

Livelihood Resilience Assessment in Koralai Pattu South, Sri Lanka

March, 2024 | Koralai Pattu South, Batticaloa District

KEY MESSAGES

- As reported by KIs and FGD The division of Koralai Pattu South observes **human-elephant conflict (HEC)**, **heavy rains with floods**, and **droughts** as the main hazards impacting the communities.
- Damage to agricultural land and crops**, along with the **loss of livestock**, endangers **farming livelihoods**, according to KIs and FGD participants. Similarly, **reduced fish populations** threaten **fishing livelihoods**. These factors **decrease income**, triggering **food insecurity** and **poverty**.
- According to reports from KIs and FGD participants, **poor infrastructure** such as **damaged roads** and the **absence** of appropriate **drainage systems** along with **deforestation** and **sand mining** contributes to experienced **vulnerability**. **Low education** and **technical knowledge** on **Disaster Risk Reduction (DRR)** and **livelihood resilience** measures also aggravate vulnerability.
- The **priority mitigation activity** by respondents for **HEC** is constructing **elephant fences**. For **floods**, **improving** and **maintaining drainage systems**. To address **droughts**, **constructing** or **repairing agricultural water facilities**.

CONTEXT & RATIONALE

Located in the Eastern province, Batticaloa district, Koralai Pattu South (Kiran) Divisional Secretariat Division (DSD) covers an area of 656 km², with a population of 26,143 individuals, 52% out of them female and 38% children. The average population density is 49,85/km².

The terrain in Koralai Pattu South is diverse, ranging from coastal areas to inland areas with flat plains and some hilly terrain. In Koralai Pattu South, paddy cultivation stands out as the predominant agricultural activity, with the highest level of employment with 1521 families and 1768 farmers. This highlights the dependency on rice cultivation of the local population.

During heavy monsoon rains, low-lying areas in Koralai Pattu South may be prone to flooding, leading to damage to infrastructure, disruption of livelihood activities and displacement of communities. Periods of drought can affect water availability for agricultural purposes, impacting crop yields and livestock health. Koralai Pattu South's natural environment, surrounded by forest and in the migration path of elephants, may result in human-elephant conflict, loss of lives, and damage to infrastructure and agricultural land.

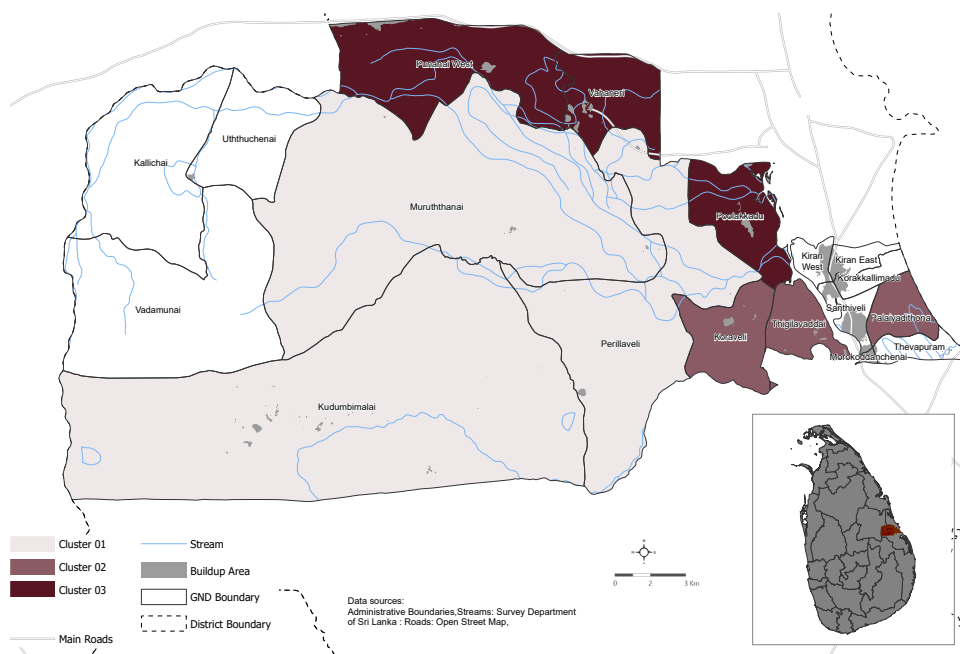
ASSESSMENT OVERVIEW

IMPACT profiled the situation of farmers' and fishers' livelihoods in Koralai Pattu South 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 22 key informants (KIs) and 12 focus group discussions (FGDs) were conducted from January to February 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 - Koralai Pattu South division and clusters of Grama Niladhari



