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EXPLORING CASE-BASED LEARNING

Building a resilient organization to building
a disaster resilient State – Odisha State
Disaster Management Authority (OSDMA)

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Case Brief

Building a resilient organization to building a disaster resilient State – Odisha State Disaster Management Authority (OSDMA)

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IIHS Case No. 1-0037

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Case Teaching Note

Case Narrative

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This section contains

- I. IIHS Case Method
- II. Case Preface Note
- III. Table of Contents
- IV. Teaching Note

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

In the field of disaster management and preparedness in India, the Odisha State Disaster Mitigation Authority (OSDMA) is often discussed with respect to the exceptional feats achieved by the organisation in a disaster-prone state like Odisha. The Super Cyclone of 1999 in Odisha witnessed a human casualty of nearly 10,000 and affecting more than 18 lakh houses and nearly 4.4 lakhs of livestock. The cyclone ravaged 14,190 villages in 12 districts. This heralded a new era of disaster management approach in the state, one which went on to set an example for the country and influenced future national level policies. While the state government reached out to international aid agencies for humanitarian help, it also mobilised the establishment of its own agency that would collate all the efforts by multiple agencies towards the single aim of restoring normalcy in the state at the earliest.

OSDMA stands out in comparison to some of its peer organisations, not only for being the first of its kind but also for the way it played a role in the aftermath of the disaster, and how it has established its leadership role in developing the disaster preparedness of the state. In comparison, other organisations like the Tsunami Relief and Rehabilitation Coordination in Tamil Nadu, a Project Management Unit (PMU) that was established for the management of the relief and rehabilitation efforts of the government following the devastating tsunami in 2004, failed to render long term services to the affected people and also petered out as the international agencies withdrew their support. A credible entity for relief and rehabilitation for the common man to relate to is critical for developing faith and confidence in the actions undertaken, and also lays the path for building disaster preparedness in the future.

While many of OSDMA's achievements are already documented, this case highlight the inception and growth of this organisation, tracks the processes laid down in its early years and discusses the challenges faced in its journey of establishing itself as an organisation to reckon with. The objective is to understand the innovations introduced in the institution's design and culture, and learn how an ad-hoc institution for a specific cause such as disaster preparedness and management can be conceptualised based on the type of leadership, the mandate to be set, the collaborations to be formed and the processes to be followed. How can such an organisation ensure its permanence and continue to play a significant role in the long term?

The case has been documented mostly through interviews of individuals who were associated with OSDMA during its initial years, in the capacity of office bearers or members of organisations working with OSDMA. Through these interviews, the case tries to capture the experience of these individuals in trying to develop and nurture the different aspects of an organisation in its nascent stage, guide it through various challenges, broaden its horizon, innovate on its services and holistically address its purpose. Apart from the interviews the case refers to several reports and books that have discussed the role of OSDMA in the various incidents in the State.



It is to be noted that the perspectives offered through the case are the authors' and the select interviewees, and that some perspectives may have been left out due to limited resources and scope. It is meant to be used as a teaching aid, and not meant to be a comprehensive report of the institutions building process.

III. Table of Contents

Section A: Introduction to the Case

1. Preface Note
2. Detailed table of Contents
3. Teaching Note

Section B: The Case

1. Main case Write up – “Building a resilient organization to building a disaster resilient State – Odisha State Disaster Management Authority (OSDMA)”

Section C: Case Archives

Audio Visual

1. Context
2. Leadership and collaborative method of working
3. Aspects of decision making
4. Implementation strategies and key enablers

IV. Teaching Note

Case Title: Building a resilient organization to building a disaster resilient State – Odisha State Disaster Management Authority (OSDMA)

Case Trigger: The Super Cyclone that hit Odisha in September-October 1999 resulting in a casualty of 10,000 lives, along with heavy losses in livestock, agriculture and infrastructure in 14 districts.

A. Learning Objectives of the case

1. **Understand implementation through an open collaborative approach involving multiple actors:** the learners are introduced to the multiple actors that participated in the rescue and rehabilitation post the Super Cyclone in 1999. It will focus on the strategic role that OSDMA decided to take up, how it went on to establish robust ties with non-governmental organizations and communities across the state and how it sustained these over times.
2. **Innovation in conceptualizing an organization within a formal institutional system:** OSDMA was established without any guiding Act or Rules, thus, unique in its disposition when it was formed. Despite being a government organization, its structure and operationalization has been distinctly unconventional. The case thus explores different aspects of this institutional system, namely:
 - i. Organizational structure
 - ii. Decision making process
 - iii. Resource Mobilization
 - iv. Scaling up of operations
3. **Implications of a sustained institution on long term resilience building:** the learners understand the benefits of an organization with a long-term mandate. The state's response to Cyclone Phailin in 2013 will be used to explain the same.

B. Suggested Audience

The case material can be used for students undertaking their undergraduate or master's programmes in disaster management, public policy/administration, institutional design, governance, resilience building, community development and 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

In the main case narrative, the learners will first be acquainted with the context of the 1999 Super Cyclone, how it was being handled prior to the formation of OSDMA, and the events leading to the formation of OSDMA. They will learn about the key players involved in the rescue, relief and rehabilitation efforts during that period. From this section we shall try to

assess the existing lacunae, how OSDMA carved its niche within that, and the significance of the role it proposed to play.

