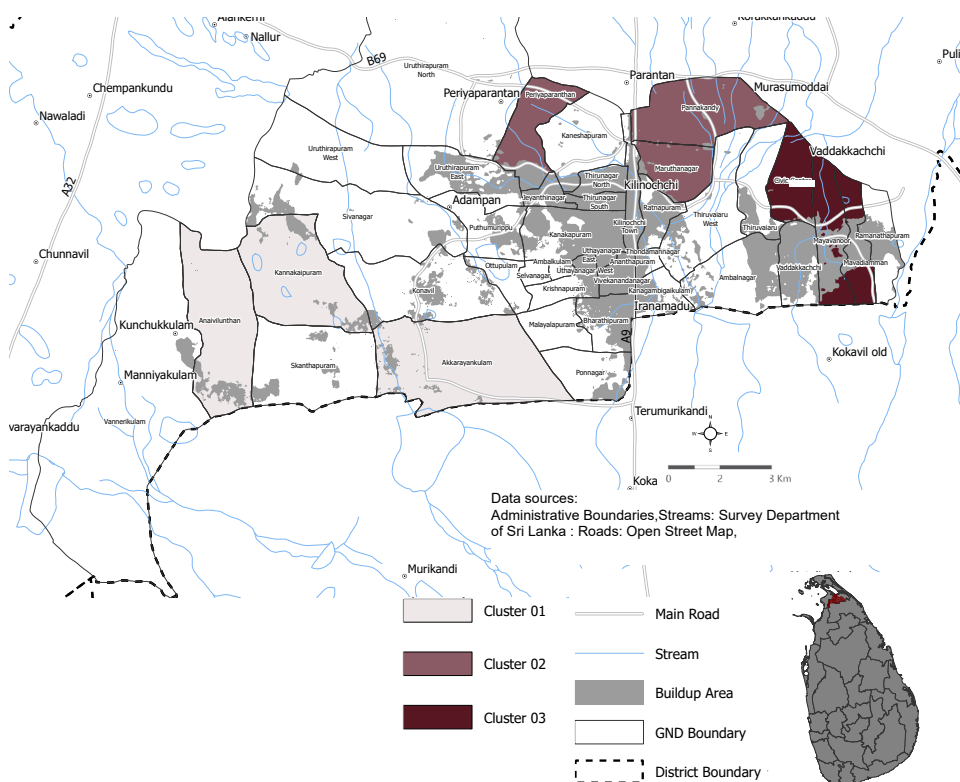
## ASSESSMENT OVERVIEW

IMPACT profiled the situation of farmers' and fishers' livelihoods in Karachchi, in order to inform the strategic programming of actors at the local level. The assessment focused on three clusters of Grama Niladhari (GND) (Map 1), chosen based on their level of risk to natural hazards identified in the [Area Based Risk Assessment \(ABRA\) conducted by IMPACT in 2023.](#)

## Methodology

A qualitative, semi-structured questionnaire was administered to 25 key informants (KIs) and 12 focus group discussions (FGDs) from January to March 2024 to understand the livelihood resilience context. KI profiles included Government actors, Community-Based Organisations (CBOs), and National and International Non-Governmental Organisations (NGO/INGOs). FGDs were conducted with members from agricultural and fisheries communities, divided by gender and age.

Map 1 - Karachchi division and clusters of Grama Niladhari



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# Risk governance and hazard impacts

## Disaster Risk Management mechanisms in place

In Karachchi, local authority (LA) KIs identified government disaster preparedness and response actions as the primary strategies for disaster risk management (DRM) planning. The most common measures performed by government departments included community awareness of disaster preparedness, response and livelihood resilience building, and emergency early warning, as reported by KIs.

KI emphasized that DRM mechanisms were commonly led by joint coordination between key actors including the Disaster Management Center (DMC), Divisional (DSD) secretariate, and Grama Niladharis (GNs). Additionally, KIs reported Grama Niladhari as the highlighted actor in DRR and livelihood resilience activities. The KI representative from the DMC also mentioned that security forces, including the police, army, and navy supported emergency relief activities. Other KI reports also cited the involvement of departments such as the Department of Agrarian Development and the Department of Agriculture in facilitating emergency alerts to farming CBOs or village members.

FGD participants also identified the DMC, GN, and DSD secretariat as the main actors in joint DRM coordination. However, they emphasized that community members were more prominent actors in implementing community DRR activities. KIs suggested that the primary need for centralized DRM mechanisms was to increase coordination among government agencies and between government agencies, civil society, and the broader community. Additionally, KI reports highlighted the need for centralized risk mitigation actions, such as risk mapping, emergency drills, and evacuation shelters.

World Vision was the most reported stakeholder in implementing DRR actions by KIs. Caritas HUDEC, World Bank, Inthira Group Agrinithira Agri Farm Consultancy, and the Sri Lanka Red Cross Society were also mentioned by some KIs.

## Main hazards in Karachchi

The key findings from KIs indicated that the most frequently reported hazard in Karachchi was heavy rains with floods, followed by drought, HEC, and other animal conflicts. Comparatively, findings from FGD participants highlight HEC, followed by other animal conflicts, drought, and storms. KIs additionally noted, with less frequency, storms with strong winds, weather pattern changes, cyclones, and extreme cold. The civil war was also mentioned as a hazard with long-term effects in Karachchi.

HEC was reported as a year-round hazard by KIs. One farming CBO reported losing 10-15 acres of cultivated land in a single night due to HEC. FGD participants noted an increase in HEC during harvest periods. The second most reported hazard frequency was annual floods, with reports by a Grama Niladhari (GN) officer estimating 400 acres of crops lost, other LA KIs reported on the substantial number of families displaced and impacted. While FGD participants reported the occurrence of annual floods with more frequency than HEC, KIs described a greater scale of damage. Droughts were also reported to affect a large number of people in the division, an estimate of more than 500 people reported by a divisional authority KI. Other local authorities reported similar scales of damages, with reports of entire fields of paddy destroyed, with some LAs such as the DMC reporting 1300-1500 acres of land damaged and a CBOs report of 150 families (half of the village) in cluster 3 impacted, although no type of disaster was specified as they are exposed to several of them.