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Risk governance and hazard impacts

Disaster Risk Management mechanisms in place

Mainstreamed disaster risk reduction (DRR) practices in Koralai Pattu South requires improvement. Most KI local authorities (LAs) report the need to further develop specific DRR tools such as risk mapping, appropriate disaster risk management and coordination between government departments, CBOs, and the rest of the community. However, some reports indicate divisional-level government coordination is currently practiced through the divisional secretariate, the divisional Disaster Management Centre (DMC), the Department of Agrarian Development, and the Grama Niladhari (GN) officials, to implement DRR in Koralai Pattu South. Some reports also indicate coordination between government officials and a village-level Disaster Risk Management (DRM) committee.

Additionally, KIs note the use of community emergency alerts facilitated through district-level coordination with divisional LAs and CBOs. For example, the fishermen' association receives early warnings for heavy rains, strong winds, and storms. These emergency warnings are also issued to the broader community through loudspeakers from religious buildings such as temples. LA KIs reported on DRR Peoples Awareness programs conducted by the village DRM committee.

Local CBOs, NGOs, and groups (village agricultural associations) reportedly engage in DRR activities, climate change awareness programs, the construction of water facilities, and the construction of elephant fences, most notably. Reports also suggest some participation in DRR and livelihood resilience training and awareness programs. Other KI reports suggest community members significantly lack existing measures or roles in DRM mechanisms.

External actors partnering to implement DRR actions were primarily the UN followed by mentions of Caritas HUDEC, World Vision, Oxfam, CARE International, and USAID. Implementing livelihood resilience activities such as the provision of seeds, fertilizers, and fish stock were World Vision, UNICEF, Farm Foundation, ESCO, and ZOA in coordination with government agencies such as the Department of Agrarian Development.

Main hazards in Koralai Pattu South

As depicted in the table, KIs and FGDs participants indicate that the most frequently reported hazard in Koralai Pattu South was human-elephant conflict (HEC), followed by heavy rains with flooding and droughts. Less frequently reported hazards by KIs include storms and strong winds, cyclones, thunderstorms and lightning, landslides, COVID-19, and other animal conflicts (e.g. crocodiles).

KIs and FGD participants highlighted the regularity of HEC incidents, noting that elephants often enter villages in the early morning and evening, with incidents increasing during harvest season. HEC incidents were reported as causing the highest number of casualties and physical disabilities. A local NGO KI also noted that the proximity to deforested lands increases the frequency of elephant attacks.

Floods and droughts were reported as occurring yearly. A CBO KI from cluster 2 reported two major flooding incidents in 2010 and 2023. An LA KI added that the recent flood severely damaged the divisions' highland crops, low-lying fields, and paddy fields.

Table 1: Main hazards in Koralai Pattu South as reported by KIs (total no. 22) and FGD participants (total no.12)

Major hazards	No. KIs	No. FGD
Human-elephant conflict	21	12
Heavy rain with flooding	20	10
Drought	20	12
Storms and strong winds	5	0
Cyclones	3	0
Thunderstorms and lightning	3	0
COVID	2	0
Landslides	2	1
Other animal conflict (crocodile)	0	2

Primary impacts of hazards

Loss or damage of agricultural lands and physical crops were reported by KIs and FGD participants as the most common impact of HEC, floods, and droughts. KIs noted the damage to crops such as paddy, maize, groundnuts, cowpea, grams, and other vegetables, and nuts from flooding and droughts. Some KI reported agricultural land infertility after floods. In times of drought, water scarcity in nearby tanks and ponds leads to an inability to irrigate crops causing them to perish. Elephants reportedly destroy fruit trees such as bananas and mangos, along with paddy harvest. These damages affect home gardens and small-scale fields.

Another impact on farming livelihoods reported is the loss or sickness of livestock due to diseases caused or exacerbated by floods and the scarcity of water and livestock feed during periods of droughts impacts the production and sale of milk, eggs, and meat.