The next section will elaborate on OSDMA as an organization, explain its design, management, planning and implementation. It will emphasize on the aspects OSDMA innovated on, while building and conducting its functions. This will mostly be imparted through narratives of erstwhile employees of OSDMA in various capacities, and people from other organizations associated with OSDMA in its initial period of setting up.

The case shall end at the juncture where the aid of most international agencies viz., UNDP, World Bank and OSDMA was obligated to come on its own and uphold the responsibility of carrying out its responsibilities with the same efficiency.

D. Learning Environment

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. Stakeholder Management

1. The NGOs were already involved in the rescue and rehabilitation work before OSDMA was formed. How do you think participation of the various NGOs was envisioned differently at the inception of OSDMA?
2. If more than one NGO wanted to work on a particular aspect in a particular area, which would have clearly led to duplication of efforts, how would that have been handled?
3. As compared to another organization like the NGO Coordination and Resource Center (NCRC) in Nagapattinam, Tamil Nadu, how was OSDMA different as a platform for collaboration? What was the most significant difference in the design or function of these two organizations that determined their outcome?

4. What would have happened if organizations like the Odisha Disaster Mitigation Mission, the United Nations, or the World Bank played the lead in building resilience in Odisha?

II. Organization Design and Leadership

1. Why was OSDMA designed as an autonomous agency and registered as a society?
2. "For disaster management at OSDMA I think our close working relationship with UNDP was of particular importance. We got a lot of support both in terms of knowledge, in terms of moral support. It was quite substantial. If you count in rupees, it was not much. I didn't want to count that support in terms of money only." Aurobindo Behera, managing Director of OSDMA (2001-03) – Why did the Government decide to create an autonomous agency rather than deploy personnel to aid and monitor the existing international aid agencies that were working there?
3. "We saw the inactiveness of OSDMA how they are not working properly like they were working previously with the support of UNDP and other things. But in later part I think they developed their own proposals." Kalika Mahapatra, UN Project Officer (2000-2009) – what could have been the challenges that OSDMA faced when UN and other agencies slowly rolled back?
4. What were the steps taken by OSDMA to ensure that the planning and implementation process was participatory? Was it successful?
5. What kind of capacity building would have been helpful for the OSDMA core team to be better leaders?
6. If one were to compare the organizational structure of OSDMA, and the Tamil Nadu Tsunami Rehabilitation Center, what are the key distinctions? What implications could these differences have had on the overall outcomes on these institutions?

III. Disaster Resilience

1. What was lacking in the existing framework of disaster management activities that were undertaken by the agencies prior to the establishment of OSDMA?
2. In terms of building disaster resilience, where did OSDMA's efforts fall short, why?
3. What should be the priority of an organization like OSDMA – capacity building of stakeholders or building hard infrastructure? Why? Is there a temporality to such priorities?

IV. What was the key aspect of OSDMA to which its success can be attributed to?

V. Comparison with other states – Gujarat State Disaster Management Authority (GSDMA)

F. Suggested Readings

UNDP. (2009). *Building PRI capacities for Disaster Preparedness and Management - A training Manual*. Government of India.

Case Narrative

This section contains

- I. Abbreviations
- II. Case write-up
- III. Exhibits

I. Abbreviations

ADB	Asian Development Bank
DFID	Department for International Development
DRR	Disaster Risk Reduction
FAO	Food and Agriculture Organisation of the United Nations
NDMA	National Disaster Management Authority
NDRF	National Disaster Response Force
ODMM	Odisha Disaster Mitigation Mission
ODRAF	Orissa Disaster Rapid Action Force
OSDMA	Odisha State Disaster Management Authority
PRI	Panchayati Raj Institutes
SOP	Standard Operating Procedures
UNDMT	United Nations Disaster Management Team
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNIFEM	United Nations Development Fund for Women
WFP	World Food Programme
WHO	World Health Organization

Case Write-up

The Super Cyclone of 1999

The Super Cyclone of 1999 struck the state of Odisha¹ in two phases, first on October 18 and 19 when three coastal states along the Bay of Bengal—Odisha, Andhra Pradesh and West Bengal—were hit. The second struck on October 29, with sustained wind speeds exceeding 260 km per hour, sometimes reaching up to 310 km per hour². The cyclone resulted in a human casualty of nearly 10,000 people, affecting more than 18 lakh houses, and nearly 4.4 lakhs of livestock. The cyclone ravaged 14,190 villages in 12 districts³. Even a climatically vulnerable and disaster-prone Odisha with a history of floods was taken aback by this terrible onslaught of two instances over a fortnight. The disruptions were beyond human assets, leading to social disruptions and extensive damage to the coastal flora – the cyclone destroyed 90 per cent of the coastal vegetation and the mangroves in the districts of Kendrapara and Jagatsinghpur, along with nearly 250 sq. km of coastal shelter belt plantations⁴.

This cyclone heralded a new era of disaster management approach in the state, one which went on to set an example for the country and influenced future national level policies. While the Government of Odisha reached out to international aid agencies for humanitarian help, it also mobilised the establishment of its own agency that would collate all the efforts by multiple agencies towards the single aim of restoring normalcy in the state at the earliest.

