



Child poverty, disasters and climate change

Investigating relationships and implications over the life course of children

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Key messages

- This study examines the relationship between natural hazard-related disasters and child and adolescent poverty in India and Kenya. It explores these connections through a lifecycle approach focusing on the incidence of child poverty and longer-term poverty dynamics and wellbeing. The analysis combines a range of different datasets around household and child poverty, disasters and local climatology, brought together for the first time.
- Climate change and natural hazards can reverse years of development gains, and can affect children and adolescents in different ways, both directly – through injury or the impact on household poverty or individual deprivation – and indirectly, through the effects on services and systems central to their wellbeing and longer-term development.
- Poverty eradication policies and programming must be risk-informed to tackle chronic poverty, stop impoverishment, sustain poverty escapes and build adaptive capacities to support children's development outcomes despite environmental shocks and stresses.

Acronyms

CHIRPS	Climate Hazards Group InfraRed Precipitation with Station data
CPAN	Chronic Poverty Advisory Network
CRU TS4.0	Climatic Research Unit Time Series 4
DRM	Disaster risk management
EM-DAT	Emergency Events Database
ICDS	Integrated Child Development Services
IHDS	India Human Development Survey
IMD	India Meteorological Department
MICS	Kenya Multiple Indicator Cluster Survey
SDG	Sustainable Development Goal
UNICEF	UN Children's Fund
WASH	Water, sanitation and hygiene
WHO	World Health Organization

Terminology

Adolescents	Individuals defined generally, according to WHO, UNICEF and others, as those aged between 10 and 19 years.
Affected	'People who are affected, either directly or indirectly, by a hazardous event. Directly affected are those who have suffered injury, illness or other health effects; who were evacuated, displaced, relocated or have suffered direct damage to their livelihoods, economic, physical, social, cultural and environmental assets. Indirectly affected are people who have suffered consequences, other than or in addition to direct effects, over time, due to disruption or changes in economy, critical infrastructure, basic services, commerce or work, or social, health and psychological consequences' (UNISDR, 2016: 11).
Children	In this paper, we define children as those aged 0–14 years, following definitions used by agencies such as UNICEF and WHO.
Children's life course/ cycle	The process of a child's life through a sequence of age categories. In this study, we categorise life course into the following: in utero and birth, children under five, young children 6–14 years old, and adolescents 10–19 years old. While the latter two groups do have overlaps, we feel this approach is a step towards understanding how the needs and wellbeing outcomes vary by a child's stage of life.
Chronic poverty	'Extreme poverty that persists over years or a lifetime, and that is often transmitted intergenerationally' (Shepherd et al., 2014: 3).
Climate hazard	A climate-related event or trend that may cause loss of life, injury or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, etc. This includes rapid-onset events such as heavy rain and flash floods, and slow-onset events such as drought, sea level rise and gradual shifts in seasons (adapted from IPCC, 2014).
Disaster	'A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts' (UNISDR, 2016: 13).

Disaster-prone	In this study, we define ‘disaster-prone’ areas as those areas which have experienced more disasters than the country-wide mean (based on EM-DAT data covering a range of disaster types – for which our study included biological, climatological, geophysical, hydrological and meteorological). In some instances, where explicitly noted, we also define it as areas which have experienced a longer average duration of disasters than the country-wide mean.
	Note: where we refer to flood-prone (or drought-prone), the same method is used. We refer to areas which have experienced more floods (or droughts) than the country-wide mean (based on EM-DAT data for the respective disaster type).
Disaster risk management (DRM)	‘Disaster risk management is the application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses’ (UNISDR, 2016: 15).
Multidimensional wellbeing	This study deals with outcome indicators such as schooling, health and labour, which are indicative of child wellbeing in a conceptualisation that is much wider than monetary or per capita income or expenditure measures alone. We refer to this as multidimensional wellbeing.
Panel data	Longitudinal datasets that track the same households over time; ideally, panel datasets comprise more than two waves of data collection. In this way, households that are chronically poor (poor in each period) can be identified, as well as those that move in and out of poverty (the transitory poor – poor in at least one period, but not in all periods).
Resilience	‘The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management’ (UNISDR, 2016: 22).
Risk	‘Risk is often represented as the probability of occurrence of hazardous events or trends multiplied by the impacts if these events or trends occur. Risk results from the interaction of vulnerability, exposure, and hazard’ (IPCC, 2014: 5).
Slow-onset disaster	‘A slow-onset disaster is defined as one that emerges gradually over time. Slow-onset disasters could be associated with, e.g., drought, desertification, sea-level rise, epidemic disease’ (UNISDR, 2016: 14).
Sudden-onset disaster	‘A sudden-onset disaster is one triggered by a hazardous event that emerges quickly or unexpectedly. Sudden-onset disasters could be associated with, e.g., earthquake, volcanic eruption, flash flood, chemical explosion, critical infrastructure failure, transport accident’ (UNISDR, 2016: 14).
Vulnerability	‘The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards’ (UNISDR, 2016: 24).