KIs and FGD participants emphasized HEC as the predominant cause of human casualties, injuries, and physical disabilities. Participants from a female farming FGD in cluster 2 estimate that in the last five years, close to ten individuals have lost their lives and even more have been injured with disabilities. They also noted that the constant movement and intrusion of elephants through agricultural fields affected daily work as farmers feared being attacked. Participants from a male fishing FGD added that fishers also fear working in the early mornings and late nights due to elephant attacks, impacting their livelihoods. The same participants also reported on casualties of fishers during monsoon seasons.

KIs highlighted infrastructural damage such as to houses and village facilities, primarily caused by elephants, and flooding in low-lying areas due to the overflow and damage of nearby ponds and dams. Participants from a female farming FGD in cluster 1 report that flooded houses are difficult to drain, with stagnant water damaging their walls and personal belongings. A divisional LA KI noted that 62 small ponds have been damaged by floods, FGD participants added that floods have damaged canals and bridges. FGD participants also reported elephant damage to the walls of houses, schools, temples, and village electricity poles. Sanitation facilities have also been reportedly damaged by floods as well.



FGD participants reported that elephants have damaged their vehicles, tools, agricultural machinery, and fishing equipment such as nets and canoes and life-saving equipment. As a result of lost or damaged fishing equipment, fishers are unable to engage in their livelihood. Male fishing FGD participants also reported that during heavy rains fish are washed away from ponds and tanks, and during droughts, low water levels also impact fish availability, leading to reduced or ceased fishing activities.

During heavy flooding, markets become inaccessible, roads are blocked affecting the transportation and sale of agricultural and fishing produce. Participants from a fishing FGD in cluster 1 also noted difficulty in reaching hospitals in an emergency due to the threat of elephants on roads.

During periods of drought, access to drinking water from nearby wells and tanks is reduced. Additionally, KIs and FGD participants reported community temporary relocation to neighbouring villages or relatives during floods and displacement triggered by HEC and droughts. All these reported factors significantly impact communities and their livelihoods.

Secondary consequences of hazards

Economic

Key findings from KIs and FGD participants highlight the increase in poverty and economic hardships as a common secondary consequence of hazards. Damage to crops from floods, droughts, and HEC has led to a significant loss of income for farmers. Blocked roads from floods or elephants prevent farmers from accessing local markets, creating local inflation in the price of food and goods. Fishers are also unable to engage in livelihood activities during floods and droughts, leading to reduced or no profits gained. These combined factors lead to food insecurity.

KIs suggest that some individuals and families relocate in search of security and financial opportunities. A village disaster committee (VCD) KI from cluster 2 reported that farmers migrate to Thikiliveddai and Kudumbimalai areas, while fishers relocate as labourers to Silapam, Potuvil, and Trincomalee.

Food access

HEC, droughts, and floods indirectly affect access to food for communities. The most reported secondary impact in Korlai Pattu South is increased food prices due to damaged crops and reduced production. Local markets are impacted by damaged or poor-quality crop harvest reduced agricultural production from home gardens and small-scale fields, and transportation blockages preventing farmers from transporting available produce for sale. High demand with scarcity creates a local market increase in food prices. The Village Committee for Disaster (VCD) in cluster 1 found that small-scale farmers bear more of a burden from rising costs than large-scale farmers. The price of fish has also increased, reportedly doubling or tripling due to reduced availability.

Rising food prices reduce household food access, leading to nutritional deficiency. FGD participants reported consumption of only one meal per day, with severe ramifications on pregnant and lactating mothers, children, and the elderly people. This has also led to an increase in differently-abled babies. Female FGD participants reported pregnancy complications, heavy menstruation, and extreme exhaustion due to nutritional deficiency.

Social tension

Increased social tension is an indirect consequence of hazards. KIs reported a rise in child sexual abuse and child marriages, likely due to children being sent away to other farming locations in response to droughts, reports a DSD LA KI. There are also conflicts over resource access, such as grazing lands (e.g., Mayilaththamadu

lands) farming land boundaries, and common water sources like wells. Tensions have also arisen over the distribution of disaster relief aid and within families due to economic hardships.

Education

Key findings from FGD participants and KIs reported increased school dropouts or interruption of schooling because of flooding and drought. The increase in school dropouts was largely attributed to the increase in poverty, with an inability to afford transport or school supplies. However, some KIs and FGD participants attributed school drops to poor parenting priorities, with one group suggesting children are taken to work wage jobs in rice mills or construction sites, and not an indirect cause of hazards.

