



DISASTER RISK REDUCTION AND EDUCATION

Outcomes for children as a result of DRR activities
supported by the EEPCT programme

Case study A: DRR outcomes for children in the Philippines

June 2012



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Cover photo: © Paul Venton, 2012. A new 'standard design' school building is built next to a multi-purpose school building, raising questions surrounding the ability of an entire school to withstand hazard impacts.

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1 INTRODUCTION

1.1 Overview of the case study

The most recent progress report on Education in Emergencies and Post-Crisis Transition (EEPCT) in the Philippines (2011) states that further documentation is needed on lessons learned through the experience of Disaster Risk Reduction (DRR) in education, particularly at the school and community level. The information in this case study contributes to this need, as the main aim of the work was to investigate the DRR outcomes for children as a result of EEPCT funding in the country.

Fieldwork was undertaken from 6 November to 16 November 2011. Initially, time was spent in Manila meeting UNICEF staff and Education Cluster members. This was followed by the main investigation, which focused on the six schools targeted in the programmes' DRR pilot, plus another school and a day-care centre, all in the vicinity of Legaspi City in Albay Province, in the Bicol region. The study focused on Albay because the province exhibits the strongest DRR-related contributions of the EEPCT programme.

The school and day-care visits were made by the consultant with UNICEF staff from Manila, the Bicol region, a local NGO involved in the work, and the DRR focal person from the Department of Education (DepEd) local government unit. Typically, despite attempts to arrange simple focus-group meetings with children, teachers, parents and officials, the team was warmly greeted with a large (up to 200 people) reception and sometimes a dance show, fire/earthquake drill demonstration, or assembly meeting with presentation. After an appropriate period, the large and formal gatherings were broken up into smaller focus groups, as best as possible. On the whole, the arrangements were adequate to ascertain answers to core questions, based on the semi-structured questions described in the main report, and to develop a sense of DRR outcomes.

The team also travelled to Mindanao Province in the south of the country to meet with the Education Cluster focusing on the conflict and displacement hardships that seriously affect children, families, teachers and communities. UNICEF decided to arrange one meeting in the regional capital rather than visit project locations, because of potential insecurity which would compromise the field visit. The focus in Mindanao has been on the provision of education in temporary learning centres (TLCs).

The fieldwork was completed after additional meetings in Manila with key stakeholders that had been unavailable earlier, and in debrief with UNICEF staff. Annex B provides a list of meetings held.

The remainder of this section provides a brief overview of disaster risk in the Philippines and the current situation on disasters and education, followed by a brief description of the activities

funded under EEPCT. Section 2 describes the findings from the fieldwork and Section 3 presents conclusions from the research.

1.2 Disaster risk in the Philippines

The Philippines is one of the most disaster-prone countries in the world, as it experiences typhoons and tropical storms, flooding, landslides, earthquakes, tsunami and volcanic eruptions. Of the natural hazards, typhoons in particular effect the Philippine population on a repeated basis. Each year, the Philippines experiences an average of 20 typhoons, with five or six causing significant damage. Climate change was often referred to during the fieldwork, particularly in relation to a sense that typhoons are now occurring throughout the year rather than during a more distinct 'typhoon season'. In addition to natural disasters, certain regions within the country face instability from armed groups and conflicts – the Philippines is host to Asia's two longest-running armed conflicts.¹

In 2006, the Philippines was buffeted by a particularly difficult and damaging typhoon experience, culminating with Super Typhoon Reming (internationally known as Durian), which hit the eastern coast of the country, killing nearly 1,000 people and displacing more than 1 million. The equivalent of one month of rain fell within 12 hours, triggering mudslides and flash floods.² In Albay alone, the hardest-hit area, 702 out of 704 schools were damaged when roofs were ripped off and instructional materials washed away, affecting 357,400 enrolled children. Also, 21,500 preschoolers were affected in 595 learning centres. All in all, the damage to education infrastructure was estimated to have reached \$66 million, which represented practically the entire country's School Building Programme budget for a year.³

1.3 Education and risk management

Education in the Philippines is a massive undertaking, with more than 54,000 schools catering to almost 20.5 million students and 15 per cent of the total national budget spent on education.

Challenges in the country mean that it is unlikely that the Philippines will reach the Millennium Development Goal (MDG) regarding universal access to primary education by 2015. Half of children who are the appropriate age for Grade 1 (6 or 7 years old) are not enrolled in school. Although the Government mandates free education, other school-related costs exist; therefore, poverty remains the primary cause of non-enrolment and school drop-out. Other children experience barriers to education access, including children with disabilities, working children,

¹ Human Development Network, 'Philippine Human Development Report 2005: Peace, Human Security and Human Development', Human Development Network, Quezon City, 2005.

² United Nations Children's Fund, 'Progress Evaluation of UNICEF's Education in Emergencies and Post-Crisis Transition Programme: the Philippines Case Study', UNICEF, New York, March 2011.

³ UNICEF, Philippines EEPCT Fourth Progress Report, UNICEF, New York, June 2011.

children affected by armed conflict, indigenous children and street children. Boys are more likely than girls to leave school early, as they typically begin working at a young age.

As a disaster-prone country, the Philippines is often highlighted as an example of where DRR progress is more pronounced. However, it is only recently, and within the lifespan of EEPCT funding in the country, that a regulatory framework for disaster management has been endorsed, after years of discussion and advocacy by the country's key actors. The Disaster Risk Reduction and Management Act (2010) – catalysed into endorsement by the Manila floods of the same year – decentralizes disaster risk reduction and management (DRRM) to the local government units (LGUs). In descending administrative order, the LGUs are made up of province, municipality and 'Barangay' (village) level. In line with the national framework, and the creation of a national DRRM council, LGUs are now mandated by law to include a DRRM office at the local level and allocate a budget to the subject. However, the budget is said to be a re-assigning of existing money, and not new, although the act is helping to create a stronger enabling environment for DRR in the country.

Some important issues exist regarding links between education and disaster. These include:

- The aforementioned law on DRRM states that DRR should be integrated in high school and college – which is positive – but not in preschool and primary education. This is a key focus for advocacy by UNICEF and others.
- There are some entry points for advocacy at a local level, such as through local school boards. However, as education is not devolved, there is limited scope for the uptake of DRR with LGU education stakeholders. Advocacy at the national level that articulates local needs, best practices and recommendations is therefore crucial.
- Finally, education is not prioritized by actors in an emergency because it is not deemed a 'basic need' at this time. UNICEF, together with the other education cluster members, advocates strongly for this to be corrected, as a return to school is commonly considered important for the psychosocial well-being of children and because the community recognizes the process of education as a sign of normality. In the meantime, the education cluster usually undertakes its own independent rapid assessments in times of emergencies and then brings this information to the humanitarian response decision-making forums. In this way it seeks to foster support for education in emergencies by entering dialogue processes. One example of this was when education cluster members coordinated their response to Typhoon Megi in Northern Luzon in October 2010. In this case UNICEF focused on the heaviest-hit coastal municipalities in Isabela Province, while Plan International and Save the Children concentrated on mainland municipalities.