Introduction

This study examines the relationship between natural hazard-related disasters, including those influenced by climate change, and child and adolescent poverty. It explores these connections through a lifecycle approach focusing on the incidence of child poverty and longer-term poverty dynamics and wellbeing. Analysis is done directly (through the effects of disasters on household poverty trajectories and individual deprivation) and indirectly (through the effects of disasters and climate change on services and systems central to children's wellbeing and long-term development, including health, nutrition, water, sanitation and hygiene (WASH) and education). The analysis is new and unique, combining a range of different datasets around household and child poverty, disasters and local climatology, brought together for the first time. It considers the following key questions:

1. What are the implications of disasters for child and adolescent poverty and wellbeing?
2. What can analysis of relevant datasets (particularly panel data) tell us about child and adolescent poverty and wellbeing dynamics in climate- and disaster-affected situations at the national and/or subnational level, and the causes of these dynamics?
3. Having identified relationships between natural hazard-related disasters, climate change and child and adolescent poverty dynamics over the life course, what policy and programming implications may be drawn?

The study focuses on the links between natural/ climate hazard-related disasters and child wellbeing in India and Kenya (focusing on three counties: Bungoma, Kakamega and Turkana – which we refer to as Kenya) between 2000 and 2014.¹ The report undertook case studies in the State of Bihar in eastern India and Turkana County in Kenya (see Box 1). For a brief outline of the methodology see Annex 1, or refer to the main report.

Key messages

Part 1: A focus on child wellbeing

1 Key message

The need to adopt a lifecycle approach to support longer-term development outcomes. Disasters and climate change affect children and adolescents in different ways: directly (for instance through the effects of disasters on household poverty trajectories and individual deprivation, injuries and death); and indirectly (through the effects of disasters and climate change on services and systems central to children's wellbeing and long-term development, including health, nutrition, WASH and education). Research tends to focus on the short-term, direct impacts, not the indirect and longer-term effects that disasters may have on a child's multidimensional wellbeing and longer-term development.

Key finding

See Table 1 for a summary of key findings.

Recommendation

The whole of a child's life course needs to be considered in relation to climate and disaster risk, not just static points in time, because impacts will vary in the immediate, short and longer term. See Table 1 for policy recommendations.