Health

The most reported health issues in Korlai Pattu South were increases in infectious diseases such as viral fever and allergies, caused by stagnant floodwaters mixed with garbage and waste. An LA KI reported an incident where flooding prevented burying the deceased and spreading diseases. Skin and eye infections were also reported from contaminated flood waters and saltwater affecting fishers. There were some reports of an increase in dengue because of flooding.

There were also reports of psychological distress and mental health decline along with substance abuse as a coping mechanism for economic hardship and instability.

Vulnerability to hazards

Groups in vulnerable positions

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

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

KIs in Korlai Pattu South identified FHH and people with disability/households with a member with a disability as groups in a highly vulnerable position. FGD participants and LA KIs report a large number residing in Korlai Pattu South, experiencing social and financial difficulties, with most being low-income and requiring Samurdhi benefits or the new 'Aswesuma' benefits.

FGD participants also reported on the lack of access to employment opportunities. Some FHHs, as sole breadwinners, travel to nearby villages for wage work, fish by the shores and dry fish for sale, yet still experience challenges.

Most disabilities were caused by injuries from HEC or other animals, and nutritional deficiency. People with a disability used to work in agriculture or fishing industries but are now unable to do so, a GN official from cluster 3 reported. Participants from female fishing FGD suggested that these socio-economic preconditions increase experienced vulnerability of FHH and PWD more than others.

Farmers

Factors contributing to the vulnerability of farmers were reported as their dependence on agriculture as their main source of income. When hazards cause land and crop destruction, it leads to the loss of yield and associated profits, with farmers lacking alternative livelihood skills to rely on to cope with financial constraints. Farmers also engage in cultivation in low-lying areas that are susceptible to flooding, leading to ongoing land, crop, and equipment damage. The inability to cope with financial losses also means that farmers are unable to meet the rising cost of fertilizers,



seeds, and equipment. Leasing agricultural land is also reported as costly with profits needed to meet financial demands. Financial constraints are also not alleviated through loans, as there is a lack of access to them, reported FGD participants from cluster 3.

FGD participants from cluster 3 reported an incident where agricultural land did not have access to water for irrigation, as a private factory had complete access to water from the Vahaneri pond. Similarly, participants from cluster 2 also reported a lack of access to water for agricultural irrigation.

Another factor creating vulnerability is the low literacy in the area and the absence of DRR and livelihood resilience awareness, as reported by participants from farming and fishing FGDs

Fishers

Fishers in Koralai Pattu South face reduced catches due to the depleting number of fish caused by exploitative aquaculture and fishing practices. There are also large areas with aquatic plants, silt or sand that hinder fishing activities. Fishers also face threats from crocodiles, and female prawn fishers from elephants. FGD participants also reported that financial constraints impact the purchasing of fishing gear such as canoes. Cluster 2 FGD fishing participants reported that fishing associations are institutionally weak and unable to provide appropriate support to fishers, especially financially. Similarly, governments CBOs, and private credit facilities do not provide loans for fishers.

Other groups

Additionally, the elderly people, drug users and school dropouts are other groups vulnerable to the impact of hazards, as reported by KIs.

Pre-existing infrastructural conditions

Findings from KIs and FGDs participants indicate limited or poor transportation facilities as the most common vulnerability-inducing factor in Koralai Pattu South. Damaged roads impact farmers' ability to transport produce to markets and access agricultural inputs such as fertilizers and seeds. Inadequate infrastructure and urban planning, such as the absence of appropriate drainage systems, with existing drains constantly blocked by poor garbage disposal, worsen the issue. FGD participants also reported that nearby canals used for drinking water and irrigation are closed to the public. KI reports note that the area has many ponds and dams in a state of disrepair and a CBO KI also noted that due to poor initial construction, infrastructure was constantly damaged and then in need of repairs.

KIs and FGD participants noted vulnerability caused by human-induced activities such as environmental degradation through deforestation, pollution, and sand mining. Divisional LA KIs suggest that deforestation leads to increased HEC as elephants enter agricultural fields in search of food. An LA KI also reported that the lack of a polythene management plan results in improper garbage disposal, clogging drains and worsening flooding. Sand mining in Koralai Pattu South also creates vulnerability to floods in nearby agricultural lands.