**Table 1: Main hazards in Karachchi as reported by KIs (total no. 25) and FGD participants (total no.12)**

Major hazards	No. KI	No. FGD
Heavy rain with floods	24	9
Drought	23	7
Other animal conflict (Monkey, Peacock)	20	9
Human-Elephant conflict	16	10
Storms and strong winds	7	3
Weather pattern change	6	1
Cyclones	3	1
Civil war	3	0
Extreme Cold	3	0

## Primary impacts of hazards

Key findings by KIs reported on physical crop loss or damage with the highest frequency. KIs noted the damage to crops such as paddy, grams, groundnuts, coconut, chili, cowpea, maize, banana, pumpkin, and other vegetables. Crops are damaged yearly by the flooding of fields, droughts, and wild elephants and monkeys. Crops are also damaged by the increase in disease and pests, such as root rot caused by flooding reported by female farming FGD participants, and pests such as thrips, reported by male farming FGD participants. Fishing FGD participants also reported damage to their home gardens. As an aftermath of the points discussed, crop yield deteriorates, as reported by FGD participants. Reported with comparatively less frequency by both KIs and FGD participants was infertility and damage to entire acres of land caused mostly by the submersion of land in water or drought.

In addition, the loss or damage of agricultural equipment or structures such as livestock sheds were reported with high frequency by KIs and FGD participants. There were also reports on irrigation water scarcity during periods of drought and damage to irrigation systems. Subsequently, all these damages combined led to the cease or reduction of agricultural activities.

KI and FGD participants reported on the loss, harm, or sickness of livestock, whereby heavy rain and extreme cold lead to livestock deaths and diseases such as cowpox and foot and mouth disease as reported by a GN officer. There were also a few reports on the loss of grazing land for cattle due to floods. These factors led to decreased dairy production and ultimately led to ceasing or reduced livestock farming activities. Female farming FGD participants also supported this finding, reporting the decreased production of livestock produce such as eggs, meat, and milk. There were also reports by the Womens Rural Development Society (WRDS) on crocodile attacks on livestock.

The loss or damage of fishing equipment, such as nets and boats was mostly due to heavy rains and on some occasions by crocodiles. Additionally, fishers experience the loss of fish as they are washed away during high rains or migrate during rainy periods, as reported by both KIs and FGD participants fishers. There were also a few reports on the obstruction of logs and stones, hindering fishing. Subsequently, these factors led to the cease or reduction of fishing activities as a result of hazards.

KIs and FGD participants alike reported on migration and



displacement because of hazards. GN officers reported 20-40 families affected by flooding, along with 25 people repeatedly exposed to floods, leading to resettlement. Similarly, the DMC reported that close to 900 families were affected by floods, of these, around 800 were displaced. Generally, families seek shelter in public buildings such as schools or temporary camps.

There were also reports of disruption of transportation, mostly caused by damage and flooding of roads. There were some reports of fishermen's routes blocked by elephants and others related to the transportation ban at the height of the pandemic. Other infrastructural damages were: houses, bridges, canals, embankments, and drains. Water- sources and waterways damaged during flooding resulted in overflow and worsening of the hazard's impact.

Communities are also experiencing a scarcity of drinking water mostly due to drought, reported with similar frequencies by both FGD participants and KIs. Human lives lost were reported with high frequency by KIs but not reported by FGD participants.

## Secondary consequences of hazards

### Economic

Hazards indirectly affect the economic stability of agricultural and fishery livelihoods. The damages caused by hazards led to the ceasing or significant reduction in agricultural, livestock, and fishing activities. As an after-effect, KIs and FGD participants reported a loss of income and investment, loss of alternative employment (e.g. daily wage work), and lack of financial capital and resources for self-employment. FGD participants highlighted the reduction in yield and sales which sharply increased poverty and economic hardship.

This led to reduced purchasing power and ability to afford basic goods and difficulty maintaining a standard of living, such as the inability to afford food, children's school supplies and replace damaged equipment. In an attempt to cope with financial loss and minimize the burden, both KIs and FGD participants reported on the increase in debt cycles. FGD participants also reported an increase in pawned jewellery and other items unable to be redeemed due to hazard-incurred financial losses.

FGD participants and KIs reported on increased agricultural and fishing livelihood costs. KIs emphasized the inability to replace damaged equipment and FGD participants emphasized high farming investment with low return. Female fishing FGD participants emphasized the rising cost of fuel and kerosene.

KIs reported on families' savings spent on health emergencies as well as an increase in expenses for families with people with a disability and female-headed households (FHH). Both KIs and FGD participants reported on economic migration.

District authorities and participants from FGDs reported on the increased inability to market produce, and the lack of control over produce prices (e.g. paddy and fish), which favor middlemen over farmers and fishers, worsened economic impacts. Additionally, for fishers, the suspension of fishing activities seasonally or during periods of disaster impacts livelihood. The fisher's situation is made worse when fish is also sold at a low price despite stock decline.

### Food access

With the increase in poverty and economic hardship, from the loss incurred by hazards, Karachchi observes reports of local market impact causing an increase in food prices, reported with the highest frequency by most KIs. A GN officer from cluster 2 expanded on this, stating that these rising prices can be experienced across the entire country. As crops are destroyed and exposed to disease and pests, the decline in yield leads to higher

unmet demands which significantly increases market prices. A KI DSD level LA further reported a need for a policy to establish fixed market prices to increase communities' capacity to cope with disaster effects. KIs also reported that the reduced harvest from home gardens for self-consumption creates a further dependency on limited market produce for consumption, leaving families incapable of meeting rising costs. The combination of factors such as food shortage, high prices, and inability to afford prices led to a significant number of reports of the lack of nutritious food.