On account of its strong links with disaster, it is important to also highlight that the Philippines established a Climate Change Act in 2009, demonstrating a commitment to both climate and disaster risk.

1.4 EEPCT in the Philippines

The targeting of EEPCT funding in the Philippines was heavily influenced by the near simultaneous occurrence of disasters. Funding commenced in 2007, immediately following Typhoon Reming in late 2006, and hence at the outset EEPCT funds were largely directed towards a response to a specific emergency. Then, rather than a continuation of work over the longer term to sustain progress made, scale up activities and promote DRR as originally envisioned, a new emergency occurred that deflected EEPCT attention. In this sense, EEPCT in the Philippines had two distinct phases. Whereas both of these sought to work at a local and subregional level in response to specific emergency contexts, EEPCT also supported UNICEF's national-level activities. This section is therefore divided into subsections to describe the various activities:

- Phase 1: EEPCT DRR activities in response to Typhoon Reming in Albay Province;
- Phase 2: EEPCT complex emergency response in Mindanao Province; and
- EEPCT national-level DRR activities.

Phase 1: EEPCT DRR activities in response to Typhoon Reming in Albay Province

The establishment of EEPCT in the Philippines occurred almost simultaneously with the Typhoon Reming emergency in late 2006. The newly created programme funds were accessed to assist with the emergency response in Southern Luzon, particularly Regions IV-B (Southern Tagalog) and V (Bicol Region), which were the most affected. Funding amounting to nearly US\$3.5 million contributed by the Netherlands as part of EEPCT and US\$350,000 (9 per cent) by Sweden between 2007 and 2009 primarily supported the Building Safe Learning Environment Programme for the Philippines (BSLE). This programme focused on the reconstruction of school buildings and day-care centres in the Bicol Region. It had the following aims:

1. Complement government repair work on damaged day-care centres and schools to help restore children's access to education;
2. Ensure the structural integrity of schools/evacuation centres to make them safe for use as refuge/evacuation or holding centres in the event of a disaster;
3. Enhance teachers' and other service providers' knowledge, skills and attitudes regarding emergency preparedness and disaster risk reduction measures; and
4. Teach children emergency preparedness measures and involve them in DRR initiatives.

BSLE was launched in Southern Luzon in 2007 and consisted of two projects: The Safe Schools Project (SSP) and the Emergency Support for Day Care Centres Project, both of which had structural and non-structural components. In all, the projects supported 72 elementary schools, (plus a tent for an additional school), 18 high schools and 85 day-care centres in the six provinces most affected by typhoons: Albay, Camarines Norte, Camarines Sur, Marinduque, Mindoro Oriental and Sorsogon. Altogether, about 83,200 schoolchildren and 5,100 preschoolers have benefited from a safer and healthier learning environment.

Structural measures

It has been documented that Philippine schools often lack the resources to build disaster-resilient school structures, and that in rural districts school administrations often lack the resources to rebuild schools at all. While embarking on this less traditional role for UNICEF, the repair and reconstruction efforts by BSLE across 91 schools and 30 day-care centres⁴ is therefore a very significant contribution to the education sector in the wake of typhoon damage. Further, UNICEF made the structural component of the BSLE programme its main feature (complemented by the non-structural aspects). School repairs included 'hazard-resistant features', whereas new construction included buildings (one per school) that serve as both classrooms (two) and evacuation centres. Such buildings, known as Learning and Public Use School (LAPUS) buildings, differ from standard classroom design in the following ways:

- Hazard resistance – the buildings are designed to withstand strong typhoon winds (up to about 250 kilometres/hour), most notably by virtue of the use of reinforced concrete roofs. This is instead of the typical pitched-shape corrugated galvanized iron roofs that can be more easily blown or sucked off a building (as the roof can act like an aeroplane wing with a pressure differential between the outside and inside, lifting the roof up). LAPUS buildings are also raised 1 metre on a plinth, protecting occupants and items inside from flood water. Proponents also describe the LAPUS buildings as being “more earthquake resistant,” but it is not at all clear whether this is scientifically proven. Indeed, a collapsing concrete roof is likely to be more damaging and to cause death and injury than a corrugated galvanized iron structure. The buildings are also designed in light of good practice health and safety, such as doors that open outward to aid rapid exit.
- Flexibility – The buildings have partition walls dividing the two classroom spaces, thus enabling the space to be easily opened up into a larger room should this be required. Beams and hooks are installed for the hanging of hammocks.
- Facilities – Each side, and hence each classroom, benefits from the special construction of a toilet, small kitchen area and washing point, all at the same raised



⁴ The other 55 day-care centres received non-structural support from UNICEF EEPCT.

level as the classrooms and hence protected from floodwaters. Such facilities are mandated by law for buildings that serve as evacuation centres.

The DepEd managed construction work through the Principal-Led School Building Program (PSBP) approach. This allows for active involvement of school heads together with Parent Teacher Community Associations (PTCAs) and other stakeholders in the community. The same approach was adopted in the AusAID-assisted school-repair project that immediately preceded the BSLE and was proven to ensure successful and timely completion while empowering school communities to manage and eventually own and sustain projects.



The EEPCT-funded school building and evacuation centre at San Jose Elementary School: The building was used for two months by evacuees during an eruption of the Mayon Volcano. © Paul Venton, 2012

It is important to point out that in the Philippines it is very common for schools to serve as evacuation centres, and so UNICEF did not initiate this approach. While UNICEF has a global preference that schools are not promoted as evacuation centres on account of how this disrupts education, the use of schools as shelters for a limited time period during an emergency is not discouraged. The intriguing dilemma is that the LAPUS buildings are better classrooms than the norm because they are also evacuation centres. A trade-off in terms of ideals in

school-building quality and education service delivery is occurring – most of the time the two classes of children fortunate enough to occupy a LAPUS building have a better school environment (the LAPUS is just one building in the school premises, which on average may have from 10 to 50 other buildings), but on occasion their education will be disrupted by the building's alternative use.