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.	No.	No.	No.
	KI	FGD	KI	FGD
	Farming		Fishing	
Daily wage labour	14	1	10	0
No other source	9	0	3	0
Livestock rearing and husbandry	6	1	3	1
Shop owner or small business	5	1	0	0
Handicraft	3	0	0	0
Private sector	2	0	0	0
Fish drying	0	0	4	1
Constructing, cleaning and repairing nets and boats	0	0	3	2
Sea cucumber and algae farming	0	0	2	2
Agriculture	0	0	2	0
Garment factory	0	2	0	0

Most KI reports indicate fishing in nearby freshwater rivers and ponds or the Madura Oya dam. Others reported fishing by the coast and other saltwater bodies. Alternatively, fishers identify other freshwater sources such as the Thikilieddai River in cluster 2. Some fishers have no other source while others engage in saltwater fishing.

Disaster preparedness and risk mitigation measures

Community disaster preparedness and response

FGD participants in Koralai Pattu South reported stockpiling food and storing livestock feed like rice stews for annual disasters such as heavy rains as the most common community disaster preparedness activity. Comparatively, district and divisional LA KIs reported on community participation in training and awareness programs on disaster prevention and livelihood resilience, with one KI reference to fishing communities. Additionally, there were awareness programs on using and preparing natural fertilizers for farming communities. In response to recurring hazards, a village group, in collaboration with the government and INGO, established a DRR people awareness program, which is still operating. However, one KI criticized that while awareness programs are conducted, they fail to lead to any interventions.

In contrast, some KIs reported the absence of capacity-building and awareness programs. KIs also reported that the role of the community had not yet been identified due to low literacy, lack of training, and awareness as challenges to organizing community-based risk mitigation measures. District authority KIs mentioned that the community's role is limited to following instructions by authorities. They are also limited to activities requiring manpower for construction or maintenance. Some FGD participants in clusters



2 and 3 report that no DRR activities have been implemented in Koralai Pattu South, nor is there any DRR coordination.

Both KIs and FGD participants reported early warning systems through radio, telephone, and television as a community measure. FGD participants also reported on the construction and maintenance of elephant fences, though only in a few areas. Villages like Ichaiyadi and Mattapupulthottam lack fences as reported by farmers in cluster 1. Locations without fences resort to rotational guarding against elephants, according to farming FGD participants cluster 1 and 2.

Other community disaster preparedness responses reported by FGD participants include pond dredging, seasonal cultivation, reducing small-scale farming, provision of water facilities like wells, and community relocation.

Government disaster preparedness and response

In Koralai Pattu South, KIs commonly reported the absence of government disaster preparedness and response actions, such as precautionary systems and risk maps, which are often found in different departments, usually at the divisional secretariat. An LA reported that although preparedness measures have been introduced in Koralai Pattu South, inconsistent application led to a lack of effective mitigation measures. However, reports of government departments' primary disaster response involve community emergency mechanisms, such as emergency warnings. The Department of Agriculture and the Department of Fishers and Aquatic Resources reportedly issue warnings via phone calls to relevant associations. The divisional secretariat disaster management system provides early warning to other government departments and DRR committee groups, which is then disseminated through temple loudspeakers. Reports also indicate that evacuation paths and plans are shared with the community during disasters.

KIs also indicate awareness programs conducted by the DMC, including youth-targeted initiatives in collaboration with the Agrarian Service Centre, Department of Health, Department of Education, tri-army, and Police. However, there were reports on the absence of livelihood resilience training for farmers and fishers, with previous attempts deemed unsuccessful. The DMC also held a tsunami drill two years ago. LA KI also reported the distribution of drinking water by the divisional secretariat during periods of drought and rehabilitating roads.

Civil Society disaster preparedness and response

Key findings from CBOs indicate that the most common disaster preparedness and response activities include cleaning and renovating drainage canals to reduce flooding, DRR and climate change awareness or capacity building programs, constructing elephant fences, and constructing or repairing water facilities. Water facility actions include providing water pumps, repairing structures, deepening ponds and wells, installing pipes, constructing water tanks, and ensuring water supply during periods of droughts. Other reported activities involve repairing roads and improving boat service during floods. There were differing reports on early warning announcements, with some reporting its absence and others its presence. Additionally, chicken farming promotion was also mentioned as a livelihood preparedness activity.

Livelihood risk mitigation measures

In Koralai Pattu South, LA KIs reported ongoing community awareness programs on DRR and livelihood resilience. However, most FGD participants from all clusters and CBO KIs noted the absence of DRR projects and actors. A CBO KI mentioned the last awareness and training project was ten years ago by NGOs like Oxfam, CARE, UNDP, and USAID following the tsunami.