After the Super Cyclone

The Special Relief Commissioner under the Revenue & Disaster Management Department (erstwhile the Revenue Department) was the only Government department responsible in the response phase of any disaster. Their scope was limited to providing relief material to the affected areas. District Collectors of all the cyclone affected districts provided emergency relief up to a period of 15 days as per the need, a free kitchen for seven days, or two weeks in the case of critically affected areas⁵. The Andhra Pradesh state government sent a special team with power saws and electric pole straightening machines, which were extremely helpful in clearing the roads blocked by collapsed trees and poles. Senior officers from various departments of the Odisha government were deputed to supervise the work in various districts⁶.

¹ Named 'Orissa' prior to 2011, the state will be referred to as Odisha throughout this document for the sake of consistency.

² Action by Churches Together (ACT). India - Orissa, Andhra Pradesh & West Bengal. Cyclone Relief & Rehabilitation - ASIN95. Geneva, 29 October 1999. Available at <https://reliefweb.int/report/india/act-appeal-india-orissa-andhra-pradesh-west-bengal-cyclone-relief-rehabilitation-asin95>

³ UN Disaster Management Team - Orissa Super Cyclone Situation Report 9, 02 Dec 1999

⁴ 'Towards a Disaster Resilient Odisha – A journey from Super Cyclone 1999 to Phailin 2013', Padmalochan Behera, 2014

⁵ Draft Report Evaluation study of Rehabilitation & Reconstruction Process in Post-Super Cyclone, Orissa (Date?)

⁶ U.N Behera (first Managing Director of OSDMA), Personal Communication, Interview Date

The United Nations Disaster Management Team (UNDMT), consisting of UN agencies such as Food and Agriculture Organisation of the United Nations (FAO), World Food Programme (WFP), UNDP, UNESCO, UNFPA, UNHCR, UNICEF, UNIFEM and WHO, maintained close touch with the state-run control room and the additional relief commissioner.

An emergency meeting of the UNDMT was convened on 1 November 1999 to discuss the possible involvement of UN Agencies in relief and rehabilitation activities in Odisha. It was decided that the UN Agencies would observe the developments in the state and provide relief materials to the state in consultation with the national and state governments. The UN Disaster Management Team met every day to review the situation and to coordinate the activities. UNDMT had meetings with the officials of the Government of India and discussed possible involvement of UN agencies in providing relief to the affected population and in medium-term rehabilitation activities. Usually, the policy of the Government of India is not to appeal for international assistance for relief activities, unless the state government requests for it in extreme scenarios. However, when the UNDMT expressed the interest of UN Agencies to provide assistance to Odisha, the state government accepted the offer and also agreed to send free-of-cost any material that would be made available.

Many bilateral agencies also expressed interest to be involved in relief activities in Odisha. It was decided to maintain regular exchange of information with the bilateral agencies to identify areas of mutual cooperation. WFP representatives, who had meetings with aid agencies such as CARE and OXFAM found that many NGOs were showing interest in UN activities. Hence, UNDMT requested WFP representatives to participate in the review meetings of select NGOs and communicate to them the UN activities in connection with the Odisha cyclone⁷.

UNDMT also recruited four National UN Volunteers. These volunteers, after a short orientation training, were placed in the four worst affected district administrations, to help the district collectors in monitoring the flow of relief and rehabilitation resources and to coordinate the activities⁸.

About 40 local and international NGOs set up an emergency response network called Orissa Disaster Mitigation Mission (ODMM) to their coordinate relief and restoration work. ODMM ran a control room at the state capital and shared information with the government regarding problems faced in affected areas. Another NGO network formed earlier called 'Orissa Development Action Forum' also played an active part in emergency response. The NGOs ran community kitchens in hundreds of villages providing cooked food to people. Professional NGOs utilised such food relief to initiate immediate restoration activities in partnership with local communities, which included clearing village roads, schools, cleaning water sources and disposing carcasses.

⁷ Orissa Super Cyclone Situation Report , 02 November 1999 – Available at <https://reliefweb.int/report/india/orissa-super-cyclone-situation-report-1>

⁸ Orissa Super Cyclone Situation Report 9, 02 December 1999 – Available at <https://reliefweb.int/report/india/orissa-super-cyclone-situation-report-9>

The birth of OSDMA

While the international aid agencies and philanthropic organisations were doing their part, the state government decided that they needed an institution, working 24 hours to coordinate the various activities happening in the non-governmental sector, and also to recognise what was needed to be done by the government⁹. At the time, U.N Behera, was the Secretary of the Department of Steel and Mining along with the additional charge of Special Secretary in the Finance Department, and also had the responsibility of negotiating with the World Bank for state finance restructuring. Immediately after the cyclone, he was directed by the Chief Secretary and Additional Chief Secretary of the Finance Department to negotiate with the World Bank for support in the reconstruction of the state post disaster.

In December 1999, the 'Odisha State Disaster Mitigation Agency' was registered as a non-profit making, charitable institution for the interest of the people of Odisha under the Societies Registration Act, 1860. Its headquarters was at Bhubaneswar and it had jurisdiction over the whole state. For the very initial period, it was under the Finance Department to facilitate the fund transfer processes, but by August 2000, it was shifted under the domain of the erstwhile Revenue Department.

