Recovering from the tsunami: A case of long-term engagement to build resilience in Nagapattinam

Vineetha Nalla, Yashodara Udupa, Dhanapal G.

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IIHS Case No. 1-0036

This section contains

I. IIHS Case Method

The IIHS case is a work-in-progress that represents experiments in different forms of creating interdisciplinary and inter-sectoral cases, as well as a diversity of pedagogical environments to learn and teach with these cases. The opening set of cases is, thus, also in a sense, an experiment in form and teaching modes. Given this, we do not claim a singular 'IIHS Case Method' or any one form or definition of a case. Indeed, one of the explicit aims of case development at IIHS is to challenge conventional ideas of what case-based learning is. How then does a user know how to use cases? Pedagogical transactions will differ from case to case and indeed multiple options will be open within each case. Therefore, in order to aid users, all IIHS cases come with a set of consistent elements that help users navigate through the diversity of form and content.

These are:

- **Preface:** Every case begins with an introduction by the case writer that describes their own approach to the case. How did the case writer frame the case? Why did they choose to structure it as they have? What were their intentions in writing the case?
- **Teaching Note:** The second shared case element is the Teaching Note. Here, the case writer lays out their imagination of how they would teach with the case in its current form. They suggest learning outcomes, pedagogical modes, learning environments and assessment frames. True to the diversity of the cases, each of these is particular to the case.
- **The Main Case:** This is the main body of the case—its core empirics, arguments, discourse and data. Across the cases, these come in different forms: PowerPoint presentations, audio-visual material, web interfaces, written text, and data visualizations.
- **Pedagogical Possibilities:** The next element lays out the case writer's suggestions on other ways in which the case could be taught, including in other disciplines or learning environments. These are not as detailed as the Teaching Note but offer a set of possibilities to the user to imagine other uses of the case than those laid out.
- **Case Archive:** The final element of the case is a library of documents—reports to interview transcripts, unedited footage to visual photo libraries—that act as an archive for the case. This repository allows users to also access a host of background and additional information necessary to navigate the larger contexts in which the case is situated.

Each IIHS case—regardless of the diversity of its form—comes structured with these elements. It is our hope that this recognizable framework will enable users to navigate easily across cases with very diverse elements and forms.

II. Case Preface Note

Disasters represent collective stress occurring at a community level, overwhelming their capacity to contain its consequences. The loss of homes, livelihoods, assets and social relations have differential effects on varied groups of people depending on their socio-economic conditions prior to the disaster. Accordingly, disaster risk and coping capacities are closely related to the entrenched vulnerabilities of the people. Recovery is therefore an active process, involving not only enduring the destructive impacts of a disaster but also strengthening individuals and communities' capacities against future disasters. Resilience building is not just an outcome but also a part of the recovery process.

The tsunami on 26 December 2004 generated waves that penetrated between 300-3000 meters inland along the south-eastern coast of India severely affecting the states of Tamil Nadu, Andhra Pradesh, Pondicherry, Kerala and Andaman and Nicobar Islands. Across the coast, an estimated 1089 villages; 1,57,393 houses and 39,035 hectares of ripe agricultural land was damaged. In Tamil Nadu, the entire coast was severely affected and Nagapattinam district reported a maximum loss of life — 76% of total deaths reported in the state (Government of Tamil Nadu, 2005). Agriculture and fisheries, the primary economic activities in the district, incurred heavy losses. According to vulnerability assessment studies conducted following the tsunami, the communities of Nagapattinam lived with high physical and socio-economic vulnerability prior to the tsunami largely owing to previous events of drought, extreme rainfall, lack of coastal regulations and limited services in the region. These struggles were exacerbated by the tsunami, rendering them further vulnerable in their ability to cope with the disaster.

It was in this context that the NGO Coordination and Resource Center (NCRC) was set up in the wake of the tsunami in Nagapattinam. In the first week following the tsunami, NCRC set up a two-way information flow between the government and NGOs for the needs in the villages, fostering a strong relationship with the government. In the following weeks, they helped organize NGOs into sectoral groups relating to issues such as shelter, livelihoods, health and sanitation to address specific issues on the ground.

Thereafter, and up until now, NCRC worked on reviving and strengthening livelihoods, especially in the agricultural and fisheries sector. Having a long-term resilience agenda since its inception, NCRC continued to work on recovery of the coastal communities with a plan to build resilience in the process. NCRC was succeeded by the Building and Enabling Disaster Resilience of Coastal Communities (BEDROC), a Trust registered in 2008, which continues to work on long term recovery and integration of disaster reduction into the mainstream development agenda to build resilience of these coastal communities.

Within Disaster Risk Reduction (DRR) initiatives, NGOs are increasingly taking on intermediary roles in the collection and dissemination of information. As frequencies of disasters continue to rise across the world, it is useful to understand the evolving role of platforms such as NCRC as intermediaries and their implications in the overall recovery process. The case of NCRC has

been chosen to **understand disaster recovery process focusing on livelihood improvement to build long term resilience.**

Under this purview, this case has three thematic foci –

1. Coordination platform for resource management
2. Livelihoods approach towards building resilience
3. Lessons on processes

This case has been documented and compiled through interviews with individuals involved in the formation of NCRC, partner organizations and persons from communities affected by the tsunami. The interviews have been structured to develop a comprehensive understanding of the experiences of these individuals in setting up the NCRC, and their mode of operation in executing initiatives to build resilience in the coastal communities of Nagapattinam. These interviews are supported by an intensive review of secondary literature - government reports, NGO publications, research papers, documentaries and grey literature. Published literature that discuss the role and activities of NCRC in the relief operations in Nagapattinam have also been reviewed.

The case content is written primarily for teaching purposes and may have the author's own views which must not be construed as facts.

III. List of Case Contents

Section A: Introduction to the Case

1. Introduction to the Case
2. Preface Note
3. Detailed table of Contents
4. Teaching Note

Section B: The Case

1. Main case Write up – "Recovering from the tsunami – A case of continued efforts to build resilience in Nagapattinam"
2. Case Films | Playlist

    Trigger for Action
    First Steps & Founding of NCRC
    Developing the Coordination Center
    Structuring NCRC
    From NCRC to BEDROC
    Agriculture
    Housing
    Fisheries

Section C: Case Archives

1. Essays, reports and published papers on the 2004 tsunami in Nagapattinam and NCRC
2. Short clips of interviews with members of NCRC, SIFFS, SNEHA
3. Short clips of interviews with fishermen and other locals

IV. Teaching Note

Case Title: Recovering from the tsunami - A case of long-term engagement to build resilience in Nagapattinam.

Case Trigger: The 2004 Indian Ocean Tsunami

Case Objective: To understand what entails disaster recovery process, focusing on livelihood improvements for building long term resilience

Case Thematic Foci

This case will investigate the relief efforts in Nagapattinam by the NGO Coordination and Resource Center (NCRC), a multi-stakeholder co-ordination and program implementation platform set up after the 2004 Indian Ocean Tsunami. NCRC was succeeded by Building and Enabling Disaster Resilience of Coastal Communities (BEDROC), a Trust registered in 2008 and focuses on long term recovery and integrating disaster reduction into the mainstream development agenda to build resilience of coastal communities.

This case can be taught using three thematic foci which are explained below. These themes translate to the three learning outcomes that can be achieved using this case.

