



Reducing Relocation Risk in Urban India
**Site Report for Urban Risks
and Resettlements**

Section I
Research Framework and Initial Summary of Findings

Credits by Garima Jain, Amir Bazaz; Rohit Jigyasu; Teja Malladi; Sushmita Ramoji; Sunil Kraleti; Aishwarya Balasubramanian; Andaleeb Rehman; Mohan Raju JS from Indian Institute for Human Settlements

July 2016

This document is an output from a project funded by the UK Department for International Development (DFID) and the Netherlands Directorate-General for International Cooperation (DGIS) for the benefit of developing countries. However, the views expressed and information contained in it are not necessarily those of or endorsed by DFID, DGIS or the entities managing the delivery of the Climate and Development Knowledge Network, which can accept no responsibility or liability for such views, completeness or accuracy of the information or for any reliance placed on them.

The Research project Reducing Relocation Risk in urban areas is carried out by The Bartlett Development Planning Unit (DPU) at UCL, the Indian Institute for Human Settlements (IIHS) the Latin American Social Science Faculty (Facultad Latinoamericana de Ciencias Sociales (FLACSO), and Makerere University.

This report is downloadable for free from: www.bartlett.ucl.ac.uk/dpu/reducing-relocation-risk/

The findings, interpretations and conclusions expressed here do not represent the views of any organisations that have provided institutional, organisational or financial support for the preparation of this paper

Designing Support by Pallavi Sharma and Nawaz Khan

Reducing Relocation Risk in Urban India

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Lead Author

Garima Jain

Project Team

Amir Bazaz; Rohit Jigyasu
Teja Malladi; Sushmita Ramoji; Sunil Kraleti
Aishwarya Balasubramanian
Andaleeb Rehman; Mohan Raju JS

Reviewed by

Aromar Revi; Gautam Bhan; Chandni Singh

Edited by

Arpita Das, Rekha Raghunathan

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List of Abbreviations

AP	Andhra Pradesh
APL	Above Poverty Line
BPL	Below Poverty Line
CDKN	Climate and Development Knowledge Network
DPU-UCL	The Bartlett Development Planning Unit at University College London
FLACSO	Facultad Latinoamericana de Ciencias Sociales
GVMC	Greater Vishakhapatnam Municipal Authority
HH	Household
HTL	High Tide Line
IHS	Indian Institute for Human Settlements
JnNURM	Jawaharlal Nehru Urban Renewal Mission
NGO	Non-Government Organisation
ODRP	Odisha Disaster Recovery Project
OSDMA	Odisha State Disaster Management Authority
PMBY	Pradhan Mantri Bima Yojna
R&R	Resettlement and Relocation
RAY	Rajiv Awaas Yojna
RSBY	Rashtriya Swasthya Bima Yojana
USD	United States Dollars
VAMBAY	Valmiki Ambedkar Awaas Yojna Housing Scheme
VIZAG	Vishakhapatnam

Case Study Sites

ASR	ASR Nagar, Vishakhapatnam
BHS	Bada Harijan Sahi, Behrampur
CST	Canal Street and Boarding Sahi, Behrampur
DLR	Devi Nagar, Ramapalli and Lakshmipur, Ganjam
JAL	Peda Jalaripet, Vishakhapatnam
KHS	Khaja Sahi, Behrampur
MRK	Markandi, Ganjam
PAP	Paradesipallyam, Vishakhapatnam
PPN	Pichipicha Nagar, Behrampur
PUD	Pudimadaka
ROS	Ramnagar Odiya Sahi, Behrampur
SEV	Sevanagar Madhurvada, Vishakhapatnam
SGN	Sonia Gandhi Nagar, Vishakhapatnam
VMB	VAMBAY housing, Vishakhapatnam

Background

India has suffered many extreme events in the past, both climatic and non-climatic, but it was only after the 1999 super cyclone, 2001 Latur earthquake and 2004 Tsunami that orchestrated institutional action began to be taken for long-term risk reduction. Before the 1990s, efforts were limited to relief and recovery, with some exceptions involving investments in early warning systems, but once the State Disaster Management Authorities was set up (first in Odisha in 1999 and then Gujarat in 2001), systematic action was initiated for mitigation and preparedness. Large investments began to be made to improve early warning systems for hydro-meteorological hazards and rehabilitation of disaster-affected people. Many international development lenders such as the World Bank and Asian Development Bank also increased investments in India with a view to strengthening natural disaster management and building resilience (see Appendix 1). Affected states learnt from their past experiences of disasters that providing early warning and investing in evacuation-response systems greatly reduced the numbers of lives lost. However, what remained a challenging situation was when people returned to their broken homes and disrupted livelihoods. Thus, long-term resilience-building was the prime endeavour which led many states like Gujarat, Tamil Nadu, Bihar, Uttarakhand, Odisha and Andhra Pradesh began projects to help people rebuild their houses after earthquakes, tsunamis, floods and cyclones, in a way that future events would have the least possible impact on their lives.

Some of these housing rehabilitation projects also involved moving people out of harm's way by relocating and resettling them in new locations. Provision of housing affects not just the physical habitation of people but has far-reaching social, environmental, economic and political implications. While there has been a great deal of learning during the time that these housing projects have taken shape, the long-term monitoring and impact evaluation is still in its nascent stages and the time-frame of such evaluations is short. Further, the knowledge from

these experiences is still limited to certain states and regions, and all long-term implications to people's lives are not understood everywhere equally. In addition to this, the urban context implies further challenges in the face of limited yet contested resources and complicated institutional arrangements. The experiences in the urban context, however, from which one could learn more, are limited. It was with this objective of learning more about such relocation projects that this research was envisioned by the Indian Institute for Human Settlements (IIHS); Development Planning Unit, University College London (DPU-UCL); and the Latin American Social Science Faculty (Facultad Latinoamericana de Ciencias Sociales FLACSO), funded by the Climate and Development Knowledge Network (CDKN).

While IIHS is focusing on India, UCL-DPU is studying the context of Resettlement and Relocation (R&R) in Uganda, and FLACSO is doing so in three countries of Latin America (Peru, Colombia and Mexico). The aim of the research is to learn, across three geographies with varying levels of urbanisation and hydro-meteorological hazard exposures, about the current status of such resettlement projects and the capacities of national, regional and local governments to deal with the long-term implications of such interventions. This includes an initial reasonable assessment of outcomes and experiences from the perspective of multiple stakeholders, and most importantly, the household itself.

Summary of findings from the Diagnostic Report

The first phase of this research focussed on larger urban risks prevailing in these regions, the institutional and regulatory frameworks in place to deal with them, current literature and gaps therein, as well as illustrative case studies. The findings from that phase were presented in the Diagnostic Reports and are summarised below:

- There is a paucity of literature that examines the urban context of R&R. While cities agglomerate

risk, create risk, and often serve as respondents to risk experienced elsewhere, they also offer a transformational opportunity to address these risks—premised on the established institutional and financial capacities of the cities as well as their limited numbers as compared to rural locations. More risk can be mitigated by directing the research and other resources to the most vulnerable urban centres, particularly in small and medium-sized towns, which are often the sites where the most vulnerable are forced to live. Advance planning could not just safeguard a city's future, but could actually make possible more enhanced lives for future citizens.

- The review of the existing institutional and regulatory framework shows that while there are national and state policies for 'resettlement and rehabilitation' of project-affected families in the context of land acquisition through 'Eminent Domain for public purposes', there seems to be no legal framework or safety net for those who are relocated in the case of disasters, and affected people are compensated by the State on a case-to-case basis. The authors are in no way suggesting a policy for R&R in the disaster context. Rather knowing that R&R could be highly 'costly' to both individuals and the city, this should be the last resort for risk reduction. Only once it is suitably understood that R&R is truly the last resort and all other means of mitigation will be less effective and more costly, should there be a 'safety net' policy for people who are being resettled for risk reduction. The authors remain wary of the implications that an R&R policy could have, and about the dangers of such a policy in practice and often the pretext of risk reduction, particularly for those with less political power.
- Besides policies, there are national programmes for rehabilitating slum dwellers (for instance, Jawaharlal Nehru Urban Renewal Mission), but most of them do not consider hazard-risk mitigation measures in their planning, even though some have improved their socio-economic outlook (for instance, Rajiv Awaas Yojna) by incorporating more context specific interventions.
- The report also outlines case studies to illustrate some of the experiences of R&R in the Indian (as well as South Asian) context. Based on secondary reviews, a detailed hazard-risk analysis and inputs from experts, the states of Andhra Pradesh and Odisha are identified for detailed primary work. Within these, Berhampur and Ganjam in Odisha and Vishakapatnam are selected for further study.

Site Report Structure

This phase of the research studies select cases in each of the regions in an in-depth manner, looking at the life cycle of such projects through the decision-making processes, implementation challenges, and outcomes. The attempt is to arrive at some relationships between different decisions and the associated challenges and outcomes of such interventions within each region as well as across the three geographies, in order to ultimately build a body of work that can inform future interventions of this nature for more positive outcomes.

This report is from the detailed primary work conducted by IHS at the select case study sites in India in the states of Odisha and Andhra Pradesh. It is divided into four sections:

Site Report Section I: Research Framework and Summary of Findings

Site Report Section II: Detailed Site Case Studies

Site Report Section III: Data from Primary Work

Site Report Section IV: Transcripts and Appendices

This Site Report Section I outlines the conceptual and research framework adopted for the research in India, site selection methodology, sample design and initial summary of findings from the primary work.

Suggested Readership of the Report

Primary work was undertaken over a period of two months across 14 sites in two states of India. The core team of four led the fieldwork in select urban and rural sites. With limited time and resources available, this report outlines only the initial findings from the household surveys, focus group discussions and expert interviews. The results of the research are indicative and exploratory and at this point, relevant only for the core research team and partners, suggesting potential directions of research for other academic and policy practitioners.

This report must be read along with the Diagnostic Report as well as the other sections in detail to gain the full view of the arguments being made here. Also, this report uses very limited references, for the ease of the readers, but many of them are covered in the other reports.

Research Framework and Scope of Study

The key question of enquiry was set out as, ‘*How, whose, what and to what extent are the risks reduced (or intended to be reduced) by resettlement and relocation?*’ This is understood by conceptualising a resettlement intervention in three phases: decision-making processes, implementation phase and their effect on the outcomes of these interventions. The key questions inquired within these phases are as follows:

Decision-making Processes

We as researchers set out to understand the various decision-making processes that lead to resettlement interventions. We aimed to understand the various **triggers** that initiate these processes **and alternatives** to such relocations. These triggers could be corrective, pre-emptive or compensatory in nature and the various alternatives of interventions could be relocation, resettlement, rehabilitation, in-situ housing or infrastructure upgradation (described in detail as ‘type of risk management’ and ‘type of intervention’ respectively in the Diagnostic report). These decisions further lead to beneficiary identification (inclusion and exclusion). Another important aspect of relocation decisions that is questioned is related to land in terms of location decisions and alternate uses of the vacated land and how they may af-

fect the outcomes of the intervention. The **institutional design** of these interventions are envisioned in multiple ways, particularly differentiated between urban and rural contexts. In this process, how and when is participation enabled and imagined? We also tried to understand the various **incentives and disincentives** built into the intervention design as evaluation methods.

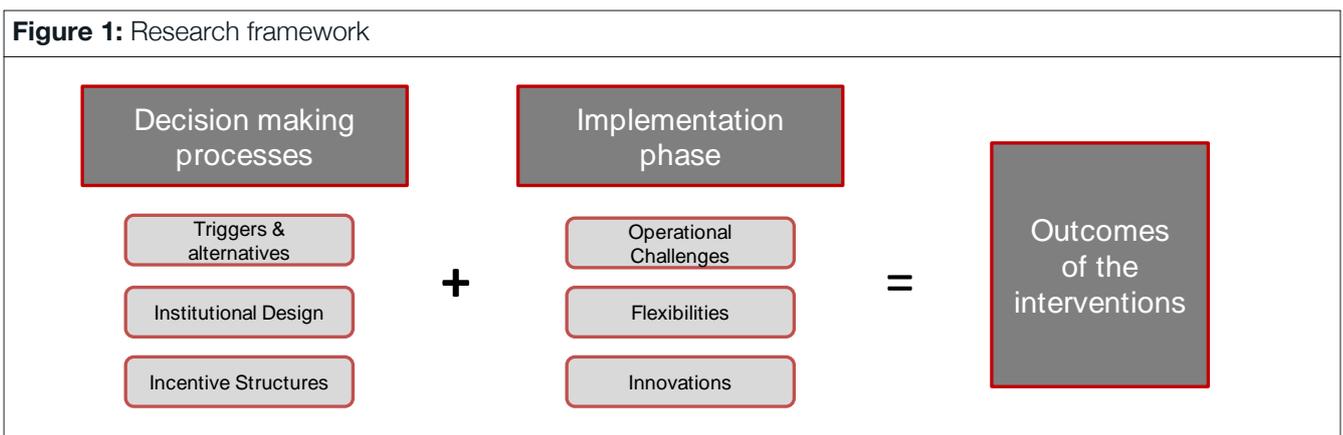
Implementation Challenges

To understand the implementation phase better, we set out to understand the various **operational challenges** faced during the implementation of resettlement interventions, particularly those that are faced in urban areas. These may be purely logistical in nature, but might also refer to context-specific **flexibilities**. There could be innovative **ways to address and scale** these methods up. It is also aimed at reflecting on the relationship between various decision-making aspects, such as timing, that may have an effect on implementation.

Outcomes of R&R

This phase is understood as the outcome due to the various **combinations of decisions and the processes of implementation** that affect the trajectory and experi-

Figure 1: Research framework



ences of resettlement outcomes. This report will aim at outlining some of these emerging connections between the two phases of decisions and implementations, and will be more elaborately discussed in the next phase of risk assessment. The objective is to understand what are the aspects of costs and benefits, who bears them in what ways and when.

The overall objective of this research remains to learn how decision making and implementation processes can be re-imagined for overall better outcomes of risk reduction both for households and the city.

Definition of risk. Risk in this context is understood as a composite of hazard risk, along with vulnerabilities that exacerbate the impacts as well as the capacities to cope (please see the Urban Risk section in the Diagnostic Report for a detailed discussion about this definition). We as researchers are interested to understand the scale of risk by understanding people’s perception of risk at the household level (‘risk to people’) as well as from the perspective of the city (‘risk to the city’).

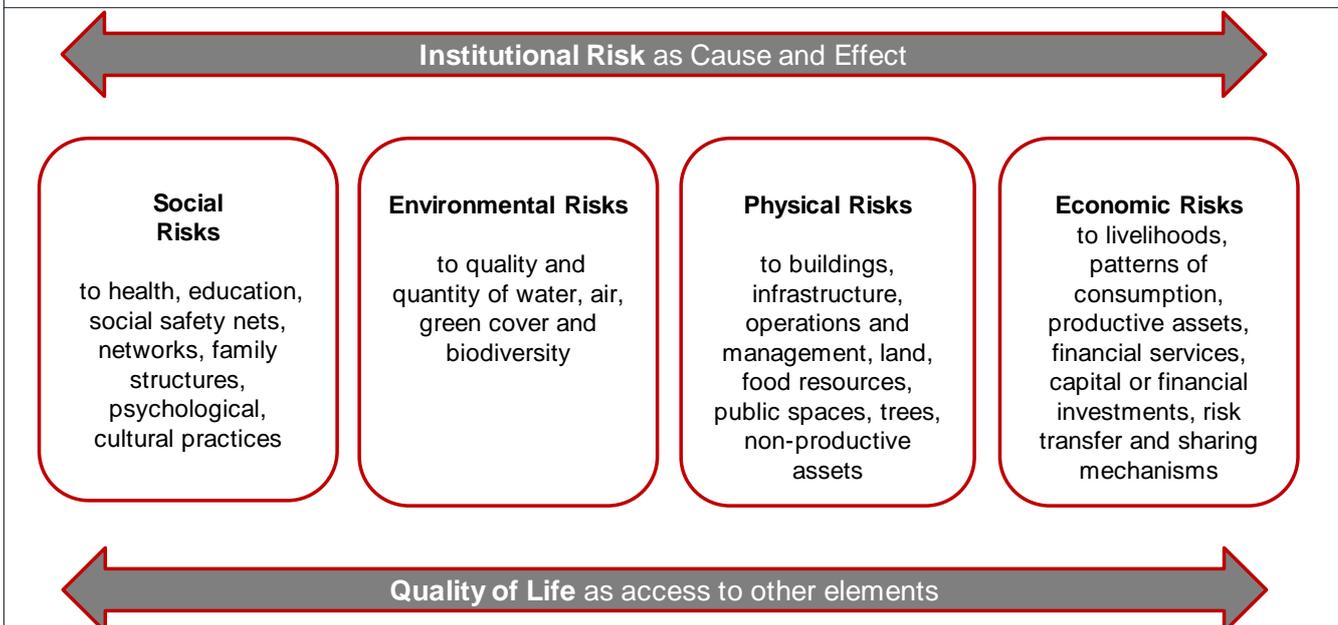
Risk to people is further broken down into various **elements**: social risks such as risks to health, education, social safety nets, networks, family structures, psychological risks and prevailing cultural practices; physical risks to the built environment, infrastructure, operations and management of the infrastructure, land, food resources, public spaces, trees and other non-productive assets; economic risks to livelihoods, patterns of consumption, productive assets, access to financial services, capital or financial investments, risk transfer and sharing mechanisms; environmental risks to quality and quantity of water, air, green cover and biodiversity; governance or institutional and regulatory risks—both

risks to these and created by these; and risks to overall quality of life and political agency.

Different indicators were then identified to study the risks to these elements as changes before and after the relocation intervention. The detailed risk framework matrix is presented in Appendix 2.

Methods. The various sources of information are also identified and prioritised across the different indicators. While the use of secondary data is preferred, in most cases this information is not available in the public domain. Unlike developmental projects, it is observed that for projects conducted in the context of extreme disaster events, due to limited time availability, detailed project reports are not made based on socio-economic surveys or environmental assessments, and this data is also not available through them. As much as possible, the site is used as a source of information and of site observations are mapped as instruments of research and analysis. Community-level information (for instance, on systems and infrastructure conditions and cultural norms) is gathered through focus-group discussions. However, since many household-level risks are still difficult to grasp through these methods, primary household-level surveys were conducted to assess changes in various indicators. There are still some cases which may get left out of the ambit of households, and who may have special needs like the disabled, aged or women. Some individuals are interviewed to get a better sense of the risks faced by them during such R&R interventions. Decision-making and implementation processes are understood separately by conducting interviews with key officials and policy makers, or during consultations. Transcripts of interviews and sample household survey forms can be found in Section III of this Site Report.