As part of the ongoing Orissa Water Resources Consolidation project (OWRCP) by World Bank, a new project was conceived— the 'OWRCP – Cr. 2801 – IN – Emergency Cyclone Reconstruction Component (2000-2004)' and was to become the first project to be executed by OSDMA.

After the notification of the National Disaster Management Act, 2005, the agency was renamed as the 'Odisha State Disaster Management Authority' (OSDMA) in September 2008. OSDMA was set up with the main purpose of coordinating activities within the Government departments, international aid organisations and NGOs.

OSDMA – The Organization

Institutional history and growth

OSDMA was registered as a Society in 1999 and continues to be one. At the time, the decision to register it as a society under the Societies Registration Act, 1860, was taken since it was found to be the fastest way of setting up an autonomous agency for a specific purpose in the absence of a supporting Act by the central or state government¹⁰. Later, after the enactment of the Disaster Management Act, Odisha established a separate State Disaster Management Authority with the State Executive Committee, and the existing OSDMA functioned as its operational body for planning and managing the disaster management activities

(Refer Exhibit 1 and Exhibit 2 for more details on these documents)

According to the Dr Kamal Lochan Mishra, the ex-Chief General Manager of ODSMA,

⁹ Aurobindo Behera (second Managing Director of OSDMA), Personal Communication, Date.

¹⁰ The Disaster Management Act, 2005 was by the Ministry of Home Affairs, outlining the design, roles and functions of State Disaster Management Authorities. Several directives in the Act were executed by OSDMA in its initial years, viz. District Level Disaster Management, Disaster Rapid Action Force.

“Because of OSDMA was implementing (a) number of externally aided projects from the World Bank, from DFID, from other institutions, from CRF... at that juncture of time, this

organisation which had entered into MoUs of different types with different organisations, it was considered that this organisation should be allowed to continue to finish its job. Number two (sic), the state disaster management authority as it is postulated in the act, is a body having decision makers, but the decision-making body needs limbs and other body parts to implement the decision¹¹.”

Being a society also enabled the ODSMA to operate beyond the stipulations of the financial year followed by the government departments, as well as access funds offered by agencies like the World Bank and the UNDP¹².

OSDMA, as a coordination and management platform, was responsible for channelizing funds to various departments, at a time when any government department was bound by very stringent protocols and a hierarchical approval channel, that tends to delay movement of funds. This role was crucial during the time when fast-paced action, but slow movement of decisions or funds may have created bottlenecks in the cyclone rehabilitation work.

The organisational structure of OSDMA has been designed to be lean with less vertical hierarchy and more linear spread of the functions. The aim was to reduce time taken in communicating ideas and making decisions within the organisation. The core operational team comprised of civil servants in various capacities, who were handpicked based on their prior experience. For example, one of the general managers, an Indian Forest Service Officer, had previously worked with the World Food Programme, and many other engineers had prior work experience on development aid projects. External consultants were also welcomed on board to lend their technical expertise.

(Refer Exhibit 3 for organisation structure of OSDMA

Listen to Mr U.N Behera, the first Managing Director of OSDMA to know more about the type of people recruited in ‘OSDMA | Context’)

According to Aurobindo Behera, Managing Director of OSDMA from 2001 to 2003,

“The more the hierarchy, the more the levels, the greater is the delay. The flatter the organization, is the better. But government doesn’t have that kind of culture. For example, another department I got one additional secretary and I wanted additional secretary to directly bring the files to me. But it didn’t happen. He came through special secretary. I said no, you are not supposed to come through the special secretary, you come directly to me, but it was very difficult to inject these new ways of working. But things were easier because people were just getting files and taking approvals. I was there all the time (sic).

Interviewer: So OSDMA in its work culture set a very different trend?

Aurobindo: That was our idea. Not only that, I had a very secret strategy of influencing governance over a larger area beyond disaster management. If this can happen here, why not in other organizations? (sic)”

¹¹ Kamal Lochan Mishra, Personal Communication, date

¹² U.N Behera, Personal Communication, Date

The challenge for OSDMA in the initial years was to set a long-term mandate and establish its role in a larger scheme. The immediate need of the hour was rescue and relief operations, but the long-term need was to set in place a system for improving preparedness. While OSDMA was given the mandate to coordinate between the various departments, it did not have any regulatory power. Another challenge was to convince various stakeholders of their vulnerabilities and the need to prepare a Disaster Management Plan, as opposed to the contingency plans each government department prepares. At critical junctures, the leadership of specific managing directors, IAS officers of exceptional repute and authority who facilitated communication and operations across other departments and coordinating with external agencies and other stakeholders.

Decision making process

The key principles in the mind of the leadership in OSDMA was transparency and expedited decision making and resolution of issues.

Decision-making strata

OSDMA was created with two main layers of decision makers - the 'General Body' headed by the Chief Minister of the state, and the 'Executive Body' headed by the Chief Secretary to the Government of Odisha. This was supported by a Managing Director along with a team of executive directors, general managers and engineers. The General Body also included representatives from NGOs and international aid agencies upon invitation. From the very beginning, OSDMA has presented itself as a body which has an inclusive and participatory approach, inviting international groups, consultants and NGOs to be part of its operations

The Executive Body comprised of secretaries of different line departments. The head of the Executive Body was granted the overall power of supervision, direction and control over the affairs of the authority and the functioning of the office bearers

Modernised operations

Unlike erstwhile government departments, OSDMA emphasised on the use of technology in its daily operations from its inception. Emails were yet to be considered an official mode of communication in 1999-2000 but were promoted internally in OSDMA and also in its communication with other departments to expedite the process of decision making and approval which would otherwise meander through several layers of protocol and take more time to be implemented.