1. *Coordination platform for resource management*

NCRC was established as a platform to coordinate relief efforts in the immediate response to the 2004 Indian Ocean tsunami. As described by its founding members and reports, its role as a coordinating platform evolved over the subsequent months after the tsunami by developing a strong network with the local communities, government officials and civil society organizations to gather information, coordinate resources, co-produce knowledge, to build networks and enhance implementation.

Through the case, it can be debated whether NCRC played the role of a 'knowledge broker'. Knowledge brokering is a function that helps ensure relevant and accurate information guides strategies designed by the government or any other decision makers. Such platforms act as filters, translators and communication channels between different stakeholders. Jones et al., (2016) suggest five areas of interaction and engagement to address risks – improving knowledge sharing, enhancing coordination on planned activities, enhancing collaborations across systems and scales, focusing on knowledge co-production and emphasizing learning processes.

In the context of Nagapattinam, the NGO Coordination Centre was first established as a platform out of a need to coordinate the immense inflow of national and foreign aid and organizations into the district, and channel it to the people in need. Simultaneously, it was also involved in collecting and assimilating accurate ground data and disseminating it to government officials and decision makers for better decision making. Through the instances described in the case, NCRC's role as knowledge brokers can be argued through their interaction and engagement with the local communities, other NGOs and government

officials to coordinate activities on ground, facilitate collaborations across sectors and stakeholders and ensuring knowledge co-production.

2. *Livelihoods approach to building resilience*

On the subject of building resilience, the wellbeing of people is linked to their ability to cope with risks. Wisner et al., (2003) explain disasters as not just the result of natural events, but also the result of social, political and economic processes. Therefore, disasters disrupt all spatial and economic activities at household and settlement levels. To understand the impact of disasters, specific vulnerability of groups of people due to social systems must be understood to make meaningful attempts at recovery and building resilience.

Post tsunami, NCRC has been actively involved in building livelihoods of communities in Nagapattinam – especially in the sectors of agriculture, fisheries and women's employment. Their initiatives in shelter reconstruction and rehabilitation also show close linkages to livelihoods. For the coastal communities of Nagapattinam, the sea is a major source of sustenance, livelihood and trade links. Hence, for them the choice of where to live is driven by a series of trade-offs between affordability and proximity to their livelihoods. NCRC's initiatives to build long term resilience is described through narratives of their attempts at livelihood recovery in fisheries and agriculture. An interesting aspect to debate upon is the attempt at participatory approaches in resilience building initiatives which is claimed to be an integral element mentioned in the reports reviewed and in one of the main interviews of this case with Annie George. The outcomes of these activities and whether the goal of resilience building was achieved can be debated.

3. *Lessons on Processes*

In the decade that followed the Hyogo Framework for Action (2005), greater public, private and civic accountability to reduce risk and vulnerability has been increasingly discussed. In the same vein, improved accountability, transparency and governance for disaster risk was urged in the discussions around the Sendai Framework for Disaster Risk Reductions (2015-2030). Accountability in disaster risk reduction is intended to enable review of actions taken at different levels, and of those responsible for such actions. It also serves as a guide on how to improve leadership in risk governance, transparency, sharing of risk information, stakeholder participation and public awareness.

The processes and mode of practice observed in the case of NCRC is interesting to deliberate on the subjects of accountability, ethics of practice and the implications of having a long-term resilience agenda in the recovery of a place or community. NCRC was established with the intention of working long term in the recovery and rehabilitation of Nagapattinam. Was there a need for an exit strategy in this case? In 2008, BEDROC succeeded NCRC with a focus on long term recovery and mainstreaming disaster risk in the development agenda of Nagapattinam. The outcome of this transition and the challenges faced in its implementation can be debated.

A. Learning Outcomes of the case

1. Understanding the role of coordination platforms in disaster recovery processes.
2. Exploring ways to build resilience through strengthening livelihoods
3. Understanding the implications of having a long-term resilience agenda in recovery processes

B. Suggested Audience

The case material can be used for students undertaking their undergraduate or master's programs in disaster management, public policy/administration, urban development, economic or sustainable development, housing, resilience, governance, or project management. This case can also be used for training working professionals, drawn from the public or private sectors or the civil society, working in the fields of disaster management, public relations, rural or urban development.

C. Pedagogic trajectory

The case should ideally be used in a course/ module where the learners are familiar with the concept of 'vulnerability', 'resilience' and 'risk'. These concepts should be located in a disaster context with discussions on risk perceptions, disaster management and resilience building. Discussions on common frameworks on disaster resilience leadership, institutional and regulatory structures within the country with respect to disaster management and recovery, and the existing gaps and limitations should ideally precede the case.

The first area of learning would be to understand what entails a platform such as NCRC. The learners can be engaged in a facilitator-moderated discussion on what are the conditions in a post-disaster context, and what are the actions required to be taken. The discussion can then move to the key enablers for creating a coordination platform in a disaster context. This should lead to a discussion defining such a platform and its core agenda. It is useful at this point to map all the actors and networks required to make this platform possible. It is also recommended to engage the class in a discussion to deliberate on how such an organization could materialize in the formal space and what its roles and objectives would be, who would be the actors involved, the limitations and advantages of working in a formal institution etc.

The second area of discussion would be to define the specific problem that NCRC was established to address and the theory or the mission guiding the organization. NCRC has had a sustained presence in Nagapattinam for more than a decade, continually working on recovery and rehabilitation of the coastal communities. It is useful to discuss the implications and outcomes of such a presence on both the lives of the founders and members of the organization, and on the communities of Nagapattinam. At this point it is also useful to compare with another NGO such as the Timbaktu Collective which has been working in Anantapur, Andhra Pradesh for the last 25 years. The learners can also have a debate imagining a scenario if NCRC had an exit strategy – what would the mandate of the organization then be?

The third area of discussion would be to debate on the livelihoods approach to building resilience taken up by the organization. NCRC advocates a transparent and participatory process of engaging with the community and the government. It would be interesting to

discuss how participation in these processes is measured and how it could be viewed from different stakeholders' perspectives.

The last area of discussion would be on the question of scaling up and measuring social-impact. It can be debated if scaling up NCRC was necessary? If so – in what ways and what could be the potential challenges, and the key enablers to make this happen. The class would also have a discussion on the type of leadership style exhibited in the case and how effective it was.

D. Learning Environment

The case of NCRC's recovery efforts in Nagapattinam began more than a decade ago and is fairly well documented through published reports and journals. The case write-up is therefore a narrative of the events leading up to formation of the platform and the actions taken henceforth. The first-hand information collected for this case consists primarily of oral histories from persons who were present in Nagapattinam at the time of the tsunami and persons who were closely involved in the formation of NCRC. These oral histories have been documented in a film which is a useful tool for engaging the learners with their descriptions of the situation in Nagapattinam, the tsunami and challenges they faced in their attempts to ameliorate the situation.

The recommended mode of teaching this case would be through blended learning self-paced/instructor-paced models, where the case material (case write up) is offered to the learners to get familiarized with before the class. The in-class time is used primarily for discussion and analysis as described in the pedagogic trajectory. It is recommended to screen the case films in class to set the context, and to engage the learners through insights and experiences of the people who were involved in the case. This exercise is also useful for learners to visualize the context and actions which they have previously read about.