CBO from cluster 2 points to instances of children losing consciousness because of a lack of nutritious food. An NGO KI also reported on low nutrition impacting pregnant or lactating mothers along with elderly members. FGD participants also reported high-frequency, food insecurity, malnutrition, or limited nutrition where families are unable to afford all three meals, with most citing the increase in food prices as the primary cause for insecurity.

### Social tension

Another indirect consequence of hazards was the rise in social tension. Most KIs report an increase in involvement in illegal business activities such as the illegal production of alcohol by individuals motivated by the loss of their livelihood, decline in their economic capacity, and escalating debt cycles. These factors, in turn, led to an increase in family conflict and violence, which was highly reported by FGD participants. KIs also reported on disputes over farming land. For example, an NGO KI reported that families living abroad rent out their land to local communities at unaffordable prices. DSD authority also shared that farmers living on land owned by government departments such as the Department of Irrigation experience issues over assistance and the construction of facilities. Moreover, KIs from cluster 2 reported an increase in theft as well as inter-group conflicts.

### Education

Key findings from FGD participants and KIs reported on the increase in school dropouts or the interruption of schooling. FGD participants highlighted the inability to participate in night classes and afford tuition, with some reasoning that the dropout rate was due to children supporting families with their livelihood in the wake of increased poverty due to disasters. CBO KI reported on the inability to afford school materials and classes. LA KIs also emphasized low attendance and performance along with the lack of regular transportation to schools or the high cost. A DSD authority reported low attendance and performance such as instances where students are unable to attend school due to transportation blockages during flooding.

### Health

The highest reported health issue as a result of hazards in Karachchi was the increase in substance abuse by both adults and children, reported predominately by LAs KIs and farming FGD participants. There were also reports of dengue, rat fever, infectious or viral fever, and skin diseases that spread due to heavy rains and flooding. There were also reports of psychological distress and mental health decline as a result of an increase in economic hardship and instability. There were also reports of the rise in adult health issues and exposure to diseases for children.

## Vulnerability to hazards

### Groups in vulnerable positions

The groups in vulnerable positions to hazards were identified as farmers, female-headed households (FHH), elderly people, people with a disability/households with a member with a disability, and fishers.





## Farmers

Farmers are particularly vulnerable due to their dependence on agriculture as their main source of income. When hazards cause land and crop destruction, leading to the loss of yield and related income, farmers lack alternative livelihood skills to rely on to meet financial demands.

Additionally, even before a disaster, farmers have been incapable of meeting the rising costs of organic fertilizers, pesticides, and other agricultural goods. Agricultural input costs have doubled, with farmers reporting that input expenditure is more than profits gained. The cost of leasing agricultural land has also increased, increasing financial vulnerability. Forcing farmers into poverty, loan cycles, and even illegal activities.

It was also further suggested that farmers engaged in unsustainable agricultural practices, such as using chemical fertilizers, which impacts yield and increases vulnerability. It was reported that farmers lack agricultural expertise with a preference for traditional farming methods. They also lack the expertise and access to modern agricultural tools. Additionally, farmers do not have adequate shelters for their cattle, leading to sickness, loss, and harm, further impacting farmers' income. These conditions are made worse after a hazardous event. A male farming group further adds that sustaining their livelihood proves challenging as they struggle with access to support and resources.

Soil mining near water sources also leads to vulnerability, as male farming FGD participants reported sand mining creating large pits that lead to stagnant rainwater that breeds viruses such as dengue. These pits cause accidents and fatalities to both humans and livestock.

## Elderly people, female-headed households, people with a disability

There are high numbers of elderly people, FHHs, and people with a disability/households with a member with a disability, who are in socially and financially vulnerable positions. FHHs lack the means to obtain sufficient monthly income to support themselves and their children.

Due to the division's exposure to war, there are a high number of FHH and people with a disability/household with a member with a disability. The DS Department of Fisheries and Aquatic Resources along with CBO WRDS reported that FHH often receives lower wages in comparison to men, trapping them in poverty as low-income households dependent on Samurdhari beneficiaries. The DSD Department of Agriculture reported 30 households with people with a disability. LAs such as GN from cluster 1, highlighted that people with a disability/household with a member with a disability are vulnerable even before exposure to a disaster, with their situation worsening during periods of disaster.

## Fishers

The main key factor, specific to fishing communities, that contributed to the vulnerability was water pollution, caused by chemical and oil spills along with plastic waste, as reported by fishers from cluster 1. KIs also reported that as a result there is a lack of fish in water sources, impacting livelihoods. These fishers also reported the absence of life jackets and protective gear which contributes to their vulnerability during hazards. They also reported on instances of overfishing and other unauthorized fishing practices.

Fishers from cluster 3 reported on the high costs associated with maintaining fish hatcheries, even with the support of the Department of Fisheries and Aquatic Resources. It was reported that fishers generally receive low income through fishing. Lastly, fishers noted the high number of FHH in the area is a cause for

vulnerability as they struggle economically as well as households with people with a disability/households with a member with a disability who are reliant on their families' support.

## Other groups

Additionally, the elderly people, drug users, and school dropouts, as reported by DSD LAs, add to the area's pre-existing socioeconomic vulnerabilities. The combined effects of the economic crisis and COVID-19 have further exacerbated the vulnerability of these groups.

## Pre-existing infrastructural conditions

Findings from KIs indicate limited farming land as the most recurring physical cause of vulnerability. Farmers are often not landowners, paying high leasing fees for low-lying lands susceptible to saltwater intrusion. This then hinders their ability to cope with damage.