OSDMA also promoted the use of technology in disaster management and preparedness activities. By 2004, they had set up a very high frequency (VHF) network in the entire state, linking 401 locations covering all blocks, all district headquarters, and all major *tehsils* and disaster-prone gram panchayats of the coastal area. Besides these, 22 satellite phones were procured and deployed at strategic locations to maintain communication network in the event of failure of all other systems during a natural hazard.

A strong technology enabled communication infrastructure was imperative to OSDMA's operations. While internal operations of OSDMA could be expedited by use of emails and scanned documents, most district offices still lacked basic infrastructural and human capacity

to work in tandem with them. Thus, computers, printers and scanners were procured for the Disaster Management Centres in various districts. The officials in the district and village levels were trained to operate them.

Around 2001, during the Community based Disaster Preparedness (CBDP) programme, the idea of having a Geographical Information Systems (GIS) cell in OSDMA germinated after UNDP shared a GIS Specialist with OSDMA. OSDMA then collaborated with Odisha Space Applications Centre (ORSAC) to set up the GIS cell. GIS as a tool for monitoring development related activities was still an alien concept in state government departments. Generally, the proposition of employing new technologies would be vetted by several people in the administration, scrutinising its financial viability and trying to find a precedence to further reinforce the need, but in this case, it was done quickly.

Kamal Lochan Mishra, the Deputy General Manager was keen to GIS cell which could be an extremely useful tool in planning and disaster preparedness. It could be used to map out multiple vulnerabilities of a region and their extent,

The following anecdote about setting up the GIS Cell was shared by State Project Officer Gyana Ranjan Das:

Kamal Lochan Mishra (KLM): "Gyana da, research shows that GIS can be an extremely useful tool in planning and disaster preparedness. We could use it to map out multiple vulnerabilities of a region and their extent, map out relief routes and safe locations, among other things. OSDMA would greatly benefit from a GIS cell, helping in its planning. It would be great if we could propose one under the OSDMA Project Cell"

Gyana Ranjan Das (GRD): "That sounds like a brilliant plan. How can I help you?"

KLM:"I have discussed with some experts and we would need around Rs 50,000 rupees to set up the cell, if the fund for the same is sanctioned I can set to work immediately"

GRD:" Sure, let me discuss this with our Executive Director and try to sanction the amount"¹³

The fund for setting up the GIS cell was promptly sanctioned with the approval of the Executive Director and the Managing Director. The cell was soon functional and since then GIS has been used in OSDMA as a decision support tool for a range of activities described below.

- Identification of location for construction of multipurpose cyclone shelters
- Grid analysis for setting up the Automated Weather Stations (AWS)
- Preparation of the district and gram panchayat level vulnerability maps
- Strengthening of embankment, repair of roads
- Identification and demarcation of weak points in the embankments, area to be affected by flood for preparedness planning
- Preparing the base map indicating location and operation of boats and deployment of rescue personnel

¹³ Lunch at OSDMA office, 2001-02

- GIS was extensively used as a part of the Incident Command System and Decision Support System during the air dropping operations in management of floods in 2007 and 2008

Bottom-Up Approach

From 2002 to 2009, under the Disaster Risk Management Program, OSDMA in collaboration with UNDP set up Disaster Management Committees at the district level, the block level and the gram panchayat level. This developed the bottom-up approach of planning that was adopted by OSDMA in its future ventures. The District Disaster Management Committee was headed by with one elected representative, the Panchayat Samiti Chairperson and one administrative representative, the Block Development Officer (BDO) as the convener member of the committee. The gram panchayat committees were headed by the Sarpanch. The aim was to make the disaster management process more people-centric by involving elected representatives.

The NGOs and Community-based organisations (CBOs) were constantly encouraged to engage with the communities at grassroots level and create awareness on the ideas and processes of disaster management. The plans prepared at the village, gram panchayat, block and district level were made in a participatory manner with inputs from the villagers.

The District Disaster Management Committee (the predecessor of District Disaster Management Authority as per the Disaster Management Act, 2005) mandated a District Officer, who was posted and would exclusively work on preparedness activities, coordinating between the state body and the stakeholders from the district. He would also be responsible for facilitating the preparation of the district, village level disaster management plans, Standard Operating Procedures (SOPs) and also help in Management Information Systems (MIS) activities.

Mr Jagadananda, erstwhile head of the ODMM narrated a story of an old woman in a flood affected village, whose words led to developing a livelihood rehabilitation initiative for the village. In one of his visits to a village an elderly woman complained to him about the relief trucks that visited the village in due intervals. She had observed that the villagers were listless until the arrival of the truck, which they would chase, and on its departure, go back to not doing any productive work.

The trucks that were meant for a good purpose were instead leading to the development of counter-productive culture. Eventually, the people of the village themselves came up with a solution to the situation. Every year, earthen dams were built by the villagers annually after the monsoon on the banks of the rivers to prevent the entry of saline water, and the area is used for vegetable cultivation. The shock of the cyclone had rendered people hopeless of resuming their lives and the dams hadn't been built that year. After the woman's words, the NGOs initiated a camp to build these dams and very soon mobilised several villages to participate. The initiative was lauded by the government.