Further, depending on the length of the class, a list of discussion prompts is suggested below and can be used for debating in-class, personal reflection or as peer group discussions. The discussions prompts have been structured along the three themes and is left to the discretion of the instructor depending on the subject of course/ module, duration and class composition.

E. Discussion prompts:

I.   Coordination Platform

(Case films to support discussion: Trigger for Action; First steps and the founding of NCRC, Developing the coordination center)

1. What were the key enablers that led to the formation of this platform?
    (Think - What entails such a platform; networks, partnerships needed; political context in which it was formed – discuss the roles and responsibilities of such a platform)

2. What entails a knowledge brokerage platform? In what ways did NCRC function as one?
   (*Review actions taken in Agriculture, Fisheries and Housing*)

3. How would the State envision such a platform? What would be the challenges toward establishing one?
   (Think – under whose jurisdiction would it be? Mode of operation)

4. What could be the challenges and opportunities for women in leadership roles in disaster response and resilience building initiatives?
   (*Review actions taken by Officer Shantha Sheela Nair, Sushma Iyengar, Annie George and Jesurathnam in this case. Also compare with Timbaktu case in Anantapur and mHS in Delhi which were led by strong women leaders*)

II. Long term resilience agenda

(Case films to support discussion: Developing the coordination center; Structuring NCRC; From NCRC to BEDROC)

1. What are the implications of having an organization's sustained influence in a specific place have in growth of the place?
   (Compare with the example of the Timbaktu case in Anantapur – what have been the long-term outcomes for the community, place and the organization itself?)

2. In what ways did NCRC's actions for recovery address entrenched vulnerability?
   (*Review actions taken in Fisheries film*)

3. In what ways has the mandate of the organization changed over time?
   (Think - In response to what triggers? Have the objectives been met for which this organization has been set up?)

4. What would be the pros and cons of scaling up such an initiative?

III. Livelihoods approach

(Case films to support discussion: Structuring NCRC, From NCRC to BEDROC, clippings from Fisheries and Agriculture)

1. In what ways is a livelihood-oriented approach to building resilience successful?
   (Think - In whose perspective can it be thought of as successful? How does the organization view its own success?)

2. How was participation understood by NCRC? How did this understand manifest in their actions?
   (*Review actions taken in Fisheries and Housing films*)
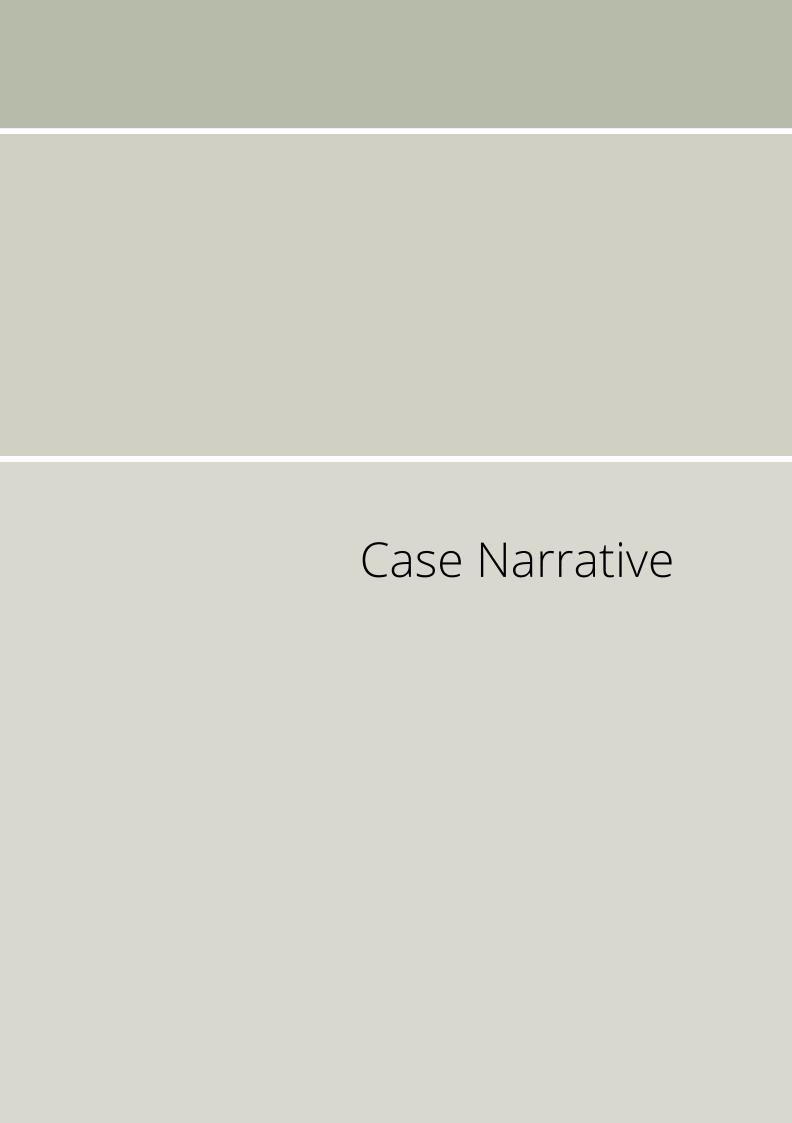
F. Suggested Readings

Wisner, B., Blaikie, P., Cannon, T. & Davis, I., 2003. *At Risk: Natural hazards, people's vulnerability and disasters.* s.l.:Routledge.

NCRC Nagapattinam, 2010. *Mapping and Study of Coastal Water Bodies in Nagapattinam District,* Nagapattinam: NGO Coordination and Resource Center.

NCRC, 2006. *Understanding Vulnerabilities of Agricultural Communities to Frequent Disasters and Coping Mechanisms - A Sample Study of Tsunami Affected Agricultural Villages in Nagapattinam District,* Nagapattinam, Tamil Nadu: NGO Coordination and Resource Center.

BEDROC, 2015. *Tamil Nadu - Ten Years After the Tsunami: Learning from interventions in shelter and fisheries livelihoods,* Nagapattinam: BOBLME.

Jones, L., Harvey, B. & Godfrey-Wood, R., 2016. The changing role of NGOs in supporting climate services. *BRACED Knowledge Manager,* Issue 4, pp. 1-23.

Case Narrative

This section contains

I. Case Introduction

An earthquake of magnitude 9.3 on the Richter scale near Sumatra triggered a tsunami in the Indian Ocean in the early hours of 26 December 2004. The earthquake was felt prominently along the east coast of India, generating waves of up to 10m in height which penetrated inland causing severe damage to life and property in the Coastal states of Andhra Pradesh, Tamil Nadu, Kerala and Andaman and Nicobar Islands significantly damaging their economies and infrastructures (Government of Tamil Nadu, 2005).

In the State of Tamil Nadu, the entire coast of Nagapattinam was affected and the district reported maximum loss of life. Agriculture and fisheries, the primary economic activities in the district, incurred heavy losses. According to vulnerability assessment studies conducted following the tsunami, the communities of Nagapattinam lived with high physical and socio-economic vulnerability prior to the tsunami largely owing to previous events of drought and extreme rainfall, lack of coastal regulations and limited services in the region. These struggles were exacerbated by the tsunami, rendering them further vulnerable in their ability to cope with the disaster.