Poor infrastructure and urban planning also exacerbate disaster effects. These include resettlement and illegal housing that cannot withstand floods and houses under constant repair due to repeated damage. Additionally, the lack of drainage, canals, and sewer systems fail to manage floodwaters. Ponds and tanks in Karachchi are often in disrepair, they overflow and flood agricultural lands, destroying crops during heavy rains. Comparatively, findings from FGD participants indicate higher reports of poorly planned road conditions, systems, and locations as a primary cause for vulnerability. Poor road conditions lead to stagnant water with increased flooding, causing accidents and fatalities for both humans and livestock. KIs also reported limited means of transportation services and facilities, due to poor road conditions, remote rural locations, or high transportation costs increasing community vulnerability.

Findings by KIs and FGD participants note that poor waste and garbage disposal spread diseases in humans, livestock, and crops alike, and impact livelihoods. Improper disposal also leads to canals blocked by garbage worsening flood impacts. During drought, the absence of drinking and agricultural water facilities such as wells and tanks impacts communities and livelihoods. The lack of adequate irrigation systems along with inadequate levels of groundwater affects both home gardening and large-scale cultivation.

KIs and FGD participants noted vulnerability caused by human-induced activities such as deforestation and urban expansion. These activities increase the intrusion of elephants or other animals into farming lands, disrupting livelihoods. Illegal sand mining reportedly causes the spread of diseases such as dengue and increases flooding.

KIs also reported difficulty in predicting weather, impacting farming and fishing livelihoods. The lack of elephant fence and maintenance was also reported with low frequency.

## Pre-existing attitudinal conditions

KIs key findings indicate recurring reports on the lack of education and technical knowledge as a pre-existing organizational vulnerability. This results from the absence of community awareness initiatives available in Karachchi, reports suggest. There were also reports of the lack of resources across all government institutions, impacting interventions to reduce vulnerability. Similarly, there was also a reported need to increase the capacity of LAs, CBOs, and NGOs alike in Karachchi making it difficult to implement vulnerability-reducing measures.

KIs also reported on the lack of community participation in reducing vulnerability, one report suggested that this may be due migrations, either to main cities or overseas.



## Areas most at risk

Karachchis KIs identified the most at-risk areas as low-lying farmland near canals, tanks, reservoirs, and other water sources. DSD officials such as the Department of Planning and GN officials reported that most of the divisions' farmland is located near the Iramadu and Kanagarayan tanks, as well as the Kanagarayan River. During heavy rains, these water sources overflow, flooding nearby lands, destroying crops, and ceasing or reducing farming activities, thereby impacting livelihood and income. These low-lying areas are also prone to pollution by poor garbage and waste disposal.

Secondly, farmland in or around forest reserves is prone to elephant or other animal attacks. Authorities and CBOs alike noted that cultivation in deforested or forest-reserved land invites conflict with elephants and other animals. There were also less frequent reports of farming along hillsides and slopes as well as in dry locations, all of which exacerbated the residents' vulnerability.

## Alternative sources of income

**Table 2: Alternative sources of income to farming and fishing when livelihood activities are impacted by natural hazards**

Alternative sources of income	No. KI	No. FGD	No. KI	No. FGD
	Farming		Fishing	
Daily wage labour	13	1	11	0
Livestock rearing and husbandry	13	0	5	1
Shop owner or small business	10	1	0	1
No other source of income	7	0	6	0
Private sector	5	0	0	0
Government or civil defence jobs	5	0	2	0
Handcraft	4	0	1	0
Mason work	4	0	3	0
Sand dumping	2	0	0	0
Self-employment	2	0	0	0
Home gardening	2	0	3	0
Agriculture	0	0	6	0
Fishing	2	0	0	0
Fish drying	0	0	3	2
Making, repairing and cleaning nets or boats	0	0	3	4

Generally, Karachchis fishers use freshwater sources such as the Akkarayan tank, Iramiyadu tank or the Aanaivilunthaan pond (seasonally), reported DS official from the Department of Fishery and Aquatic Resources. They also fish from Karachchi's east fishery system. Alternatively, as reported by an INGO they use freshwater and sea fishing during the seasonal bans placed on fishing communities.

# Disaster preparedness and risk mitigation measures

## Community disaster preparedness and response

The most commonly reported community disaster preparedness responses by FGD participants were emergency warnings and community displacement or relocation. KI findings also indicate that emergency warnings are the community's primary preparedness response. A GN officer from cluster 1 reported that the Divisional Secretariat body and district DMC offices issue emergency warnings to CBOs in the area, ensuring dissemination through social media, text messages, and loudspeakers. Participants from farming and fishing FGDs also mentioned the use of emergency warnings through social media and word of mouth, including informing parents at school gates about disasters. Additionally, reports from cluster 3 farmers and a KI noted that a GN officer coordinates information sharing with CBOs and the community.

In contrast, participants from a fishing FGD reported the necessity of improving implementation support for community preparedness activities conducted by relevant actors. Families are required to evacuate themselves from a disaster area, citing an incident where residents from Mavadiyaman and Joni villagers were displaced during flooding in the Mayavanur East Bank. However, the participants from the same FGD reported that individuals are sheltered in school during flooding. Participants from farming FGDs in cluster 2 reported that schools are stocked with food and healthcare supplies for flooding emergencies, for up to three days. Cluster 3 participants noted community notifications when reservoir gates were being opened. KI findings support these observations, adding conducting emergency drills.

KIs also highlighted community awareness and training activities to support community preparedness measures. Reports by KIs and FGDs include cleaning waterways such as canals and drains to prevent blockages from debris, silt, and garbage, rehabilitating (e.g. widening narrow drains) or constructing canals and drains, and community efforts in pond dredging to reduce flooding. The construction of drinking water facilities such as wells and tanks and cutting long branches to prevent storm damage was also noted. KIs reported community members supporting other activities requiring local manpower.