The Emergency Support for Day Care Centres Project built 30 day-care centres in partnership with the Department of Social Welfare and Development. Five of these are in Albay Province, and one was visited during fieldwork. The design, although different from the school LAPUS buildings (notably in terms of roofing and size), is intended to be typhoon-resistant, with gender-segregated toilets and a kitchen. The centres can also serve as evacuation centres.

Non-structural measures

Normally in the Philippines children may learn about disasters, but through EEPCT, UNICEF has tried to ensure their active involvement in the assessment, design and implementation of activities in response to risk. In support of this, the EEPCT non-structural component of BSLE included:

- The delivery of supplies and educational packages to children and teachers;
- Development and production of a DRR Resource Manual; and
- Training on disaster preparedness and DRR. This work involved a short pilot project among six schools called 'Enhancing School-Community Preparedness of Selected At-Risk Schools in Albay Province', referred to more commonly as the DRR pilot.

The work undertaken by EEPCT in relation to the issues highlighted here in 'Phase 1' formed the main focus of the fieldwork time spent in the Philippines.

Phase 2: EEPCT complex emergency response in Mindanao Province

In 2010, BSLE shifted from Southern Luzon to respond to the complex emergencies in Mindanao that caused the massive displacement of about 750,000 persons. This figure included about 77,000 schoolchildren who stayed in transitional shelters, mostly in Maguindanao and some parts of North Cotabato, where communities of internally displaced persons abound. This most recent emergency is the latest in more than three decades of similar problems affecting Mindanao. The setting of prolonged conflict required adjustments in EEPCT programme design to address the need for temporary learning spaces, psychosocial activities and more intensive training of teachers and community facilitators.

Through BSLE, UNICEF provided technical assistance and supported the establishment of the local Mindanao Education Cluster; the establishment and/or operation of a total of 74 TLCs, thus enabling about 6,700 displaced children to resume education or partake in it for the first time, even at the age of 14, as well as to receive some form of psychosocial intervention.

In addition to insecurity, parts of Mindanao are particularly exposed to flooding. Indeed, during the course of this study, the province suffered the consequences of Typhoon Washi. The unprepared, worse-affected communities, just 100–200 miles from UNICEF target areas, were hit hard, and more than 1,000 people lost their lives. Survivors took refuge in school buildings, among other community buildings.

With direct impact on target areas, in one example, two Barangays from Cotabato City evacuated floodwaters, with some making use of TLCs as evacuation centres. In other instances, it became apparent that there are experiences where child-friendly spaces are submerged and drinking water rendered unsafe due to contamination. Adjustments have been made to TLCs accordingly, such as the introduction of raised platforms.

In essence, while some DRR-related activities that relate to natural hazards have been

deployed through EEPCT programming, this has only gone as far as introducing some concepts. It has not been prioritized and taken forward in any significant manner.

The lack of safe drinking water has been the most significant impact of flooding on children attending TLCs and living in affected communities, resulting in disease and loss of life.

EEPCT national-level DRR activities

As EEPCT came to fruition in 2007, impetus was added to the Education in Emergencies cluster approach already underway (since about 2005) in the Philippines. Thus UNICEF work on BSLE was folded into existing processes, helping to reinvigorate efforts and strengthen the system. About 20 organizations are currently members of the cluster. The cluster developed mainly on account of the needs surrounding emergency coordination after Typhoon Reming, and works on such areas as contingency planning. UNICEF is the co-lead, together with government counterparts.

The cluster has also advocated protecting the right to education of children affected by or displaced in times of emergencies. This has included undertaking rapid damage and needs assessments of education impacts in the wake of disaster so as to ensure that the sector is as well represented as possible in emergency response efforts. This is important because education is currently not considered a priority need, and thus is not included as a formality within flash appeals and under the coordination of UNOCHA. A recent development is that DepEd set the maximum length of evacuees' stay in schools to three days, after which the LGUs concerned are encouraged to relocate evacuees to an available LGU facility, (e.g., a multi-purpose building, such as a local gymnasium). However, in protracted armed conflicts like those in Mindanao, internally displaced persons, including schoolchildren themselves, are compelled to stay longer in schools designated as evacuation centres. Hence, a review of policies and guidelines on the management of evacuation centres is ongoing.

A recent activity of the national cluster is the development of a policy framework for DepEd, which aims to articulate and fill gaps pertaining to education in emergencies. For example, in Mindanao, children receiving education in TLCs do not accrue credits that are transferrable to the normal school system.

The support from the national education cluster was crucial in leading to the formal organization of the Mindanao Education Cluster in March 2010.

In broader terms, SSP has carried out policy advocacy with DepEd on disaster management and preparedness, including mainstreaming risk-reduction measures into development policy, planning and programme/project implementation. In addition, a DRR Resource Manual was

developed (2009) to serve as a guide for teachers and school heads on DRR concepts, strategies and procedures.⁵

Disaster events that affected target schools in Albay since DRR interventions by EEPCT

Within the time frame of EEPCT activities, disaster events affected some target schools in Albay. This enabled the fieldwork to consider how well the DRR aspects of the programme were performing, particularly from the perspective of the children themselves.

The most significant event occurred when the Mayon Volcano, on the fringes of Legaspi City, generated a lahar flow. This disaster and events leading up to it triggered the evacuation between December 2009 and January 2010 of 112,000 people from within the designated 6–kilometre radius danger zone around the volcano's summit. Among these was Banadero Elementary School, which was visited during fieldwork, as it had been targeted by UNICEF as part of the DRR pilot project. This school and



The active Mayon Volcano dominates the skyline of Legaspi City and the surrounding area. © Paul Venton, 2012.

community evacuated to a 'safe area', which had already been assigned by the Government to the community as a permanent site for their relocation. The community is among the last on the slopes of the volcano to accept a government relocation package to a safer area, where homes (with very small plots of land, preventing the continuation of agriculture-based livelihood activities) have already been built. A new school to replace Banadero Elementary School has not yet been built on the relocation site, because the Government is still negotiating land use for this purpose. Consequently, a tent was used as a temporary space for school, with teaching to multiple grades in a crowded space without chairs.

⁵ Other areas of support to DepEd include in relation to the Disaster Preparedness through Educational Multimedia (DP-EM-Media) programme; school mapping exercise; Assessment of School Building Structural Integrity and Stability (ASSIST); and School Water and Electrical Facilities Assessment (SWEAP).

While Banadero and other schools evacuated the volcano zone, some other schools in the area received evacuees during this time. One such school, San Jose Elementary School – which was also visited during fieldwork – had, like 11 others, been provided through EEPCT with a LAPUS building.