This year, NGOs such as World Vision, UNICEF, Farm Foundation, ESCO, and ZOA supported farmers with seeds, paddy, groundnuts, bananas, fertilizers, and agricultural equipment, resulting in successful harvests. The Agrarian Service Center provided a fertilizer subsidy program, while local NGOs and other government departments offered agricultural loans. A district LA KI reported financial assistance to fishers post-disaster and the divisional Secretariat provided fishing equipment. The Rehabilitation and New Life organizations supplied fishers with 16 boats. Early warning and awareness programs were also conducted by the district LA KI, with NGOs and government departments reporting these efforts as effective.

World Vision, in collaboration with government departments, implemented a rainwater preservation project. ASMP, the Department of Agriculture, and the Department of Forestry constructed an elephant fence, and a bio-fence using lemon and wood apple trees was also established. Child Protection and Emergency Response WASH was previously implemented.

Ineffective past activities

Participants from a farming FGD in cluster 3 reported that a government water tank project was abandoned due to technical issues, leaving 250 families without access to water. Similarly, irrigation and drainage projects near the Vahaneri dam were abandoned. A CBO KI noted that fish stock projects can be unsustainable during droughts when ponds dry up. Some KIs suggested that certain projects focus on immediate relief but lack long-term viability. An LA KI also reported inadequacies in past elephant fence constructions.

Barriers to risk mitigation

Governance capacity needs

The primary need to incorporate risk mitigation measures, as reported by KIs and participants from a farming and fishing FGD, is to strengthen effective government support and institutional policy measures to implement mitigation measures. Most LA KIs emphasized the need to develop state policies and measures aimed at DRR, noting that complex state politics and policy changes prevent divisional-level implementation. CBO KIs and male farming FGD participants reported insufficient support from authorities, attributing this to a lack of empathy toward the plight of local farmers. Participants from male farming FGDs in clusters 1 and 3 reported government's delay in addressing HEC by constructing necessary fences.

A KI reported slow implementation of policies and interventions, such as infrastructural maintenance. They cited an incident where a damaged dam and a lack of regular maintenance resulted in an accumulation of plastic and nets in the water, reducing fish growth. This was described as challenging to coordinate with government agents. FGD participants emphasized limited cooperation between government agencies and the community as a significant barrier to incorporating risk mitigation measures. FGD participants noted ongoing issues between community and government officials, including an incident where water was provided only twice a week.

FGD participants from cluster 1 reported a low representation of government agencies and CBOs working on risk mitigation in the area. Cluster 3 FGD participants noted that while the DMC previously provided community awareness, they now function post-disaster. As a result, participants report insufficient awareness of DRR and livelihood resilience as a barrier.

Financial constraints were also reported as a barrier by LA KIs, citing limited capacity to implement livelihood resilience activities and recovery systems due to a shortage of funds. As an example,



they cannot procure new varieties of flood-resistant rice and other crop seeds for subsidies. Participants from a female farming FGD in cluster 1 noted that financial compensation, subsidies, and other forms of relief are delivered up to two to three months late, if at all. A CBO KI from cluster 3 added that HEC compensation was not provided to all victims. Other inaccessible forms of risk finances were low-interest loans for farmers and fishers.

FGD participants reported limited access to modern technology and equipment for farming and fishing and the technical knowledge to use, highlighting this as a primary capacity gap

Governmental policy impact on hazard mitigation

The most frequent KI response was the limited policy impact on hazard mitigation, the lack of these policies was reported by a few of them as one of the reasons. Only one DSD LA KI noted that there are existing policies aimed at disaster hazard mitigation. One KI reported the Disaster Management Act (DM Act) created barriers to mitigation actions, particularly concerning loans for implementing activities. [A case study by Verite Research](#) suggested that the DM Act was an adequate framework. However, the low engagement in decision-making due to chronic delays in convening and approving critical decisions, such as loans, hinders its effectiveness. This was cited as a reason for the response's management and preparedness issues.

Risk financing

Koralai Pattu Souths' KIs reported compensation upon death from HECs as the most common risk financing measure. LA KIs noted that Rs 500,000 is provided to households upon the death of a family member, but this amount varies yearly. Other reports indicate that farmers have access to low-interest agricultural loans through the Agrarian Service Centre and agricultural insurance schemes. Farmers also benefit from fertilizer subsidies provided by the Department of Agrarian Development and access to disaster compensation based on the damage incurred. Koralai Pattu South fishers have access to low-interest loans from local banks and fishing societies. However, some KIs reported limited access and availability of risk financing measures.