Figure 2: ‘Risk to people’ Framework



Site Selection

After the diagnostic stage, two cyclone-affected regions of Odisha and Andhra Pradesh were shortlisted for in-depth research. While they are neighbouring states on the east coast of India and are both exposed to very severe cyclones, the institutional approaches to risk reduction in the two states were found to be at different levels of maturity. Initial reconnoitring was undertaken in these states and key regions were identified for study such that a variety of decision-making processes, implementation challenges and their outcomes could be understood in connected but distinct contexts. The research regions, based on their project completions, were broadly framed in the following manner, as shown in Table 1, (although some local sites within these regions fall under different categories of completion and therefore research):

completion in various sites, allowing us to study all the three stages of a project.

The urban component of ODRP in Berhampur for post-cyclone rehabilitation is currently in the process of design and initial stages of implementation. It is a combination of corrective and pre-emptive action (please see the Diagnostic Report for the detailed definitions and distinctions), and therefore the focus was on trying to understand and inform (if possible) the decision-making processes. While housing is likely to be provided under the central scheme of Pradhan Mantri Awaas Yojna (PMAY), infrastructure provisions may be funded by the ODRP. Initially all 160 sites were to be undertaken by both the agencies, but over a period of time there has been a split and while 80 locations will be provided

Case Study Regions	Stage 1: Decisions	Stage 2: Implementation	Stage 3: Outcomes
a) Berhampur (Urban Odisha)			
b) Ganjam (Rural Odisha)			
c) Vishakapatnam (Urban Andhra Pradesh)			

Odisha Disaster Recovery Project

After Cyclone Phailin, the Government of Odisha initiated the Odisha Disaster Recovery Project (ODRP) with financial assistance from the World Bank, the objective of which was to provide 'dignified' housing for the communities affected by Phailin (as defined in the policy laid out for the project). Of the 16,000 HHs identified, many communities are being relocated to reduce their vulnerability to further extreme climate events. ODRP started in the year 2013, and has reached different stages of

housing along with services under PMAY, the other 80 will only get infrastructure upgradation under ODRP.

Clear decisions are still awaited after two years of the cyclone. The selected sites in Berhampur have been briefly described below:

- **Khaja Sahi (KHS):** It is a 30-plus-year-old slum settlement of a close-knit Muslim community in the centre of the city of Berhampur. KHS occupies

what is identified as ‘untenable’¹ land around the main drainage channels of the city. It is located next to what has now become a solid waste dumping yard and is exposed to severe health hazards. For a few years now, there has been a plan for it to be moved to a nearby location under the Rajiv Awaas Yojna but it is yet to happen. There are about 250 households living in this neighbourhood, which were severely affected by the cyclone in 2013.

- **Pichipicha Nagar (PPN):** It is an approximately 20-year-old settlement of 170 households where most people do not own the houses or land on which they live. Many live on rent, or pay the local leaders to live here. PPN is located in the centre of the city, close to other social and economic services but adjacent to an open drain which exposes the residents to long-term health and access risks. The situation was exacerbated during the 2013 cyclone, and while the city intends to relocate the residents, the latter are keen to stay on here. No action has been taken yet for reducing their everyday and extreme risks.
- **Canal Street and Boarding Sahi (CST):** These are two streets in the middle of a larger area which is earmarked for infrastructure upgradation after the 2013 cyclone under ODRP. It is a mixed-income neighbourhood, with people involved in varying economic activities ranging from cattle rearing, casual household work or even government jobs. There are more than 500 households living on these two streets, who have been here for varying numbers of years, some of them for generations. Many are renters while some are also home owners.
- **Ramnagar Odiya Sahi (ROS):** This is a mixed neighbourhood of lower middle income as well as economically weaker households. It is imagined as a combination of in-situ upgradation of 40 and relocation of 60 households of the 100 identified. The neighbourhood is located next to a railway line and many households were severely affected by the cyclone in 2013. People are not keen to move too far away from the current location, despite the attendant hazards. They expressed the

wish to have access to improved basic service provisions in the same location.

- **Bada Harijan Sahi (BHS):** This site of 200 households is earmarked for a combination of in-situ housing upgradation, relocation and infrastructure upgradation. It is a settlement primarily comprising lower-caste individuals, many of whom have been living in the neighbourhood for over 30 years. None of them own the land on which they reside, and have been recognised as a ‘notified’ slum by the Slum Improvement Board. Despite various discussions, no clear action has yet been taken for reducing risks of the neighbourhood.

Rural Ganjam

Although part of the same project as the one being undertaken in Berhampur, had recently been implemented and people are in the process of completing construction and moving in. This is a case of corrective action, and also an exploration of compensatory and insurance mechanisms. Since it is still in its early stages, it was observed to be the most interesting site to understand the implementation challenges being faced and dealt with, in the context of the various policies set out and decisions taken beforehand. Although this is a rural site and a relatively different context from its urban counterpart, it provided considerable learning for the urban context as well, and is therefore included in the study. Following is a brief description of sites in rural Ganjam:

- **Markandi (MRK):** Part of the larger village was identified as cyclone-affected, and housing was provided under ODRP. Over 600 families received houses which are planned with risk measures—high plinth height to prevent damage from storm surge and RCC roofs to safeguard against high speed winds during cyclones, although one of the three locations is still close to the coast (100 m) and remains exposed to cyclones and surge. Since the residents were made part of the locational decisions, they seemed satisfied with the intervention. The residents have gone further in making changes to the approved building plans to make them more appropriate for their requirements.
- **Devinagar, Ramayapalli and Lakshampur (DLR):** Similar to Markandi, this was also a combination of in-situ rebuilding/upgradation and relocation, but the relocation involved 50 affected families from two villages coming to live together in one site, at a distance of more than 5 km from their original location. This was one of the initial settlements in the intervention, and people were not able to affect locational decisions unlike in

1 “Untenable settlements are such as are decided by the Government. These include sites where existence of human habitation entails undue risk to the safety or health or life of the residents or habitation on such sites is considered contrary to public interest or the land is required for any public or development purpose.” Housing For All Slum Policy, Government of Odisha, [http://www.urbanodisha.gov.in/\(S\(mmsysc45j1g52d55er0fn45\)\)/pdf/plans_polices/slum_policy.pdf](http://www.urbanodisha.gov.in/(S(mmsysc45j1g52d55er0fn45))/pdf/plans_polices/slum_policy.pdf)

Markandi. This distance from the original location is now being seen as problematic, and many families have members who have stayed behind in the older site to retain their original livelihoods, schools, social networks, etc.

Vishakhapatnam Slum Rehabilitation Projects

In the case of Vishakhapatnam, many slum communities have been rehabilitated under the various central and state housing schemes in the past few decades. Those that were considered for this study included the ones under the Valmiki Ambedkar Awaas Yojna (VAMBAY) housing scheme, Rajiv Gruha Kalpa, and Jawaharlal Nehru Urban Renewal Mission (JnNURM). Many of these identified neighbourhoods that were relocated under the JnNURM scheme were included because they were high risk areas, either in terms of climatic or non-climatic hazards.² Many were also cases of evictions, and no participatory processes could be initiated. There are some neighbourhoods that are now being identified under the Rajiv Awaas Jojna (RAY) but have been excluded from the study since they are still in early decision-making stages.

Cases of resettlement that were completed close to five years ago were found in Vishakhapatnam, and were ideal to understand the short, medium and longer-term implications of such interventions in the context of their project design and policies. But many of these projects were undertaken after regular low-intensity events such as local flooding, so they are categorised as pre-emptive interventions for the purposes of this study. The selected sites in Vishakhapatnam are briefly described below:

- **Sonia Gandhi Nagar (SGN):** This was primarily an in-situ upgradation where approximately 150 families living on government land next to the highway were resettled on the same land about five years ago after some temporary relocation. Most of these people were living on the site for over 50 years, although without any land tenure. After moving into the new houses (following a small payment), they were given non-alienable rights to live. The residents claim to have been affected by the cyclone to a limited extent.
- **ASR Nagar (ASR):** This is a small slum settlement right next to Sonia Gandhi Nagar described above, but located on railway land (as compared to State Government land in SGN). The residents are physically exposed to cyclones, rains and water clogging (apart from other social and health risks), but no action has yet been taken to allevi-

ate these conditions. There have been instances where the residents were asked to leave and live in Madhurvada (like SEV below), but people resisted the move. Since the Railways did not need this piece of land (unlike in the case of SEV below), the residents were allowed to continue living where they were. They faced severe losses during the 2014 cyclone, but no action has yet taken in this regard.

- **Sevanagar Madhurvada JNNURM (SEV):** This was a slum settlement and a neighbour of SGN and ASR located on railway land (unlike SGN residents, but same as ASR). The Railways needed the land, and took the help of the city (GVMC) to evict the residents here on the pretext of hazard reduction and 'un-tenable' status, and despite the legal battles between the residents, and the Railways and GVMC, the area has now been developed as a railway stadium. The residents were relocated by a distance of more than 25 km northward to Madhurvada, where there is limited access to physical, economic or social services. The poor outcomes following the eviction are being felt deeply by the residents. While they are facing greater everyday challenges, even during the cyclone they did not receive any aid or government help which they had in the past in their previous location.
- **Paradesipalyam JNNURM (PAP):** This is a neighbouring settlement of Sevanagar in Madhurvada, with similar infrastructure and physical provisions as SEV. Most residents were renters when they lived in the inner city, and 'chose' to come and live on this site. Many of them are parts of autorickshaw or watch repair unions, and moved here in groups. Much of the settlement still remains uninhabited, because of which private or public provisions of buses and other services are still not possible. Although people said that they did not face many challenges during the cyclone, the everyday challenges they live with could reduce if more people came to live here.
- **Jalaripeta (JAL):** This is a fishing village in the heart of the city of Vishakhapatnam. It is a few hundred years old, and still growing. It has a mix of mud and thatch houses as well as brick and concrete ones. Many houses were damaged and fishing assets were lost during the cyclone in 2014 (apart from lowering fishing activity itself which still continues). Many attempts have been made to rehabilitate the residents here, but since they are not willing to move and it is not possible to build in-situ due to the area being within the Coastal Regulatory Zone, there has been a lock-jam which has turned into a hotly debated political

² 18 out of 43 as mentioned by the Additional Project Director, Urban Community Development Department, Greater Vishakhapatnam Municipal Corporation

issue. It was only after the Hud-Hud that the state declared that 10,000 housing units would be built as cyclone-resilient shelters in Madhurvada area (which were almost 80% complete in November 2015), and has 'vaguely'³ indicated that these communities will be relocated there. There have also been conversations of moving them close to the existing site, but there seem to be no final decisions yet.

In the rural area of Pudimadaka, there is a recent intervention of building cyclone-resilient housing, and so it was decided to include that in the study as well to contrast with the urban Andhra sites as well as rural Odisha sites. Here is a brief description of the same:

- **Pudimadaka (PUD):** This is a fishing village that was severely affected during Hud-Hud cyclone in 2014. Using a combination of funds from govern-

Table 2: List of Selected Sites and their Current Status of Completion (As of December 2015)

No.	Site	Status
Odisha (Urban)		
	Khaja Sahi (KHS)	Planning
	Pichipicha Nagar (PPN)	Planning
	Ramnagar Odiya Sahi (ROS)	Planning
	Bada Harijan Sahi (BHS)	Planning
	Canal Street and Boarding Sahi (CST)	Planning
Odisha (Rural)		
	Devinagar, Ramayapalli and Lakshmiipur (DLR)	Complete
	Markandi (MRK)	In process
Andhra Pradesh (Urban)		
	ASR Nagar (ASR)	Planning
	Jalaripeta (JAL)	Planning
	Paradesipalyam JNNURM (PAP)	Complete
	Sevanagar Madhurvada JNNURM (SEV)	Complete
	Sonia Gandhi Nagar (SGN)	Complete
	VAMBAY Housing (VMB)	Complete
Andhra Pradesh (Rural)		
	Pudimadaka (PUD)	In Process

- **VAMBAY Housing (VMB):** This is a large (more than 500HH) resettlement colony built in 2004 as part of the state housing scheme Valmiki Ambedkar Avas Yojna. The VAMBAY housing scheme was implemented as part of the slum improvement programme and for providing affordable housing for the poor in Vishakapatnam. Many inner city slum dwellers were made to move here, a number of whom were renters at that time. The project consists of both voluntary and involuntary relocation. The residents mentioned that there were issues initially with transport, water and electricity, but that after all these years, these have been resolved.

ment and private donor funding, 600 housing units are being built about 2 km away from the existing settlement. The project is imagined and implemented in three phases, with the first one almost complete but farthest from the coast. Most residents mentioned they would not move until all three phases are complete so they could decide which one to move in to. Besides, they are sceptical about being able to continue with their work easily from the new location. They currently live in houses which are traditional and round, with low hanging roofs that keep the interiors cool. But the new construction is a typical rick and concrete framed structure which may not be suitable for the extreme hot and humid weather conditions.

3 There are no official reports, only some newspaper articles alluding to this connection, referred to in Section II of this report.

Of the possible sites that could be studied, some sites were prioritised so that by observing the least number of sites, most resettlement typology aspects (arrived at and described in the Diagnostic Report) could be studied. Please see Appendix 3 for the Site Selection Process. Sites that were eventually studied in detail are as given in Table 2 above.

Additional sites and samples have been added (see Appendix 7) since the completion of the primary work phase. These will be added to the Risk Assessment Work report. Following is the brief description of the sites across the typology of resettlements arrived at in the Diagnostic Report:

A	Project level Characteristics		Description of Sites Selected
A1.	Type of Project	(a) In situ housing or infrastructure up gradation	(a) 3 sites
		(b) Temporary resettlement	(b) None
		(c) Relocation	(c) 4 sites
		(d) Resettlement	(d) 1 site
		(e) Eviction	(e) 1 site
		(f) In planning process for relocation	(f) 6 sites
A2.	Type of Risk Management	(a) Corrective / Post impact	(a) 9 sites
		(b) Prospective / Pre-emptive	(b) 4 sites
		(c) Not applicable	(c) 1 site
A3.	Nature of Planning	(a) Planned with risk measures	(a) 9 sites
		(b) Planned without risk measures	Rest are still undergoing planning
		(c) Unplanned/Organic	
A4.	Level of planned participation	(a) Part of decision-making process	(a) 2 sites
		(b) Part of planning process	(b) 2 sites
		(c) Part of implementation	(c) 6 sites
		(d) Part of long-term management post completion	(d) 4 sites 4 sites are still undergoing planning process, although with no participation as yet
A5.	Motivation/Nature of Hazard	(a) Post extreme climatic event	(a) 4 sites
		(b) Loss of land post an extreme event	(b) None
		(c) Low-intensity High Frequency events	(c) 8 sites
		(d) Non-climatic event (tectonic, etc.)	(d) None
		(e) Development	(e) 2 sites
A6.	Level of attribution of CC to hazard	(a) Low	(a) 4 sites
		(b) High	(b) 10 sites
A7.	Primary Decision Maker	(a) People	(a) None
		(b) Civil Society	(b) None
		(c) Government	(c) 9 sites
		(d) Combination	(d) 5 sites
A8.	Distance between old and new locations	(a) 0 to 1 km	(a) 3 sites
		(b) 1 to 5 km	(b) 2 sites
		(c) More than 5 km	(c) 6 sites

A	Project level Characteristics		Description of Sites Selected
A9.	Time between decision and implementation	(a) 0 to 1 years	(a) 4 sites
(b) 1 to 2 years		(b) 3 sites	
(c) More than 2 years		(c) 7 sites	
A10.	Time taken to complete the project	(a) 0 to 2 years	(a) 7 sites
(b) 2 to 5 years		(b) None	
(c) More than 5 years		(c) None	
A11.	Age of the project (time since completion)	(a) Less than 5 years	(a) 5 sites
(b) 5 to 10 years		(b) 2 sites	
(c) More than 10 years		(c) None	
A12.	Size of the Project	(a) Small (1–100 HH)	(a) 2 sites
(b) Medium (101– 500 HH)		(b) 8 sites	
(c) Large (more than 500 HH)		(c) 4 sites	
A13.	Nature of dividing the population	(a) Whole population moved to one place	(a) 3 sites
(b) Part moved together to one place		(b) 4 sites	
(c) Different settlements in their entirety moved together to one place		(c) None	
(d) Different parts of settlements moved together to one place		(d) 2 sites	
(e) All HH moved but spread in parts		(e) None	
(f) Part of HH moved and scattered in different locations		(f) 3 sites	
A14.	Financing Sources	(a) 100 per cent government funded	-
(b) 100 per cent Donor/ Civil Society funded			
(c) 100 per cent Community funded			
(d) Contribution of funds from different sources but none from the beneficiaries		(d) 5 sites	
(e) Contribution of funds from different sources including the beneficiaries		(e) 9 sites	

B	Original Settlement-level characteristics		Description of Sites Selected
B1.	Type of land tenancy	(a) Owned	(a) 1 site
(b) Owned but non-alienable		(b) 2 sites	
(c) Right to occupy		(c) None	
(d) No explicit/legal rights		(d) 11 sites	
B2.	Age of settlement (before the move)	(a) 0–5 years	All are more than 10 years old
(b) 5–10 years			
(c) More than 10 years			

B	Original Settlement-level characteristics	Description of Sites Selected	
B3.	Most dominant nature of livelihood options for HH	(a) At home work	(a) 1 site
		(b) Travel 0–1km for work	(b) 9 sites
		(c) Travel 5km or more for work	(c) 4 sites
		(d) Migrate regularly to other cities/towns for work	(d) and (e) None (although many HH within them)
		(e) Migrate seasonally to other locations for work	
B4.	Level of Hazard Risk Exposure	(a) High	(a) 5 sites
		(b) Medium	(b) 6 sites
		(c) Low	(c) 3 sites
B5.	Type of Urban form	(a) Cluster housing	(a) 10 sites
		(b) Row Housing	(b) 3 sites
		(c) Multi-storey Housing	(c) None
B6.	Levels of social infrastructure distinguished by provider	(a) Sufficient provided by the government	(a) 2 sites
		(b) Sufficient provided by the civil society	(b) 1 site
		(c) Sufficient self/community created	(c) None
		(d) Insufficient with contributions from public funds	(d) 4 sites
		(e) Insufficient with contributions from civil society	(e) None
		(f) Insufficient self-provisions	(f) 7 sites
B7.	Strength of social networking	(a) High	(a) 8 sites
		(b) Low	(b) 6 sites
B8.	Most dominant form of family structures	(a) Nuclear family (male head)	(a) 5 sites
		(b) Nuclear family (female head)	(b) 1 site
		(c) Joint family (male head)	(c) 8 sites
		(d) Joint family (female head)	(d) None
B9.	Use given to abandoned site	(a) No use planned	(a) 2 sites
		(b) Planned housing	(b) 1 site
		(c) Planned commercial	(c) 1 site
		(d) Environmental land use	(d) 2 sites
C	New settlement-level characteristics	Description of Sites Selected	
C1.	Level of hazard exposure	(a) High	(a) None
		(b) Medium	(b) 2 sites
		(c) Low	(c) 7 sites

C	New settlement-level characteristics		Description of Sites Selected
C2.	Type of land tenancy	(a) Owned	(a) 1 site
		(b) Owned but non-alienable	(b) 6 sites
		(c) Right to occupy	(c) None
		(d) No explicit/legal right	(d) 7 sites
C3.	Type of new urban form	(a) Same as what it was before	(a) 1 site
		(b) Similar but not exactly the same	(b) 2 sites
		(c) Absolutely different from the earlier form	(c) 11 sites
C4.	Level of planning and provisions	(a) Designed housing	(a) 8 sites
		(b) Roads	(b) 7 sites
		(c) Public Transport	(c) 5 sites
		(d) Water and Sanitation	(d) 8 sites
		(e) Electricity	(e) 8 sites
		(f) Schools	(f) 3 sites
		(g) Hospitals or health centres	(g) 3 sites
		(h) Marketplaces	(h) 3 sites

Sample Design

During the reconnaissance, six different kinds of respondents were identified as follows:

Type 1 Non-beneficiaries: These were the families which lived on the cyclone-affected sites, but were not made part of any upgradation or allocation. While their neighbours were selected for R&R they were not, and the motivation to interview them was to study what risks they face, what their aspirations and expectations are, and what the equity challenges of such R&R interventions could be.