On account of the regularity of the typhoons that affect the Albay Province, and the Philippines in general, there were also several cases of localized flooding affecting schools and a sense that carrying out ‘running repairs’, especially to roofs, on account of weather events is the norm. For example, Guinobatan East CS, which had been provided through EEPCT with a LAPUS building (while Save the Children and USAID made non-structural contributions), hosted evacuees from a localized flood event for two days. At least one evacuee was also a teacher at the school.

Finally, within the time frame of EEPCT, in October 2010 Super Typhoon Megi struck Northern Luzon – just north of the focus of UNICEF’s DRR pilot project and other activities in provinces of Southern Luzon. It was sufficiently powerful to take roofs off in affected areas, but was far enough away from EEPCT-supported schools to not cause such damage to them. However, UNICEF was involved in the response to this emergency.

2 FINDINGS

2.1 Introduction to findings

The primary focus of the fieldwork was to document DRR outcomes for children associated with programme activities. This was especially important to complement findings with respect to EEPCT activities in Peru that focused more upon national-level activities. However, the results framework also considers how EEPCT contributes to the Hyogo Framework for Action (HFA) and cross-cutting themes as outlined below:

- **DRR outcomes for children** – How have children benefited from the programme? These are described in terms of physical, educational, economic and psychosocial outcomes.
- **Contribution to HFA** – How has the programme contributed more widely to the priority actions identified under UNICEF’s four DRR goals (which have been adapted from the HFA)?
- **Cross-cutting factors** – How has the programme of work contributed to four cross-cutting themes, namely, leverage, innovation, scaling and evidence (as identified in the 2010 Progress Review Seminar).

2.2 DRR outcomes for children

DRR can lead to a wide range of positive outcomes for children. In order to structure the findings, outcomes were investigated in relation to the following four categories: physical, educational, economic and psychosocial.

PHYSICAL OUTCOMES FOR CHILDREN:

Improved safety at school

Several examples were provided where children as well as others, such as parents, have applied the skills and knowledge they have learned through EEPCT to improve the safety of the school environment and the children while at school.

For instance, demonstrating an actual outcome of their training, children led the response to an electrical fire in the principal's office of Binitayan Elementary School – their timely action likely prevented significant losses. The lunchtime fire, caused by a water heater being left on, was developing in a locked room. A child first noticed the fire, and children raised the alarm. As the key-holder was not to be found and teachers were at home during the lunch break, the children did two things. First, they got a message to a teacher, and then, while waiting for assistance, they created a line and transported water to the doorway, ready to extinguish any flames. By the time a teacher arrived with a key to unlock the door, the fire had spread. With the ready supply of water the flames were quickly and easily extinguished once the electrical supply was switched off.

In a similar instance, another school indicated how children raised the alarm when an electrical fan appeared to malfunction.

Demonstrating preventive action to mitigate localized flooding, PTCAs engaged in the clearing, maintenance or construction of drainage channels around school premises. It was not evident whether this resulted in significant benefits, but in a context where flooding is common, it would certainly be good practice to avoid unnecessary disruption or damage.

Several schools identified and assessed the risk caused by overhanging branches or large 'unsafe' trees in the proximity of classrooms – often through hazard-mapping exercises – and these branches and trees were removed. Again, it was not evident whether benefits of avoided damage could be attributable. The abundance of coconut trees was observed, including within school grounds (schools commonly offered fresh coconuts to the evaluation team). However, the danger of a falling coconut did not seem to register as a risk in any school (notwithstanding a coconut falling from a tree in the grounds of one school close to the group of evaluators and the school principal while discussing safety).

Other practical ways in which the school environment has been made safer on account of project activities is in terms of road safety (the use of traffic wardens to assist children outside schools), measures taken to avoid slipping, and regular inspection of electrical wiring.

Training on fire and earthquake drills was demonstrated in some schools. Typically, this involved the ringing of a bell, whistles and the use of a megaphone, with children moving rapidly to a designated safe area, which was the most open space within the school premises. One school that had been provided with emergency supplies demonstrated how it was using emergency supplies to support the establishment of a more coordinated evacuation plan with local authorities and parents. In the event of an emergency, panic should be minimized as a result of drills, and hence loss of life and injuries will be reduced.

Improved safety at home and in the community

As a consequence of the School-Community Risk Reduction Workshops (SCRRW) and School Disaster Risk Reduction Management (SDRRM) Council (parents, teachers, local officials, children) some physical non-school-based outcomes of the project were apparent.

Several cases were described where safety improvements to the home were made, such as the moving of furniture from spaces in the home that might hinder a rapid exit and the unplugging of electrical items at night. Dangerous areas around the home were also identified, such as the case of an open and deep well.

A 10-year-old schoolgirl was able to provide an example of how training in first aid allowed her to help stabilize a 4-year-old girl who had suffered a serious injury (it seems that a nail deeply punctured her arm).

In the community, children demonstrated risk awareness and adjusted their decision-making accordingly. For example, in one case, children are more cautious about when it is safe to cross a stream/river close to the school and when it is better to take a different route.

In addition, parents and other community members were mobilized on account of DRR training to replace a bridge in the vicinity of the Mayon Volcano that had been washed away during Typhoon Reming. Such actions could prove very important should a community need to evacuate due to a volcanic eruption, pending typhoon or other hazard. This could be deemed as safeguarding lives and household belongings, as well as improving communications during normal times, and thus indicates indirect DRR outcomes of the project.

A final illustrative example of the application of training was provided by the account of a mother at Binitayan Elementary School, who was grateful to her daughter for reminding her to pack a flashlight (torch) in an emergency bag ahead of their moving to an evacuation centre when a typhoon warning was issued.

EDUCATION OUTCOMES FOR CHILDREN:

Safer school buildings with better facilities create a more child-friendly learning environment

LAPUS buildings have not yet proven their structural integrity with respect to the occurrence of a powerful typhoon. From a DRR perspective, the most notable benefit of the LAPUS buildings has been their resilience against the less severe but regularly occurring typhoons/storms (about 20 per year, throughout the year). These events in particular cause rapid deterioration to corrugated galvanized iron roofs, resulting in leaky structures that require frequent minor repair – and ultimately need to be completely replaced. The use of buildings that are better able to function during inclement weather can only be an advantage in terms of education service delivery for much of the year.

Indeed, children and teachers described the main benefits of LAPUS buildings in relation to the improved comfort levels. The outcome for children should be improved learning, as a child-friendly space will encourage school attendance and also help ensure that children are learning well while at school.