Limitations of funding or technical capacity

Key findings from KIs and FGD participants indicate that recurring activities are hindered by limited funding and technical capacity. These include repairing damaged ponds, strengthening embankments, constructing dams and agricultural wells, and meeting drinking water and irrigation needs. The inability to improve transportation by repairing and paving roads was also frequently reported. KIs noted the lack of technical support for transportation improvements during floods, which affects access to markets for produce sales. Additionally, there is insufficient funding for road drainage systems to improve water flow during heavy rains. KIs highlighted the need for support to repair or procure boats used for disaster relief.

FGD participants frequently reported that disaster mitigation and livelihood resilience projects are not implemented due to financial and technical constraints. Constructing elephant fences was the most reported unmet need by FGD participants and CBO KIs highlighted it as a priority activity.

A CBO KI shared that fishermen and farmers lack equipment for weather and disaster notifications. Farmers often receive false information about rainfall, which affects cultivation. This was cited as a technical capacity barrier. CBO KIs and divisional LA KIs also emphasized the need for technical support and financial capital to improve fishing livelihoods by expanding sources of income such as fish farming.

Solutions suggested by KIs and FGD participants for disaster resilience building

Recommended DRR activities

FGD participants predominantly reported that increasing risk financing solutions through agricultural and fishery loans issued by government departments, financial institutions, or CBOs is crucial. They also suggested improving disaster compensation mechanisms. KIs emphasized the priority of establishing DRR awareness programs for fishing and farming communities, noting the current lack of such programs. Additionally, KIs recommended introducing agricultural livelihood training programs and implementing an early warning system.

Livelihood solutions for fishing communities

The most recommended solution for fishing livelihoods by KIs was to rehabilitate ponds and tanks to reduce water scarcity for fishing during periods of drought. Another recommended solution was to promote aquaculture by introducing fingerlings. An LA KI also recommended introducing training for fishers on alternative livelihoods and income sources. Participants from an FGD added fish farming to expand livelihood opportunities. Participants from a female fishing FGD recommended increasing collaboration with the government departments as a livelihood solution. The extension of a beach dock, construction of barrier nets, fishermen's rest halls, and fish markets have been suggested as factors that could safeguard livelihoods.

Another solution suggested by KIs was the promotion of aquaculture with fingerlings. Some financial recommendations for fishing communities include compensation and rehabilitation assistance and improving access to interest-free loans.

Livelihood solutions for farming communities

Key findings from KIs suggest increasing financial support through low-interest loans, compensation schemes, insurance schemes, and agricultural subsidy programs as the most recommended solution for farming livelihoods. A district-level LA KI and participants from a female farming FGD emphasized the necessity of introducing compensation for hazards such as floods and droughts, especially for crop damage. They also recommend introducing government insurance schemes and increasing access to fertilizers and seed subsidies. A preference for subsidies on short-duration, high-yield, and flood-resistant crops was recommended by another KI. Additionally, a suggestion was to ensure that farmers cultivate on land that is not flood-prone with adequate drainage of floodwater. Increasing awareness, training, and capacity building on DRR measures and modern agricultural equipment usage were reported as priority activities.

Recommended solutions for flood mitigation

As depicted in the table below, KIs identified the priority flood solution recommendation as improving and maintaining drainage systems, especially road drainage systems since poor drainage has been causing increased flooding as reported by CBO from cluster 2. FGD participants also recommended constructing and renovating waterways, such as drains. This was closely followed by KI reports on constructing and repairing water sources, such as ponds, dams, and embankments, to reduce water overflow into residential and cultivation areas.

Participants from a female farming FGD recommended increasing collaboration with government authorities to discuss



facilities in need of repair and disaster compensation. Other KIs recommended improving boat services during floods, as the current boats are in disrepair, which was also highlighted as a priority activity. Repairing and improving road pavements and promoting fish farming were also reported as a priority activity by FGD participants. They also suggest prohibiting agriculture in flood-rick areas and encouraging seasonal cultivation.