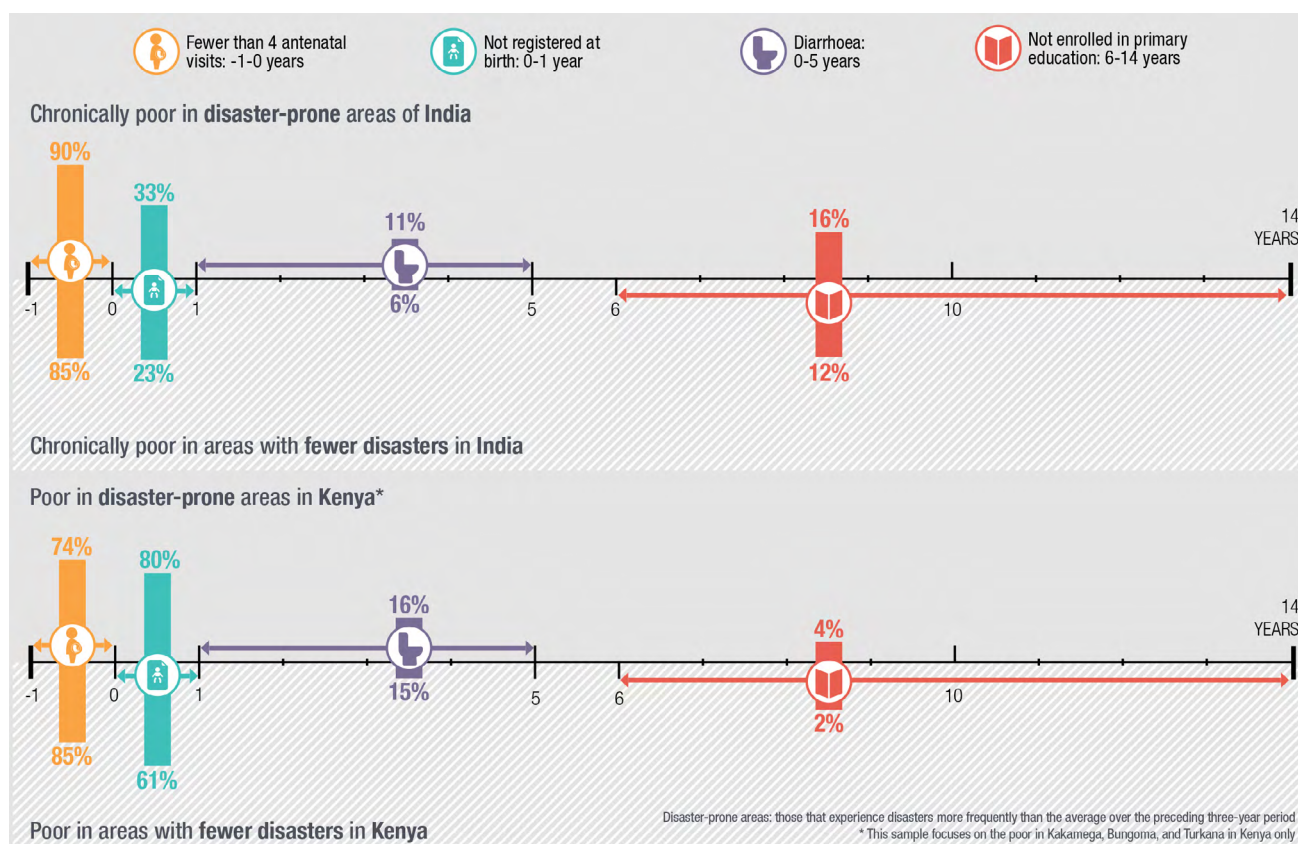
2 Key message

The need to ensure continuity of services and systems central to child wellbeing and resilience. The research found significant differences in access to services (health, education) and infrastructure (WASH, electricity and roads) between disaster-prone areas and other areas; these gaps often particularly affect chronically poor children or marginal groups. Access to and continuity of these systems and services are critical to reducing child poverty and, ultimately, eradicating extreme poverty.

¹ The choice of study locations was partly determined by the availability of data, but it is a limited sample and it is important to stress that it is difficult to draw general findings for other countries and contexts from these examples.

Key finding

Figure 1 The links between natural/climate hazard-related disasters and children's wellbeing at different stages of their life course



Note: This timeline depicts selected key findings of the study in terms of the wellbeing of children and adolescents in disaster-prone areas of India and Kenya, compared to areas with fewer disasters in these countries. In Kenya, the school statistic refers to whether the child attended school during the school year, whereas in India, the question more restrictively asks whether the child is currently enrolled at the time of the survey.

Recommendation

Key services and infrastructure in disaster-prone areas need to be tailored and strengthened to reach the most marginalised, and access for all needs to be sustained despite environmental shocks and stresses. Development and planning need to be risk-informed across sectors to prepare for current and emerging risks, including contingency planning to avoid disruption to basic services and infrastructure. Simultaneously, sustained efforts to support *response and recovery* after a disaster can help ensure access to and continuity of services and systems, despite environmental shocks and stresses. Greater attention should be given to equity and inclusion in sectoral policies and programming, as well as policies and programming which aim to build resilience and promote longer-term wellbeing,

before, during and after a disaster. Programming and service delivery should be designed to support different livelihood systems in different socioeconomic and cultural contexts. A disaster can be a political opportunity to develop a national commitment to social transfers (such as cash transfers, but also other forms of government investment in rebuilding services and infrastructure in a more resilient manner) which may have been missing prior to the disaster, and which could help prevent impoverishment and close some of these service gaps.

3 Key message

The need to understand underlying vulnerabilities and intersecting inequalities. Children are not a homogenous group. Socially, economically, culturally, politically and

environmentally marginalised children are often the most vulnerable to harm from environmental shocks and stresses due to the contexts in which they live – which may constrain or enable their ability to prepare for, cope with and respond to climate change and natural hazards (Lovell and le Masson, 2014).

Our results highlight that poor and marginalised groups, such as the Adivasis ('Scheduled Tribes') of India and the nomadic pastoralists who make up most of the population of Turkana in Kenya, are particularly vulnerable to environmental shocks and stresses, including those influenced by climate change.

Key finding

Almost 20% of the Adivasi population in India fell into poverty in disaster-prone areas between 2005 and 2011, compared with just 12% among

other groups. Kenya's drought-prone Turkana County also has a higher prevalence of poor people living in rural areas (55%) compared to urban areas (6%).

Recommendation

Intersecting inequalities need greater consideration in policy and planning. The intersecting inequalities certain groups face (for example poverty, ethnicity, gender, disability, caste or age) mean that targeted interventions are required to reduce chronic and extreme poverty among people most vulnerable to natural hazard-related disasters, including those influenced by climate change. Targeted and strengthened approaches in policy and planning are needed to reach the most marginalised, for instance through the provision of mobile services in Turkana.