Safer school buildings with better facilities should deliver health and nutrition outcomes for children

LAPUS buildings and day-care centres also come with improved water, sanitation and hygiene (WASH) facilities and kitchens for cooking, which can substantially contribute to improved health (reduction in waterborne diseases such as diarrhoea) and better nutrition. The outcomes for schoolchildren (and evacuees that will include children) are not known, although it can be assumed that in the case of a disaster benefits would be apparent.

Challenge: Increased disruption to education through schools hosting evacuees

In the event of a major disaster, the outcomes for children of a school having a LAPUS building are either nil or negative. The only possible exception to this would be an earthquake, should the LAPUS building prove to be more resilient and remain standing, safeguarding the lives of the children within.

The most likely event to occur is a strong typhoon. Under such circumstances, it is highly likely that the school itself would be suspended ahead of time by the Barangay officials, in accordance with the well-established LGU contingency planning protocol. Hence, children would be sent home, and then, if necessary, LAPUS buildings used as evacuation centres. Consequently, under these circumstances a school also being used as an evacuation centre has no bearing on education. Indeed, localized but serious flooding affecting the schools since the construction of LAPUS buildings has resulted in just such a pattern. It is stipulated that a multi-purpose evacuation centre in a school can only be used to house evacuees for up to three days at a time. It is assumed that after this period communities return to normal, in which case schools reopen and evacuees return home (or for a short time to family and neighbours while

repairs are made). If this situation were to occur intermittently, then the disruption to education is small.⁶

However, as has been noted already, even in the case of the small number of schools visited during fieldwork, EEPCT-supported LAPUS buildings have already been used for a much longer period of time. This example came about not on account of a typhoon, but due to the active Mayon Volcano triggering the use of some LAPUS buildings for two months (December 2009–January 2010). This period overlapped with the Christmas holiday, and therefore schools and evacuees were sharing the same space for one month, not two. That said, it is much longer than the DepEd stipulated three-day maximum stay of an evacuee in a centre.

However, the impact on the school and education was described as being limited. This is because LAPUS buildings are only one of several classroom spaces. For those children who 'lose' their classroom, such as those at San Jose Elementary School, the teachers and children adapted their routine, set up temporary learning spaces (tents, spaces under trees, and so forth), or in at least the one case of Guinobatan East CS, continued classes during the day, but with evacuees using the building during the night. Schools also report how they make up time lost due to school suspensions by opening classes on Saturday. Demonstrating community solidarity, children in San Jose described how they would provide food and 'gifts' for the evacuees. These experiences highlight how schools exercise considerable flexibility and resilience when playing host to evacuees.



Example of a school hazard map. © Paul Venton, 2012.

One final consideration in terms of the outcomes for children in the case of a major disaster, especially a typhoon, is that the main stock of school buildings are not built to the same hazard-resistant and generally better-quality standard as LAPUS buildings. Hence, when the majority of school spaces are suffering from wind and water damage, for instance, and education becomes

⁶ On average, about five days of school are lost each year on account of typhoons. This figure rises if there is a more exceptional event.

harder to provide, the best space for education, the LAPUS building, is likely to be out of bounds.

ECONOMIC OUTCOMES FOR CHILDREN:

Cost savings on maintenance and repair/rebuilding costs in the event of a disaster of a LAPUS building compared with a standard DepEd classroom building will deliver economic benefits for the community that should indirectly benefit children

The LAPUS building compares very favourably with standard DepEd classroom structures in terms of reduced maintenance and repair costs. A LAPUS building costs 2.6 million Philippine Pesos (PHP) (for 204 m², equivalent to 12.8k PHP per square metre), while a DepEd standard buildings costs 1.6 million PHP (155 m², equivalent to 10.4k PHP per square metre). The DepEd standard building has a smaller floor area than a LAPUS building, as it does not include toilets and kitchen. The financial benefits of having a stronger LAPUS building, as reported by the principals, include a savings of about 70,000 PHP per year in maintenance costs and the avoidance of needing to replace a corrugated galvanized iron roof with a cost of 100,000–150,000 PHP after about 10 years. In the event of a major typhoon, the LAPUS building design should resist damage and, considering the scale of damage caused by the 2006 typhoons (especially Reming), should result in significant cost savings for repair/rebuild.

Clearly, the initial construction cost of the higher-quality LAPUS building is greater. But when the avoided maintenance costs are incorporated into the analysis, the LAPUS building is less expensive overall.

If two cases are analysed over a 10-year time frame, using a 10 per cent discount rate (to reflect the time value of money): In the first instance (see Analysis A below), the cost per square metre of the LAPUS building is used to estimate the cost of a LAPUS building were it the same size as a DepEd building (in other words, without a bathroom or kitchen). This calculation enables us to consider building costs like-with-like. When the total maintenance costs are added over a 10-year time frame to the DepEd building, the DepEd building is actually 40,000 PHP more expensive than a LAPUS building of the same size.

Analysis A – Comparable square footage			
Year	LAPUS	DepEd	DepEd discounted cost
0	1,982,295	1,605,645	1,605,645
1		70,000	63,636
2		70,000	57,851
3		70,000	52,592
4		70,000	47,811
5		70,000	43,464
6		70,000	39,513
7		70,000	35,921
8		70,000	32,656
9		100,000	42,410
Total discounted cost	1,982,295		2,021,500
Difference between two buildings			39,205

In the second instance (see Analysis B below), the cost of a full-size LAPUS building (with kitchen and toilets) is used. In this case, the LAPUS building costs approximately 600,000 PHP more than a DepEd building when all costs are incorporated over a 10-year time frame. But clearly this building brings additional benefits in terms of health (toilets at schools can increase attendance and help to reduce cases of diarrhoea), and for evacuees, which are not incorporated into this analysis.

Analysis B – Actual square footage			
Year	LAPUS	DepEd	DepEd discounted cost
0	2,609,077	1,604,525	1,604,525
1		70,000	63,636
2		70,000	57,851
3		70,000	52,592
4		70,000	47,811
5		70,000	43,464
6		70,000	39,513
7		70,000	35,921
8		70,000	32,656
9		100,000	42,410
Total discounted cost	2,609,077		2,020,380
Difference between two buildings			-588,697

Given that the costs associated with a LAPUS building are less per square foot than a DepEd building, *there is an economic rationale to invest in stronger buildings*. In theory, the cost savings deliver benefits for the wider community, as reduced spending on maintenance/rebuild should reduce pressure on government budgets. This could result in educational outcomes for

children if money is redirected from maintenance to children's education. And while LAPUS buildings with kitchens and toilets are more expensive than DepEd standard buildings, the difference in cost should be far outweighed by health and other benefits that accrue from having a LAPUS building.