(Jadadananda, Personal Communication, Date)

Resource mobilization

Since OSDMA believed in the practice of disaster preparedness at the panchayat level, the aim was to ensure that the community was prepared to come to its own aid in the crucial first few hours once the disaster had struck, focussing on reducing casualties and also actively participating in rebuilding activities. The NGOs that wanted to work towards helping the cyclone affected found that OSDMA in principle shared their values and was open to exchanging knowledge and working in collaboration. OSDMA took up the task of managing different aspects of disaster management preparedness or rehabilitation. OSDMA's role ensured minimum duplication of tasks carried out by the various NGOs.

The collaboration with an organisation like the ODMM which had brought together NGOs soon after the cyclone and worked closely with the affected communities facilitated transfer of valuable knowledge to OSDMA of the trials and tribulations of the affected communities and vulnerable groups within them.

ODMM was later disbanded and the state Inter Agency Group (IAG) was established to coordinate with all these organisations at the state level. The objective of the state IAG was to create effective convergence of preparedness activities and, to establish coordination with Government authorities and extend support for relief and response activities during an emergency situation.

Creation of Odisha Disaster Rapid Action Force (ODRAF)

While OSDMA worked towards developing disaster management preparedness, the gaping lacunae observed in the state mechanism was that it only provided for relief mechanism and rehabilitation to an extent, but a crucial taskforce that could conduct rescue operations was missing. With Odisha being a disaster prone, the state should be equipped to handle emergency operations and mobilise a force without waiting from external aid as the army or non-specialised forces such as the Police. Thus the Odisha Disaster Rapid Action Force (ODRAF) was created vide the Home Department Resolution no-939/CD dated 7th June 2001.

It is the first of its kind in the country with a force of 20 units carved out of the Orissa Special Armed Police, Armed Police Reserve, India Reserved Battalion and Specialised India Reserve Battalions. With only about 50 personnel per unit of ODRAF, it is structurally a lean organisation. The personnel are trained exclusively, the cost for which is borne by OSDMA. It will be deployed as per the request of the Special Relief Commissioner (SRC), OSDMA or the Collector.

Funding

OSDMA is not budgeted under the state government. As a project executing body, it has created its own corpus fund over the years from the various projects. Most external agencies did not want to contribute to the state budget but rather give it to an agency like OSDMA for direct implementation.

The first major project executed by OSDMA, 'OWRCP – Cr. 2801 – IN – Emergency Cyclone Reconstruction Component (2000-2004)', was estimated to be around Rs.270 crore involving 670 packages¹⁴. OSDMA was appointed as the nodal agency for fund management, quality monitoring and quality assurance. The project was spread across remote areas in 14 districts. By September 30 2004, OSDMA had achieved around 95 per cent completion of the work despite teething issues, heavy rains and 2003 floods.

The World Bank appreciated OSDMA's efforts of incorporating components including: (i) Mobile Quality Control Laboratory Systems (MQCLS) (ii) Documentation of Quality Control Testing Data (iii) Quality Control Workshops in Zones (iv) Upgradation of specifications (v) Circulation of Specifications (vi) Introduction of OK Card System (vii) Inspection of OSDMA, (viii) Quality Monitoring System by QMCS; OSDMA for creating awareness on Quality Control and Quality Assurance aspects amongst the Engineers and Contractors

By the year ending March 31, 2002 OSDMA received Rs. 104.53 crore from various sources and utilised Rs. 69.82 crore. During the year 2002-03, OSDMA had received Rs. 76.79 crores from government and other related funds like Member of Parliament Local Area Development (MPLAD), Chief Minister's Relief Fund, UNDP, CARE India and XIth Finance Commission. Apart from that OSDMA had also received as grant Rs. 16.62 crores from DFID for Cyclone Support Health Project and LIP Rehabilitation Project. During the year 2003-04, OSDMA received an amount of about 89.2 crore rupees from various sources. Moreover, an

¹⁴ A package involved different grouped components of the project, for ex: a cyclone shelter, roads, infrastructure etc.

amount of 55.6 crore rupees was received from DFID for the construction of primary schools¹⁵.

Majority of the cyclone shelters were built under the National Cyclone Risk Mitigation Project (NCRMP) project funded by World Bank. The Government of India released the money as a grant to OSDMA.

Collaborative approach to disaster management and preparedness

The initial projects of OSDMA in building disaster management preparedness were programs floated by the UNDP. The projects were designed based upon experiences drawn by such agencies work in other countries.

Disaster Risk Management Program supported by UNDP

The Disaster Risk Management (DRM) Programme further reinforced OSDMA's practice of developing stronger institutions at village level. The DRM programme focussed on developing the capacity of the Panchayati Raj Institutions (PRIs), reduce their vulnerabilities through a decentralised planning process. OSDMA and UNDP joined forces to conduct this program in the vulnerable districts.

In the course of building disaster management preparedness, OSDMA took special care in identifying vulnerable communities, non-apparent effects of a shock and adopting measures to cope with them and integrate with the process of disaster preparedness.