Box 1 Child wellbeing in Bihar and Turkana

- In **Bihar State, India**, repeated hazards increase vulnerability by wearing down assets, livelihoods, infrastructure and services, with little time for recovery, preparation or resilience-building. While child wellbeing outcomes are better in drought-prone areas compared with disaster-prone areas in general, highly flood-prone districts of north Bihar suffer from low socioeconomic development and high rates of poverty.
- **Recommendation:** States need to prioritise investment and policies that support child wellbeing and wider poverty alleviation. Risk-informed development and socioeconomic planning would help support child wellbeing and longer-term development outcomes and address environmental shocks and stresses.
- In **Turkana County** in Kenya, recurrent drought, followed at times by flash flooding, poses significant challenges for pastoralist communities. Prolonged drought has contributed to widespread malnutrition and extreme poverty, and poor children have considerably lower wellbeing outcomes than other segments of the population.
- **Recommendation:** More investment is needed to build resilience in the pastoral economy and ensure that development is risk-informed. For example, 'less than 2% of Turkana's 2013/14 budget is allocated to the pastoral economy, though pastoralism is a source of livelihoods for 70% of the population' (Carabine et al., 2015: 10). In particular, investment and planning focused on mobile services could support child wellbeing and long-term development.

Table 1 The relationships between natural/climate hazard-related disasters and child and adolescent wellbeing at different life course stages in India and Kenya

The table below provides a selection of recommendations from the research study related to different stages of a child's life course. For the full set and explanations of what may appear to be counter-intuitive findings in some instances, please refer to the main report. The sample is of chronically poor across states in India, and the poor in Kakamega, Bungoma and Turkana, respectively.

Stage of life course	Key study findings for India and Kenya	Policy implications: national and local governments should...
In utero and birth		
Fewer than four antenatal visits (%)	<p>India: 90% of chronically poor mothers had fewer than four antenatal visits in disaster-prone areas, compared with 85% elsewhere.</p> <p>Kenya: 74% of poor mothers had fewer than four antenatal visits in disaster-prone areas, compared with 85% elsewhere.</p>	<ul style="list-style-type: none"> • Increase access to healthcare and promote context-specific child and maternal health interventions which are functional and accessible at all times. For instance, provide mobile health service delivery in areas where the population are (semi-) nomadic, such as in Turkana. This should include a basket of everyday healthcare provision to reduce health risks, including maternal health (through <i>both</i> antenatal visits and delivery care), immunisation against disease, regular treatment facilities and emergency response to disasters and climate change.
Access to formal delivery care (%)	<p>India: 20% of chronically poor mothers accessed formal delivery care in disaster-prone areas, compared with 22% elsewhere.</p> <p>Kenya: 27% of poor mothers accessed formal delivery care in disaster-prone areas, compared with 43% elsewhere.</p>	<ul style="list-style-type: none"> • Ensure that public health programmes in emergency interventions are risk-informed, and that community health systems are strengthened.
Birth registration (%)	<p>India: 67% of babies in chronically poor households were registered in disaster-prone areas, compared with 77% elsewhere.</p> <p>Kenya: 20% of poor babies were registered in disaster-prone areas, compared with 39% elsewhere.</p>	<ul style="list-style-type: none"> • Systematically strengthen systems of birth registration, especially for marginalised groups such as the Adivasis in India, which will open up access to social and other services. This requires tackling the bottlenecks (including administrative, access, demand and awareness) which limit the provision of adequate birth registration for people in disaster-prone or marginalised areas/groups.
Children under five		
Diarrhoea (%)	<p>India: 11% of chronically poor children had diarrhoea in the two weeks preceding the survey in disaster-prone areas, compared with 6% elsewhere.</p> <p>Kenya: 16% of poor children had diarrhoea in disaster-prone areas, compared with 15% elsewhere.</p>	<ul style="list-style-type: none"> • Ensure policies and programming are risk-informed to reduce disruption to systems and services that support safe WASH, which will help reduce the risk of diarrhoea and other vector-borne diseases and illnesses. • Learn from existing WASH programmes to understand and replicate success factors and enhance access, especially among the poorest or most marginalised. For example, Anganwadi Centres in villages and settlements constitute the backbone of the Integrated Child Development Services (ICDS) programme, providing a network dedicated to improving child wellbeing outcomes (Andrew et al., 2015). Community nutrition programmes in Kenya were also undertaken alongside sectoral actions (LINKAGES, 2002).