An economic downside of the use of school buildings as evacuation centres comes as a result of theft and damage. It was reported how, for instance, a fan belonging to the school was stolen by an evacuee, and how classrooms are damaged (seemingly only by nature of their intensive use by 60 or so evacuees). To counteract such loss and damage, an evacuee family is appointed with responsibility to help 'police' the situation.

It is not known whether the general widespread repairs made to the majority of the other 91 school buildings that incorporated hazard-resistant features have had economic benefits through reduced upkeep costs.

PSYCHOSOCIAL OUTCOMES FOR CHILDREN:

Children have a much greater sense of safety than before

Children expressed in many ways a sense of improvement in their well-being as a consequence of EEPCT programme activities. These stemmed from a combination of various inputs, ranging from specific DRR training, first-aid courses, hazard mapping of schools, learning on the subject of disasters and their mitigation through regular curricula, and the joining of school clubs where disaster-related issues are included. This is all the more important from a psychological perspective when appreciating that at least one of the pilot schools lost children in Typhoon Reming, and the community tends to assume that other large-scale disasters are likely.



The exception to this came from some children at Banadero Elementary School, in the danger zone of the Mayon Volcano, when reflecting upon evacuation experiences. They said that at the time they felt scared, sad and worried.

There was also much use of such phrases as, "If we are prepared there won't be a disaster." In one school, a child said that what was important was that they "don't panic," which was supplemented by another child, who said, "...and stay calm." Finally, representing a sense among many of the children while illustrating how much the local community enjoys its food, one girl responded to the question, "How much do you like DRR?" with the very well-received response among the group, "I like it like chickens!"

2.3 Contribution to the HFA

The HFA describes five priorities for action that are necessary to achieve disaster resilience, and these have been adapted by UNICEF in its development of four DRR goals. The contribution of the programme in the Philippines to each of these areas is documented below.

Priority 1: DRR for children and women is a national and local priority

The high prevalence of disasters and widespread public acceptance regarding likelihood of future events place DRR as a high priority

Disaster risk reduction was already a high priority in the country due to the very high risk profile in the Philippines, and implementation of the Disaster Risk Reduction and Management Act (2010) and Climate Change Act (2009) help to demonstrate priority at a national level. The disaster experiences in Albay – particularly regular typhoons with related landslides and flooding, and the presence of an active volcano – maintain local interest in disaster preparedness and risk reduction. There was much talk among varied stakeholders regarding the likelihood of future disasters, and this was often attributed to climate change.⁷ Importantly, there is a real sense that Typhoon Reming was not a one-off event. In the case of Buraguis Day Care Centre, parents contributed their labour to help with construction, demonstrating strong local priority for the programme. Such public awareness and engagement on risk and safety is reflected in the fact that the current Governor of Albay has a 'zero casualty' approach to disaster management, which is well known and highly regarded by the stakeholders met (they were quick to raise this point without prompting). So at least in this case, there are strong links between national-level policy and regulatory frameworks and local practice. Considering the long history of the celebrated Albay Public Safety and Emergency Management Office (APSEMO), it is probable that local concerns and interest have been more pioneering than at the national level, and not the other way round.

A strong advocate was identified and engaged in the process

The conditions for advancing DRR in education in the Philippines are strong. Currently, the Under Secretary of DepEd demonstrates enthusiasm and commitment for DRR (and climate change adaptation). Likewise, the appointment within the provincial department of DepEd of a DRRM focal point, who was an active member of the fieldwork for three days (demonstrating interest, enthusiasm and commitment), is one indication of the potential for expansion of DRR in education. Indeed, the DepEd DRRM focal point at the national level requested the provincial focal point to also attend the national education cluster meeting held at the start of the fieldwork.

⁷ Legaspi City in Albay Province is about to open a Climate Change Academy within its university, championed by the Governor of Albay. This is indicative of the high profile that climate change has within the region, particularly in relation to its implications regarding extreme events.

At the school level, the willingness of a school to participate in BSLE interventions rested first on the engagement of the principal. Thereafter, it was found that the uptake of teachers was crucial, on account of the high turnover among school principals, bringing into question issues of sustained interest.

The contrast in terms of relevance of DRR at the local level in Mindanao compared with Albay appears stark. Whereas Albay recognizes disasters as having significant implications for development, in Mindanao the armed conflict is the preoccupation. Considering the possibility of TLCs experiencing flooding, for example, had not registered as a priority concern, despite examples of this occurring in practice. The major disaster affecting northern Mindanao during the course of this study is sure to accelerate the uptake of DRR in relation to natural hazards as a critical consideration within education in emergency planning in the context of the province's complex emergency context. A sense that the region was 'caught napping' was raised by the President of the Philippines as he toured the affected areas. The experience of the disaster itself and the sentiments portrayed by the President summing up the need for greater DRR could catalyse stakeholders to take disasters in Mindanao more seriously in the future.

Use of locally appropriate entry points

The programme has encouraged schools in Albay to utilize the annual process of developing a School Improvement Plan to integrate improvements regarding safety. This helps to sustain interest by embedding necessary work within the existing school-based processes.

Likewise, several (possibly even all) schools have 'beautification' days at least during the beginning of the academic year. These have also been recommended as ideal moments to carry out repairs and other activities to make the school safer.

A further example was shared regarding school club programmes that students join voluntarily at the beginning of the academic year. Existing clubs have been supplemented by disaster-themed clubs. In the case of Marcial O. Ranola Memorial High School, links between Little Doctors and Nurses and the DRRM Club and overlapping aspects of the Youth and Environment for School Club have been facilitated. Each organization has an action plan for the year, including the need for dissemination.

Consistent advocacy with humanitarian agencies and departments on the importance of education in emergencies

Awareness raising is helping to maintain and raise the profile of the education sector in an emergency, which will result in improved continuity of education when the next disaster threatens widespread disruption.

Through the education cluster, rapid assessment is now being conducted immediately in affected early learning centres and schools. This was the case during many of the subsequent emergencies that occurred after the 2006 disaster, which was first responded to by EEPCT. Normally, the education sector is excluded in the inter-agency and inter-cluster rapid

assessments jointly conducted by the humanitarian agencies and government partners because education in emergencies response is not considered as life-giving or life-saving. The cluster has been advocating that from the children's viewpoint, resuming the rhythm of schools helps bring about normalcy in their lives and provides opportunities to receive psychosocial intervention, which in a full sense is life-saving and life-sustaining. Further, the education cluster has heightened consciousness on balancing the welfare of evacuees and the right of children to education, especially in schools being used as evacuation centres. This is to ensure there is more conscious effort to reduce or minimize disruption of education during subsequent emergencies, whether these involve natural disasters or are spawned by a conflict situation.