Type 2 Beneficiaries of in-situ housing upgradation: These were families who received some kind of in-situ housing upgradation support. The motivation to study them was to compare their outcomes with those of the residents who had been relocated despite being part of the same project.

Type 3 Beneficiaries in the process of relocation: These were families which were still completing the construction of their houses after relocation. The motivation to include them was to study their anticipated risks in the new sites vis-à-vis their existing ones.

Type 4 Relocated/resettled beneficiaries: This is the selection of families which had already undergone

a relocation or resettlement in the last 5–7 years. They were included to study the changes they had experienced after the intervention, and to assess if their overall risks were indeed reduced by R&R or whether new risks are created in the process. This would form the primary study group to understand the outcomes of an R&R. Although we only know about their previous experiences from what they said.

Type 5 Beneficiaries identified for infrastructure upgradation: These were residents in sites which were identified for infrastructure upgradation after the cyclone but work has not yet started there.

Type 6 Beneficiaries identified for relocation (in future): There were residents of sites that have been identified for relocation under various projects and programmes, but the beneficiaries have not yet been identified from among them. The motivation to study these families was to learn what they required in their new resettlement, if at all they were identified for R&R.

Below is a snapshot of the sample households by the type of responders:

The overall sample description of the various sites is presented in Appendix 4. It provides the distribution of

Site	Type of Responder						Urban	Rural	Total
	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6			
	Non Beneficiary	In-situ housing	Relocation in process	Relocated	Identified for Infra. upgrade	Identified for relocation			
Urban	22	3	0	33	20	35	113	45	158
Rural	9	5	20	11	0	0			
Total	31	8*	20	44	20	35			

* Sonia Gandhi Nagar offered the opportunity of a larger pool of in-situ housing beneficiaries, but the households were too similar and therefore left out of the surveys.

the sample among the types of responders listed above, within urban and rural contexts, as well as the total relevant population from which the respondents were sampled.

Limitations

- We also had an additional type of respondent (Type 7) to start with which would have represented people who had been allotted housing, but had moved back to their previous locations. While we did come across a few HHs of this kind, people were reluctant to talk to us as they thought this could deprive them of their future benefits. Eventually we had to drop this group.
- We also wanted at least 300 HHs surveyed, but the time taken to conduct each household survey was high because the questionnaire was predominantly qualitative and followed an open-ended conversational style of questioning which was often time-consuming albeit more detailed. These interviews thus provided a 'thick description' (Ponterotto, 2006) that is lost in more quantitative, structured approaches. Quality was given priority over quantity and fewer surveys were completed over the allotted time for data collection. A second round of surveys are now complete with additional 150 HHs and will be included in the risk assessment work phase for understanding certain priority issues more comprehensively (see Appendix 7 for the additional sites and samples).

Summary of findings

After conducting various interviews and focus group discussions and noting observations from the site and household surveys, many emerging themes were identified for further research. Some of these are discussed below in detail. While the insights might be from specific sites, they lead to questions which are relevant to the larger context of R&R after extreme events. These may not be an exhaustive set of concerns and questions but help frame the next phase of risk assessment.

Decision-making Processes

Triggers and alternatives to relocation

Most often the decisions to take action post a disaster is based on the urgency of the situation, where many people have lost all forms of shelter (e.g., ODRP Ganjam). But in some cases, it is also evident that the action taken is more of a political move, to not seem inactive, and

Box 1: Prefabricated Cyclone Shelters being built in Madhurvada for cyclone affected families living on the coasts of Vishakapatnam

Image 1: Cyclone shelters being built at the Survey no. 119 next to currently unoccupied JnNURM housing which was allocated to beneficiaries 4 years ago



Image 2: Prefabricated housing construction of the cyclone shelters at the Survey no. 119, but no other social infrastructure in the vicinity.



Post Hud-Hud in 2014, many individuals and private donors gave money as aid to the State government of Vizag for the benefits of the cyclone-affected families particularly those living on the coastal areas. The state government immediately announced matching of those funds and started building 10,000 housing units for the affected families in the Madhurvada region, 20km north of the city, already burgeoning with housing schemes which are currently lying vacant. While particular beneficiaries are yet not identified, there are newspaper reports suggesting that the fisher community at Jalaripeta might be one of them. It is yet to be seen whether these fishing people agree to move this far, and if they do, what might be the implications of this move on their other socio-economic conditions.

the provisions of housing end up remaining unusable by those for whom it is being built (e.g., Pudimadaka, or see Box 1 for Jalaripeta housing provisions in Madhurvada). In the former case, it is important to understand the long-term implications of such interventions, particularly when there is not enough information to conduct any detailed environmental or socio-economic assessments. In the latter, it seems the moments of disaster are being used as opportunities to build housing stock for the future in line with the overall growth vision of the city and not necessarily for the benefits of those for whom the aid may have been received. Further, the urban context of such interventions is evidently different from the rural. This is particularly due to the contested and limited land resource in the former, and often alternate uses of the vacated land drive the decisions for relocation vis-a-vis other intervention alternatives.

Institutional design

Participation is being left for the last stages of the project, if at all, instead of including people from the design and planning stage itself. This is partly due to the lack of multi-scalar institutional designs of these interventions. Urban settlements are also more heterogeneous as compared to rural settlements, and this seems to pose challenges for enabling participation. People’s perceptions of risk differ from that of the city’s, and this seems to affect the decisions each makes towards reducing risks.

Incentive structures

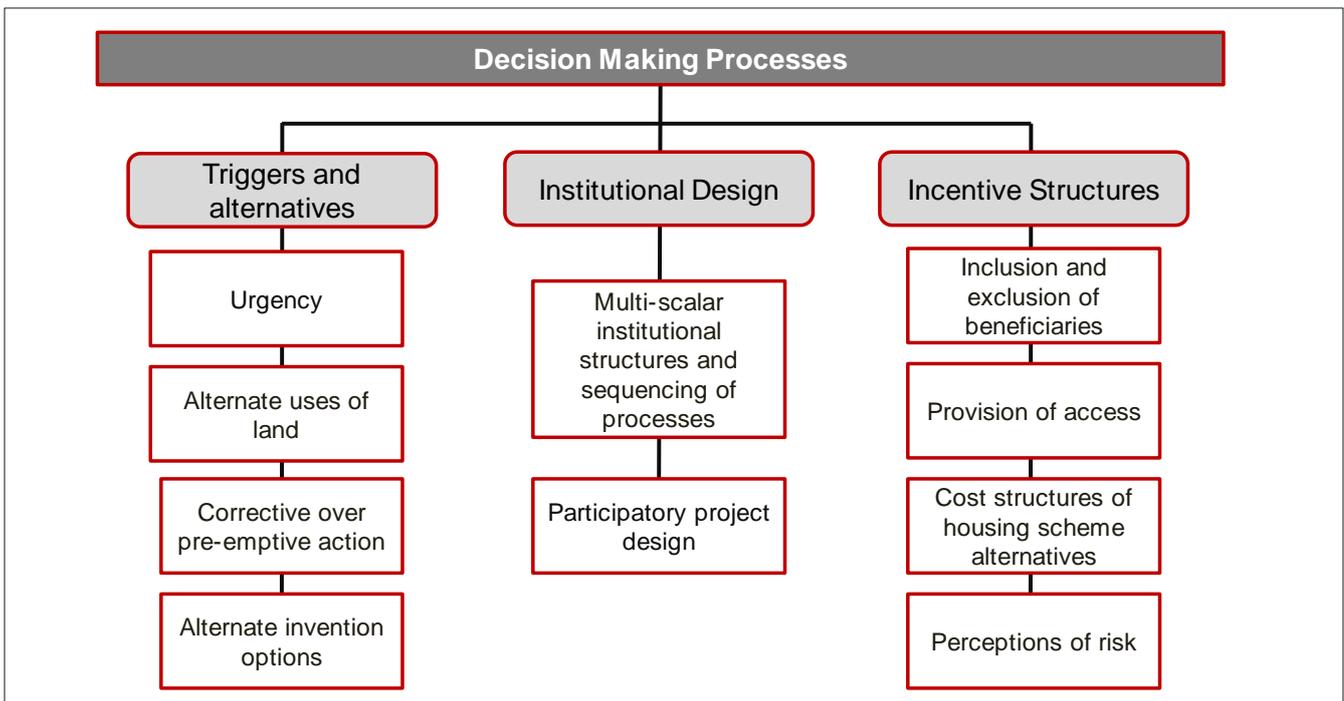
Inclusion and exclusion of some households of larger settlements could potentially tamper with the existing

social and economic inequalities, and may not be equitable owing to the current beneficiary selection criteria and processes. Proper grievance redressal systems are yet to take shape, particularly in the urban cases. Multiple housing schemes running at tandem for the same geographies may also act as disincentives to participate in some over others (e.g., IAY vs ODRP in Ganjam, Pudimadaka’s phased housing construction). Although there is already a culture of using public transport in cities, yet relocating people by more than 5km is still leading to economic stresses faced by the communities and thereby resistance for relocating.

These points are discussed in greater detail as follows:

Disaster risk projects are undertaken with a high sense of urgency. Actions taken in the context of disasters are often response-centric one-time efforts, and not a long-term scheme or a programme as in the case of development-related work. In development programmes, systems are found in place for assessments, implementation design, beneficiary identification, pre-defined compensatory mechanisms, and long-term monitoring and impact evaluation. But in a disaster context, action is taken soon after an extreme event as affected families require immediate efforts with specific responses, and there is very limited time to conduct any detailed socio-economic, risk or environmental assessments (see **Appendix 5** for the ODRP project timeline).

As noted in the Diagnostic Report as well, the compensatory mechanisms and amounts in the disaster risk context are a State prerogative as their moral responsibility (*ex-gratia*). Development projects are usually designed following a particular framework with a mid-



to-longer-term perspective to enable the overall development outcome, but a Disaster Risk Reduction (DRR) project—particularly one undertaken after an extreme event has occurred—could be a short, medium or long-term intervention. There are also some post-disaster projects which aim to reduce long-term vulnerabilities to these recurring events such as upgradation of storm water drains, providing critical infrastructure, building embankments, and ‘moving people out of harm’s way’. The emerging question then is how, when and by who could preparatory actions be taken and assessments conducted. Although the outcomes of both perspectives is to improve the overall development of the people, it is because of these fundamental differences between the two contexts that the approaches for them need to be different. The question that presents itself then is—what can be learnt from development context projects for those undertaken post disasters for risk reduction such that the overall outcomes of development are still achieved?

If the vacated land is put to an alternate use, other than environmental uses, the costs of relocation and upgradation for this new use seem unjustifiable vis-a-vis in-situ upgradation. While people are being relocated to new government sites that may have had other agricultural or entirely different functions to begin with, the older inhabited sites in many cases have undergone changes of uses. In New Golabanda in Ganjam or Sevanagar in Vizag, the entire neighbourhood is being relocated (with no exceptions) and the land is being traded with the military base nearby or being used by the railways respectively. Once the land is known to be exposed to risks and is being vacated, should it still be considered for alternate uses? If yes, then why and for what uses? If structural measures are considered for reducing risks in this location, then why are they not considered before moving people? What are the economic costs and benefits of moving people and using these lands, versus keeping them there and upgrading the current status of their physical and social infrastructure? Is the new location acceptable to people and is it safe with respect to all other socio-economic requirements for a dignified well-being? Many of these questions will be dealt with during the Risk Assessment phase of the research.

In case of ODRP Ganjam, people have been allowed to keep their original lands and houses which they owned, and in many cases family members have continued living there to retain a connection. While the relocated residents are required to live in the new sites and cannot rent out their lands and houses in the older sites, there is no regulation for the use of the older sites. In cases such as Ramayapalli and Lakshmipur, the distance between the old and new sites is so large that many are choosing to live in the old sites with one member going to the

new site (on and off) or only to sleep at night. This approach would have been acceptable to residents as it supports their wealth accumulation strategy, but it is yet to be seen if these older sites continue to remain at risk. Thus, the risk reduction outcome in these cases is not completely achieved despite the provision of new and safe houses.

Alternatives to relocation are not assessed fully. Particularly in urban areas, where the inner-city land is priced very high, alternatives to relocation are not considered as such, particularly when the land is occupied by people living in ‘slums’ or do not have land rights. In many cases, lack of ‘tenability’ is used as a pretext for moving people to peripheral areas (e.g., Sevanagar), without sufficient assessments of social, economic and environmental costs and benefits to the households in question or the city at large.

Multi-scalar institutional designs and sequencing of processes can significantly affect the levels of participation and thereby the outcomes of the intervention. In the case of ODRP, it was at the behest of the Odisha State Government that the Department of Economic Affairs made a request to the World Bank and funds were received for the project. To implement the project, the Odisha State Disaster Management Authority (OSDMA) was selected (along with the Department of Revenue which it is a subsidiary of) and they anchored the delivery of housing and allocation of land. Since DRR was a primary agenda, it was achieved with informed experiences from the World Bank’s past projects (see Appendix 1) as well as those of Gram Vikas, a local NGO that was brought in as a socio-technical partner. Affected people and villages were first identified, following which suitable land was found in agreement with the village development committees. But in the context of Vizag, the development agencies took the lead on delivering disaster resilient housing. The State Housing Board received funds (private and public) to build housing for the cyclone-affected families and land was allotted by the State Department of Revenue. Housing was constructed well before the district authorities started their beneficiary identification. This resulted in a situation where the beneficiaries could not participate in the decision-making process. The state-level disaster management authorities as well as local NGOs were also not part of the picture. What can we learn from the Odisha case then while re-imagining the designing of such projects in terms of identifying the institution that would be responsible for housing provision, and how can past experiences be built into the delivery of new projects?

Participation and sense of ownership once enabled can have longer-term benefits for the development. One clear distinction observed between the cases of Paradesipallyam and Sevanagar which were both relocated to Madhurvada at a distance of 20-plus km from the city, was the willingness of people (who were ‘beneficiaries’ of these houses) to live here. The provisions of social and physical infrastructure, distance from the original site, timing, etc., are all the same in these cases as both are part of the JnNURM housing relocation programme. However, while Paradesipallyam was inhabited mostly by people who were renters in the city previously and came to live here post an application process, Sevanagar inhabitants were evicted from railway lands inside the city and left with no choice but to move here. Eventually, people in Paradesipallyam formed a management committee to take care of open drains and other services and to get bus access improved, etc., whereas the people of Sevanagar took no ownership of maintaining the place, and with time, the increasing health hazards, accidental deaths, crime rate, education drop outs and other issues became big concerns. While there may be other reasons for these differential outcomes, the level and sense of ownership certainly has implications which need to be considered in such relocation scenarios.

In many cases, the State has also attempted preemptive actions to relocate neighbourhoods that face small but regular hazards (floods, disease exposure, etc.). Since these are not perceived as major difficulties by residents, however, they oppose such actions, and these relocations end up becoming unwanted evictions. It is clear therefore that preventive action may even be dangerous. Moving people out of harm’s way is often used (particularly in India) as a pretext to evict residents when the latter do not perceive the risk as being high or consider themselves capable of coping with it. This can lead to long-term burdens as seen in the case of Sevanagar. People’s participation and ownership, therefore, is a necessity for the successful outcome of any intervention by the State.

Inclusion and exclusion processes can create greater inequities within the existing social structures. Most of the housing schemes meant to rehabilitate disaster-affected families are often selective about beneficiary identification. In most cases, the criteria is set during assessments based on which these identifications are made. The assessments are conducted by different teams comprising various government officials with differing skills and expertise (Mandal Revenue Officers, Palli Sabha members, Ward Members, officers of line departments, officers from neighbouring districts, etc.) To keep the assessments as objective as possible so that there are no discrepancies across assessment teams, the criteria are also very objective. Such objective

criteria can have problems/limitations of their own. The criteria adopted in this context often include:

- *Proof of residence in the state/land title/ownership proof:* Not everyone has these documents to prove residence, or they may have lost them during the disaster itself. Furthermore renters, may have been living in a place for a long time without having any proof of residence, and may not have an alternate place to stay at either.
- *Proof of identity:* With populations having limited education, often people are unable to secure identity proof, although this is now changing, and most people have a voter ID or other forms of government identification (although migrant population may still be an exception to this).
- *Housing Damage levels:* **Fully and severely** damaged structures are those where both the walls and roofs are damaged and are not habitable while **partially** damaged structures are those where either a small portion of the roof or the wall is damaged and can be repaired.’ House damage is taken as a proxy for all damages and does not include the loss of other productive or non-productive assets, loss to livelihood days, etc.; this could exclude many needy people.

Additional criteria added in the ODRP identification process:

- Houses located within 5km from High Tide Line (HTL) in target districts (in the case of ODRP): This is from a preventive perspective as well, so that exposed people are given priority first.
- Non-beneficiaries in previous government schemes (IAY, etc.): Even if previous inclusions in rural housing schemes may not have been sufficient to build any housing, those who are beneficiaries from before are excluded from beneficiary lists. However, now under ODRP exceptions are being made if people are willing to return the funds secured previously.
- Vulnerable to hydro-meteorological hazards or living on untenable lands: This criterion was added in ODRP assessments, and offered some subjectivity to the assessing teams.
- Preference to women-headed HHs, disabled, SC/STs, BPL, and senior citizen headed HHs: This was another instance of expanding the beneficiary criteria under the ODRP, to have more equitable and inclusive outcomes.