Stage of life course	Key study findings for India and Kenya	Policy implications: national and local governments should...
Young children		
School enrolment (%), 6–14 years	<p>India: 84% of chronically poor children were enrolled at the time of the survey in disaster-prone areas, compared with 88% elsewhere.</p> <p>Kenya: 96% of poor children were enrolled in disaster-prone areas, compared with 98% elsewhere.</p>	<ul style="list-style-type: none"> Promote comprehensive school safety, including safe learning facilities that protect children and teachers from the impacts of disaster; raise awareness about environmental shocks and stresses; and promote contingency and preparedness plans, including ensuring education continuity after a disaster. Provide extra salary, housing and help with children's schooling for teachers, to encourage them to work and live in disaster-prone areas, and so that they suffer less stress and provide better-quality teaching. In Kenya, provide mobile primary schooling so that pastoralist children and adolescents, especially girls from nomadic families, can access education. If appropriate, adjust the school year and day to seasonal livelihood patterns to improve attendance.
Years of education, 6–14 years	<p>India: Chronically poor children had on average 2.5 years of education in disaster-prone areas, compared with 2.4 years elsewhere.</p> <p>Kenya: Poor children had on average 1.5 years of education in disaster-prone areas, compared with 2.6 years elsewhere.</p>	
Adolescents		
School enrolment (%), 15–18 years	<p>India: 43% of chronically poor adolescents were enrolled at the time of the survey in disaster-prone areas, compared with 51% elsewhere.</p> <p>Kenya: 89% of poor adolescents were enrolled at any point during the school year in disaster-prone areas, compared with 84% elsewhere.</p>	<ul style="list-style-type: none"> In India, expand scholarship and other education programmes for low-income groups. Providing bicycles to children, particularly girls, can encourage children to stay in secondary education. Limit the use of schools as evacuation or relief centres in order to avoid disruption to education, or find mechanisms to continue classes when schools must be used. Reintegrate children and adolescents who have been removed from the school system, paying attention to gender, age and other socioeconomic markers, through: (i) local education authorities identifying children withdrawn from school; and (ii) developing and providing information about measures for reintegration: school feeding, cash transfers and migrant support programmes, including a focus on children and others left behind in migrant households. Reduce child labour. Measures could include extended and optimised social protection to ensure livelihood safety, with cash transfers tied to school attendance, nutrition programmes and extra-nutritious meals in schools during disasters.
Years of education, 15–18 years	<p>India: Chronically poor adolescents had on average 2.7 years of education in disaster-prone areas, compared with 2.9 years elsewhere.</p> <p>Kenya: Data quality inadequate to draw conclusions.</p>	
Labour (%), 10–19 years	<p>India: 39% of chronically poor adolescents were engaged in some form of labour in disaster-prone areas, compared with 44% elsewhere.</p> <p>Kenya: 31% of poor adolescents were engaged in some form of labour in disaster-prone areas, compared with 65% elsewhere.</p>	

Note: Text in green: difference is statistically significant (table of significance provided in the main report). This table provides differences between disaster-prone and other areas, but does not speak of causation – these outcomes are as much due to increasing vulnerabilities related to changing demographics and socioeconomic conditions, unplanned urbanisation, development within high exposure zones and environmental degradation as they are due to the hazard (climate-related, geological, epidemics and pandemics).

Part 2: A focus on disasters and poverty

4 Key message

The need to understand types of disasters and risks and how these influence poverty pathways.

4A Disasters can be slow- or rapid-onset, frequent or infrequent, and children will be affected in different ways, in different contexts and over different time periods

While children and adolescents are at risk of sudden-onset, high-impact events, such as flooding or earthquakes, they are also subject to risks related to slow-onset hazards, including changes in seasons and temperatures, which may contribute to chronic, low-frequency impacts on multidimensional wellbeing.

Key finding

In India and Kenya, floods were the most common form of disaster between 2000 and 2014, and were responsible for the highest number of deaths (more than 22,000 in India, and more than 850 in Kenya). Droughts are also significant in both countries. In India, areas with a high prevalence of floods also saw high numbers of households falling into poverty, in part reflecting their vulnerability to rapid-onset disasters.

4B Natural hazard-related disasters, including those influenced by climate change, affect household poverty pathways, which can impact child wellbeing over the longer term

Examination of long-term poverty dynamics or changes in wellbeing over time brings the focus on the chronically poor: people who have been poor for many years; whose poverty is often transmitted to future generations; and who often lack the skills, education and other assets to escape poverty. Where they do manage to escape, these groups are often especially vulnerable to falling back into poverty – particularly when shocks (including disasters) strike. Disasters have the potential to reverse years of development gains. Reaching ‘zero poverty’² means tackling

chronic poverty: preventing people from falling into it, and ensuring that escapes from it are sustained, including in the face of environmental shocks and stresses.

Our research found that...

4C Disasters and climate change affect households' poverty status

Key finding

In India, our analysis³ reveals that the likelihood of a household being in poverty was 53% lower in areas that saw an increase in disasters over time. In Kenya, the likelihood of a household being in poverty was 47% higher when the number of disasters increased.

At first sight, the India finding appears strange. Improved outcomes for some people despite high hazard exposure seems to be in part a result of pro-poor political settlements and improved governance in certain areas, reducing vulnerability and improving resilience (Shepherd et al., 2013). India developed and implemented its first Disaster Management Act in 2005, the National Action Plan on Climate Change in 2008 and the National Policy on Disaster Management in 2009. Although there is still more emphasis on disaster response and relief as opposed to long-term disaster risk management (DRM) (Bahadur et al., 2016), some progress is being made with regard to child wellbeing and more integrated DRM across socioeconomic development planning in some states (Government of Bihar, 2014). Nevertheless, many state-level plans and policies have only recently been established, including Bihar’s Disaster Risk Reduction Roadmap (adopted in 2016), and therefore these are yet to have a measurable effect, beyond some pockets of resilience programming at the state level.