Table 3: Recommended solutions for flood mitigation

Recommended mitigation solutions	No. KI	No. FGD
Constructing or improving drainage facilities	5	2
Constructing or renovating water stores	4	1
Flood boat service	4	1
Road reconstruction	2	0
Increase collaboration with government authorities	0	1
Seasonal cultivation	1	0
Prohibit cultivation in at-risk areas	1	0

Recommended solutions for drought mitigation

As illustrated in the table below, KIs and FGD participants indicate the most recurring recommendation as the construction of rehabilitation of agricultural water stores. These activities include introducing tube wells renovating damaged ponds, dams, and canals, deepening small ponds, and constructing bunds to reduce water scarcity during drought. These were identified as priority activities.

This was closely followed by the construction of drinking water facilities such as wells, which was also deemed a priority. Other recommended activities include introducing new cultivation methods and technology such as cultivating drought-resistant crops, encouraging home gardening, and establishing a food storage system for disaster preparedness.

Table 4: Recommended solutions for drought mitigation

Recommended mitigation solutions	No. KI	No. FGD
Construction or rehabilitation of agricultural water storage facilities	10	5
Drinking water facilities	5	5
Introducing new cultivation methods and technology	2	0
Home gardening	1	0
Food stockpiling	0	1

Recommended solutions for human-elephant conflict

As shown in the table below, the priority solution recommended by KIs and FGD participants was constructing and maintaining elephant fences. LA KIs and participants from a male farming group in cluster 1 reported that only one area in Koralai Pattu South has elephant fence coverage, leaving the rest of the area exposed to elephant intrusions. they suggested expanding

coverage to areas such as Kudumbimalai and ensuring regular maintenance of fences. Additionally, a bio fence using thorny plants such as Palmyra trees, planted in a zigzag pattern, was recommended. Other suggestions include increasing afforestation to provide elephants with food, deterring them from consuming farmers' harvests. In contrast, some FGD farming participants also suggested forest clearance as a deterrent. Lastly, a farming CBO KI in cluster 3 recommended increasing HEC compensation for damages incurred.

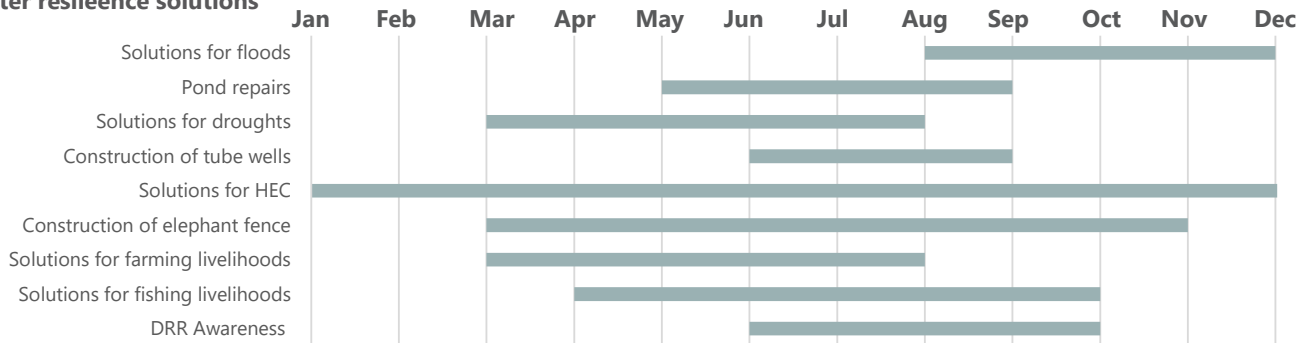
Table 5: Recommended solutions for human-elephant conflict

Recommended solutions	No. KI	No. FGD
Construction or maintenance of elephant fences	14	5
Bio-fence	2	0
Afforestation	1	0
Forest clearance	0	1
Increase disaster compensation	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 three Clusters of GNDs in Koralai Pattu South DSD identified by the ABRA. Cluster 1 included Kudumpimalai, Muruththanai, and Perilaveli. Cluster 2 included Palayadithona, Thikiliveddai, and Koraveli. Cluster 3 included Poolakadu, Vahaneri, and Punanai West.

A purposive and snowballing sampling method was employed, with 22 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, N., Fernando, S., Haigh, R., Amaratunga, D., Fernando, N., Vithanage, C., Ratnayake, J., & Ranawana, C. \(2022\). Economic resilience in an era of "systemic risk": Insights from four key economic sectors in Sri Lanka. Progress in Disaster Science, 14, 100231.](#)

2 [Verite Research Disaster Management in Sri Lanka. A case study of administrative failure \(2009\).](#) Retrieved July 12, 2024,

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.