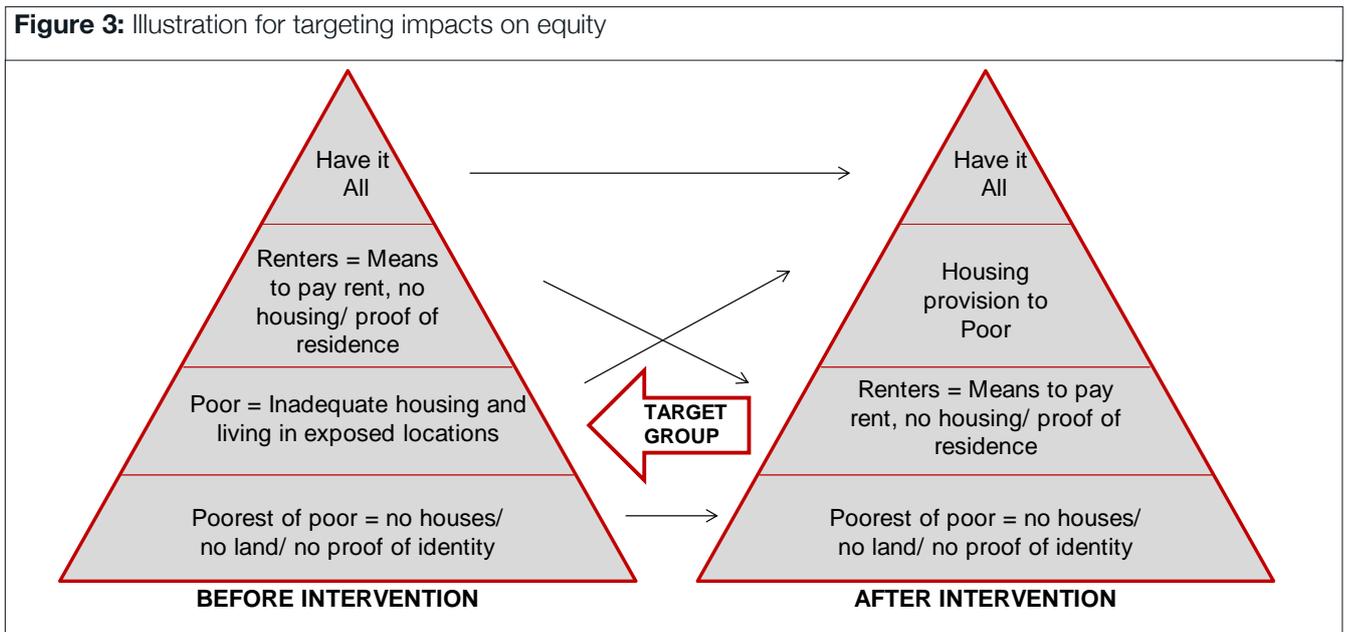
All the same, these objective criteria could often lead to the exclusion of many others in need belonging to the same community who have been equally affected (or sometimes even more affected). The following simplified illustration attempts to explain how this might happen.

Assume that before the intervention takes place, there are four kinds of people in a neighbourhood: The poorest of the poor with no residence proof, no land, and often no identity; the poor with inadequate housing; renters with no proof of residence and the affluent. But since the beneficiary identification criteria are such that only the poor with inadequate housing are allotted new housing, the poorest of the poor and the renters are left out of upgradation. The question that arises then is are we creating greater inequities in society by excluding only some people? While lives for some stand improved, are some also left worse-off?

Universal housing allocation is neither a solution not implementable. First, it might be worthwhile

But the provision of rice or compensation is very different from providing housing. Currently the selection of affected families is a corrective approach for risk reduction, but if some people have been affected in a neighbourhood it may mean that the location itself is at risk, and in the long term may need some upgradation. Notionally, if all the people in one neighbourhood were to be resettled together, it might have a positive impact vis-a-vis the social continuity of these settlements but this is easier said than done. Even in one neighbourhood not everyone is equally able— economically, politically and socially—and not everyone would want these provisions. With limited funds and other resources (land, etc.) on hand, it is not always possible to make such commitments. Besides, those who have not been affected at the time of the rehabilitation may not want to participate in these interventions. They may still be at risk in the future due to increasing intensities and frequencies of climate hazards, but remain unaware of this and hence decline to participate. What is it that these interventions can do now, so that even the non-beneficiaries could

Figure 3: Illustration for targeting impacts on equity



to examine if universal access could be considered as an approach for some such programmes as opposed to targeting. This has also been a great debate in the matter of the public distribution system of food in India. Universal access could indeed reduce the errors of excluding the ones in need (type 1 error) and the costs of targeting itself could actually be more than the costs of including ones not in need (type 2 error). This was observed during the Odisha relief distribution after Cyclone Phailin, when Rs 500 and 50kg rice were given to everyone, irrespective of whether they were affected or poor. Every household we spoke to received this one-time-relief, although in many cases people self-selected themselves out, based on their needs, price of their time and convenience.

get some risk reduction benefits for safeguarding their future as a preventive approach to risk reduction?

Proximity or provision of public transport is not the same as access. The outcomes of resettlements are seen to be different based on the distance of the original settlement from the new sites. And these differ further in rural (up to 2km) versus urban areas (up to 5km). Further investigation yields that outcomes are based on the connections people have with the original location—for their workplaces, schools, health facilities, temples, etc.—and as long as they are able to reproduce these connections, relocations are more acceptable to them. In rural areas, people are still dependent on walking, and some men use bicycles, but are habituated to taking buses for

long-distance commutes. Paying for a bus commute on a regular basis is not habitual. Even if such transport options were provided, it would still be an additional burden that they may not want to take on. These relocation sites in rural areas should ideally be within a walking distance of 1–2 km.

In urban areas, however, people are used to travelling on buses and public transport over short distances. When asked how far they would be willing to go, most people said they would be fine with relocation as long as it was within 3–5km. But it is also in the urban areas that relocation sites (in Vizag particularly) are located very far (20+ km from original sites) from the city. So even if a bus service were provided (which in many cases is not sufficiently frequent), it may be too expensive for most people, or not accessible due to their young or old ages or disability or cultural or safety concerns. The question then is whether the provision of transportation services is enough of an answer to the problem of access. Are other alternatives to moving people far, or not moving them at all considered at the time of decisions? In-situ development was provided until mid-2000s, after which

housing to everyone, and in Vizag cyclone-resilient housing is currently worth nearly Rs 2.25 lakh per unit. The stated reasons for the last two being high is the inclusion of disaster-resilient construction technologies and specifications that escalate costs. In scenarios where people are being excluded from one scheme because of their participation in other schemes earlier, they are left demotivated as the support received in the past might not have been sufficient. In many cases (e.g., ODRP in Odisha), people have agreed to return the money they had received previously (under IAY) in order to become part of new housing schemes. One might also ask that why are the buildings not also made disaster resilient in development housing (in many cases in the similar exposed locations as other disaster-resilient housing e.g. prefabricated cyclone shelters built next to regular framed structures for JnNURM housing in Madhurvada in Vizag)? How are these prices arrived at? Are they really sufficient to construct an adequate and decent house? Are these actual costs the same across different conditions and contexts (rural vs. urban, big city vs. small town, etc.), and if not, are there reasons for price differentiation?

Sl. No	Instalment	Condition	Amount (INR)
1	First	On signing of agreement for construction	20,000/-
2	Second	Construction up to plinth level	50,000/-
3	Third	Construction up to roof level	100,000/-
4	Fourth	Casting of the roof	50,000/-
5	Fifth	After removal of centring	50,000/-
6	Sixth	After completion of the house in all respect	30,000/-
Total			3,00,000/-

most programmes started provided peripheral housing (except Rajiv Awaas Yojna that prioritised in-situ). If value of land is the concern in providing in-situ housing, the discussion goes back to the alternate use of land argument discussed above.

In many cases, despite having schools across the main highway where the settlement is located, it is still very difficult for families and children to cross over and access the school. Safety is a big concern, and so proximity does not confirm access.

Different costs of on-going housing schemes present themselves as disincentives to participate in one over the other. There have been many housing schemes in the last few years, often running simultaneously within the same geographies, but the per house spending set on each is very different. While IAY provides Rs 75,000 nationally, JnNURM constructs houses worth Rs 1.25–1.75 lakh. ODRP decided to build houses worth Rs 3 lakh, in order to provide dignified

One size doesn't fit all. Even within one programme, the budget may not be sufficient for all. In ODRP, Rs 3 Lakh has been disbursed in the above tranches:

Another Rs 12, 500 is disbursed before roof casting for the toilet construction, as part of the Swachh Bharat Abhiyan (National Clean India Mission). While people in the completed sites said that this sum was sufficient, most of the houses were contractor-built, where the sum to be paid was fixed and built houses were delivered en masse. In many such cases, quality is seen to have been compromised. Also, while the sum that was disbursed was considered adequate for the early sites that started construction (within one year of the project initiation), over a period of time, as costs of labour, material and transport have increased, many of the currently under-construction site owners are finding this sum insufficient.

Besides, residents are receiving only Rs 20,000 to build up to the plinth level. In many cases where the ground levelling is such that the plinth is higher than in other

cases, or on sites where the location is very close to the coast and people are advised to build higher plinths to avoid storm surge, this amount is not sufficient. In many cases, people end up taking loans for constructing these plinths, and when the next tranche of money is received that is used to pay off these loans with an addition of 3 per cent monthly interest. This results in people taking more loans to build and the cycle continues. After the entire construction is completed (if at all), therefore, many are left with loans to repay.

While people are being encouraged to build additional rooms, or access to the roof, etc., if they have bigger families or have economic needs for these spaces, most people do not have the resources to do so. Many mentioned that some additional low interest loans would have been useful.

People perceive risks differently from the state and each acts based on their knowledge and perception of these risks as well as their abilities to respond to them. Individuals perceive risks differently from the State. Even within populations/sites, different people may perceive risks differently based on who they are, what they have, whom they can approach, etc. This informs each of their actions towards risk reductions, and thereby their priorities. Those who stay close to the coastal areas have learnt to deal with climatic hazards and onsets of cyclones and flooding but for them to have a secure livelihood and access to other services is a much bigger risk. The State is seen as inactive if no action is taken to safeguard people from such extreme events, and so the State tends to take action in order to not be perceived as such. In the process, the State often ends up creating more challenges for the people.

How can a bridge be built between these differential understandings of risks? How can the State be made more aware of context-specific dependencies and risks, and people made more aware of the real hazard risks they are exposed to, so that a mutually agreeable outcome can be achieved?

Being exposed to some serious hazards almost every year (or recent memories of them) can change people's perceptions and reduce their abilities to deal with these hazards. In the case of Odisha where people faced a super cyclone in 1999 and 2013, and feared the impacts of Hud-Hud also in 2014 even though it missed Odisha eventually, people have become superstitious about the 10th month of the year. When we visited in October, we heard rumours about another cyclone (given names like 'queen' and 'dolphin') from the people, although there was no warning issued formally. Many people had already started leaving their homes to go and stay with relatives in safer locations. Many even said that the government was giving free train tickets to help evacuate people. None of this was borne out, however. In the

same month, the state decided to conduct a tsunami drill and sent out messages to everyone on their phones in English (which most people could not read). This strengthened people's fears further; the people of the village of Markandi organised a large ceremony to appease the sea gods.

Indeed, how could communication be improved between the state and the people? Can better timing of certain communications change the outcome and urgency? How can data be generated, analysed and distributed such that everyone understands risks the same way?

Implementation and its Challenges

While decision-making processes drive the implementation design, there are other challenges faced for which adequate flexibility needs to be built into the design of such interventions.

Operational challenges

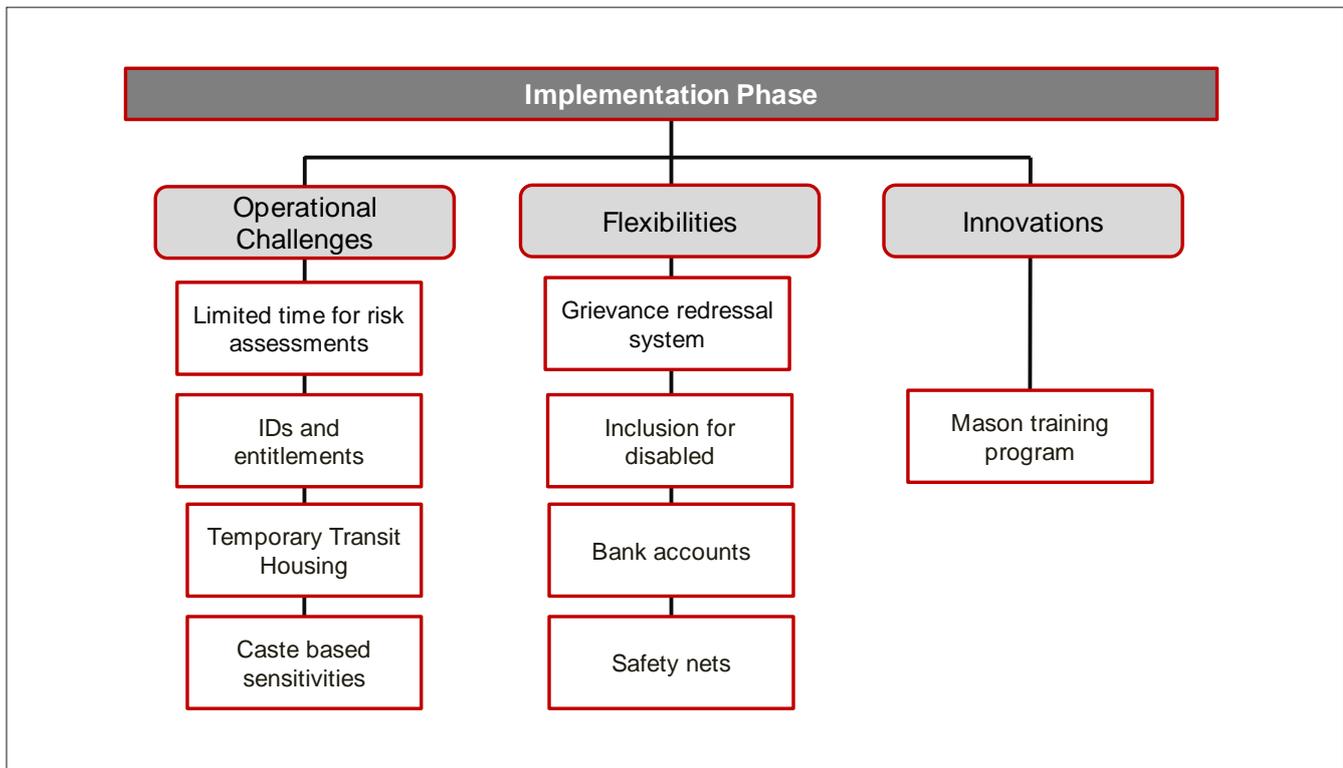
In post-disaster intervention scenarios, it is difficult to conduct detailed risk assessments due to lack of time available, which makes it pertinent to conduct these in advance for potentially exposed locations. Beneficiary identification based on IDs could be misleading, and leads to both Type 1 and Type 2 errors. Provision of temporary transit housing needs to be made part of the housing schemes, including those that involve in-situ housing, for greater success of the intervention. Transferring money to existing beneficiary bank accounts may not be possible as they have lower transfer limits. Either this limit should be made flexible, or time taken for opening new accounts considered at the time of planning.

Flexibilities

Caste-based or disability issues are faced very often, and there need to be community mobilisers having sufficient autonomy working closely with the target settlements to be able to identify and address these as they come up on case-by-case basis. A multi-stage grievance redressal system needs to be in place in urban areas that is accessible to one and all to correct for any excluded households that have been disadvantaged because of their lack of political powers.

Innovations

Innovative interventions such as the mason training programme could reduce the challenges of scarcity during large-scale interventions, but their impacts on long-term economic diversification and other social outcomes for women are still unknown. These are discussed further in greater details ahead



It is difficult to conduct detailed risk assessments after the hazard strikes, and thus, makes it pertinent to conduct these in advance. In India, usually, it is only after a disaster occurs that the Centre or a state initiates an action-based project using different sources of funds (National or State Disaster Response Funds, or those received from international donors/lenders, multi/bi-lateral, private or high income individuals). This is soon followed by a brief 'Rapid Damage Needs Assessment'. While it is made as rigorous as possible, the focus is limited due to time constraints, and it is impossible to deal with many subjective issues (see Appendix 5 for details on the ODRP Rapid Damage Needs Assessment time frame of assessment and key findings). It is on this basis that decisions are taken on the nature of interventions, and relevant policies are drafted. Identification of implementing agencies and technical partners comes next and in many cases participation processes are also envisioned and enabled only after the stage of rapid assessment. One might ask if prospective assessments may be done before, in order to identify 'un-mitigatable' risks and vulnerabilities, and strategies with necessary steps and policies. Who could do it? 'Public Sector' could take the lead, but they may have limited capacities and mandates; partnering with local established NGOs and academic institutions; involving private-sector partners who may have a stake in the region's resilience (as seen in Surat where the private sector's motivation to invest in risk reduction was quite high); and people themselves by making them aware and extending ownership to them. How could it be done? Data collection in coordination with Census, NSSO, etc.; conducting regular studies and updation; and open/shared data management.

When should this be done? Long-term tracking post an extreme event to prepare for the next eventuality; and an overall-regional study in the context of hazard exposure irrespective of an event.

Reasons for the lack of identity cards could further lead to exclusion from entitlements and beneficiary identification needs to be substantiated with alternative reasons of selection. Beneficiary identification remains a particular challenge. As mentioned before, beneficiaries are often identified based on very objective criteria, and some of them involve people having certain identity cards. Apart from the fact that many people are not aware of the importance of these documents, they also do not consider picking them up at the time of evacuation and often lose them during these disasters. It may then take several days for them to get a new ID issued by which time they would have lost the chance of being identified for any compensation.

One ID that is often used as an identifier is the Below Poverty Line (BPL) card. The poverty line itself is a contentious statistic across the country; in addition, however, there are several other challenges in getting a card even if one is needy. Both Type 1 (people who should get but don't) and Type 2 errors (people who shouldn't get but do) occur in the allocation of these cards. This has been borne out by what happened in Markandi village. Predominantly consisting of thatched roof houses it caught fire in 1997. Many people took loans at that time to rebuild their houses using asbestos sheets but again lost what they had rebuilt in the 1999 super cyclone, leaving them burdened by more loans. Those

who hadn't taken loans earlier took loans this time to build parts of their houses using concrete slabs to avoid any such disturbances in the future. Since then however, their names have been taken off from the BPL list (roof quality is a criterion in BPL selection). Thus when the 2013 cyclone struck, even though they may still have been repaying 10-year-old loans, they were not entitled to get new houses since their names were not on the BPL list anymore. There are many such cases where self-investment is becoming a disincentive in our system. Using the proxy of a katcha roof is clearly an insufficient indicator of poverty and need. In such scenarios, how can verification be improved for beneficiary identification such that those who were excluded from getting BPL cards do not lose out on further entitlements?