It was in this context that the NGO Coordination and Resource Center (NCRC) was set up in the wake of the tsunami in Nagapattinam. In the first week after the disaster, NCRC set up a two-way information flow between the government and NGOs for the needs in the villages, fostering a strong relationship with the government. In the following weeks, they helped organise the huge numbers of NGOs which arrived in Nagapattinam into sectoral groups relating to issues such as shelter, livelihoods, health and sanitation to address specific issues on ground.

Thereafter, and up until now, NCRC worked on the reviving and strengthening of livelihoods, especially in the agricultural and fisheries sector. Having a long-term resilience agenda since its inception, NCRC continued to work on recovery of the coastal communities with a plan to also build resilience in the process. NCRC was succeeded by the Building and Enabling Disaster Resilience of Coastal Communities (BEDROC), a Trust registered in 2008, which continues to work on long term recovery and integration of disaster risk reduction into the mainstream development agenda to build resilience of these coastal communities.

This case narrates NCRC's journey from the events that led to its inception to becoming a sustained presence in Nagapattinam continuing to work on recovering and building the resilience of coastal communities. This case aims to understand disaster recovery process focusing on livelihood improvement to build long term resilience.

It is recommended to read this case in parallel to the case films for a better learning experience.

Abbreviations

ACCORD   Action for Community Organisation, Rehabilitation and Development
BEDROC   Building and Enabling Disaster Resilience of Coastal Communities
CRZ   Coastal Regulation Zone
FRP   Fibre Reinforced Plastic
GoTN   Government of Tamil Nadu
HTL   High Tide Line
IEC   Information Exchange and Communication
IRMA   Institute of Rural Management Anand
IAS   Indian Administrative Services
NCRC   NGO Coordination and Resource Center
NGO   Non-Governmental Organisation
SIFFS   South Indian Federation of Fishermen Societies
SNEHA   Social Need Education and Human Awareness
VIC   Village Information Center

III. Case Write-up

Nagapattinam and the 2004 tsunami

Tamil Nadu state has a coastline of about 1076 kms. A majority of this coast (about 1016 km) lies facing the east towards the Bay of Bengal (BEDROC, 2015). On this coast, stretching between the River Coleroon in the north and Kodikarai in the south lies the Nagapattinam District. It is located between 10^0 15' to 11^0 30'N and 79^0 30' to 79^0 55'E. The district covers a total geographical area of 2569 Sq. km. with a coastline of about 190 km.

The district's long coastline has enabled the establishment of many fishing communities along the coast. Due to its location in the Cauvery delta and the presence of a considerable number of canals and streams, paddy cultivation is quite popular in Nagapattinam (SNEHA, 2009). With a mild slope and its associated backwaters, Nagapattinam is quite vulnerable to ocean-originated hazards such as tsunamis and storm surges. The district's location at an elevation of about 5m above the mean sea level, narrow beaches and a shallow continental shelf further contribute to the coastal vulnerability (Murthy et al., 2012). The numerous canals and distributaries of the Cauvery river branch into 14 streams joining the sea. These form the backwaters which are used by the fishermen to venture into sea.

Vulnerability assessment studies in the district were mostly conducted post the 2004 Tsunami. Studies on socio economic vulnerability and capacity note that most of the population in the district was highly dependent on fisheries and agriculture as their primary source of income (Guleria & Edward, 2008). In the years before the tsunami, the district had witnessed drought and extreme rainfall events which significantly affected agricultural production. The region also has limited services such as banking and attempts to evade coastal regulations have led to unregulated construction activities along the coast. Post-tsunami surveys indicate a high physical and socio-economic vulnerability in the district.

The earthquake that triggered the tsunami on 26 December 2004 generated waves that penetrated between 300-3000 metres inland along the south-eastern coast of India severely affecting the states of Tamil Nadu, Andhra Pradesh, Pondicherry, Kerala and Andaman and Nicobar Islands. Across the coast, an estimated 1089 villages; 1,57,393 houses and 39,035 hectares of ripe agricultural land was damaged. In Tamil Nadu, the entire coast was severely affected and Nagapattinam district reported a maximum loss of life — 76% of total deaths reported in the state, i.e. 6065 out of 7995 deaths in the state were reported in Nagapattinam (Government of Tamil Nadu, 2005). Apart from the destruction of shelter in and around the coast, agriculture and fisheries suffered heavy losses in the district. The waves from the tsunami inundated agricultural fields with salt water and silt. The level of inundation of sea water in the district was estimated to be in the range of about 700 to 1400 meters. Nagapattinam's location at a lower elevation from the mean sea level, and its lack of barriers like sand dunes and mangroves were observed to be reasons for the devastating impact of the tsunami in this district (Murthy et al., 2012). Almost all the standing crop in the fields (paddy) was destroyed. It is estimated that almost 20,000 hectares of agricultural land was damaged in and around Nagapattinam (A. George, Personal Communication, 28 May 2018).

As for the fisheries sector, thousands of nets, catamarans, *vallams* (traditional canoe boats) and mechanised boats were damaged apart from fishing harbours and ports (Government of Tamil Nadu, 2005). The tsunami disrupted almost all spatial and social processes. The coastal communities were left without a home and livelihood options in the aftermath.

Physical infrastructure suffered great losses as well. The district headquarters was inundated, and the general hospital was flooded, leaving behind silt and slush from the receding waters (Government of Tamil Nadu, 2005). Some of the immediate concerns for the government were: search and rescue of survivors from the debris and arranging for their proper disposal, first aid assistance, food and drinking water for the survivors. There was a need to restore communication channels, transportation, water supply, electricity and hospitals to deal with the needs of the surviving victims.

According to a study of social capacity in Nagapattinam by Prater et al., (2006) at the time of the tsunami in 2004, the district had a contingency plan in place. However, the lower administrative levels (blocks, taluks and villages) did not. The study further notes that the contingency plan was developed by the district collector and was based on the contingency plan of Cuddalore district, which includes planning for disaster response, hazard analysis, a warning plan and other elements, but is focused almost entirely on floods and cyclones. Tsunamis were not accounted for or even mentioned in the plan. Further, relevant personnel and their disaster related duties were mentioned, but no system of human resource training and drills were found in the plan. The local police and administrators were not trained for any functions beyond their usual traffic management and general public safety. Currently, the district website — www.nagapattinam.nic.in— has updated its disaster response strategies to specifically include tsunami response.

Relief and rescue operation during disasters of unprecedented scales such as the 2004 tsunami required experience, thought, and coordination for efficiency. The scale of the disaster brought a huge inflow of aid from multiple domestic and international sources to help with the relief efforts. In about a few weeks from the day of the disaster, between 400 and 500 NGOs had arrived in Nagapattinam and the surrounding areas (A. George, Personal Communication, 28 May 2018).

Trigger for Action

Annie George a graduate of the Institute of Rural Management Anand (IRMA) was working with the Rural Water Supply and Sanitation project in Trivandrum when the tsunami struck. The images circulating in the media of the lives lost and the wreckage motivated her to make the journey to the affected areas and volunteer to help. She contacted her friend Amarnath Raja, CEO of Trivandrum-based software company InAPP, to visit Nagapattinam which was reported to be the worst affected district in Tamil Nadu. Annie got in touch with Vivekanandan, the CEO of South Indian Federation of Fishermen Societies (SIFFS) through her husband who was previously been associated with SIFFS, to get to Nagapattinam where field staff from SIFFS were already on ground and actively involved in the recovery activities (A. George, Personal Communication, 28 May 2018).