Read: *Building PRI Capacities for Disaster Management and Preparedness-A Training Manual*

Partnerships with other institutions

In 2004, the National Institute of Mental Health and Neuro Sciences (NIMHANS) and Sneha Abhiyan, an initiative of NGO ActionAid, conducted a survey for the Odisha State Disaster Mitigation Authority (OSDMA) on the mental health problems in Ersama, the ground-zero of the Super Cyclone 1999. The survey showed that a staggering 11 per cent of the respondents expressed the wish to die. Those who committed suicide were primarily victims of post-traumatic stress disorders such as restlessness, flashbacks and sleep disturbances. Some others ended their lives because they were plagued by the guilt that they survived when their loved ones were washed away by the huge sea waves that accompanied the storm¹⁶.

In 2009, in collaboration with Handicap International (HI) -an international organisation specialised in the field of disability OSDMA undertook a programme titled 'Integrating disability in community-based disaster risk reduction and response'¹⁷. The programme aimed

¹⁵ Draft Report to Planning Commission SER Division Government of India, New Delhi 'Evaluation study of Rehabilitation & Reconstruction Process in Post Super- Cyclone, Orissa'

¹⁶ Source: Frontline, Volume 21 - Issue 23, Nov. 06 - 19, 2004

¹⁷<http://www.osdma.org/ViewDetails.aspx?vchglinkid=GL003&vchplinkid=PL013&vchslinkid=SL005&vchtlinkid=TL006>

to integrate disability and disaster management, conducting surveys, mapping exercises, assessment of persons with disabilities and organising trainings and camps. The village level shelters were retrofitted with low cost structural modifications to be disabled-friendly. People were trained to be state and district level trainers.

Indian Institute of Technology, Kharagpur was an important knowledge partner for the technical design of cyclone shelters. The institute provided inputs on the structural design and specifications for the multi-purpose cyclone shelters.

OSDMA recognised the dearth of adequate knowledge of the plight of the vulnerable sections of the community affected by disaster and conducted a detailed study, 'Voicing Silence: Experience of Women with Disasters in Orissa', 2002, of women affected in the cyclone and documented their stories.

Based on the study a roadmap was proposed that emphasised on understanding how disaster affected men and women differently, developing disaster management and preparedness plans that were inclusive, considerate of the needs of women, address the skill gaps between men and women to equip them equally to respond, and, actively identify any opportunity that a disaster may present, which may be leveraged to create a source of livelihood. The study discusses various examples of such opportunities presented through Self Help Groups (SHGs) and various initiatives of NGOs.

Exit of the international aid agencies

The programs under UNDP were the Disaster Risk Management Program (DRM) from 2002 to 2009 implemented in 14 districts and later the Disaster Risk Reduction (DRR) which was implemented only in three districts. After the initial years post the super cyclone, the focus of the government and the multilateral agencies diverted. While the former prioritised infrastructural and structural mitigation, the latter was more focussed on capacity building, at all levels of stakeholders. Eventually, as the involvement of these agencies ceased, the institutional strengthening activities were reduced, essentially projects led by the agencies were curtailed.

Tested by Phailin

On 8 October 2013, the India Meteorological Department (IMD) reported the formation of a depression over the North Andaman Sea. It was predicted that it would intensify into a deep depression and further into a cyclonic storm by the next day i.e., 9 October 2013. The state government immediately sprang into action and informed district collectors, especially of the 14 cyclone prone districts, and the media, of the position and movement of the depression. On 10 October, the IMD reported through an 'Orange Message'¹⁸ that the deep depression had intensified into a Very Severe Cyclonic Storm named Phailin. This was followed by a review meeting of District Disaster Management Authority (DDMA) to review the status of preparedness.

¹⁸ For details on cyclone alert system, please see -

http://www.rsmcnewdelhi.imd.gov.in/index.php?option=com_content&view=article&id=24&Itemid=170&lang=en

The Special Director General of Police in charge of the Odisha Disaster Rapid Action Force (ODRAF), Additional Director General of Police, Fire Services and the Commandant, National Disaster Response Force (NDRF) in Odisha, were asked to be on alert for deployment of response forces for evacuation and search and rescue operations. BDOs identified nodal officers for vulnerable gram panchayats to check the readiness of the multi-purpose cyclone shelters. On the other end, the National Disaster Management Authority (NDMA) was notified to keep air force helicopters and NDRF ready to be available at a short notice. NGO coordination centres were established at village, block and district levels.

The concentrated pre-disaster efforts led to evacuation of nearly 10 lakh people, who were moved to safer locations and the resultant casualty was 44 people. Despite that, the damages caused by the cyclone were immense. The Rapid Damage and Needs Assessment (RDNA) Report by the ADB estimated the total damages and loss caused by Cyclone Phailin at about INR 89,020 million (equivalent US\$ 1,450 million).

The efforts before Phailin and their outcomes were proof of the success of the continuous efforts in building disaster preparedness within the Government and non-Government organisations and the community. The effective communication along the different levels of the PRIs and the coordinated efforts of the NGOs and the local leaders. On the other hand, the coordination between the state government and the Centre ensuring timely action of the ODRAF, NDRF and air-force was crucial in curbing the loss of human lives.