Similarly, in Kenya, the finding suggests that policies and programming aimed at building resilience are yet to make a considerable difference to poverty reduction. This is partly

2 Zero poverty is measured by the World Bank not in its literal sense, but rather refers to a target to lower the global poverty rate to 3%.

3 See our methodology for this regression analysis in the Annex.

because many policies and supporting authorities aiming to end drought emergencies and build resilience were only recently established, and the country has only recently begun to adopt a more anticipatory and holistic approach to climate and disaster risk. The complex nature of drought emergencies, pastoral livelihood dimensions and low investment and political backing has made progress challenging, as has the high incidence of severe and repeated drought since 2009. While drought management appears to have become more established in recent years, flood and disease preparedness still lack coordination (Development Initiatives, 2017).

4D Disasters and climate change also affect households' poverty pathways

Key finding

In rural Kenya between 2000 and 2007, drought was a factor in reduced household income (Muyanga and Musyoka, 2014). In India, our analysis revealed that households in disaster-prone districts are twice as likely to be chronically poor than to escape poverty, and three times as likely to become impoverished.

In India, while policies and programming which aim to build resilience to climate and disaster risks may help escapes out of poverty overall, they do not prevent chronic poverty. The factors that are linked to lower development outcomes, such as a lack of medical services, are the same factors influencing vulnerabilities and capacities to prepare for, cope with and recover from hazards. Lack of services, poor governance and other factors in lower development outcomes simultaneously place households and children at higher disaster risk.

Our regression analysis in India also reveals that disasters of longer duration are associated with a lower risk of chronic poverty and impoverishment, possibly because relief programmes last longer, and so have time to extend their reach to more marginalised people, including children.

Recommendation: the wider context

Climate and disaster risk should have a stronger focus in socioeconomic development policy. While both countries have national and subnational policies and plans to reduce climate/disaster risk, building resilience to environmental shocks and stresses requires that other sectors and line ministries have the incentive, mandate, capacity and finances to deliver risk-informed development policies, programming and services. This is still a challenge.

The institutional and policy separation between development, poverty reduction and climate/disaster risk is not helping in achieving the outcomes that these institutions and plans target individually. Despite India's Planning Commission's work, and Sustainable Development Goal (SDG) cells⁴ in some states, there remains a need to increase the 'integration of interventions across sectors and to foster strong governance and institutional arrangements for resilience across scales' in both countries (Carabine et al., 2015: 4). The 2030 Development Agenda offers an opportunity for countries to thoroughly integrate DRR and risk-informed programming across sectors and ministries. This should include tracking of impact and results in resilience-building through the SDG and Sendai monitoring and reporting.

Achieving longer-term development outcomes, despite environmental shocks and stresses, requires an understanding of the causal links between disasters and development outcomes, and adequate delivery of the services and systems central to child wellbeing and long-term development. This will help to build people's capacity to adapt, anticipate and absorb climate and disaster risks (Bahadur et al., 2015), and reduce the risk of impoverishment in the wake of a disaster.

Response and recovery programmes need more time. In line with the recommendation for Key Message 2, the research suggests that there are many situations where response programmes should continue long after they are normally terminated, so that the poorest

⁴ For example, according to Mishra and Tavares (2015), 57 government ministries and/or departments in the country have set up Gender Budgeting Cells to ensure that the budget gives adequate provisions for schemes meant to benefit women.

and most marginalised, including children, receive support to recover and rebuild their lives after a disaster. This in turn can help them strengthen their capacity to adapt, anticipate and absorb future climate/disaster risks, and ensure continued access to and continuity of the services and systems central to child wellbeing and longer-term development outcomes. Efforts to ‘build back better’ and safer after a disaster need to be integrated within recovery, rehabilitation, reconstruction and ongoing development planning. This will help support safer and more resilient infrastructure, which will help households and sectors mitigate future disaster risk and prevent the disruption of critical basic services in the face of environmental shocks and stresses.

Part 3: Bridging data gaps

Key message

The above key findings all highlight data gaps that need to be filled. Addressing data issues and improving our understanding of key services and wellbeing in disaster-prone areas is a step towards improving the long-term life trajectories of children and adolescents in the face of environmental shocks and stresses, including climate change. Better data would help local and national governments and practitioners to increase the resilience of children and adolescents over their life course more effectively and equitably, for generations to come.