Awards to encourage and sustain actions

Awards were sometimes used to encourage local prioritization of risk management. For example, Marcial O. Ranola Memorial High School provides an award for an 'outstanding first aider'. In the same school, each school club is assigned a part of the 8.5-hectare school premises (the largest in the area) to maintain, and a prize is given for the winners, with a key focus on cleaning and maintaining the piece of land (beautification, waste management and recycling are all key themes). The recommendations section suggests ways that this can be further advanced to support DRR awareness.

Priority 2: Different risks faced by girls, boys and women are identified and addressed

Hazard mapping had been deployed as an important tool, but its strengths have not been maximized

Schools presented hazard maps of their premises as an output of the DRR piloting. The maps served the purpose of helping schools articulate some benefits of the DRR work through a practical and tangible product. Acknowledging this and also recognizing that the DRR pilot intended to facilitate a full consideration of disaster risk, the hazard maps fell short of their potential, possibly indicating limitations and barriers in aspects of the DRR pilot.

For example, discussions held regarding the maps did not indicate that a full consideration of vulnerabilities and capacities to multiple hazards was at their basis. Hazard maps often focused on the identification of 'dangerous areas' in the school premises, such as deep holes, slippery surfaces and big trees, and on the identification of new and old buildings. Who was most likely to be threatened by these was not known. Furthermore, the hazard maps seemed static, neat and 'finished' rather than part of a continual process of risk assessment that engages students and others in an interactive and dynamic way. The value in the participatory process of producing a hazard map was not obviously recognizable. That said, the traditional style of teaching (chalk and talk) is not conducive to best-practice DRR principles of participation and community-wide ownership. So the simple step of opening opportunities for participation on the subject of a hazard-mapping exercise is a gain in itself.

Another limitation in the hazard maps was the limited geographical scope. In terms of disaster risk, a school is not an 'island'. If, for example, a school is impacted by a typhoon, volcanic

eruption or landslide, then the wider community will also be affected. This was not reflected in the school-based hazard maps, because that was not their purpose.

Shortcomings of this nature could be attributed to difficulties in sustaining interest and application in DRR in the longer term, as principals, students and some teachers have since left.

Limited scope of multi-hazard risk assessment influencing selection of schools for LAPUS building

Selection of schools for the building of new classrooms that double as evacuation centres (LAPUS buildings) is the most obvious point to reflect on in terms of risk assessment. This is especially the case when considering the dominance of the structural support provided to the education sector in the Philippines in light of damage caused to schools by Typhoon Reming. LAPUS buildings were built in schools that had been designated as evacuation centres. The schools were all considered by stakeholders to be in areas of high risk, but this was repeatedly evidenced with respect to damage sustained in the typhoon not from a multiple hazard perspective. Furthermore, nearly all of the schools in Albay were destroyed in the typhoon, so it is hard to imagine how some can be considered more at risk than others in this regard. The other criteria used in school selection were with respect to the willingness of the school principal to engage in programme activities – leadership needed to be proactive in order to embed interest/uptake. It is probable that this was the dominant criterion. While it is sensible to consider the principal's interest, this criteria does not consider the high turnover of principals (about every three years), nor the fact that the system will favour schools where the principal has the strongest relationship with the DepEd decision-makers. It is not clear how any bias was eliminated through transparent processes.

At least one of the schools with an EEPCT-funded LAPUS building was sited in an area that subsequently flooded. This also indicates the possibility of the limited deployment of a thorough risk assessment. However, it was explained that the flooding was the first such experience, although the school failed to capture the flood risk on its hazard map.

Lack of a gender focus

Other than new LAPUS buildings and day-care centres possessing segregated toilets for boys and girls, there was no evidence that gender-disaggregated risks and issues were purposefully identified or addressed.

Girls as effective communicators

It was noticeable how girls played a more significant role when describing DRR and first-aid activities in their schools and communities. Boys, by contrast, had a comparative lack of interest and engagement towards DRR. Seeking to draw their input to a focus-group discussion with a mixed group of children would commonly result in an adult observer of the focus-group interaction stepping in to whisper the 'right answer'. This may be a consequence of the

dominance of female-led training by the local NGO through the deployment of social-worker trainees, and the dominance of women as teachers.

Priority 3: Safer and more resilient conditions for girls, boys and women

DRR training through EEPCT has helped to build capacity for creating safe and more resilient conditions

Children's empowerment to handle disaster situations and generally to contribute to the life of the community flowed from DRR-related activities implemented under BSLE. Such empowerment was highlighted in various ways, including:

- Children have duties and responsibilities around the home, mainly to collect emergency-kit items (containing items such as radios, batteries, flashlights and first-aid kits).
- Civic responsibility was frequently demonstrated through waste collection around school premises.
- Enhanced leadership skills of children and a sense of pride in accomplishments manifested itself through the Class Mayor system. A Class Mayor, supported by an established school-wide system, has responsibility to keep DRR alive among classmates and to disseminate current information.

Although controversial, the positioning of hazard-resistant evacuation shelters as school classrooms seemed to emphasize schools as a central element in society's handling of disasters and the promotion of a culture of safety (in a way that may be harder to achieve should the schools not serve multi purposes).

However, it should be noted that there was already a strong focus on DRR within communities in Albay, due to the history of disaster preparedness in the region. It should also be noted that the main focus of EEPCT was on structural measures (e.g., repairing and building new school classrooms). So while there were lots of examples of DRR activities being creatively integrated into schools and the curricula (for example, one school taught primary colours through the colouring in of emergency-kit items), it was not clear to what extent these types of activities were attributable directly to EEPCT.

Priority 4: Strengthened humanitarian preparedness, response and early recovery

Early recognition of the need for DRR

Importantly, in the aftermath of Typhoon Reming, UNICEF deemed it necessary to go beyond education in emergencies by incorporating DRR in their response. Indeed, this was described early on as 'Build Back Better'. Thus, the BSLE programme sought to improve the teaching-learning environment of preschool and school-age children, day-care workers and teachers, and to enhance their capacity for emergency preparedness and disaster risk management.