Other KI findings indicate DRR committee meetings with community attendance, establishing cooperatives and associations, and providing fishing equipment and tools. However, FGD participants in clusters 1 and 3 reported the absence of past and current DRR-implemented projects in their areas. Some KIs also noted a lack of awareness programs and community-based measures, with the community role limited to following instructions from government officials during disasters.

## Government disaster preparedness and response

In Karachchi, the most commonly reported government disaster preparedness and response actions included community awareness campaigns, followed closely by community emergency alerts via social media, text messages, and loudspeaker announcements. LAs frequently reported identifying solutions and implementing disaster management policies. However, there was also a high frequency of reports on the absence of other government risk mitigation actions such as risk mapping, emergency drills, and evacuation shelters.

LA KIs reported infrastructure renovation and cleaning, organization of the post-disaster working group in the village, evacuation plans, drills, centers, and temporary accommodation, agricultural livelihood resilience capacity building, and inter-



agency collaboration. They also mentioned providing manpower for disaster management activities, distribution of drinking water, and establishing DRR and risk mitigation groups, with some activities being joint efforts by government departments.

Moreover, financial assistance through subsidy programs and loans was mainly reported by CBOs. Joint government department disaster preparedness initiatives often provide agricultural subsidies.

### Civil society disaster preparedness and response

KI findings indicated that the most common organizational disaster preparedness measures are early warning announcements through social media, text messages, and loudspeakers. However, some reports noted the absence of early warning systems. Following this, KIs mentioned the provision of post-disaster cooked food and relief aid.

Other disaster preparedness and response measures reported include mitigation maps, community awareness of climate change, and DRR and livelihood awareness programs. There were also reported field visits by Agricultural Officers to observe the loss or damage of disaster-affected lands. In contrast, a report from cluster 3 noted the absence of DRR capacity-building activities. Financial disaster preparedness responses by organizations include crop damage insurance and facilitating loans. Agricultural-specific responses include provisions for seeds, fertilizers, and subsidies for agricultural inputs. Moreover, there were reports of the construction of bunds and elephant fences.

### Livelihood risk mitigation measures

In Karachchi, ongoing activities include community awareness programs on DRR and livelihood resilience. Female district authority representatives reported current livelihood development activities such as advising on home gardening and cultivation methods, instructing on modern equipment and tool usage, encouraging seasonal cultivation with appropriate crops, and providing seeds and fertilizers. They also reported on incentives for those who have lost their livelihoods to pursue alternative livelihoods. They also encouraged self-employment and business ventures such as flattened rice and rice flour production. For fishers, they have stocked the lake with fingerlings and conducted a small-scale tank restoration project.

Previous livelihood resilience activities for farming communities included the provision of agricultural inputs such as seeds, fertilizers, and equipment, as reported by male farming FGD participants. Financial livelihood assistance through subsidies and loans was also provided. Other provisions included livestock for animal husbandry, agricultural equipment, elephant firecrackers for deterrence, and water tanks. A KI also mentioned the rehabilitation of a tank in a state of disrepair. During floods, transportation support was provided as well as the provision of food supplies. Male farming participants also reported on the houses being provided after houses were damaged by a disaster.

Other activities highlighted were business development projects such as beekeeping, climate-smart agriculture with modernization, child protection, and emergency response WASH.

Previous livelihood resilience activities specific to fishing communities include fish drying production support and the provision of fish stock to replenish depleted water bodies.

### Effective and ineffective past activities

FGD participants were not able to identify any effective actions from past activities. KIs reported effective actions such as DRR awareness and training such as emergency first aid awareness. LA KIs reported drainage clearance, tank, canal, and bund renovation as effective past projects. Evacuation plans and temporary shelters

for floods were also effective. Lastly, provisions for agricultural inputs were depicted as effective.

In contrast, ineffective projects include the absence of follow-through actions after initial data collection and limited support after the provision of goods is supplied to communities. Participants from female farming groups also commented that introduced livelihood actions are often not sustainable. Distribution of food and water is limited and not enough for the entire community. KIs also reported on the poor construction of drainage systems and tank renovations.

## Barriers to risk mitigation

### Governance capacity needs

The primary centralized capacity needs for incorporating risk mitigation measures, as reported by participants from farming and fishing FGDs, were to strengthen institutional and policy frameworks to advance national risk management. Participants from male and female farming FGDs emphasized the importance of enhancing communication and collaboration between governance bodies and the community to improve community DRR awareness. Some KIs also observed increased DMC activity post-disaster for relief support, which indicated a need for more consistent DMC engagement throughout the year. FGD participants further reported that, in their understanding, past policy proposals on risk mitigation actions remained unaddressed by relevant bodies, suggesting that improved communication could have alleviated obstacles to implementing risk mitigation measures.

Similarly, limited cooperative practices between government agencies and communities resulted in low resilience, as reported by female farming FGD participants. A KI mentioned that risk and emergency alerts were seldom shared on time with the community. Despite CBOs being the focal point of coordination and communication between communities and authorities, some reports emphasized a lack of cooperation and communication. KIs and FGDs also reported limited coordination and participation by community members in implementing interventions and raising awareness. Some FGD participants suggested this was due to a lack of initiative. Another KI report identified the need to improve government assistance in providing essential facilities to rural villages. Additionally, participants of a male fishing FGD highlighted the importance of government officials upholding principles of integrity, good governance, and transparency.

Female FGD participants also noted the lack of alternative supporting stakeholders collaborating with communities in Karachchi. The most reported capacity gap by KIs was the lack of access to new technologies, including weather forecasting systems, fertilizer and pesticide sprayer machines, and paddy drying machines. FGD participants also highlighted the need for weather forecasting data. LA representatives highlighted insufficient funds to support DRR and livelihood resilience activities.