Around the same time, Sushma Iyengar, the CEO of Kutch Mahila Vikas Sanghatan, who was involved in the recovery operations post the 2001 Bhuj earthquake, also decided to travel to

Nagapattinam and help with the recovery and relief operations. Sushma, wanting to connect with a local NGO on ground also contacted Vivekanandan and travelled down from Gujarat to Trivandrum where Vivekanandan was based. Similarly Stan Thekkekara the director of Action for Community Organisation, Rehabilitation and Development (ACCORD), who had previous experiences in disaster events such the 1977 cyclone in Andhra Pradesh also contacted Vivekanandan offering to come down and help with relief and recovery operations on ground (V.Vivekanandan, Personal Communication, 02 November 2018).

On the evening of 29 December, Sushma, Amarnath Raja and Annie made the journey from Trivandrum to Nagapattinam. Around this time, the second warning for the tsunami was issued (A. George, Personal Communication, 28 May 2018). Within a few days, Vivekanandan and Stan had also arrived in Nagapattinam.

Sushma Iyengar who had prior experience in disaster management was pivotal in mobilising and coordinating their efforts from here on (Raja, 2005). The team assembled in SIFFS' office to review the situation on ground and the extent of relief activities underway in Nagapattinam. The SIFFS field staff were engaged in gathering data such as the number of camps set up, number of people in each camp, age, their condition and their immediate needs, from all the relief camps, (about 78 in number) set up in the district. With this information in hand, they met with IAS officer Shantha Sheela Nair, who was appointed to head the relief operations in Nagapattinam. Having this information from the relief camps proved influential as it helped them have an informed and focused discussion with Nair.

Sushma shared her experience from Bhuj with the issues faced with burial and cremation of the dead and the unique initiative they took to solve the issue there by using a herbal concoction to prevent spread of disease (A. George, Personal Communication, 28 May 2018; also corroborated by S. Iyengar, Personal Communication, 09 October 2018). She pointed out that picking up and disposing of bodies was not happening fast enough and was fast becoming a serious health concern risking the outbreak of disease in the area. From her experience with disasters, this was the first protocol that needed attention. During their conversation, she informed Shantha Sheela Nair that she had already arranged for the delivery of the concoction, which led Nair to in return appoint a field medical officer to assist them in this mission. This was their first opportunity to help with the relief activities since their arrival in Nagapattinam.

This intervention by Sushma served two purposes – first, it gave them a foothold into the on-going relief operations in Nagapattinam. Second, this opened a communication with the officer-In-charge and established their credibility in disaster management work.

In the first few days following the Tsunami, the locals were mostly left to fend for themselves, despite the huge influx of relief materials and aid that the scale of the event attracted into the district (A. George, Personal Communication, 28 May 2018). Donations by NGOs such as food and clothing happened in a frenzy. There was no regulating authority on who was distributing what resources and which groups were receiving what kind of relief. Within the next day, the Tamil Nadu government sent in a group of officers to take stock of the situation and begin a systematic relief effort.

In the following days, the government was involved in deploying funds, personnel, equipment and medical facilities to the affected areas. According to some reports, the Navy and Red Cross were called in to help and relief centres were immediately set up to help the injured. On 28 December 2004, the first of the Government Orders were issued —GO 574 and 575 (see Exhibit 1 & Exhibit 2), releasing funds and relief materials. IAS Officers selected by the State were posted to Nagapattinam to manage the relief operations (BEDROC, 2015). However, Annie explained that government officials found it easier to coordinate NGO funds for relief efforts rather than accessing government funds. A review of the literature on relief efforts , also indicated that it was easier for the Government to encourage the role of NGOs on aspects such as housing rather than utilise the World Bank loan which came with procedures and clearances required to access the funds (BEDROC, 2015; also corroborated by A. George, Personal Communication, 28 May 2018).

With about 500 NGOs in Nagapattinam, Sushma voiced concerns regarding issues of overlap in what they would provide to Shantha Sheela Nair. Further, as these organisations come from different development agendas, there was also the risk of efforts being siloed in their method of providing aid, which would further impede the efficiency and scope of the response. A need for a system to manage relief was voiced (S.Iyengar, Personal Communication, 09 October 2018). To address this concern, on recommendation from Sushma, a meeting was held by Shantha Sheela Nair with all the NGOs at the Collector's office. One of the common concerns that were being raised in this meeting was the absence of regularly updated data on the needs and numbers in the relief camps. It was in these meetings that a need for a structured coordination mechanism was established.

This coordination platform could have been spearheaded through three potential institutions — the government, an international aid agency, or local NGOs. Although all three perspectives had their own merits, Sushma strongly recommended to SIFFS that the local Nagapattinam NGO's that are deeply established in the region should spearhead this coordination mechanism. She reasoned that for a local NGO, the agenda is truly to "[...] ensure that the community and the region itself move forward after the disaster, and the most marginalised people do not get further marginalised" (S. Iyengar, Personal Communication, 11 August 2018).

As Sushma, Annie and the SIFFS team were already in the process of collecting this data, it was agreed that a platform be created in order to continue collecting this information on a daily basis which would help in coordinating and directing NGO efforts. Jesurathnam, the Director of Social Need Education and Human Awareness (SNEHA), a local organisation soon joined this effort. Hence, with the support from SIFFS and SNEHA, the two locally based NGOs in Nagapattinam, a coordination center materialised. Initially the platform was run entirely by volunteers. Before local citizens began volunteering, Sushma and Stan mobilized volunteers through their contacts and networks (V. Vivekanandan, Personal Communication, 03 November 2018).

The Coordination Center

The established mode of operation for the platform was that SIFFS and SNEHA would allocate a dedicated number of field staff to cover the entire geography of Nagapattinam — a total of

about 78 relief camps — to collect information. Each staff member was assigned one or two camps. By 2004, access to information through the internet and the use of mobile phones for communication had become quite prevalent. It proved useful to provide information online on dedicated websites for wider access apart from ensuring a degree of transparency. SIFFS created a website to document their relief efforts, http://tsunami2004-india.org, which then became the central place to document all government and NGO efforts in Nagapattinam. Meeting reports, articles, important government orders, disaster related photographs, the names of 'registered NGOs' advisories on costs etc. were made available here (BEDROC, 2015).

The website served two purposes — first, it gave a comprehensive idea of the relief efforts and requirements on ground in Nagapattinam. National and international donor agencies could then find sectors and local partners to work with. Second, as Annie explained, the website had become a platform to legitimise the list of NGOs working on field (A. George, Personal Communication, 28 May 2018). Subsequently the website would be linked to NCRC's website where profiles of NGOs, government orders, related studies and publications were all compiled.

The progress of the tsunami 2004-india website encouraged the Tamil Nadu government to link their official online page (www.tn.gov.in/tsunami) with details on the tsunami relief packages to this website with the idea to assemble all tsunami-related information in one source (BEDROC, 2015). Further, with a substantial amount of relief material coming in, a register was opened documenting all the materials available from different sources. The volunteers and coordinators in charge of assessing the needs from the relief camps would compile a list of all the requirements from the different camps and send it to the coordination center. These would get entered into the database and matched with the availability. Wherever possible, requirements would be deployed immediately or kept on a waiting list. Again, the government encouraged this mechanism by assigning NCRC control of the movement of relief materials from the government godowns as well. Mobiles phones and motor bikes donated by NGOs were used by the field staff in communicating requirements across different relief camps to the coordination center. (BEDROC, 2015; also corroborated by A. George, Personal Communication, 28 May 2018).