Key finding

Data needs to be disaggregated:

- a. By child wellbeing – disaggregated for girls and boys – and other markers of identity to provide more information on the socioeconomic characteristics of those affected by disasters (including gender, age, caste, wealth and ethnicity); this should also

- include data on livelihood type (to ensure interventions are targeted appropriately – for instance mobile services in Turkana), and moreover be real-time and public.
- b. Direct and indirect impacts of disasters in the immediate, short and long term and by sector, with measurements against Sendai indicators, which can strengthen long-term development solutions compared with short-term, humanitarian responses.
- c. By type of disaster and exposure to different hazards, which will help governments to monitor who is affected by disasters within a multi-hazard context.
- d. Over the life course: disaggregation over time is important since poverty is dynamic. Household surveys need to be strengthened to address neglected areas, such as the physical/psychological impacts of disasters on children and adolescents.
- e. By type of data source: regular qualitative research alongside open-access panel data would strengthen analysis, allowing for stronger conclusions. Government data is also key, through developing a cutting-edge system responsive to SDG and Sendai reporting requirements, and using the aspirations of ‘Digital India’⁵ to improve disaggregated disaster impact tracking and risk assessments.
- f. Cross-sectoral data: ensuring that sectoral plans are integrated with climate/disaster information will help ministries manage hazard risk and minimise cascading disruptions to services and systems.

Recommendation

Data needs to be disaggregated by various markers (a–f) to develop a stronger understanding of the relationship between disasters, climate change and child poverty. This can support policies and practices that promote children’s long-term wellbeing in the face of environmental shocks and stresses.

⁵ Digital India is a government campaign to improve its online infrastructure and increase connectivity, so being able to provide electronic information to its citizens (see <http://digitalindia.gov.in/>).

Conclusion

An all-hazards approach to policies and programming that aim to build resilience is needed across spatial (including national, county/state, district and local) and temporal (in the immediate, short and long term) scales. Such an approach should consider multiple types of hazards, including those

emerging due to climate change. Risk-informed interventions need to be integrated across services and systems (including health, nutrition, WASH, education, child protection and social protection). Such an approach would help to support children and adolescents' longer-term development outcomes and adaptive capacities in the context of environmental shocks, stresses and change.

References

- Andrew, A., Attanasio, O., Augsburg, B., Grantham-McGreggor, S., Pahwa, S., Meghir, C. and Rubio-Codina, M. (2015) *Early childhood development in the slums of Cuttack, Odisha, India*. Cemmap, ESRC (www.ifs.org.uk/uploads/publications/comms/ECD%20India%20-%20Cuttack%20-%20Baseline%20Report_FINAL_noappendix-1.pdf)
- Bahadur, A., Lovell, E. and Pichon, F. (2016) *Strengthening disaster risk management in India: a review of five State Disaster Management Plans*. London: CDKN and ODI
- Bahadur, A., Peters, K., Wilkinson, E., Pichon, F., Gray, K. and Tanner, T. (2015a) *The 3As: tracking resilience across BRACED*. London: BRACED
- Carabine, E., Jouanjean, M. and Tsui, J. (2015) *Kenya ending drought emergencies policy review: scenarios for building resilience in the ASALs. Report prepared by the Technical Consortium, a project of the CGIAR. Technical Report Series No. 2: 'Strengthening the evidence base for resilience in the Horn of Africa'*. Nairobi: International Livestock Research Institute (ILRI)
- Development Initiatives (2017) *Assessment of Kenya's preparedness to disasters caused by natural hazards: floods, drought and disease outbreak*. Bristol: Development Initiatives
- EM-DAT Database (2017) *The International Disaster Database*. Centre for Research on the Epidemiology of Disasters (CRED) (www.emdat.be/database)
- Funk, C., Peterson, P., Landsfeld, M., Pedreros, D., Verdin, J., Shukla, K., Husak, G., Rowland, J., Harrison, L., Hoell, A. and Michaelsen, J. (2015) 'The climate hazards infrared precipitation with stations – a new environmental record for monitoring extremes', *Scientific Data* 2: 150,066
- Government of Bihar (2014) *Bihar State disaster management plan*. Bihar: Government of Bihar, Disaster Management Department
- Harris, I., Jones, P., Osborn, T. and Lister, D. (2014) 'Updated high-resolution grids of monthly climatic observations – the CRU TS3.10 dataset', *International Journal of Climatology* 34(3)
- IHDS (n.d.) *Indian human development survey. Dataset for 2005 and 2011* (<https://ihds.umd.edu>)
- IMD – India Meteorological Department (2017) *Customized Rainfall Information System (CRIS), Hydromet Division*. New Delhi: Ministry of Earth Sciences ([http://hydro.imd.gov.in/hydrometweb/\(S\(ygbhg545irlwlyjvdhuhpqw\)\)/DistrictRaifall.aspx](http://hydro.imd.gov.in/hydrometweb/(S(ygbhg545irlwlyjvdhuhpqw))/DistrictRaifall.aspx))
- India Water Portal (2017) State and District-wide meteorological data from the India Meteorological Department (www.indiawaterportal.org/met_data/)
- INFORM – Index for Risk Management (2017) *Index For Risk Management results*. Inter-Agency Standing Committee (IASC) on Risk, Early Warning and Preparedness and the European Commission (www.inform-index.org/Portals/0/InfoRM/INFORM%20Global%20Results%20Report%202017%20FINAL%20WEB.pdf?ver=2016-11-21-164053-717)
- IPCC – Intergovernmental Panel on Climate Change (2014) 'Summary for policymakers', in Field, C.B., Barros, V.R. et al. (eds) *Climate change 2014: impacts, adaptation, and vulnerability. Part A: global and sectoral aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge and New York: Cambridge University Press
- LINKAGES (2002) *Successful community nutrition programming: lessons from Kenya, Tanzania, and Uganda*. Eldis (www.eldis.org/document/A16389)
- Lovell, E. and Le Masson, V. (2014) *Equity and inclusion in disaster risk reduction: building resilience for all*. London: CDKN and ODI
- MICS – Multiple Indicator Cluster Surveys (n.d.) 'Kenya Multiple Indicator Cluster Survey. Data for 2013/14' (<http://mics.unicef.org/surveys>)