But the state has its own limitations as well. States are still dealing with leakages within such housing schemes, where people who do not need such allocations are able to get them through unfair means or by using incorrect identities⁴. Andhra Pradesh is currently building a system for a holistic application process for housing schemes. This will involve linking the Adhaar card, ration cards, property tax information, and BPL status of people, etc. This would make it easy to monitor anyone who is not eligible for a house (if they have received a house before, or if they already own a house, or if their family member owns a house, etc.) Those who have been identified as people affected after the cyclone will be eligible for the housing made for cyclone-affected families. While this system may help minimise the Type 2 error, what about the Type 1 error, where the needy are still getting left out?

Provision of temporary transit housing needs to be made part of the housing schemes, including those that involve in-situ housing, for greater success of the intervention. Despite identifying people who have lost their houses in the disaster and offering them newly constructed housing, provision of temporary housing is still a big challenge. In cases where in-situ development is planned, e.g. in Sonia Gandhi Nagar, people still need to find alternate locations to stay in until their promised homes are completed. But the insecurity of being excluded compels them to stay as close as possible to the construction sites leaving them exposed to other physical hazards. These 'temporary' tenements often give rise to more informal settlements with new people coming to live there as well. Such a situation could be avoided if transit housing were made part of the project and removed soon after the allotments are done.

Currently however, the funding lines (central or state housing schemes) have no such mandate.

In many cases people are also choosing to rent neighbouring houses so that they can continue with their original livelihoods, but not all are able to take the additional financial burden of a rent. So they move to close relatives' homes, and while that could affect their livelihoods and other social services, it could also cause more far-reaching social problems between families. In ODRP now, some steps are being taken to support people with rents and shifting allowances up to Rs 12,000. But in all national and state scheme-related resettlements, temporary housing needs to become an important consideration.

There is still a lack of caste sensitivity at the time of beneficiary identification, and this is leading to high risks for some relocated households. Social clustering, particularly caste, is deeply ingrained in our country—both urban and rural—and has far-reaching impact on the outcomes of R&R interventions. The consequent reorganisation of ingrained systems of spatial distinction need to be understood well before such interventions are initiated. In rural Odisha for instance, people of many castes co-habit in these villages, but they have their own sub-communities which act as social binders and economic networks. At the time of relocation, there have been instances where one family belonging to a lower caste has become socially secluded because it has moved along with other higher-caste families. These lone families have had to face serious challenges particularly during emergencies when there is no one willing to help or touch them. Higher-caste families are further wary of housing schemes like Rajiv Awaas Yojna and JnNURM where they have to share common spaces with people from lower castes. While there is some imagination of caste-based allocations within the Rajiv Awaas Yojna for instance, not being aware of this, beneficiaries remain wary of outcomes.

How can caste sensitivities be incorporated at the time of beneficiary identification, and how can people be made aware of the considerations so that they are more comfortable? The participation of the community during planning and decision-making during allocation of housing units could be one way of managing this. For example, in Markandi, house allocations were carried out as per the community's suggestions on matters of caste and professional segregation. Three sites were identified for this one village according to the needs set out by them. It is yet to be seen if the character of these new sites will be different from the original one where all the different castes lived together. But perhaps, as long as it takes shape as per the choice of the communities, the new site will eventually engender a sense of ownership among the residents which will further help them resolve any concerns that might arise.

In Paradesipallyam and Jalaripeta, it was noticed that people have strong community dependence. The auto

4 In reference to the interview with the District Collector of Vizag

unions and watch manufacturers' unions got together and applied for housing in Paradesipallyam and were able to form a committee in the new location which looked after the long-term maintenance of systems and services. Furthermore, people in Jalaripeta have used their political connections and powers to resist many interventions in the past.

A multi-stage grievance redressal system needs to be in place in urban areas that is accessible to one and all to correct for any excluded households that have been disadvantaged because of their lack of political powers.

There were instances where families felt that they were left out for reasons other than not meeting the selection criteria. There are undertones of class and caste politics that may give some people more than others the voice to gain access or raise concerns. Some cases were found—although as exceptions—where IAY funding had been received previously, and even without returning the amount received earlier, the family became a beneficiary under ODRP in rural Ganjam, while some others in the same village did not receive anything despite severe damages during the cyclone. Although the four-stage grievance redressal system is set up for rural cases in Ganjam with verification systems in place, no such system is in place for the urban resettlement cases. Urban areas due to their heterogeneity also offer less space for people to unite with one voice, and they are often left worse off than their rural counterparts (Canal Street and Sevanagar cases vs. New Golabanda or Ramayapalli and Lakshmipur). This is particularly seen as a problem in cases where people have been evicted 'out of harm's way' and there is no place to lodge a complaint apart from the judiciary system, which can take several years to come to any conclusion and by which time the harm is already done. People try to go to their elected council members, but many also raised issues about how even these are politically biased in favour of a certain lot, and that the voices of others are left unheard on a regular basis.

Many people were not aware of their entitlements and rights to various national social schemes such as widow pensions, old age pensions, insurance schemes, livelihood loan schemes, etc. (although it was difficult to assess the reasons for such disparity in power and political agency based on location, caste, gender, income, etc.). Often, even if they were aware of them, they were not sure whom to approach to avail of them, and sometimes even if they did apply despite all these hurdles, they ended up not receiving the benefits. How can people be made more aware of their entitlements? How can access to entitlements be improved and made transparent? This is not entirely difficult as has been seen with

the implementation of the Prime Minister's zero-balance account scheme. Most of the households surveyed in both states (urban and rural) mentioned had these zero-balance bank accounts. Could similar action be taken, in partnership with the private sector, media, academia and NGOs, to make people regularly aware of their entitlements and thereby improve their social safety nets?

Most housing provisions are not accessible for the physically challenged.

The act of accessing systems and services (common toilets, public water pipes, public transport to local markets, etc.) also makes them dependent on others for their daily needs. In many cases, state governments have offered wheelchairs to those who cannot walk after disasters. Other factors such as long distances, quality of roads, habitations located on the seashore, etc. make these entitlements impractical and unusable. Even during emergency evacuations, the process could be extremely cruel to disabled people with no distinctions being made between their needs and those of physically able people.

Our rural and urban areas are least serviced for differently-abled people. At the UN Economic and Social Commission for Asia and Pacific (ESCAP) meeting in 1992, India was one of the signatories which later paved the way for 'The Persons with Disabilities Act 1995'. This helped India discuss disability from a rights-based perspective, which was till then being discussed from a largesse-based (generous gift) perspective. Steps are now being taken by governments and banks to give preferences to these vulnerable people by providing housing to them on a priority basis. Yet, the steps taken are currently not sufficient and may have side effects of other kinds. What then, given the current constraints, can the governments do?

Mental disability is yet another challenge and cannot be conflated with physical disability. This is understood even less, despite the fact that there are a large number of people living with such challenges, or with a mentally challenged family member. In R&R interventions, it has been observed that priority may be accorded to those who are physically challenged, but not to those who are mentally challenged. Cases of mental disability are also much more difficult to identify as there are often no objective and universal characteristics to tick off on a form. What can be done in the verification process so that such households may be identified and included?

Having bank accounts does not ensure financial security at the time of disasters and most of the existing accounts are not useful for large transfers as may be required by housing schemes. All

households we spoke with⁵ (158) in urban as well as rural areas claimed to have bank accounts, which goes against popular belief. Many opened them as it was required for them to have bank accounts for any scheme disbursement from the government, or to receive money for house construction. There are also instances where even though people have opened these zero-balance bank accounts under the National scheme, they are still not using them due to lack of trust. Many do not have much to save in the first place and whatever little they do, they keep at home for any emergency needs. So having access to bank accounts itself may not mean better financial security.

The households studied were observed making other kinds of investments also. Due to a lack of alternatives or allured by the expectation of good returns, many people are still participating in private chit funds to save money, despite being aware of their history of frauds. Many women we spoke to are part of more informal self-help groups (SHGs) or social kitty systems, where 20–25 women get together and put Rs10,000–20,000 per person into one account. They can use these funds based on their needs and return the amount with interest over a fixed period of time. The system works primarily on the basis of the social trust that people have in each other. Many people who have asset-based livelihoods such as grocery stores, etc., are also seen investing in buying more assets for their shops, instead of retaining liquidity. Many people claimed to have some form of life insurance but none seemed to have any access or knowledge about non-life insurance products, especially for their work-related assets or housing. This is also because there are not too many insurance products available in the market, particularly for those living or working in the informal sector.

In disaster scenarios, where people have limited liquid assets or financial security, they are left with no other option but taking loans at very high rates. What can be done to improve people's knowledge about the need to save, especially those who are exposed to external hazards? What can be done to improve access to non-life insurance and multi-hazard insurance products for housing and assets for people who are particularly vulnerable and have the least financial security to help themselves recover in case of an extreme event? Can there be low-interest government loans that could support people in time of need, instead of the fixed but insufficient amount of compensation?

⁵ Another primary research insight we had regarding questions related to savings posed to households was about how that question was asked. When we asked people whether they saved or not, everyone responded with a 'no', or that nothing is left to save ever. But once we replaced this question with 'how do you save', some started stating the ways in which they did, if they did.

Other formal and informal safety nets can be strengthened to improve peoples' resilience and ability to cope with losses during hazards, thereby reducing the burden on the state for providing for housing losses. People still seem to trust their social knowledge more than formal knowledge, particularly when it comes to asking for help. Many women we spoke to who work as household help in urban areas also mentioned how their employers offered long-term help in monetary and non-monetary ways. Many received loans from their employers with zero interest rates. On a regular basis as well, they depend on their employer's help for health-related support. They get paid leave, which is uncommon even in many formal jobs. Many people who work in other people's shops, etc., also receive regular subsidies on food supplies and other needs. Many people took help from their neighbours, friends and relatives during and after the cyclone, but these cases were rarer in the urban areas than the rural potentially because of the large distances involved or the lack of adequate resources to share.

There are also other institutionally supported yet informal safety nets. In the case of Khaja Sahi, after the cyclone flattened the entire neighbourhood, it was the local Muslim Trust that helped the residents rebuild again without having to bear the attendant cost. The Tata Group of Industries, as part of its CSR activity, also sends medical vans to the areas where their factories are located in Ganjam, and many people mentioned how their health costs have gone down dramatically since the vans started visiting. These informal safety nets definitely seem to be offering modes of resilience in a way many formal means are limited at doing. What can be done to enhance these safety nets and people's access to them, albeit informal?

Anganwadis and registered self-help groups (SHGs) are formal institutions put in place to provide support to people in different ways. Anganwadis were started by the Indian government in 1975 as part of the Integrated Child Development Services programme to combat child hunger and malnutrition. It is part of the Indian public health care system. Basic health care activities include contraceptive counselling and supply, nutrition education and supplementation, as well as pre-school activities. Many of them also train people in vocational skills such as stitching and product-making. But many people we spoke to, particularly in the urban areas, complained about the services and quality of their anganwadis. They do not trust the quality of food being given to their children and in some cases the anganwadi members are not accessible so their impact and importance seems to be limited. In some cases the anganwadis were indeed seen to be very active, particularly with maternity nutritional support and pre-school activities. But there is clearly a lack of consistency across different locations and anganwadis. Anganwadi members face many chal-

allenges in delivering their services. For instance, even if they are able to train people in making goods (candles, agarbattis, papads, pickles, etc.) they do not have the capacity to market all the goods made by the residents, and so are not able to pay the latter as promised. This creates an atmosphere of mistrust towards the anganwadis, which might even be accused of corruption.

Could better connected markets be created for such products? Can the quality of these trainings be improved such that the market creates itself? Improved trust in anganwadis could in turn improve greater local resilience as they could offer great services during and after disasters in helping people recover.

SHGs on the other hand are meant to provide more financial support by using a saving pooling system. But in most instances, people are still involved in unregistered social kitty systems and are therefore not able to access other benefits like bank loans (such as the National Development for Agriculture and Rural Development (NABARD) scheme). Can these informal SHGs be brought under the formal system? What are the inherent barriers and are there benefits of keeping SHGs informal that would be lost by formalising them?

Innovative interventions such as the mason training programme could reduce the challenges of scarcity during large-scale interventions, but their impacts on long-term economic diversification and other social outcomes for women are still unknown. With large reconstruction projects right after a massive disaster, there is often a shortage of material and labour. Shortages are managed by importing from neighbouring regions, but price escalation cannot always be avoided. This was envisioned at the outset in the ODRP project in Ganjam, where 16,000 houses were planned to be constructed with high-quality construction details. The challenge was planned for in advance by bringing in a local NGO Gram Vikas which has been conducting mason trainings in these areas for a few years. They started training the beneficiaries to build their own and their neighbours' houses as well. It has been observed in many cases that people, including women, who were earlier employed as unskilled labour, are now able to earn a lot more. But a number of challenges were also noted.

According to the community mobilisers, the trainings attracted people more for the stipend it paid and not necessarily the training itself, so iteration rates were high. Even those who attended did not think that 30 days of training were enough for anyone to become a master mason, and many beneficiaries from the same village were not comfortable getting these newly trained masons to build their houses (although this was mitigated by sending trainees to other villages). It was observed that many men and women who were 60 years of age

and above and hence not eligible for the training, were using incorrect age proofs to get into the programme; they were advised by the mobilisers to not join the training as it could be a health hazard for them.

Many people who received training under this programme are seen to be migrating now for work. They are earning Rs 700 per day in bigger cities versus Rs 500 per day in the relocation sites. However, the opposite trend has also been observed, i.e., the training leading to reduced migration in cases where unskilled labour migrants from the villages have returned to get trained. Since a lot of work is generated here, their wish to work and live in their own village is potentially being satisfied. Some women, who were earlier unskilled labour and earning only Rs 100, are earning considerably more now. Most women are continuing to live here and not migrating, barring cases where they were already migrating with their husbands and families before the event and already working as unskilled labour.

The questions that remain unanswered are whether the vision of using the mason training programme to diversify people's incomes has been accomplished, and also if this training has been substantial to improve incomes in the long run. While many women have attended the programme, it is yet to be studied if earning post the training has improved their status and empowered them more than before.

Emergency shelters, particularly in urban areas, are not sufficiently equipped for the needs during disaster evacuations. With climate risks still being unlike tectonic risks, the advantage is that we can receive early warnings and take action immediately so that people are temporarily moved out of harm's way. In rural Odisha and Andhra Pradesh, there have been initiatives to build dedicated cyclone shelters that are designed to serve the purposes of providing safety to a significant number of people, along with provisions of food, water, etc. They are also designed to accommodate cultural considerations, of having separate spaces for men and women. But in the urban context with space being a large constraint, the construction of emergency shelters has not been achieved. In most cases, cities notify schools and other public buildings which are used in times of evacuation after a warning has been issued. But these spaces are also limited in their functionality for an emergency. They often do not have enough toilets for the number of people staying there and become unhygienic spaces exposing a large number of people to health hazards. They also do not have emergency health services especially for pregnant women. Many of them are not disabled-friendly and many people (disabled, but also older people or those physically hurt after the disaster) face severe challenges. What are the ways in which these spaces can be retrofitted such that there

is a proper plan ready to be enacted before a notice is issued?

Once resettled, long forgotten. Many people in the post-cyclone resettled colonies in urban areas (particularly Vizag) mentioned how they used to get aid after any severe event before they were relocated. Using their regular earnings they would manage to get back to normalcy quite quickly. But now that their regular everyday problems have increased after being relocated, no one has come to check on them even after the cyclone, potentially because of their distant location from the city. Are relief and aid measures following severe impacts making people dependent or resilient? Is the provision of housing enough to reduce people's risks? Are we leaving people even more dissatisfied after the provision of housing than they were before?

The above discussion merely provides some insights from the primary work in terms of new questions, but not all direct answers. There may not be any scope within this research to address all these emerging questions, but some of them will be dealt with in more detail in the risk assessment phase. For the rest, the authors invite greater discussion with a larger community to challenge existing norms and try to find practical solutions such that the outcomes of R&R interventions could be made more inclusive thus making it possible to accomplish the intended objective of reducing risks and improving people's lives.

Conclusion

Outcomes are defined by decision making & implementation processes.

The various decisions and the contexts in which these decisions are made have far-reaching impacts on the implementation as well as outcomes.

- Relocation almost always disturbs the balance of the existing neighbourhood, particularly if they have resided there for longer than 7-10 years, and the distances between the old and new locations are such that they disturb the existing locational dependencies (more than 1–2 km in rural areas, and more than 5–7 km in urban areas). If sufficient social and physical infrastructure is not provided, people do not relocate and continue staying in existing locations (e.g., Devinagar, Pudimadaka). In-situ housing and infrastructure upgradation is preferred by most households, but the conditions for risk reduction without reducing exposure need to be assessed. Also, the problem of transit housing persists after the loss of shelter post-disasters, lack of which could lead to extensions of informal settlements (e.g., Sonia Gandhi Nagar).
- Pre-emptive relocation is difficult to undertake, and is most likely to face resistance from the people. Other pre-emptive actions for reducing risk using planning instruments and building capacities to cope using risk-sharing mechanisms could be considered.
- Housing undertaken in a purely developmental context often ignores hazard risk-reduction as part of the mandate; however, although post-disaster housing developments may be addressing hazard exposure, they are often seen as creating other socio-economic risks (e.g., Devinagar, cyclone shelters being built in Madhurvada for fishermen in Vizag). Climate risks are understood even less, particularly in the long term, and new constructions built despite the exposure may have future risk implications (e.g., Markandi still built close to the coast).
- Top-down decisions of relocating people as a means to reduce their hazard risk, often without enabling their participation in the process, has led to resistance and cases of forced evictions. This has further led to a lack of a sense of ownership from the people, and long-term maintenance of these settlements suffers a great deal (e.g., Sevanagar vs. Paradesipallyam). Time taken between decisions, implementation and completion also affects the outcomes a great deal; when it is too quick, participation could become difficult (e.g., Devinagar vs. Markandi).
- There is a clear relationship between land ownership and the decisions to relocate or not, and this needs to be studied in greater detail in the next phase of risk assessments. Continuing to own the land inhabited before also affects the completion of the relocation (e.g., Devinagar).
- When the most dominant nature of livelihoods is independent of the distances (home-based industry, autorickshaw drivers, etc.) then relocation distances matter a lot lesser (e.g., Paradesipallyam) (although other social services still need to be made accessible).