IV. Exhibits

Exhibit 1

Government of Odisha
Revenue & Disaster Management Department
(Special Relief)

NOTIFICATION

Bhubaneswar, the 31st August, 2013

No. 16/3 /R&DM (SR). In pursuance of sub-sections (1) and (2) of section 14 of the Disaster Management Act, 2005 (53 of 2005) and rule-3 of the Odisha Disaster Management Rules, 2010 and in partial modification of this Department Notification No. IV F OSDMA-24/10-42370/R&DM dt.20.10.2010, the State Government do hereby reconstitute the State Disaster Management Authority (SDMA), Odisha which shall consist of the following:

i) Chief Minister	-	Chairperson <i>ex-officio</i>
ii) Minister, Revenue & Disaster Management	-	Member-cum-Vice-Chairman
iii) Minister, Agriculture	-	Member
iv) Minister, Finance	-	Member
v) Chief Secretary	-	Member-cum- <i>ex-officio</i> Chief Executive Officer
vi) Development Commissioner/ Addl. Development Commissioner	-	Member
vii) Secretary, Home Department	-	Member
viii) Secretary, Deptt. of Water Resources	-	Member
ix) Secretary, Revenue & Disaster Management Department	-	Member
x) Special Relief Commissioner	-	Member

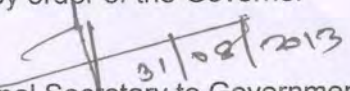
By order of the Governor

Principal Secretary to Government
& Special Relief Commissioner

Exhibit 2

**GOVERNMENT OF ORISSA
REVENUE & DISASTER MANAGEMENT DEPARTMENT**

ORDER

No. IVF(OSDMA)-24/10-51763/RDM.,

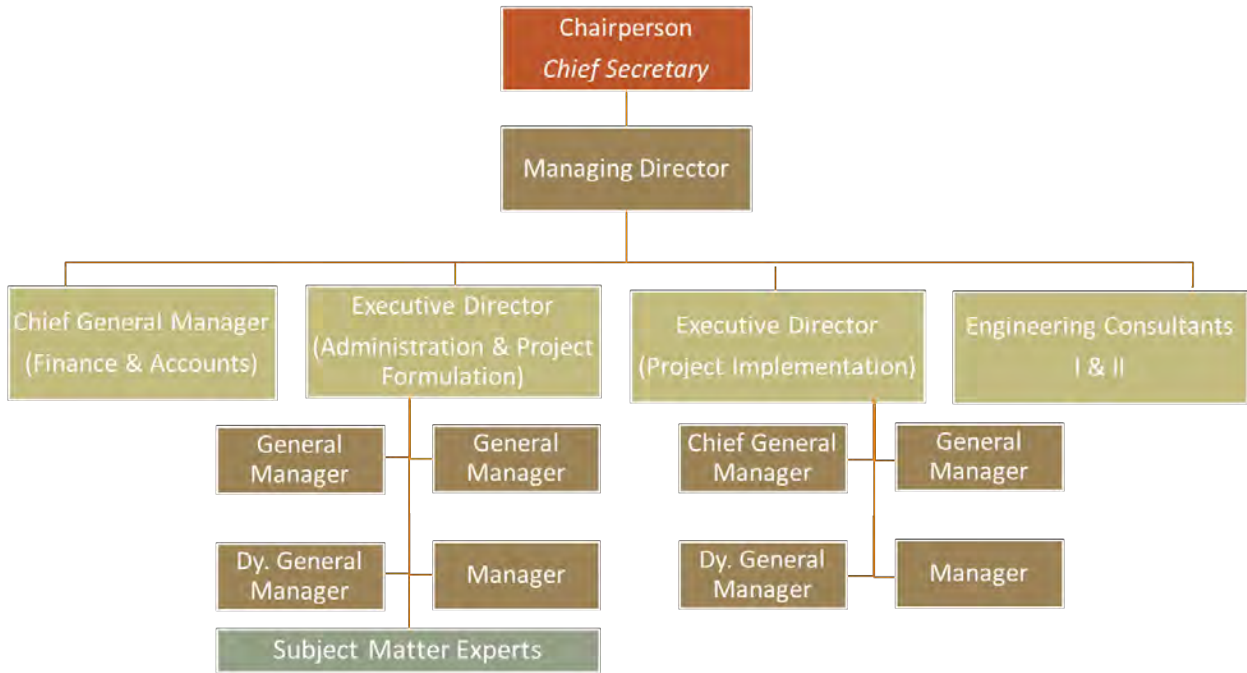
Dated, Bhubaneswar, the 16th Dec. , 2010.

In pursuance of Rule 7 of the Orissa Disaster Management Rules, 2010 notified by the Government in Revenue and D.M. Department Notification No. 27164 dated 12.7.2010 as published in the Extra-Ordinary Issue of the Orissa Gazette No.1135 dated 17.7.2010. the State Government do hereby declare that the Office of Special Relief Commissioner shall function as the Secretariat of State Disaster Management Authority (SDMA) which has already been established as per the Government in Revenue and D.M. Department Notification No. 42370 dated 20.10.2010. Hence follow up action may be taken at their end. The Orissa State Disaster Management Authority (OSDMA) is allowed to function as such until further order.

2. The Special Relief Commissioner is hereby declared as Additional Chief Executive Officer of the State Disaster Management Authority (SDMA).

By order of the Governor
R.K.Sharma
Commissioner-cum-Secretary to Government

Exhibit 3



About IIHS

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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