During and after a disaster, the state faces vast pressures of bringing the situation under control with limited capacities and inadequate information. In such a situation, it is important for institutions to tie up, partner and collaborate with the purpose of enabling the state to be effective. An NGO in such a situation has to choose if it will engage entirely with the community, or if it will work to some extent to influence policy (S.Iyengar, Personal Communication, 09 October 2018). Sushma asserts that although the ability to respond to people with compassion, social justice understanding is crucial for rehabilitation, the right policy to drive rehabilitation is equally, if not more, imperative.

Sushma explains that during disasters, a local collective of NGOs is a critical component to any relief and rehabilitation effort due to their familiarity with the issues, the developmental processes and the community in the region. For outside NGOs entering the region, it is often a struggle to understand what is appropriate for a particular region or community and this is where the knowledge of a locally vested organisation becomes crucial. When a region becomes an epicentre of relief efforts – like the Kutch during the earthquake and here

Nagapattinam, several voices enter the region with different opinions and ideas on what needs to be done. There is a need for coherence and agreement among these voices so as to engage with the state in a coordinated fashion, to in turn enable the right kind of change on the ground. Sushma also advocated that forming a coordination platform with all stakeholders is important to have a dialogue and consensus on what needs to be done and hence engage with the state in one collective voice, thereby enabling the state (if it is receptive) to listen, observe, acknowledge and evolve policies. The communities therefore are able to receive more options and importantly, better options (S. Iyengar, Personal Communication, 09 October 2018). It was these aspects that led conceptualising the 'NGO Coordination Center' as an influencing space to facilitate this.

In the course of the first few weeks of relief operations, the coordination platform – which was then known as the NGO Coordination Center ensured a transparent relationship with the government officers in Nagapattinam. With the help of the field staff from SIFFS, SNEHA and other volunteers from the different NGOs present there, the NGO Coordination Center could establish a two -way communication and information channel on the requirements in the affected villages and resources available with the NGOs and the government (NCRC, n.d.). During the initial stages of the coordination platform, work was limited only to activities like relief distribution, immediate rescue and material distribution. While this was underway, more substantive, long term issues began to surface, primarily issues in fisheries and agriculture. The coordination platform then slowly began to evolve into sectoral coordination. NGOs had formed sectoral groups relating to their area of work and expertise such as fisheries, agriculture, shelter, women, health, sanitation and childcare, addressing critical issues in the sector collectively. Parallel meetings were being held for each sector and the entire operation was beginning to become less amorphous and more structured.

The success of this sectoral functioning of the NGOs led to a continued need for partnership between the NGO Coordination Center and the government into the rehabilitation phase. Meanwhile a strong trust-based relationship was being formed with the community. Rehabilitation required more long-term, structured and systematic effort. The need for daily meetings reduced and instead, structured sectoral meetings were held among relevant NGOs. Apart from coordinating on ground material resources, the coordination center would coordinate knowledge resources, technical expertise, data, organisations and donors in their respective areas of interest (NCRC, n.d.).

In light of the above, it was decided by SIFFS and SNEHA that the NGO Coordination Center would be transformed into the NGO Coordination and *Resource* Center – NCRC – with an aim to connect and coordinate affected communities with aid organisations and the government (NCRC, 2005). The UNDP, who had arrived in Nagapattinam to aid the relief effort, joined as a partner in this effort. The established goal at the time was to help tsunami affected communities restore their lives in an equitable and sustainable manner. Vivekanandan, Sushma, Amarnath Raja, Jesurathnam, Stan Thekkekara and Annie George became the founding members and the governing council of NCRC. By April 2005 they had moved away from the District Collectorate and set up their own premises.

Up until 2008, NCRC was not a registered organisation; SIFFS was the managing organisation that would receive finances and then channel it to NCRC. Annie was a consultant under a

UNDP contract at the time (until 2005-06) to work with NCRC. Following her move to Nagapattinam, her continued involvement and her time dedicated to NCRC and Nagapattinam, she joined NCRC as a permanent partner. In 2008, she registered the organisation as BEDROC – Building and Enabling Disaster Resilience of Coastal Communities – expanding the mandate from relief to resilience building. Sushma continued to be actively involved until 2007 after which she took up an advisory role.

Structuring NCRC

Following the decision to transform the NGO Coordination center to the NGO Coordination and Resource Center, the members were aware that they lacked the resources, skill sets and the 'bandwidth' to run such a center (A. George, Personal Communication, 28 May 2018). Hence, after numerous discussions (involving Annie, Sushma, Vivekananda, Stan and Amarnath Raja), an organisational system was designed to define the functioning of NCRC. The core idea of the structuring came from Sushma's experience in Bhuj which was then deliberated in the Nagapattinam context. Vivekanandan was instrumental in enabling this and forming networks and relationships required for effective functioning of the platform.

As NCRC, they did not want to establish their own independent authority in Nagapattinam. Rather, their aim was to support local organisations and the Government of Tamil Nadu (GoTN) to ensure that a reasonably sustainable system was in place. Systematising information and ensuring that relevant and accurate information is guiding strategies in the area – either by the government or any other decision makers – was their primary agenda. A Bengaluru-based firm was contracted to identify organisations that can depute people on a long term to run operations on ground. NCRC was clear that its long-term agenda was only to the extent of enabling and supporting local organisations (A. George, Personal Communication, 28 May 2018). Sushma asserts that the District Collector of Nagapattinam, Radhakrishnan and Vivekanandan were instrumental to achieving this – both of whom were willing to collaborate, reach out, form partnerships and curate this organisation. Having the district collector as a partner was pivotal to provide space for policy advocacy. It was necessary for the government to legitimise this neutral space without taking control of it (S. Iyengar, Personal Communication, 09 October 2018).

The core component of NCRC would be the Information Exchange and Communication (IEC) department. Enabling information exchange between all stakeholders being of the elementary roles of the center. The IEC department was involved in accessing, managing, collating and analysing information across different stakeholders for better engagement (NCRC, n.d.).

NCRC recognises that public participation in disaster management is essential for efficient functioning. Hence, a Community Facilitation department was established. The aim was to empower communities through skill building exercises and establishing mechanisms in place to promote participation in the rebuilding process. Under this department, NCRC selected 12 strategic locations in this region to set up Village Information Centers (VICs). Each VIC was meant to cover 5 or 6 villages; and 2 or 3 VICs formed a cluster. A team leader was assigned to manage a cluster and was supported by an area coordinator, a village coordinator, a junior village coordinator and volunteers. Care was taken to ensure a gender and education balance.

The staff consisted of both professionally qualified persons and locals who were familiar with the community. Through community meetings and by involving members of the community, care was taken to ensure that the local community had ownership in this, and that they were motivated to participate and be a part of their rehabilitation.

The third department in this structure was the Sectoral Support Unit. To organise its field and NGO level interventions, agriculture, child welfare, fisheries, shelter and other livelihoods were selected as focus areas and were called 'sectors'.