Appendices

Appendix 1: World Bank Projects in India supporting Disaster Risk Resilience

Title	Region	Sectors	Budget (million USD)	Status	Approval Date
Andhra Pradesh Cyclone Emergency Reconstruction Project	Andhra Pradesh	Reconstruction and rehabilitation of services, infrastructure, cyclone shelters, housing repairs, technical assistance	210	Closed	4-Oct-90
Dam Safety Project	India	Flood protection and administrative support	153	Closed	14-May-91
Jharia Mine Fire Control Technical Assistance Project	Jharkhand	Mining and other extractive related disaster management support, Administration	12	Closed	17-Dec-92
Maharashtra Emergency Earthquake Rehabilitation Project	Maharashtra	Housing, Health, Education, Social Services, Vulnerability assessment and monitoring and administrative support	246	Closed	31-Mar-94
Andhra Pradesh Hazard Mitigation and Emergency Cyclone Recovery Project	Andhra Pradesh	Public Administrative support for preparedness and mitigation, Roads and highways, Irrigation and drainage, Power and other social services	150	Closed	6-May-97
Gujarat Emergency Earthquake Reconstruction Project	Gujarat	Housing construction, Roads and Highways, Irrigation and drainage and other social services	442.8	Closed	2-May-02
Emergency Tsunami Reconstruction Project	Tamil Nadu	Housing construction, Agriculture fishing and forestry, Social Services, Water, Sanitation and flood protection	465	Closed	3-May-05
Tsunami Disaster Recovery in India		Agriculture, fishing and forestry sector and other social services	2.5	Closed	2-Jun-06
Bihar Flood Management Information System Phase II	Bihar	Flood Protection	1.5	Closed	29-Apr-10
India National Cyclone Risk Mitigation Project (1)	Andhra Pradesh and Odisha	Infrastructure and Public Administration	255	Active	22-Jun-10
Dam Rehabilitation and Improvement Project	India	Irrigation and Drainage and Flood Protection, Public Administration support	350	Active	29-Jun-10
Bihar Kosi Flood Recovery Project	Bihar	Housing Reconstruction, Livelihood recovery, Infrastructure, Flood Protection and other social services	220	Active	9-Sep-10
Tamil Nadu and Puducherry Coastal Disaster Risk Reduction Project	Tamil Nadu	Housing Construction, Flood Protection, Animal Production, Other social services and Public Administration	236	Active	20-Jun-13

Uttarakhand Disaster Recovery Project	Uttarakhand	Infrastructure, Flood Protection, Housing reconstruction, Other social services and Public Administration	250	Active	25-Oct-13
Odisha Disaster Recovery Project	Odisha	Housing reconstruction, Public Administration, Infrastructure	153	Active	20-Feb-14
Uttarakhand rwss additional financing	Uttarakhand	Water and Sanitation, Flood Protection, Public Administration	24	Active	4-Mar-14
Uttarakhand Decentralized Watershed Development II Project	Uttarakhand	Irrigation and drainage, Forestry, Industry Marketing and trade, Agricultural research	121.2	Active	31-Mar-14
India: National Cyclone Risk Mitigation Project (I) Additional Financing	Andhra Pradesh and Odisha	Infrastructure and Public Administration	104	Active	8-Apr-14
2nd DPL to Support Inclusive Green Growth and Sust Devlp in HP	Himachal Pradesh	Irrigation and drainage, Pollution management, Energy, Water and Sanitation, Flood protection, Information and communication and other social services	100	Closed	16-May-14
Sustainable Livelihoods and Adaptation to Climate Change	India	Economic and Livelihood sectors	8	Active	9-Dec-14
National Cyclone Risk Mitigation Project-II	India	Flood Protection, Infrastructure and Public Administration	308.4	Active	28-May-15
Jhelum and Tawi Flood Recovery Project	Jammu and Kashmir	General transportation, Flood Protection, Health and Education, Public Administration	250	Active	2-Jun-15
Andhra Pradesh Disaster Recovery Project	Andhra Pradesh	Infrastructure, Energy, Water and Sanitation, Flood Protection, Livelihoods	250	Active	17-Jun-15
Bihar Kosi Basin Development Project	Bihar	General Water and Sanitation, Agriculture, fishing and forestry sector	250	Active	8-Dec-15

Source: World Bank Website as on 25 December 2015

ELEMENTS AT RISK			INDICATORS OF MEASUREMENT	SOURCES OF INFORMATION					POTENTIAL RESEARCH METHODS				
			<i>(Many of these need to be studied as changes between before and after the move)</i>	1. Secondary data	2. Site	3. Community	4. HH	5. Policy makers/ Implementers	A. HH Survey	B. Mapping	C. Personal Inter-views	D. Focus Group Discussions	E. Observations
Quality of Life and Political agency													
1		Access to public transportation											
		Access to primary, secondary and tertiary education											
		Access to public spaces											
		Access to public distribution system/ any other sources											
		Access to adequate health facilities											
		Access to entitlements											
B. Risks to the City													
1		Trends of urbanization	Migration / rural- urban linkages										
			Flow of resources										
			Growth pattern at community and city level										
			Work life distribution										
			Opportunity cost of land										
			Pressure on service provisions										
			Pressure on environment										
2		Labour markets / heterogeneity/ local economy											
3													
4													
5													

Appendix 3: Site Selection Methodology

Based on the typology of resettlement and relocation project as was defined in the diagnostic phase, project level characteristics are assessed for a select sites. Scores (0/1/2) are given to each site, based on the insight they are able to offer for the particular characteristic

Ganjam Odisha									
Project level Characteristics		Coverage Status	New Golabanda	Arjapalli	Markandi	Kumbidipa	Konaka	Ramayapalli + Lakshmipur	Berampalli
1	Type of Project ⁶		0	1	1	1	1	1	1
2	Type of Risk Management		2	1	1	1	1	1	1
3	Nature of Planning		0	0	1	0	1	0	0
4	Level of planned participation		0	0	2	1	1	0	0
5	Motivation/Nature of Hazard		2	1	1	1	1	1	1
6	Level of attribution of CC to hazard frequency and intensity		1	1	1	1	1	1	1
7	Primary Decision Maker		1	0	1	0	0	0	0
8	Distance between old and new locations		1	0	1	0	1	2	0
9	Time between decision and implementation		1	0	0	1	0	1	1
10	Time taken to complete the project		0	0	0	1	1	1	1
11	Age of the project (time since completion)		0	0	0	1	0	1	0
12	Size of the Project		2	1	1	0	0	0	0
13	Nature of dividing the population		0	2	1	1	1	2	1
14	Financing Sources		0	0	0	0	0	1	0
15	Type of land tenancy		0	0	0	0	0	0	0
16	Age of settlement (before the move)		0	0	0	0	0	0	0
17	Most dominant nature of livelihood options for HH		2	1	2	1	1	2	1
18	Level of Hazard Risk Exposure (based on past events)		0	1	0	0	1	0	0
19	Levels of social infrastructure distinguished by provider		0	1	0	0	0	1	0
20	Strength of social networking		1	0	1	1	0	1	0
21	Most dominant form of family structures		0	0	0	0	0	0	0
22	Use given to abandoned site		2	1	1	1	1	1	1

⁶ As defined for this research, resettlement is a major integrated, comprehensive movement of people and families which normally involves significant distance between the origin and new location. Resettlement involves not only new housing and services but also new social and economic relations, and new challenges such as access to work and social cohesion. Relocation, meanwhile, refers to short-distance, non-systematic movements of families or individuals from hazard-prone locations to nearby areas. Relocation therefore involves less upheaval in terms of access to work and social networks.

Ganjam Odisha									
Project level Characteristics		Coverage Status	New Golabanda	Arjapalli	Markandi	Kumbidipa	Konaka	Ramayapalli + Lakshmpur	Berampalli
23	Level of hazard exposure		1	1	1	0	1	0	0
24	Type of land tenancy		0	0	0	0	0	0	0
25	Level of planning and provisions (Good, medium, minimum, none)		0	0	0	1	0	1	0
26	Type of new Built - form		0	0	1	1	1	0	2
Score			16	12	17	14	14	18	11

Note: Colours red and green denote insights possibility of the particular characteristic using the identified cases, where red denotes 'not covered' and green denotes 'covered'. The idea is to cover as many characteristics as possible, using the least number of sites

Berhampur								
Project level Characteristics		Coverage Status	BHS	ROS	KHS	PPN	Lakshminagar	CST + 2
1	Type of Project		1	1	1	1	1	2
2	Type of Risk Management		1	1	1	1	1	1
3	Nature of Planning		0	0	1	1	0	0
4	Level of planned participation		0	0	0	0	0	0
5	Motivation/Nature of Hazard		1	1	2	2	1	1
6	Level of attribution of CC to hazard frequency and intensity		1	1	2	2	1	2
7	Primary Decision Maker		0	0	0	0	0	1
8	Distance between old and new locations		0	1	1	1	0	0
9	Time between decision and implementation		0	0	0	0	0	0
10	Time taken to complete the project		0	0	0	0	0	0
11	Age of the project (time since completion)		0	0	0	0	0	0
12	Size of the Project		1	1	1	1	1	1
13	Nature of dividing the population		2	2	0	0	0	0
14	Financing Sources		1	1	1	1	1	2
15	Type of land tenancy - original settlement		1	1	1	1	1	0
16	Age of settlement (before the move)		1	1	1	1	1	1
17	Most dominant nature of livelihood options for HH		1	1	1	1	1	2

Berhampur								
Project level Characteristics		Coverage Status	BHS	ROS	KHS	PPN	Lakshmi-nagar	CST + 2
18	Level of Hazard Risk Exposure (based on past events)		1	1	2	2	1	2
19	Levels of social infrastructure distinguished by provider		1	1	1	1	1	1
20	Strength of social networking		2	1	2	1	1	1
21	Most dominant form of family structures		1	1	1	1	1	1
22	Use given to abandoned site		0	0	0	0	0	0
23	Level of hazard exposure		1	1	2	2	1	1
24	Type of land tenancy - New		1	1	1	1	1	0
25	Level of planning and provisions (Good, medium, minimum, none)		1	1	1	1	1	1
26	Type of new Built - form		1	1	1	1	1	0
Score			20	20	24	23	17	20

Vizag Urban												
Project level Characteristics		Coverage Status	SEV	PAP	ASR	SGN	VMB	JAL	Sy.No. 25	Sy.No. 43	Sy.No. 413	Sy. No. 119
1	Type of Project		1	1	0	1	1	0	1	1	2	2
2	Type of Risk Management		1	1	0	1	1	0	1	1	1	1
3	Nature of Planning		1	1	0	1	1	0	1	1	1	1
4	Level of planned participation		1	2	0	1	1	2	1	0	0	0
5	Motivation/Nature of Hazard		1	1	0	1	1	2	1	0	1	1
6	Level of attribution of CC to hazard frequency and intensity		1	1	1	0	1	2	1	0	1	1
7	Primary Decision Maker		1	1	1	1	1	2	1	1	1	1
8	Distance between old and new locations		1	1	0	1	1	0	1	1	0	0
9	Time between decision and implementation		1	1	0	1	1	0	1	0	1	1
10	Time taken to complete the project		1	1	0	1	1	0	1	0	0	0
11	Age of the project (time since completion)		1	1	0	1	1	0	1	1	0	0
12	Size of the Project		1	1	1	1	2	0	1	1	1	1

Vizag Urban												
Project level Characteristics		Coverage Status	SEV	PAP	ASR	SGN	VMB	JAL	Sy.No. 25	Sy.No. 43	Sy.No. 413	Sy.No. 119
13	Nature of dividing the population		2	1	2	2	1	0	1	0	0	0
14	Financing Sources		1	1	1	1	1	0	1	1	2	2
15	Type of land tenancy - original settlement		1	0	2	1	0	2	0	0	0	0
16	Age of settlement (before the move)		1	1	2	1	1	2	1	0	0	0
17	Most dominant nature of livelihood options for HH		1	1	2	1	1	2	1	0	0	0
18	Level of Hazard Risk Exposure (based on past events)		1	1	2	1	1	2	1	0	0	0
19	Levels of social infrastructure distinguished by provider		1	1	1	1	1	2	1	1	1	1
20	Strength of social networking		1	2	2	2	1	2	1	0	0	0
21	Most dominant form of family structures		1	1	1	1	1	1	1	0	0	0
22	Use given to abandoned site		1	0	0	0	0	0	0	0	0	0
23	Level of hazard exposure		1	1	2	1	1	2	1	0	0	0
24	Type of land tenancy - New		1	1	1	1	1	0	1	0	0	0
25	Level of planning and provisions (Good, medium, minimum, none)		1	1	2	1	1	0	1	1	1	1
26	Type of new Built - form		1	1	1	1	1	0	1	1	1	1
Score			27	26	24	26	25	23	24	11	14	14

Project level Characteristics		Coverage Status	Bheemli	PUD
1	Type of Project		1	1
2	Type of Risk Management		1	1
3	Nature of Planning		1	1
4	Level of planned participation		0	0
5	Motivation/Nature of Hazard		1	1
6	Level of attribution of CC to hazard frequency and intensity		1	1
7	Primary Decision Maker		1	1

8	Distance between old and new locations		0	2
9	Time between decision and implementation		0	2
10	Time taken to complete the project		0	1
11	Age of the project (time since completion)		0	0
12	Size of the Project		1	1
13	Nature of dividing the population		1	1
14	Financing Sources		1	1
15	Type of land tenancy - original settlement		1	1
16	Age of settlement (before the move)		1	1
17	Most dominant nature of livelihood options for HH		1	1
18	Level of Hazard Risk Exposure (based on past events)		1	1
19	Levels of social infrastructure distinguished by provider		1	1
20	Strength of social networking		1	1
21	Most dominant form of family structures		1	1
22	Use given to abandoned site		0	0
23	Level of hazard exposure		1	1
24	Type of land tenancy - New		1	1
25	Level of planning and provisions (Good, medium, minimum, none)		1	1
26	Type of new Built - form		1	1
Score			20	25

Appendix 4: Sample Description by Type of Responders and Sites

Site	Ward #	Ward/Village (2011)		Site level		Sample Size - HH	Target HHs	Source
		Pop	HH	Pop	HH			
Odisha (Urban)								
Khaja Sahi	13	8987	1772	922	242	5	242	(BeMC, 2014a)
Pichipicha Nagar	4	11285	2303	807	167	5	167	
Ramnagar Odiya Sahi	28	13445	2395	387	102	15 ⁷	102	(BeMC, 2014b)
Bada Harijan Sahi	19	7526	1710	686	194	10	194	
CST	24	8833	1988			20	1988	(Census of India, 2011)
Odisha (Rural)								
Ramayapalli		190	45			22	23	Interview
Lakshmipur		690	157				138	Interview
Devi Nagar					41		41 ⁸	Interview
Markandi		3210	717			18	623	Interview
Andhra Pradesh (Urban)								
ASR Nagar	34	24265	6113	1112*	278	8	278	(GVMC, 2015b)
Jalaripeta	17	26262	6731			10 ⁹	300	(SARMA, 2015)
Paradesipalyam	5	43744	11400	3708*	927	12	480 ¹⁰	(GVMC, 2015a)
Sevanagar	4	27132	7082	3832*	958	16	763	(GVMC, 2015b)
Sonia Gandhi Nagar	34	24265	6113	2200*	550*	4	550	Primary Visit
Vambay Housing	5	43744	11400	14,400*	3600*	8	3600	Primary Visit
Andhra Pradesh (Rural)								
Pudimadaka		9912	2412			5 ¹¹	600	Interview

Source: Ward and Village level data - (Census of India, 2011)

7 The total sample may include families outside the site as the exact boundaries couldn't be identified

8 The 41 Households are a subset of Ramayapalli and Lakshmipur Villages and are relocated to Devinagar

9 Beneficiaries for the project are yet to be identified. Samples were selected from the families closer to the coast living in kutcha houses.

10 Out of 927 units, only 480 were occupied.

11 Beneficiaries for the project are yet to be identified. Samples were selected from the families closer to the coast living in kutcha houses.

*estimated at average HH size of 4 persons

Site	Type of Responder						Total (Urban)	Total (Rural)	Total
	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6			
	Non Beneficiaries	In-situ housing upgradation	In-process of relocation	Relocated	Identified for Infra-structure upgradation	Identified for relocation			
Khaja Sahi						5	5		5
Pichipicha Nagar						5	5		5
Ramnagar Odiya Sahi						15	15		15
Bada Harijan Sahi						10	10		10
Canal Street and Boarding Sahi					20		20		20
Ramayapalli and Lakshmiipur	6	5		11				22	22
Markandi	3		15					18	18
ASR Nagar	8						8		8
Jalaripeta	10						10		10
Paradesipalyam (Jnnurm)				12			12		12
Sevanagar Madhurvada (Jnnurm)	2			14			16		16
Sonia Gandhi Nagar	1	3					4		4
Vambay Housing	1			7			8		8
Pudimadaka			5					5	5
Total (Urban)	22	3	0	33	20	35			
Total (Rural)	9	5	20	11	0	0	113	45	158
Total	31	8	20	44	20	35			

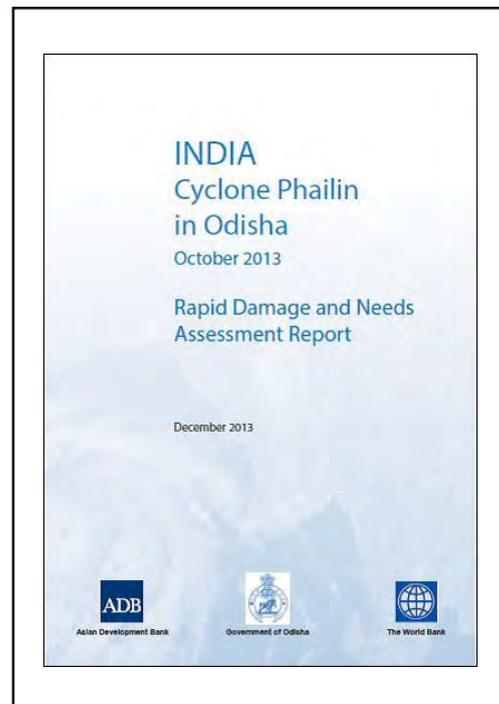
Appendix 5: Rapid Damage Needs Assessment for ODRP

Sectors covered: Housing; Public Building; Roads; Urban and Rural Infrastructure; Agriculture and Livestock; Livelihood (Fisheries, MSME, and Handicraft & Handloom); Energy/Power; and Forest and Plantations.