CBO KIs emphasized the need for capacity-building and training programs on new technologies and equipment. They also suggested improving the capacity of fishing societies through training. Additionally, an absence of DRR awareness was reported by both KIs and FGDs, which led to severe financial losses for farmers as they were unable to employ mitigative actions to prevent hazards from impacting their livelihoods.

Lastly, KIs and FGD participants reported insufficient financial funding for communities to engage in resilience activities, such as agricultural subsidy programs for farmers.





## Specific barriers affecting fishing and farming resilience

Karachchi observes the two key findings relating to specific barriers affecting the resilience of fishing groups. The first is the limited or unequal resource distribution reported by female fishers in Cluster 1 and male fishers in Cluster 3. The second is the fisherman's inability to profit from selling fish due to lack of market control. Male and female fishing groups state that due to the large number of middlemen who purchase goods at a low price to meet market demands, fishers lower their prices, leading to economic constraints.

The division of Karachchi observes one key finding for farming communities: the lack of financial support. Farming FGD participants noted that due to the lack of funds, CBOs are unable to engage in work activities to support their livelihood resilience. For example, they are unable to construct adequate drainage systems that could reduce the impact of floods.

## Governmental policy impact on hazard mitigation

KIs, primarily CBOs reported that there were no significant policy impacts, with some CBOs observing the lack of policy or its ineffectiveness. The Village Committee for Disasters (VCD) reported the negative impact of the new tax policy, claiming that farmers cannot afford agricultural inputs, leading to low profits. [Gazette Extraordinary No.2238/45, issued on, July 31, 2021](#), stated that the previous ban of chelated mineral and micro nutrients would be lifted in favour of Import Control License (ICL) regulation of these goods. Farmers without a valid ICL would be unable to purchase chemical fertilizers, insecticides and other essential agricultural inputs. [A local news report](#) on Kilinochchi farmers indicates that this policy change has resulted in poor disease control due to the limited availability of agrochemicals in the market. Agrochemicals that are available are sold at unaffordable prices.

An INGO KI reported similarly, adding that this has led to an increase in alcoholism and psychosocial distress. The KI further adds that most of the community is unaware of the new tax process and cannot access further information. Lastly, there were reports on a new fertilizer subsidy program aimed at reducing farmers' costs. Towards the end of 2022, [the Minister of Agriculture announced](#) a subsidy program, providing Rs 20,000 for organic fertilizers for paddy cultivation and Rs 10,000 for 50 kg of urea.

## Risk financing

Key findings from Karachchi KI portray low-interest loans or benefits by government agencies as the most common risk financing measures. Government authorities frequently reported that these loans are provided mostly by the Department of Sumardhari and the Department of Agriculture. The Department of Agriculture announced a new microfinance scheme called "Aravanapupkadan," which is to support fishing and farming CBOs in Karachchi. The "Varappuyara loan scheme" will also be introduced, offering loans at a 6% interest rate with one-time repayments.

However, officials also highlighted the absence of limited government risk financing and insurance, leaving fishing and farming communities without a risk buffer after a disaster. Government authorities also noted the availability of high-interest loans, which are often avoided due to the difficulty of repayment and fear of further debt.

CBOs, such as the VCD and farming CBO, are more aware of loans from state banks and financial institutes. The VCD referenced microfinance loans from the Ceylon Central Bank, but reiterated similar sentiments about repayment difficulties, especially after income loss from disasters. Female DS LAs reported existing

compensation for disaster damages but noted the inadequate or exclusivity of disaster compensation, with a preference given to wealthy landowners. Lastly, KIs mentioned existing subsidies for agricultural goods such as fertilizers as a risk financing option.

## Limitations of funding or technical capacity

Key findings by KIs indicate the maintenance and cleaning of canals as the most reported activity unable to be undertaken due to a lack of funding or technical capacity. This was closely followed by reports on capacity building for modern agricultural technology and equipment. Comparatively, the activities limited by funding and technical capacity, reported the most by FGD participants were disaster mitigation and livelihood resilience. This was followed by the widening and deepening of existing water sources such as tanks, wells, and ponds.

KIs reported on constructing and improving drainage facilities and FGD participants reported on the construction of waterways such as canals and drains. KIs reported on the construction and rehabilitation of water sources (ponds and tanks), local authorities KIs reported on deepening irrigation well systems and CBOs highlighted increasing drinking and agricultural water facilities such as wells. FGD participants also reported on establishing drinking water facilities. They also reported repairing damaged waterways.

Other construction activities limited by funding and technical capacity include elephant fence construction or repairs, reported by FGD participants, and road construction, reported by KIs.

KI findings also include the following activities as unable to be developed due to lack of funds; capacity building and awareness programs on DRR, provision of fishing equipment (boats, nets) provision of agricultural inputs (seeds, fertilizers, pesticides), agricultural machinery and technology, and rice drying facilities.

DS LA KIs also reported on establishing or increasing alternative livelihood developments for other sources of income. They also reported on increased access to grazing lands for livestock.

# Solutions suggested by KIs and FGD participants for disaster resilience building

## Recommended DRR activities

FGD participants' most recommended DRR measures were to increase risk financing solutions through agricultural and fishery livelihood loans provided by government agencies or by financial institutes and CBOs. Similarly, they also suggested establishing government mechanisms for disaster relief and/or other forms of assistance. KIs most recommended DRR activities were to increase access and participation in DRR awareness programs. Similarly, FGD participants specified community-based DRR awareness, training, and interventions. Participants from a female fishing FGD recommended establishing risk mitigation measures while participants from a male farming FGD reported on establishing or increasing inter-agency disaster communication. Likewise, KIs also suggested establishing DRR coordination between government agencies such as improving early warning systems.

Both KIs and FGDs reported construction or repairing infrastructure such as improving water storage facilities for both agriculture and drinking and irrigation systems.

KIs also recommended activities to scale-up, these include training programs on new agricultural methods and technologies, on topics such as drought-resistant plants, best fertilizers and pesticides, and medication for livestock, as reported by a KI CBO.