It was envisioned that these three units would feed into the Policy Advocacy division. With the extensive ground knowledge received from VICs and expert staff, NCRC has been actively involved in advocacy issues in the sectors of fisheries, shelter, agriculture and education. Annie describes NCRC as a platform that brought NGOs together, with the IEC, Community Facilitation, Sectoral Support Unit and Policy Advocacy as the four pillars of NCRC. Neutrality was their core value in the sense that they did not represent the NGOs, Government or even the community - they were a platform where different skills and resources from different sectors were coordinated for an efficient response in Nagapattinam.

There was a point in the line of work in Nagapattinam, where it was recommended to extend this coordination mechanism to Cuddalore district which was also heavily damaged by the tsunami. However, a decision was made to focus on recovering Nagapattinam instead of expanding to other districts. Good practices that would emerge from the practice in Nagapattinam could then be taken to other districts by other organisations. By that time, Nagapattinam had become a hub for policy discussions on housing and livelihood recovery (S. Iyengar, Personal Communication, 09 October 2018).

Livelihood Recovery Activities

Post the tsunami, NCRC had moved on to addressing issues sectorally. A major concern that emerged was the loss of livelihood options, as agriculture and fisheries were hard hit by the tsunami. Destruction of shelter was the other pressing concern. On the subject of building resilience, the wellbeing of people is directly linked to their ability to cope with risks. The tsunami-affected people were already vulnerable when the tsunami hit, and were further rendered worse off as livelihoods were affected, having severe implications on their coping capacities. NCRC's attempts at recovering livelihood and shelter provision are described in the next section.

Shelter Provision

Nagapattinam was one of the critical areas in need of housing, with almost 80 villages having houses either fully or partly washed away. According to reports published by BEDROC, inundation, wave impact and erosion were the three major causes of damage to physical infrastructure. There was an estimated need of about 20,000[1] houses to be constructed in Nagapattinam alone (BEDROC, 2015). Relief camps were set up across various locations to provide immediate shelter, basic amenities and medical support to the affected persons. However, the government stressed on the need to build permanent homes. In this regard, Government Order 575 was released which entrusted Collectors to build temporary shelters in the interim period while permanent homes were being constructed. The unit cost of the temporary shelter was specified at Rs. 8000 and families could develop their own models.

There was a need among the NGOs for advocacy to discuss the temporary and long-term housing policy with the Government. If NGOs were only involved in community activities, the government would go ahead with its programmes and policies, by which time it would be too late to intervene and negotiate. They felt the need for organisations to influence policy on ground apart from humanitarian aid. Efforts were made to design appropriate shelter reconstruction and rehabilitation policies in the region.

In the Nagapattinam district, relocation was facilitated by NCRC. They advocated that the shelters be set up by the affected communities themselves, arguing that it would not only create ownership but also render a sense of home. This was facilitated keeping in mind that they would relocate to permanent residences within a year. However, the relocation to permanent houses took much longer than anticipated as it proved difficult to find suitable locations considering both livelihoods and safety of the people. Issues with land acquisition caused further delays in shelter construction (NCRC, 2005). It was only in 2008 that the people could move to their permanent houses (BEDROC, 2015)– which meant that they were in the temporary shelters for almost 4 years.

Sushma recalls that the urgent need at the time was temporary shelters and sanitation. From her experience in Kutch, she explains that temporary shelters could be a very messy affair but were also a very critical need. In Tamil Nadu, temporary camps were built very quickly, which

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[1] In Kanyakumari, Cuddalore and Tirunelveli the number of houses to be reconstructed ranged between 1000-5000 which were delivered within 2 years. The massive numbers of houses required in Nagapattinam (20,000) contributed to the delay in the relocation of the people (BEDROC, 2015).

in some situations can lead to problems surfacing in the aftermath. Sushma explains that the structure, location and grouping of people within the camps created issues such as fires and violence against women (S. Iyengar, Personal Communication, 09 October 2018).

The resettlement itself was executed under the 'Long Term Rehabilitation and Reconstruction Policy' by the GoTN. Under this policy, permanent houses would be built as per the Coastal Regulation Zone (CRZ) guidelines and through a public-private partnership. The policy advocated that disaster resilient houses worth about Rs 1,50,000 with a built-up area of about 325 sft in three cents of land[2] that would be provided by the government, to those who were willing to move beyond 500m of the High Tide Line (HTL). Legal ownership was made either in the joint name of husband and wife, the survivor, or to the eldest surviving child. For availing the new houses, the old houses would have to be relinquished to the government and the vacated land would be entered in the Prohibitory Order Book maintained for public purposes (BEDROC, 2015). With this incentive, a majority of families opted to move.

While the larger infrastructure of roads, water supply, electricity was serviced by the GoTN, the construction of the houses was delegated to NGOs. NCRC supported the Nagapattinam district collector in the selection of NGOs. NGOs were selected based their proof of funds from donors, willingness to fund and the number of units they wanted to fund. The design of the resilient houses, the materials and construction style to be used was decided over several meetings by several engineers and technical experts in the field. This design was then given to the NGOs to build. Annie recalls that NCRC had to ensure no NGO was providing more than what was specified. In some cases, there is evidence of participation from the community in the design process, but for a large section of housing stock being built, it is unclear if the community were involved in the process.

Although the program was able to achieve its goal of providing permanent shelters to all the victims, the long-term implications on the quality of housing, socio-economic dimensions and maintenance of livelihoods are to be considered. According to studies conducted in Nagapattinam by Jordan et al., (2015), the overall quality of houses was fairly good with the exception of a few leakages and cement wall erosions. They concluded that the acceptance rate of the new houses was fairly good with the exception of traditional fisherfolk whose livelihoods depended on their close proximity to the sea. With the delays in land acquisition, several villages were allowed to reconstruct within the original settlement itself. Further, some villages were forced to move away from the shore thereby severely impacting their livelihoods. Shelter reconstruction in this case, cannot be addressed in isolation but as an integral aspect to their livelihood recovery.

Fisheries

Fishing industry was one of the most hard-hit sectors with huge number of boats, nets, catamarans being damaged apart from extensive damage to fishing infrastructure such as fishing harbours, landing centres and Nagapattinam port (Jeyanthi,P. et al., 2016). In Nagapattinam, fisheries provide employment and livelihood for a majority of people, either directly or indirectly.

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[2] A cent of land is 1/100th of an acre, or 435.6 square feet.

One of major interventions to recover fishing was to provide boats, nets and other fishing equipment. However, despite coordination mechanisms in place, NGOs and other organisations provided fibre reinforced plastic (FRP) boats in large numbers to the communities as an upgradation to the traditional catamarans. This massive influx of fishing equipment made quality control difficult resulting in the distribution of largely poor-quality boats (Jeyanthi,P. et al., 2016). Several local boat production units were set up along the coast to provide boats for these NGOs. There was an over distribution of boats – effectively duplicating efforts without understanding long term implications. Over fishing and other environmental concerns emerged over time. Similarly, in the case of nets, NGOs sourced large volumes of nets from suppliers and distributed them among the fisher folk. The nets being distributed were not the ones that the local fishermen were used to and according to reports by BEDROC, the fishermen still took these nets to sell them to local stores for money (BEDROC, 2015).

SIFFS had tried different approaches to recovering fisheries as a livelihood. Cautioning against uncontrolled distribution of fishing units, they spoke against using this as an opportunity to upgrading technologies and expanding the fleet. Instead they advocated for repair program. Further, they issued tokens to the fishermen who could exchange them for nets, ropes and other material of their choice from within the maximum amount assigned per person. This helped the fishermen in acquiring the materials that they actually required.