-
- Mishra, Y. and Tavares, R.R. (2015) 'A budget for women', *The Hindu* (www.thehindu.com/opinion/op-ed/a-budget-for-women/article6929819.ece)
- Muyanga, M. and Musyoka, P. (2014) 'Household incomes and poverty dynamics in rural Kenya: a panel data analysis', *Journal of Poverty Alleviation and International Development (JPAID)* 5(2)
- Shepherd, A., Mitchell, T., Lewis, K., Lenhardt, A., Lones, L., Scott, L. and Muir-Wood R. (2013) *The geography of poverty, disasters and climate change 2030*. London: ODI
- UNISDR – United Nations Office for Disaster Risk Reduction (2016) *Report of the Open-ended Intergovernmental Expert Working Group on indicators and terminology relating to disaster risk reduction*. Seventy-first session, Agenda item 19(c). Geneva: UNISDR (www.preventionweb.net/files/50683_oiewgreportenglish.pdf)

Annex

Methodology

The analysis of child wellbeing in this study is structured around a child's life course. The focus is on a set of factors with readily available data across our surveys:¹

- **In utero and children under five:** access to health services, formal delivery care and antenatal visits for the mother, birth registration of the baby and diarrhoea among under-fives.
- **Children:** access to primary education, primary school enrolment (6–14 years) and duration of education (6–14 years).
- **Adolescents:** secondary school enrolment (15–18 years), duration of education (15–18 years), engagement in farm labour and other forms of child labour (10–19 years).

The study is innovative and unique, combining a range of different datasets around household and child poverty, disasters and climatology, brought together for the first time:

- *India Human Development Survey (IHDS)*, 2005 and 2011 waves: <https://ihds.umd.edu/>
- *Kenya Multiple Indicator Cluster Survey (MICS)*, 2013/14 wave: <http://mics.unicef.org/surveys>
- *Emergency Events Database (EM-DAT)*: <http://www.emdat.be/>
- *Inform Index for Risk Management*: <http://www.inform-index.org/>
- *Climatic Research Unit Time Series 4 (CRU TS4.0 – Harris et al., 2014)*: <https://crudata.uea.ac.uk/cru/data/hrg/>
- *Climate Hazards Group InfraRed Precipitation with Station data (CHIRPS – Funk et al., 2015)*: <http://chg.geog.ucsb.edu/data/chirps/>
- *India Water Portal (2017)*: http://www.indiawaterportal.org/met_data/
- *All India District-Wise Rainfall Data (India Meteorological Department (IMD), 2017)*: [http://hydro.imd.gov.in/hydrometweb/\(S\(urzg0q2qhgiu3iybivktld55\)\)/DistrictRaifall.aspx](http://hydro.imd.gov.in/hydrometweb/(S(urzg0q2qhgiu3iybivktld55))/DistrictRaifall.aspx)

We have used a combination of robust empirical methods to analyse the relationship between child poverty and disasters. Associations between disasters and poverty incidence and trajectories were assessed using logistic regressions, controlling for factors other than disaster incidence or prevalence that may affect poverty dynamics at the household level. Statistical t-tests were also employed to investigate the difference in means between population subgroups, including gender and other socioeconomic profiles. This was complemented with difference-in-difference estimations for robustness to examine the extent to which the presence of disasters may have affected educational outcomes. We also conducted Mann-Kendall trend analysis of rainfall and temperature changes over the last 30 to 40 years in case study locations to examine the impacts of these climate shifts for children and adolescents.

Complementing this empirical analysis, the study presents an overview of existing policies and programming that aim to build resilience to disasters and climate change in Kenya and India at the national level, as well as in Turkana County and Bihar State, and a review of the wider literature on the extent and nature of household and child poverty following natural hazard-related disasters and climate change. In the study, we use this rapid policy review to evaluate the potential impact of such policies overall.

¹ For a discussion of data limitations, see Annex B of the main report.

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