Other recommended activities by KIs include reducing sand mining, increasing community awareness projects, fishing dock renovation, activities to mitigate damages caused by monkeys, and general infrastructural improvements. Both KIs and FGDs reported construction or repairing infrastructure such as improving water storage facilities for both agriculture and drinking and irrigation systems.

### Livelihood solutions for fishing communities

Key findings indicate the repair and deepening of water sources such as ponds, tanks, and wells as the most recommended solution for fishers. KIs and FGD participants recommended the provision of equipment and training for fishers; FGD participants suggested the provision of safety kits and jackets, boats, and nets. They also suggested establishing educational or training facilities for fishers for topics such as first aid, training in modern technology utilization, and DRR training. This was closely followed by reports for the extension of a beach dock.

Financial support for fishers included improving access to interest-free loans, insurance schemes, mutual aid, provisions of fishing requirements such as nets on a subsidized basis by governments, and increasing access to compensation and rehabilitation assistance.

Other fishing solutions included the promotion of aquaculture with fingerlings and the construction of barrier nets to prevent fish from being washed away during heavy rainfall. Participants from a male fishing FGD from cluster 3 recommended activities include establishing and/or increasing opportunities for small-scale industries, improving transportation systems, and fostering social cohesion and networks. Participants from a female fishing FGD in cluster 1 reported establishing government policies that will support disaster compensation and they also reported on the need for sustainable resource management practices.

### Livelihood solution for farming communities

Key findings from KIs indicate awareness, training, and capacity building on livelihood resilience as the most recommended solutions. Comparatively, FGD participants recommended expanding farming livelihoods to also include animal husbandry or dairy farming. FGD farming participants also recommended encouraging and increasing participation in farming livelihood.

KIs recommended establishing recommendations for crop insurance and compensation schemes. Similarly, there were reports on increasing financial support through low or no interest and the timely disbursement of subsidies. Findings also indicated recommendations for capacity building for farmers on modern agricultural techniques such as drip and sprinkler irrigation and short-term high-yield cultivation, and traditional crops with necessary seed provisions. They also recommended expanding livelihood options to increase sources of income.

KIs also suggested increasing collaboration between farmers, CBOS, and government disaster support agencies.

### Recommended solutions for flood mitigation

As depicted in the table, KIs recommend improving and maintaining drainage systems as the most recommended solution against flooding. While this was not the most recommended activity by FGDs it was noted as a priority activity. Participants from a male farming FGD reported that the areas of Kannakaipuram, Akkarayan, and Aanaivilundhan do not have constructed drainage systems, which results in stagnant rainwater mixed with water from sewers during periods of heavy rain with flooding. Participants in FGDs recommended the repair of roads as their most recommended activity against flooding. The second most reported recommendation from KIs and FGD participants is the

construction or repair of water infrastructures such as ponds, tanks, or wells. Fishing FGD participants further recommended the strengthening and deepening of water sources to reduce overflow during heavy rains.

KIs also reported on organizing evacuation centers as well as temporary relocation and permanent relocation for those living in vulnerable areas. Similarly, they reported on establishing accurate warning systems. FGD participants added to these findings by recommending a system that would inform the community when local floodgates would open.

FGD participants also suggested cleaning and restoring water sources and waterways. KI recommendations that were less mentioned were the prohibition of illegal sand mining and the prohibition of farming in flood-prone areas.

**Table 3: Recommended solutions for flood mitigation**

Recommended mitigation solutions	No. KI	No. FGD
Constructing or improving drainage facilities	12	2
Constructing or renovating water store	8	2
Road repair	5	4
Set up evacuation centres	4	0
Prohibition of illegal sandmining	4	0
Relocate residence living in vulnerable areas	2	0
Establish early warning systems	2	2
Prohibit farming in flood-prone areas	2	0
Constructing or renovating waterways	0	4

### Recommended solutions for drought mitigation

**Table 4: Recommended solutions for drought mitigation**

Recommended mitigation solutions	No. KI	No. FGD
Construction of drinking water facilities	9	4
Irrigation systems	8	2
Construction or rehabilitation of agricultural water storage facilities	7	2
Introducing new cultivation methods and technology	6	3

As depicted in the table above, the construction of drinking water storage, such as wells and water tanks, was the most reported solution for droughts by KIs and FGD participants. Second, was the construction of agricultural water facilities, reported mostly by LA KIs and FGD participants. Participants from a male farming FGD reported this as a priority activity as the area of Aanaivilundhan experiences challenges with access to drinking water which means residents have to travel 1-2km, crossing government security checkpoints to acquire water.

Introducing irrigation systems such as drip, sprinkler, and rainwater harvesting was also recommended by KIs. FGDs also reported on introducing new cultivation and technologies such as drought-resistant plants.