Other NGOs followed cue from SIFFS and set up repair programmes. However, there were some objections from a few villages to the idea of repairing their boat under the pretext of the possibility of getting a new one (BEDROC, 2015). Eventually, Annie said that the district collector issued an order that repairing of boats would not lead to denial of entitlement of a new one . After this, failure to coordinate boat distribution led to boats being produced in large numbers and distributed indiscriminately to all communities (A. George, Personal Communication, 28 May 2018). All the efforts on repairing the boats came to halt.

The NGOs that had arrived in Nagapattinam came from a development background, having previously been involved in addressing development issues like women's empowerment and agriculture. Each NGO looked at the situation through the lens of their own development agenda. According to Annie, with these NGOs not being grounded in local reality and with the cultural and social norms of fishing practice in the region, they argued for boats and fishing equipment to be given to all people whether or not their livelihood was in fisheries before the tsunami (A. George, Personal Communication, 28 May 2018). This led to a massive increase in the fishing fleet, unorganised and informal buying and selling of boats and other allied equipment and a considerable depletion of fish in the sea.

The fishing hamlets of the coastal Nagapattinam were governed through traditional panchayats who played a central role in the lives and livelihoods of the people. Any long-term programme to be implemented in these settlements would require the support of the panchayats (BEDROC, 2015). In this case also, the panchayats received all the boats and equipment and distributed it to the communities. The distribution was equitable, but it overlooked the social context as well. Effectively, people, whether they had a background in fishing or not, were given boats and encouraged to go fishing. This not only increased the competition for fish, but effectively put a large number of boats in the sea. Annie equated this

with an agrarian approach, where for every extra piece of land that is given, there is some produce that can be grown on it, whereas the number of fishes in the sea is going to remain the same, no matter how many boats are distributed. She said they couldn't stop the NGOs from distributing and the number of boats in the area doubled. Large scale distribution of FRP boats and compensation packages led to a fishing fleet far greater than what existed before tsunami (A. George, Personal Communication, 28 May 2018). Moreover, these FRP boats were more efficient as compared to their traditional counter catamarans. These were lighter, could go farther, and therefore carry back more fish. This eventually led to overfishing by each fishing boat, and in the long-term affected the availability of the fish to all.

In hindsight, Annie agrees that the distribution of a large number of boats across the coast was not fruitful (A. George, Personal Communication, 28 May 2018). There were a few NGOs who took cue from SIFFS efforts in repair and therefore revised their plans to distribute large number of fishing units. However, by then the fleet had vastly increased, decreasing the opportunity and catch of the traditional fisherfolk.

Agriculture

A large extent of agricultural land was severely damaged in Nagapattinam due to flooding caused by the tsunami. Fertile land in about five blocks of the district was flooded with sea water, not only destroying the standing crop but also depositing sand and silt on the land and water channels. In this district alone, nearly 8000 hectares of land was affected (NCRC, 2006). Annie reports that over the years, NCRC has worked closely with the agricultural communities in the rehabilitation of agricultural livelihoods. During this work, a number of issues related to agriculture were identified including the vulnerability of coastal communities to disasters.

Pre-existing vulnerabilities, those created by the direct impact in the short-term and those that are created in the long term, limits their daily capacities to address day to day struggles of access to proper services and livelihoods. In the case of Nagapattinam, the tsunami of 2004 brought the vulnerability and issues faced by the coastal communities to the foreground. The coastal agricultural communities have been exposed to a number of hazards over the years – drought, floods, lack of irrigation, and in this case salination.

A damage assessment of agricultural land conducted by the government revealed damages in about 4657.47 hectares of land. These assessments were conducted only in agricultural lands with standing crop. NCRC conducted similar assessments including fallow lands which were used by farmers for agriculture as well. Staff were hired for soil testing and were sent across the length of the coast and inwards into the mainland to assess the extent of saline ingress. The extent of damage to agricultural land was then estimated to be around 7000 hectares spread in over 42 villages of about 73 total villages in Nagapattinam at the time (Mohan, 2008).

From their assessment, the following challenges lay before them:

- Saline ingress in agricultural land[3]

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[3] Annie explains that the government's reclamation plans included supply of gypsum and supply of green manure which was thought to be insufficient. The suitable alternative to address the salinity in the soil was - in every acre of land, a small trench is dug and salt absorbing trees like sun hemp is grown. This crop was grown for 45 days as

- Silting of farm ponds, irrigation and drainage channels
- Silt and sand accumulation on cultivable land

Once the challenges were identified, a comprehensive package was developed by NCRC through participatory discussions with NGOs who would be involved in the projects on the reclamation of agricultural lands. This package was divided into a set of activities of three kinds – immediate, short term and long term. As most NGOs did not have enough funds to implement this package, the costing was calculated to present to donor organisations. This entire package including the costing was then presented to Disasters and Emergencies Committee (DEC) (A. George, Personal Communication, 28 May 2018). NCRC helped in facilitating the selection of NGOs according to areas and revenue village, ensuring there was no conflict of interest and overlap of work during the implementation of the package. In addition to this, a link was established with the line departments of agriculture and horticulture in organising a workshop which helped validate the package with the community (Mohan, 2008).

A total of 23 NGOs implemented the activities in the package across the 42 villages that were identified. Meetings were held on a weekly basis to review the work status and coverage on ground. Efforts were made to keep the community aware of all progress. A brochure detailing the activities in the package was prepared with illustrations and translation in Tamil. These were distributed with the help of NCRC's VICs (Mohan, 2008). Annie describes this as a textbook style of coordination – from creating interest in non-technical and non-agricultural NGOs in the project, developing a comprehensive package, capacity building of NGOs and communities and the linking of NGOs with donor organisations and line departments- which established a system that helped in the implementation of the package.

Concluding Note

It is to be deliberated as to how NCRC's livelihood-oriented approaches helped in building resilience of coastal communities. However, the sequence of events and systematic nature to the formation, structuring and growth of NCRC gives insight into what it entails to work on disaster recovery, the role of coordination platforms such as NCRC in disaster recovery and the key enablers of such a platform. Sushma explains recovery as the point until which a community starts getting back to normalcy. Beyond this, it is no longer recovery but building resilience and coping mechanisms for future disasters. A longer-term engagement such as the one BEDROC has, would be to work toward aligning development programs and policies towards disaster resilience and community empowerment. The implications of having NCRC's (and later BEDROC's) sustained influence in Nagapattinam on the growth of the place and the people themselves remain open for discussion.

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they are fast growing plants and are cut down till the root and the land is deep ploughed before the monsoons come in (A. George, Personal Communication, 28th May 2018).

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The Indian Institute for Human Settlements (IIHS) is a national education institution committed to the equitable, sustainable and efficient transformation of Indian settlements. IIHS aims to establish an independent funded and managed National University for Research and Innovation focused on the multi-sectoral and multi-dimensional challenges and opportunities of urbanization. The University is intended to be a globally ranked institution. The IIHS is a proposed network of mother and daughter institutions across South Asia, leveraging on the local and regional knowledge and innovation and linking them to global best practices. Its mother campus, based in Bengaluru, will include academic, research and social infrastructure, student and faculty housing. This campus is expected to set international standards for efficient, economic and sustainable design, operations and maintenance.

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