Scope and Scale: District or State level - Varies across sectors

Key Findings:

- Severe housing (both Pucca and Kutcha) damages would require an appropriate housing reconstruction policy for eligibility criteria and approach.
- In urban areas, upgrading informal settlements with access roads and adequate storm water drainage system
- Underground cabling for both the Power and Telecommunication networks.
- Significant social impact – particularly for those whose livelihood depends on agriculture and fisheries
- Investing in risk mitigating infrastructure (i.e., resilient housing, additional cyclone shelters, strengthening embankments and power infrastructure), planned urban infrastructure, risk knowledge management and improving forest resources.



Assessment time frame for the ODRP 2015	
Time Period	Activity
November-16	DEA led mission to support GoO
November-16	Request received from DEA for Post-Cyclone Rapid Damage and Needs Assessment
November-16	Kick-off meeting with the GoO
November 27-29	Sector-wise data collection and field visits with line agencies
Nov 30 - December 03	Preparation of draft assessment report and filling up gaps
December-16	Wrap-up presentation of report to GoO
December 05-09	Report finalization
December-16	Final report sharing

Source: (GoO, WB, ADB (2013) Rapid Damage and Needs assessment Report)

Note: Cyclone Phailin on October 12; associated floods occurred during October 21 to 26

Appendix 6: Initial Summary of Findings

This section lists some key initial¹² findings from the primary household surveys. Please refer to Section III for the detailed descriptive statistics of the sample, the detailed description of effects on people after the recent cyclones, and the changes before and after relocations.

Sample Description

Average number of family members in rural and urban

While most of the families in the rural context (both Odisha and AP), were primarily nuclear in nature, the families in urban Odisha and AP seemed to have a larger number of family members living together, potentially because of the lack of choice as well as the constraints to move out to alternate spaces. It is difficult to say if this is a way to pool risk or share resources in a way that the outcomes for all are better, or if one problem can act as a stressor for all in the household. But the larger question is whether it is a cost to break these networks, and could it add to the burden of these families. There is some benefit that is a derivative of such an arrangement which intuitively is in some ways a coping or adaptive mechanism. It is difficult to say whether such arrangements are structurally embedded but it will be interesting to understand the dynamics of such an arrangement and how it helps in reducing household-level risk.

Average number of working members in a family

Comparing this with the above statistic, the families we surveyed seemed to have more people on average working in the urban areas versus the rural areas. This could also be an outcome of costs in the urban areas being higher than those in the rural areas. Working members and their high numbers could be partly explained through the informal nature of jobs or the fact of jobs being seasonal. This kind of skill pooling could be a way of compensating for other socio-economic risks faced by households. These reasons and others could be explored through additional research. Although people were asked about their incomes the stated incomes may have response biases, hence we are not stating them at this point.

Male vs. female headed households

For the sake of simplicity and brevity, the question that was asked was 'Who takes the big decisions in the

family—decisions of marriage, investment, etc.' Other than that, we do not have information on who took the financial versus domestic decisions. We encountered a large number of families that were headed by women (41 out of 157) and many where the family as a whole including the woman took decisions (29 out of 157). One of the reasons for more female enterprise here could be prevalent male migration, which has created a situation where it is the woman who is now making all decisions, big or small. But this phenomenon may need to be studied in greater detail.

The differential outcomes of female headed households vs. male headed households in terms of living conditions, impact of cyclones, beneficiary identification and the outcomes of the relocation processes may need to be studied in greater detail with a larger sample size. Is leadership maintained at the household level after the relocation interventions? Are there institutional mechanisms that ensure equity? In the long term (beyond the scope of this research) some of these trajectories could be taken up for a longitudinal study within the existing sites.

Levels of education and reasons for dropping out of school

The predominant levels of education seem to be limited to Class 7, particularly among women. One reason pointed out was that free public education was available till that level after which financial reasons forced people to drop out. Other reasons quoted for not pursuing higher education (particularly in the rural areas) was that there were no education facilities nearby, and that women were not allowed to travel far or stay away from the home for safety/cultural reasons. More instances of higher education were noticed among male respondents in urban areas but in Berhampur particularly, many instances of under-employment were also observed where higher education did not guarantee a formal job.

Sources of livelihood

Of the 151 responses regarding primary sources of livelihood and additional sources of income (in some cases more than 1 per household), most households (46 HHs) in urban areas are involved in daily wage work or work as casual labour which could partly explain the higher number of working members per family. Many households (50 HH) were also involved in other forms of entrepreneurial work such as small shops or in-house small-scale industry, etc. A large number of people were involved in fishing (selection bias as most of the cyclone-affected families stay close to the coasts), but many also practise horticulture and agriculture (primarily in rural Odisha). Many of these could also be forms of daily

12 These findings are based on the first round of household surveys. Additional 150 or so household data will be added to this for the risk assessment work phase. The results here are only indicative of the initial findings, and no correlation or external validation can be worked out at this stage.

wage work, as many of them worked in other people's farms or boats rather than having access to their own resources. Many families noted more than one form of livelihood including migration, which may be a form of risk-mitigation strategy. It could be a burden if these forms of support, networks and informal safety nets are broken down by any external intervention, like relocating some members of these communities, and need to be studied more closely. It was also observed that the fisher communities who migrated continued to fish in the new sites, and this governs their destinations (Chennai, Goa, Vizag, etc.), but those who are predominantly agriculturalists or horticulturists migrated to work in industries or

Does the location itself enable an ability to earn through alternate livelihoods and does the new location destroy these abilities or opportunities? A time-allocation study to see how time is expended for something that may have been avoided in an earlier location could be conducted. This could also provide insights for programmes like the mason training programme, where people were required to get trained for 30–60 days to construct their own houses, or for owner-driven or self-construction housing programmes. Also, it may be enquired if this work is seasonal or continues through the year to know more about risk mitigation through livelihood diversification practices.

Image 3: People are involved in entrepreneurial activities. Picture taken in Vizag relocated site where the couple makes metal utensils and sells them in neighbouring markets



as daily wage workers during off-seasons. Studying this distinction may provide some insights on current capacities to adapt by types of livelihood¹³

About 46 out of 158 HHs mentioned they had additional sources of income in the family, which included holding multiple jobs, or having access to pension schemes, etc. The relationship between type of livelihood and alternate sources of income could be studied to ascertain if the time spent on certain kinds of livelihood allows time for alternate work, and if following the relocation, there is an opportunity cost to not continue working.

¹³ Migration numbers could be biased due to the fact that we may have visited at a certain time of the year where we didn't meet the people who were already migrating out.

Households' willingness to migrate

Migration is often an aspiration for a better life, but also an adaptation method to get away from the current conditions of living. People who are non-migrants in cities are more likely to be poor as compared to rural-to-urban or urban-to-urban migrants (Kundu, 2007), as migration is also an indication of choice and the ability to adapt. Of the households who responded (55HHs) to the question if they would be willing to migrate given a chance, many (10 HHs) said yes or did so with the condition that work be available. Many (20 HHs) mentioned they were already practising migration within the family. Some (3 HHs) also said they would do so but there are limitations because of which they cannot. Some expressed concerns about how they would migrate, but not by choice,

Image 4: Indigenous Kevda processing units in Ganjam



showing a kind of helplessness. Many also vehemently opposed the idea of migrating from their 'land of birth' (20 out of 55 of which 16 were in rural Odisha).

Aspirations for future generations to work by current type of profession

Most people we interviewed said that they would want their children to have better jobs than them and be educated. Evidently, getting government jobs particularly with the police is a huge aspiration. But while many farmers (2 out of 2) and horticulturists (3 out of 7) said that they would want their children to get educated, only fisher-families said that they would want their children to continue their profession but with bigger boats and nets. Pudimadaka was an exception, where even the fisher communities hoped for their children to get jobs in nearby upcoming special economic zones and industries and not continue fishing. Here it is increasingly becoming economically non-viable for small-scale fishermen. Most of the daily wage workers (19 out of 20) said that they would want their children to be educated unlike themselves and have better jobs.

House construction materials

This could be used to assess what the original living conditions were when the cyclone hit, and if people were correctly identified to be beneficiaries of such housing programmes and interventions. Of the non-beneficiaries, 22 out of 33 respondents were living in thatch/asbestos/

plastic roofed structures, most of whom (14 out of 22) were in urban AP. This gives some sense of Type 1 errors (non-beneficiaries with fragile structures). It was difficult to observe the housing conditions of those who had already relocated. Therefore, it is difficult to assess the Type 2 errors (beneficiaries with non-fragile structures) that may have crept into the allocations.

Besides roofing material, wall and plinth are other indicators for physical vulnerabilities, which otherwise do not seem to be considered for housing allocation.

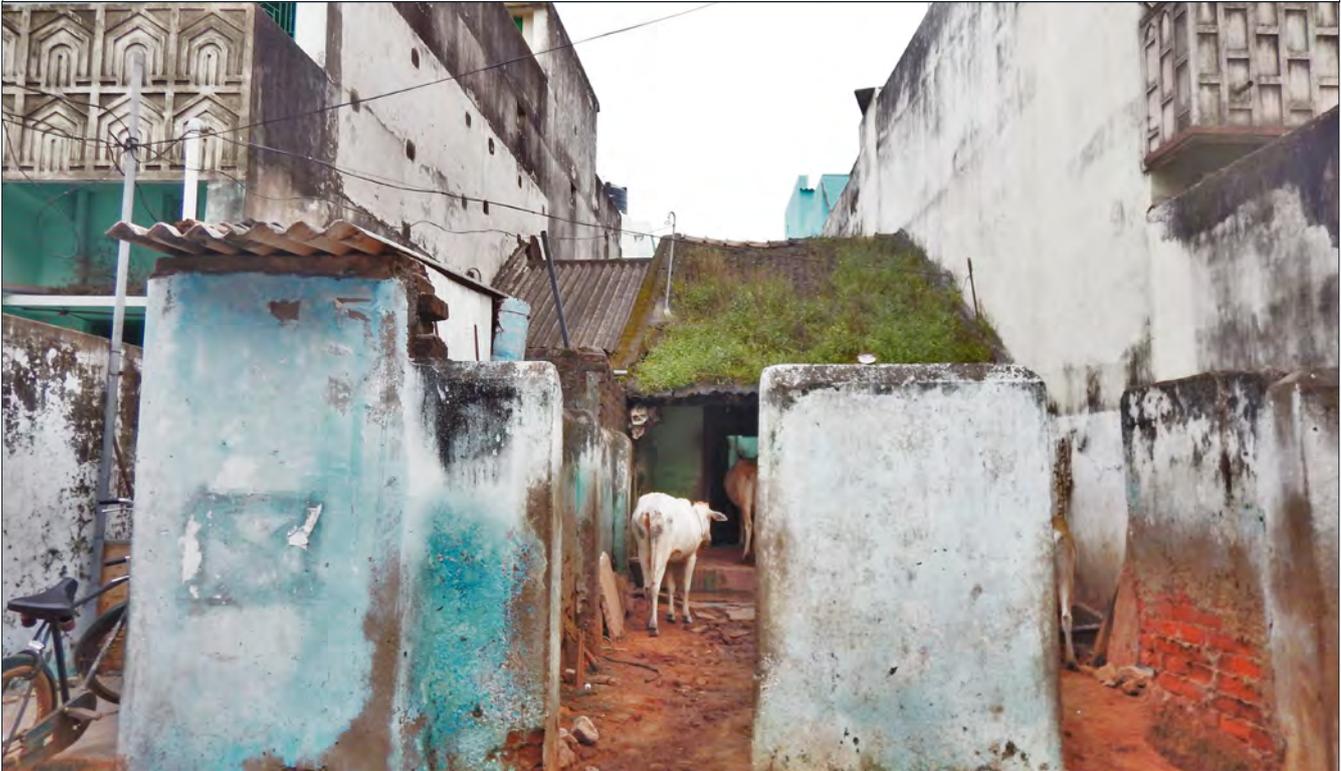
Asset ownership

Of all the households (158 HHs), 80 said they had gas stoves, 94 had some furniture, 76 had televisions, 90 had other electronics (like fan, fridge, etc.), 41 had bicycles, 37 had two wheelers, and 5 had 4-wheelers. 34 said they had work-related assets, but this could be an underestimation. 22 said they had some animals or pets. But the most used asset across the regions was a mobile phone; 129 HHs said they had at least 1 mobile phone in the family. This could be assessed further to know more about people's strategies of accumulation and risk-coping abilities (Moser & Dani, 2008).

Desire for a new house as a public provision

Of the sample that was asked 'Do you want a new house from the government', the responses varied between yes of any kind, yes but in situ, yes, even

Image 5: Variation of materials within one setting in urban Odisha on a site identified for infrastructure upgradation



relocation, and no. Of the non-beneficiaries, 33 of the 35 respondents said that they would like the government to provide a house, of which 21 said that they would like an in-situ house. In contrast were those who were relocated (44 HHs)—4 HHs said they did not want a house, and 11 of them said that they would have liked to get it in-situ instead. Of those who said yes to the need for a new house, particularly among the non-beneficiaries, 13 of 34 HHs said their current houses were not strong to withstand rains and cyclones. Other reasons quoted were the need to have a patta (ownership or occupancy certificate), or to own a house (particularly by those who were currently renters). Of those relocated, 11 out of 29 gave renting previously as their primary motivation to relocate, and 8 of 29 said they wanted a patta to a safe house.

Prevalence of bank accounts by reasons of opening

According to a World Bank estimate, only 35 per cent of Indians above the age of 15 had bank accounts in 2011 (26.5% of females and 43% of males). By 2014 this number had increased to 53 per cent (43% of females and 62% of males). This was also the time when Cyclones Phailin and Hud-Hud hit the coastal states of Andhra Pradesh and Odisha. From primary surveys, 148 of 158 HHs responded that they had at least one bank account. Many even had multiple accounts that they had to open due to various schemes which do not allow using existing accounts. For instance, the ODRP scheme would require transactions of more than Rs

10,000 which the zero balance account does not allow and so new accounts had to be opened. The Pradhan Mantri Jan Dhan Yojna (PMJDY)-linked zero balance accounts also have a fair penetration (41 of 145 respondents had bank accounts under this scheme). It was however noticed that most people despite having bank accounts were not using them for any purpose other than availing these schemes. Only 10 of 145 HHs said they were using bank accounts for work-related transactions and 28 of 145, for savings.

This phenomenon can be studied further in the next phase of research, to see if households could use the bank accounts to reduce their exposure to risk, or to examine the ways in which access to credit is responsible for mitigating risks. In some instances, people said that they had inhibitions in putting money in these accounts as they did not trust them. Many also said that they did not save enough to put any money aside in the account and much of the savings were being consumed for everyday needs and health issues.

People's stated priorities of risk management

This was asked as a proxy to the question 'What would they save for, if they could' (even if they didn't). Most people (63 HHs) mentioned health as a primary reason for which they would save to mitigate their risks, followed by education (56 HHs). Only 36 mentioned future eventualities, which could include cyclones and rains but also any other everyday eventualities. 19 said they would save for their children's

marriages, and 17 mentioned livelihood-related risks. 15 HHs also mentioned future repairs in the house as one of their motivations to save. This indicates that while most people consider health, education, livelihoods, etc., their future risks, not so many perceive cyclones and future eventualities as risks for which they may need to save. This may give an insight to policy makers who are working on reducing climate-related risks that people's current set of risks are different from what the former are trying to mitigate by providing housing and through other interventions. This is also an indication of a larger mistrust people have in what are meant to be public provisions and services (health, education, provision of livelihoods, etc.) and that they have taken it upon themselves to save for those rather than other private affairs like children's marriages and housing repairs.

When asked what they valued most—the precise question posed was 'What were the three most important things for them', people seemed to focus more on what they currently lacked but wanted in the future. Some of these were aspirations which they had the requisite skills and education for such as work opportunities nearby, title to a house, health facilities and insurance, piped water supply with adequate water, schools (many specified higher education and English medium), strong houses (safe against rains and cyclones), access to government schemes, loans for business and education, and in-situ houses. There were others, albeit in smaller numbers, that gave a sense of the current needs of the people, for instance one person also said 'alcohol' as a top priority—which aligns with the rampant alcoholism in many of the sites visited. Breaking this down by rural and urban site and by type of beneficiary could give us some sense of the needs of the people and site-specific interventions to address them.

Government assistance and IDs

Of the 158 HHs surveyed, about 93 said that they were receiving some kind of assistance from government schemes or programmes. Only 76 said they had voter IDs, 75 had Adhaar Cards, and only 47 said they had BPL cards (while many more appear to have been eligible). This data is patchy since not all households responded to this question, but it needs to be studied in depth to understand whether having such IDs has an implication on their beneficiary eligibility. And if there are people who are eligible but do not have access to any compensation or scheme, what is the burden that is being created in the process?

Stated health issues

Apart from common cold and fever, nearly 35 HHs out of 141 complained of various water- and vector-borne diseases, particularly typhoid, diarrhoea, malaria, etc. Many of the relocated people, particularly in Urban

Andhra Pradesh, stressed on increased incidence of water- and vector-borne diseases in the new locations due to improper environmental service provisions. People here also complained about various kinds of infections caused by polluted water, air or soil conditions. But many also mentioned the prevalence of what are popularly known as 'rich-people diseases'—such as blood pressure, diabetes, cholesterol, etc. There was also a mention of veterinary problems and the lack of suitable and approximate veterinary hospitals. Women mentioned several OB/GYN issues that they face, and that they often found it difficult to reach the nearest hospitals on their own. Some mentioned that they took the help of their neighbours in such instances.

Average distances to the nearest health facilities (or those that they visited) as stated by the people was predominantly less than 5 km, but about 19 HHs from the relocated types of respondents said that they had to travel more than 5 km (in many cases more than 20 km) to reach the nearest hospitals.

Disability

Of the random sample of 158 HHs, 14 had family members who were differently-abled. Of these, only 7 mentioned they received any government support or housing allocation (50% of the sample).

Insurance

40 out of 156 respondents said that they had some form of life insurance or the other. 38 out of 150 said they had LIC policies, and 5 out of 150 said that they had recently bought the Pradhan Mantri Bima Yojna (although most of them did not know how to operate it, and if they did not use their zero balance bank accounts on a regular basis they would not be entitled to the insurance either). While there is still some penetration of life insurance in these parts, non-life insurance products are non-existent. It was learnt that ODRP beneficiaries are entitled to a non-life multi-hazard insurance. But none of the beneficiaries mentioned this themselves probably due to lack of awareness. This could be because the insurance plan is still in process and people may be informed in the future. But it might be a policy dilemma whether to let people know about their entitlement to this multi-hazard house insurance as making them aware could lead to 'moral hazards' on the part of beneficiaries, while not letting them know may lead to ineffective service delivery.