Recommended solutions for human-elephant conflict

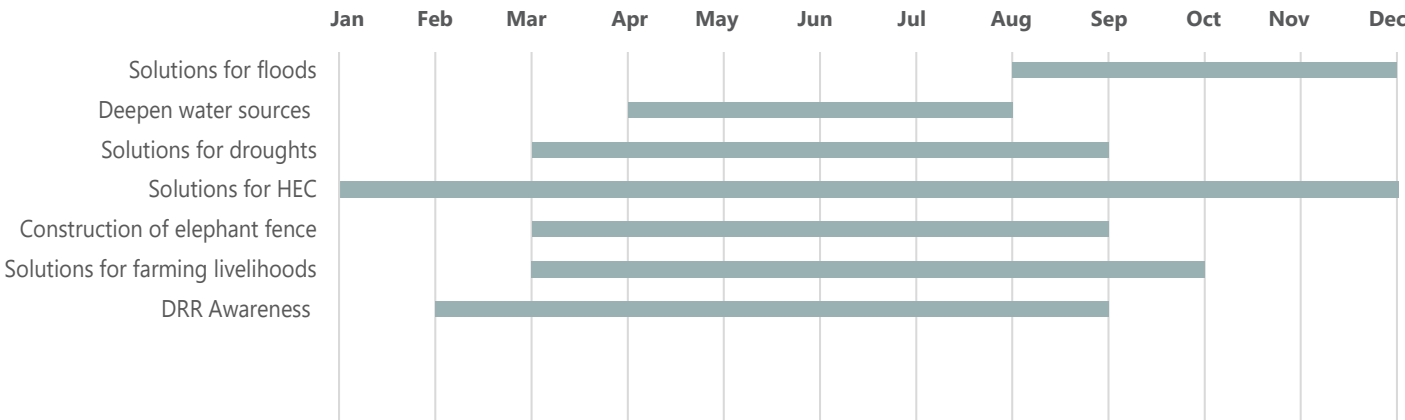
Karachchis KIs and FGD participants recommended constructing and maintaining elephant fences as a priority activity. They recommended electric fences as other types of fences are seen as less durable with reports of daily incidences with elephants. Second, they recommended the provision of elephant deterrents such as firecrackers and air guns and the associated permits. With less frequency, the use of plantations such as thorny palms to deter elephant movement was also reported. Installing night lights in the village is also reported to reduce HEC.

Table 5: Recommended solutions for human-elephant conflict

Recommended solutions for HEC	No. KI	No. FGD
Construction or maintenance of elephant fences	8	2
Elephant deterrents	2	1
Guns with shooting permits	2	0
Night lights	1	0
Bio-fence	1	0

Implementation period

Graph 1: Recommended time of year for the implementation of disaster resilience solutions



## Methodology Overview

**Research Design:** The primary research tool for the LRA was a qualitative and semi-structured data collection questionnaire, designed to assess and strengthen sectoral understanding of communities' experiences regarding the primary and secondary consequences of hazards on agricultural and fishing communities. It also explored pre-existing vulnerabilities to hazards, existing governmental, civil society and community disaster preparedness and response capacities, barriers to risk mitigations, and key solutions for disaster resilience building.

**Data Collection:** The geographic coverage of the LRA included 3 Clusters of GNDs in Karachchi DS identified by the ABRA. Cluster 1 included Kannakipuram, Akkarayan and Anaivilunthan. Cluster 2 included Maruthanager, Periyaparanthan and Pannankandy. Cluster 3 included Mayavanoor, Mavadiammam and Civic center.

A purposive and snowballing sampling method was employed, with 25 KI profiles and 12 FGDs selected per division. KI profiles included government actors, Community-Based Organizations (CBOs), and National or International Non-Governmental Organizations (NGO/INGOs). FGDs were conducted with members from agricultural and fisheries communities, divided by gender, age and cluster.

Enumerators trained by IMPACT conducted the key informant interviews (KIIs) and FGD in Tamil or Sinhala, with the support of field officers. Detailed notes in the local languages were recorded in IMPACTS debrief forms. These debrief forms were then translated into English by a third-party professionals and then shared with the research analysis team.

**Data analysis and outputs:** Using a data-saturation and analysis grid (DSAG) in Excel, data from KIIs and FGDs were logically coded into categories based on the research purpose, objectives and themes of the research questionnaire. The data was analyzed and compiled into key findings. Each coded topic was organized within the grid and tracked to identify the frequency of points mentioned across the qualitative session per division for KIIs and FGDs. Data cleaning and analysis were reviewed by the IMPACT HQ research department.

A more comprehensive overview of the methodology is found in the LRA [TOR](#).

### Research limitations

**Availability:** Instances occurred where KIIs or FGD participants, including CBO leaders and LA officials, were unavailable. Issues arose when several interviews, particularly in specific clusters, were not conducted as originally agreed upon, resulting in the prioritization of data collection in other areas or with different groups.

**Clarity:** While most of the reported information reported during the FGDs and KIIs are included in these final outputs, some interview notes were too brief to be able to interpret respondents' intended comments, for this reason, certain reports have not been included. This led to a loss of specificity in some of the findings.

**Language and translation:** The questionnaires, designed in English and containing academic and technical language, may have posed challenges for third-party translators. Specialized terminology often requires theoretical understanding in addition to strong bi- or trilingual language skills. The use of technical jargon and academic language during interviews might have hindered access to more personal and nuanced responses, which could have been achieved with more accessible language. Furthermore, it is possible that errors in accurate translation, omissions, repetition, or the loss of emotional experiences occurred when responses were translated from Sinhala and Tamil

into English. These issues may have resulted in a loss of contextual perspectives, thereby impacting data quality.

**Sampling:** The LRA was conducted in eight DSDs across four districts in Sri Lanka (Ampara, Batticaloa, Kilinochchi, and Vavuniya). The total amount of interviews conducted was 256 (160 KIIs and 96 FGDs). The large sample generated a large volume of data with varied responses, which proved challenging to streamline data, code, analyse, and report within the expected time frame.

### ENDNOTES

- 1 [Jayasinghe, 1 Population by DS division and age, 2022](#) Retrieved July 3, 2024
- 2 [The Gazette Extraordinary No.2238/45, Imports and Exports Controls Department, Operating instructions No.22/2021, IECD/6/1/10/2021/Vol 1.](#)
- 3 [Ministry of Agriculture and Plantation Industries, 2022, The Minister of Agriculture assures that nobody will be allowed to provide farmer with soil in tanks and waste material as organic fertilizer](#) Retrieved July 30, 2024
- 4 [Samaraweera, B, 2022, 7,000 Kilinochchi farmers in dire straits, The Morning](#)

Disclaimer: The views and opinions expressed in this factsheet are the reflections gathered through a participatory approach from interviewees and do not necessarily reflect the position of IMPACT or Acted.