Health insurance

Of 153 HHs who responded to the question, 66 said they had the health card (National Health Insurance Scheme Rashtriya Swasthya Bima Yojana) covering their immediate family, but of these 66 only 14 said that they had ever been able to use it (10 of whom were in Urban

AP) since it covers only major medical treatments and emergencies.

Other shocks faced in the household

Many families mentioned several shocks they had faced recently that had affected them often more than the cyclone itself. In the 105 responses received, many stated lack of livelihood options and loss of jobs (10 responses), monkey menace (predominantly by horticulturists among the Devi Nagar-Lakshmipur-Ramayapalli residents), extreme health issues and deaths in the family (11 responses), women-headed household problems (4 responses), relocation itself (4 responses), and evictions (2 responses), etc. It is possible that there are certain biases in the responses depending on the way they were interviewed and what state in their life they were. But this information was collected to get a sense of the major perceived problems and risks that may have affected them even more than a cyclone and which they had the least capacities to deal with.

Findings related to the effects of recent cyclones in 2013 (Odisha) and 2014 (AP)

Early warning about the cyclones

Only 15 out of 158 HHs said that they did not know about the cyclone in advance, and most of these (14 out of 15) were from urban Andhra Pradesh. The various sources of information people said they had access to included TV and radio (73 out of 142 respondents), government announcements (51 out of 142) and neighbours and relatives (17 out of 142—which also indicates that people still believe what they hear from others, which can sometimes be a boon but also a burden.)

Losses faced during the recent cyclones

House damage is often used as an eligibility criteria for any compensations or beneficiary identification. This question was asked to know from people what their perceptions of damages were, and whether or not the assessors had noted the same. In most cases these were observed first-hand and noted and not limited to stated damages. Of the non-beneficiaries (35 respondents), 26 said they had partial-to-completely damaged houses after the recent cyclones; 19 of these were from AP. Of those identified for infrastructure upgradation (type 5), none had severe or complete damages. Of the relocated (37 respondents), 17 said their previous houses were damaged, and 12 (from urban AP) said their houses did not exist anymore after the evictions so there were no damages during the recent cyclone.

Compensations

Of the 158 HHs surveyed, 131 said that they received some form of compensation or relief from either the state government or other non-governmental agencies. Of the 156 who offered details of these compensations, 143 had received standard packages that were being offered to everyone irrespective of whether they had suffered damages or not (in the case of Odisha, this was Rs 500 and 50 kg rice per family). Of those who did not (43 HH), 25 were already relocated. One of the reasons mentioned by households was that since they lived far away, no one came to ask how they were doing after the cyclone. This was unlike what their experiences had been when staying within the city.

119 out of 138 responders said that they received other in-kind aid including tarpaulin, solar lights, etc. 55 out of 133 also said that they received additional money based on damage assessments by assessors. But the emerging observation from here is that while people have received relief after extreme shocks, they are not getting much support after everyday shocks. Does universal compensation have a merit over that provided after assessments and follow-ups?

Problems with services (water, sanitation, electricity, education, transport)

129 HHs said they faced drinking water challenges after the recent cyclones including 30 who were already living in relocated sites in urban AP. 92 mentioned that they faced problems related to defecation, either because open defecation was difficult or because they were forced to defecate in the open because there was no water to service their existing toilets.

68 HHs said that they faced problems with electricity¹⁴ 119 HHs said they had problems accessing schools right after the event, and gave reasons including loss of books and damaged school buildings especially after being used as emergency shelters. 54 said that they faced problems with transportation, and some of the reasons included trees having fallen on streets and roads being blocked.

Work-related losses

Of the 25 respondents engaged in fishing, 23 said that they faced serious challenges for long periods of time. Apart from loss of work days, many even said that the

14 This question was added later, and 88 respondents were not asked this question. All those who were asked said that they had electricity problems for a few days

catch had substantially reduced since the two cyclones in 2013 and 2014. Four of the 7 respondents engaged in agricultural activities said they faced various kinds of problems in operating from the new sites. This number might be low because the cyclone occurred at a time of the year when most people did not have crops in the field. Early warnings also helped some secure their outputs in advance. 12 said they faced serious problems in their horticulture work after the cyclones. This number is relatively high for the total number of households in the sample involved in horticulture activities (13). In most of these cases, the outcomes were long-drawn-out as the trees would take much longer to recover and bear fruit again. Many of the horticulturists we spoke to had moved to alternate livelihoods for the time being. 92 respondents out of 116 said they faced challenges with other kinds of work they were involved in, and the reasons included access to work, difficulty in finding work, and loss of productive assets.

Of the 133 responders, 83 said they had suffered losses in their household and/or productive assets. 72 out of 105 said they had suffered losses in household assets, and 30 out of 105 said they had suffered losses in their productive or work-related assets.

Important things people carried at the time of evacuation

Of the 128 responses, 49 said they carried some items with them at the time of evacuation, whereas 35 said they carried nothing. This number is the highest in Andhra Pradesh, most likely because people had no memories of the last cyclone (unlike in Odisha) and did not consider the importance of taking their most important things with them as they evacuated. 44 also said that they did not evacuate.

What people carry with them at the time of evacuation is an indication of what they consider important as well as what they think they may not have access to in the next few days while being away from home. 31 HHs said they carried documents (IDs, home ownership documents, bank passbooks, etc.), 30 carried food items, 20 carried clothes, only 9 carried work-related assets, while 5 said they carried some other household items. What people carry with them can also become an asset or a liability in the evacuation areas, as resources available are limited, but the space available is also less.

Risk sharing

Most people (72 out of 99 responders) took help from their friends and relatives to recover after the cyclones. This is an indication of the social safety nets people rely on at the time of emergencies and crises, but also of

what is most accessible. Any destruction to these safety nets and networks could mean creating greater burden as far as their adaptive capacities and resilience to risks is concerned.

72 out of 99 respondents also borrowed money to recover after the cyclone. This is an interesting corollary to having bank accounts which seems to be widely prevalent and yet did not help them in the time of need and crisis. 76 HHs mentioned that they took loans for recovery. This may imply longer-term burdens for these households. The loans range from Rs 3000 to Rs 2 lakh; the figures vary in keeping with the economic and social capital people have, which are difficult to capture as part of this study. Also, these the rate of interest of these loans varies from 0 per cent to 5 per cent with the most common being 3 per cent, as stated by people.

Action people are likely to take if there is a warning of a cyclone in the near future (1 week)

This question was asked to learn about people's preparedness, and also their perception of being at risk to cyclones. 73 out of 143 said that they will move to safe shelters but 60 said they will stay in the same place and not move; 23 of the latter were in the relocated sites.

Action people are likely to take if there is a cyclone every year

This was asked as an indication of long-term adaptation measures people are likely to adopt against climate risks. Despite knowing that these climatic incidents may happen every year, most people (77 out of 101 responders) still said that they would not do anything different and continue to live where they are living. Few (24 out of 101 respondents and mostly those of the younger generation) said that they would move out permanently or take the government's help to find alternatives. This is an indication of what livelihood and migration changes might take place in the long-term in the face of changing climate and increasing frequency and intensity of such events in these areas.

Findings related to resettlement and relocation interventions

Relocated people by distance from original locations

The sample of sites comprised relocation areas within 1 km from the original site (Markundi) but also households which had been relocated by more than 5, 10 and 20 km. There are also many sites that have been identified for relocation, but without clear decisions on the new locations, primarily in Berhampur.

Average number of years stated of inhabiting the current location and house

Of the 158 HHs surveyed, 32 said they have been living in the current site for over 50 years (through generations), 55 between 10–50 years, and 20– between 5–10 years. 26 HHs said they have been living in this site between 1–5 years of which 11 belong to the recently relocated type of respondents. 24 HHs stated the residence in the current locations as being for less than one year and almost all of those were recently relocated.

Number of years stated of inhabiting the previous locations

Of the relocated, most people had inhabited the previous location for more than 10 years or had been living there through generations, both in urban AP and rural Odisha. This could have greater implications for the outcomes of these resettlements that need to be studied in detail, in the holistic context of their earlier and new settlements.

Problems faced after relocation

Of those who were relocated, 40 HHs responded to this question, and 36 of them said that if they were to continue with their regular activities as before their travel expenses had increased after relocation. Of those who were relocated, 35 said they were facing challenges after relocation, whereas only 8 said they were not facing any

serious challenges in operating from the new locations. Most of these who shared concerns belonged to the relocation sites in urban Andhra Pradesh. Of the 24 HHs which gave reasons for changing their work after relocation, 11 in urban AP claimed that they changed their work after being relocated due to an increase in their distance from work. Of the relocated, 16 of 31 respondents mentioned that they were facing a reduction in the family income after relocation.

Type of relocation by division of community

Resettlements tend to divide and mix people in different ways. Some of the resettlements such as Paradesipallyam are a mix of entire communities (auto driver unions and watch manufacturer unions) who lived together earlier, sub-sections of communities and also singular families. One would need to study what becomes of the voices of people who have moved as single families within the neighbourhood versus those who have moved as a community.

Satisfaction with the new house allocation

Many of those who have relocated, particularly in Markundi and Paradesipallyam, mentioned that they were happy with the houses they got. But there were mixed opinions in some sites such as Devi Nagar, Sonia Gandhi Nagar and VAMBAY colony. The respondents in Sevanagar all vehemently disliked the housing that they were asked to move into. One must note that Sevanagar

Image 6: Public transportation options in the new relocated sites



was a site of evictions whereas the rest were sites where people got to state their choices or accepted relocation.

Reasons of motivation for relocation

When asked what motivated them to move to a new location for a house, about 25 HHs mentioned safe house as a reason, about 10 said they could not afford rent, 10 said they wanted a house of their own, and 13 were evicted forcefully and had no choice in the decision to move. Only 4 mentioned better facilities and opportunities of livelihood as their reason.

House ownership details of current residences (business as usual)

While most of the relocated have some form of certification for occupation, most of these are non-alienable, i.e., they cannot be rented out or sold but can only be passed on as inheritance to future generations. Defaulters stand to lose their rights of occupation. Some households who were currently renting these apartments and were actually non-beneficiaries were also interviewed. Of the 123 who responded about their ownership details, 50 were staying in these locations without any certificate of occupancy and 37 said they had non-alienable rights to the house.

The question that arises then is whether a thought needs to be given to such families who have now been staying in these lands for generations, and yet do not have any rights to occupancy. If not tenure, could there

be some form of no-eviction rights made available to them such that it enables people to invest in their own improvement?

House ownership by gender

House ownership in the non-relocated (type 1, 2, 3, 5 and 6) households (52 responders) is primarily (32HHs) owned by the male, whereas the relocated houses are now more in the name of women (33 out of 43) as part of the policies of most relocation programmes. This is an intervention that may have far-reaching outcomes that could be studied in the long term.

House ownership before relocation

Of those who were beneficiaries of various housing allocations across Odisha and Andhra Pradesh, most people had some form of occupation rights (non-alienable patta, certificate of occupation, etc.) but there were also many instances (20 out of 34) in urban Andhra where people did not have occupation certificates in their original locations (and were essentially evicted and made to move to the new sites). There were many instances of renters (14 out of 45 HH) also who by choice moved to the new locations.

Form in which allocation was received

In ODRP projects, people received money to construct houses (31 out of 66 responders), whereas in JNNURM and other programmatic allocations, people received

Image 7: People involved in self-construction in Ganjam (Patinsounpur)



constructed houses (35 out of 66 responders) after paying a beneficiary contribution in many cases.

Self-built or contractor-built

Of those who received money for construction, most people (12 out of 31 responders) engaged contractors as a group to build their houses. Many of them also hired contractors individually. Some of them who could make the time to build their own houses did so either as labourers or as masons (9 out of 31). Few also participated in building their own houses after getting trained in the mason training programme. In many cases where the contractor was engaged by a group of people, there were complaints about the quality of construction with cracks showing up already. On the other hand, in most cases where people were able to build the houses themselves, they seemed satisfied with the construction.

Purpose given to the old houses

When asked what the old sites of habitation are being used as, most people in rural Odisha (13 out of 15 respondents) said that they were using them either for themselves or for other family members. Most people (16 out of 18 HH) in urban AP mentioned that either the houses were demolished, or if they were renters, they did not know how the old houses were being used. It is yet to be seen in terms of long-term risk reduction outcomes of these differential policy decisions, whether it is advisable to let people hold on to their older houses, versus moving them entirely.

Source of drinking water before and after relocation

There seems to be a marginal improvement in drinking water facilities after the housing intervention was made. Before relocation, almost 50 per cent of responders (34 out of 66) were dependent on hand pumps for their water supply, but after the housing intervention (66 respondents in type 2, 3 and 4), only 13 said they are still using hand pumps. 21 out of 43 HHs said they use piped water connection for their drinking water needs after the relocation, whereas only 10 out of 43 respondents had access to piped water before relocation. But in-situ housing still continues to rely on hand pumps and public taps, despite the housing upgradation.

Prevalence and use of toilets before and after relocation

There is also a marginal improvement in the access to toilets after the housing interventions. While 34 respondents (of 51 responders of in-situ type 2 and relocated type 4) had mentioned that they practised open defecation before the housing intervention, 45 out of 46 HHs in these types of respondents said that they now had toilets. Only 1 house in the in-situ category is still practising open defecation (potentially because they were still completing the construction of their toilet). The other categories of respondents (non-beneficiaries, on-site upgradation and identified for relocation) still do not have access to toilets (20 of 33, 7 of 16 and 15 of 28 respectively). But the level of utility of these toilets in

Image 8: Environmental conditions in relocated site of Sevanagar in Madhurvada, Vizag



the relocated sites varied. Reasons people gave for not using some of these toilets included: weak doors, lack of water supply, leaking soak pits and pipes, too close to the house, etc. But more or less once provided, most people seemed to be using them.

split into multiple families due to the lack of space in one allotted house, among other reasons.

Changes in animal rearing practices

There have been instances, particularly in Canal Street and Ram Nagar Odiya Sahi in Odisha, where people lost their livelihood after the cyclone. In some cases, people mentioned their cattle had suffered severe shocks and stopped giving milk for a long time, and many died in the long term. This has affected some families' main source of income. The numbers are small because the sample included very few animal-rearers (8 HHs), and none of them belonged to the type 4 category of relocated people. But most of these people suffered shocks after the cyclone. This needs to be studied further, particularly to learn how people could be re-engaged with their livelihood in cases of relocation such that shocks are not exacerbated.

Problems faced in current location

Of the relocated people in the current locations, the problems faced by them included that of livelihood (31 out of 42), housing (20 out of 43), drinking water (24 out of 43), sanitation (18 out of 43), electricity (15 out of 43), health (25 out of 43), education (18 out of 39), and transportation (29 out of 42). Most of them did not find rent (only 4 of 43) and missing the feeling of a community (8 out of 41) as a problem after relocation. Other problems mentioned by many included safety, snakes, open drains, access to markets, etc.

Problems faced in original locations

Of those who underwent housing interventions, the problems they claimed they faced before these interventions included rent (16 of 37), housing (15 of 37), and sanitation (10 of 37). Comparing the information presented above (after intervention) with data from before the intervention, it seems that while the problems of rent may have decreased for some, many other problems of livelihood, drinking water, electricity, health, education, and transportation have emerged. Problems involving housing and sanitation are also not completely rectified in this process.

Changes in older family members living together before and after intervention

Of the relocated, 14 out of 33 HHs mentioned that their older family members stopped staying with them after the relocation. Many of them are staying in the older locations (ODRP rural sites, where families continue to have possession of the old sites) or households have

Appendix 7: Additional Sites and Household samples added for Risk Assessment Phase

Kanaka (KNK): This is a settlement located west of Chilika Lake. There are a total of 205 beneficiaries in this village under ODRP, of which 143 are proposed for relocation and 62 households have got houses in-situ housing. The relocation site is located a kilometre away from the original village on a higher ground, which makes them safer from flooding from Chilika Lake and the RCC structures safeguard them cyclone winds. However, the houses that have got in-situ upgradation are still vulnerable from flooding. Agriculture is the predominant livelihood for the families here and some families practice fishing in Chilika Lake. Men from the community have also been migrating to other states for several years now due to lack of agricultural activity.

Naya Barapalli (BRP): This is one of the first few sites that were completed under the ODRP project. There are nearly 50 houses in the relocation site and the new site is located adjacent to the original village. Most of the beneficiaries here have invested extra money in their houses and have built extensions to the allotted house. Few families whose houses were completely damaged were the only families currently living in the relocation site. Other families are happy and are willing to move to the relocation site, but are waiting for the water, electricity and other services to be provided. Daily wage/ casual labour and agricultural labour is the predominant livelihood activity in the village.

Naya Raghunathpur (RGN): This site is located near Naya Barapalli village. The relocation site is adjacent

to the old village and is located at the foot of a hill on a slope. Because of the location on slope, beneficiaries had to spend extra money for filling and the cutting of slope for construction. Many of the houses in the relocation are occupied by the beneficiaries for more than a year. They only have got electricity connections, but are still waiting for water connections, roads and other services. Daily wage/ casual labour and agricultural is the predominant livelihood activity in the site.

Uppalaputi-Basanaputi (UPB) (Relocation Site):

Beneficiaries from 5 villages Uppalaputti, Terabasa, Haripur, Bhandhar and Raekatturu are being relocated to this site. The site is nearly 2 kms from Uppalaputti and Terabasa and is 5 kms from Haripur, Bhandhar and Raekatturu. There are a total 218 beneficiaries from these villages, of which 216 are proposed for relocation and two houses are in-situ. Fishing is the predominant livelihood in Bhandhar and Raekatturu. Families in Haripur also are dependent on fishing but they mostly practice fresh water fishing. As the relocation site is far from the original village and as there is no access to the sea from the relocation site, beneficiaries from these villages are not happy with the location of the relocation site. Families in Terabasa used to be a fishing community, and use to be dependent on a pond located next to the village. As the pond dried up nearly 10 years back, most of them have taken other livelihood options such as daily wage labour, construction workers and some of them work in the OSCOM factory near to the village.

Location	Type	Households added
Konaka	2: In- situ Upgradation	1
	3: Beneficiaries in process of relocation	8
N. Barapalli	3: Beneficiaries in process of relocation	5
	4: Relocated	9
New Raghunathpur	3: Beneficiaries in process of relocation	1
	4: Relocated	14
Uppalaputti	4: Relocated	5
Terabasa	3: Beneficiaries in process of relocation	4
Haripur	2: In- situ Upgradation	1
	3: Beneficiaries in process of relocation	10
Bhandhar	3: Beneficiaries in process of relocation	7
Raekattur	3: Beneficiaries in process of relocation	7
Total		72

Additional 80 households have been surveyed in Vishakhapatnam's sites.

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