The active participation of multiple stakeholders in DRR training

For 72 schools, the principals were oriented on DRR, whereas in partnership with the local NGO Tarabang para sa Bicol Inc. (TABI), in the 6 pilot schools (visited during fieldwork) the children, teachers, principals, parents and selected community members *actively participated* in DRR. The outcomes are still evident, despite a minimal budget (just 0.3 per cent of the overall programme budget), a lack of DRR expertise by the trainers, and the inputs occurring two years ago. Social mobilization of school-community stakeholders, which culminated in the establishment of School DRRM Councils (or committees), has helped to sustain action under the leadership of interested school principals.

Coordination and harmonization among humanitarian and development partners

The activities of the UNICEF co-led education cluster at the national level have involved determining the basis for setting up emergency stockpiles and organizational arrangements for resource mobilization, communication and networking among cluster members. Similar coordinator functions have been instilled within the set-up and functioning of the Mindanao education cluster.

2.4 Cross-cutting factors

The 2010 EEPCT review interpreted results using a cross-cutting analytical framework of four focus areas – leverage, innovation, scaling and evidence. Key points on leverage and innovation were evident in the Philippines.

Leverage

The injection of EEPCT funding so soon after the destruction caused by Typhoon Reming, and the leadership role played by UNICEF, added impetus to the previously slower-moving Education in Emergencies cluster. EEPCT helped catalyse the cluster, and hence helped to maximize the collective impact of all education cluster members.

The functioning of the national-level cluster was important for the creation of subregional clusters – in Albay and Mindanao. An example of the benefit of the work of the subregional clusters can be found in Mindanao. Here, the Education in Emergencies cluster contingency plan was fed into the Humanitarian Action Plan through cluster participation in planning workshops facilitated by OCHA. Also in Mindanao, in cooperation with the education cluster, the Office of Civil Defense plans to use the EEPCT-supported DRR manual in its organization and orientation seminars for the Local Disaster Risk Reduction and Management Office, as mandated by the new DRRM Act (2010).

Building on the completion of piloting DRR practices in schools in 2009, UNICEF, in partnership with local NGO TABI, pursued negotiations for a follow-up engagement that sought to translate the piloting experience into user-friendly modules. This initiative was unique in its involvement of community members and engagement of schoolchildren on the subject of DRR. The DepEd initially agreed to support this direction with the end view of consolidating and integrating all

school-based DRR-related initiatives. The DepEd itself initiated parallel efforts towards meaningful mainstreaming of DRR in the school curriculum. Curricular entry points were identified across learning competencies in different subject areas. With the help of other NGOs, the DepEd started to orient education supervisors on teaching DRR in schools. International NGOs such as Save the Children supported parallel work in developing school DRR materials as well.

Innovation

Schools as zones of peace:

In Mindanao, the programme is working to create schools as 'zones of peace'. This is very important as, to date, teachers and schools have been deliberately targeted by armed groups. This has occurred for two main reasons: either because the school has been used as a polling station in local elections, and thus for the loser it symbolizes opposition strength, which in turn encourages violent retaliation as an outlet for political frustration; or because the teachers are linked with the opposition/winning forces. Schools should be safe spaces. An example was given of the story of a pregnant mother travelling with her four children by boat, which was hit by a bomb, killing them all. If the children had a safe school to go to, they would not have been in such harm's way.

School-community links:

The programme, on a small scale within the DRR pilot, has made efforts to develop strong ties between school and community. This approach recognizes the unique place a school has in the promotion of a culture of safety within its community. On the one hand, in the school premises, the school itself has been made safer through structural and non-structural interventions. On the other hand, outside the school premises, the message of safety transferred by children and teachers to homes and communities, and the safe evacuation service provided by the school, portrays its important role in promoting and supporting DRR for the community.

Integration of DRR within teacher training:

Whereas principals frequently (about every three years) move to different schools, pupils graduate and local officials leave office, teachers remain with a school for longer periods, and thus are most suitable for the targeting of capacity building for sustained DRR. Based upon this realization through programme activities, UNICEF is in the early stage of seeking to integrate DRR within teacher training. If successful, this will go a long way in embedding the subject into the education system.

Enhancement of planning tools to integrate DRR:

UNICEF is pursuing not just an expansion of the DRR piloting but the provision of technical assistance for the DepEd Central Office to refine the guidelines/manuals for the School Improvement Plans and Division Education Development Plan because these have been shown to offer considerable benefits as entry points for sustained DRR. The aim is to make the plans more child-centred and to sharpen the situation analysis in identifying barriers and bottlenecks

to children's participation, retention and learning. This would encompass taking into consideration disaster and other risks.

Additionally, with EEPCT funds, UNICEF has supported DepEd in developing the DRRM/Education in Emergencies Policy Framework, as a step towards addressing policy gaps and to encourage integration of DRR in national education planning.

2.5 Lessons learned

The field investigations helped to identify a wide range of lessons learned in terms of the effective integration of DRR and education, which are briefly summarized below:

- The expansion of DRR from the school to the home and community is a natural progression, and has dynamic and exciting possibilities for the furtherance of community-wide risk reduction. Child-led activities come to the fore as children practice what they are learning, and adapt their knowledge and skills to suit unique circumstances.
- As advocated by the education cluster, there is a need to ensure that education is a priority in an emergency, not only considered during early recovery. If education is completely bypassed during emergency assessments and response efforts, this slows the return to normality for the community as a whole while also ignoring the fact that children are often cited as among the most vulnerable. If education is first considered only at the point of 'early recovery' then the time lag between planning and actual activities can become far too protracted.
- New 'comfortable and spacious' school buildings that also serve as evacuation centres were considered by principals, teachers and children to have more benefits than negatives. This was because they were an improvement on standard classroom design, and also because they offered more facilities. However, there is a clear conflict regarding their dual purpose, particularly given that evidence suggested that, in times of emergency, schools had been used as evacuation centres well beyond the stipulated three days.
- DRR needs to be embedded within existing activities in creative ways. Schools visited demonstrated numerous approaches to integration, such as: integration in the curriculum (especially through science and environment); the setting up of DRR clubs among a suite of others; the establishment of DRR class mayors to lead and disseminate messages to classmates; and the establishment of school-community based multi-stakeholder committees linked with annual school planning and improvement activities.
- Children have a much greater sense of safety as a result of integrating DRR messages, learning and practical activities within their education. They can also be empowered to lead efforts, or contribute meaningfully in disaster scenarios, rather than being treated as and

feeling like bystanders. They can also influence the family in observing DRR once it is embedded in their consciousness.

- The regularity of disaster events, and the widespread perception of risk, is a key driver that supported the relevance of DRR activities.
- Hazard mapping is a useful DRR tool to complement curriculum-based disaster awareness by introducing activity-oriented applications based on individuals' real-life perspectives. Its maximum value is achieved when it is participatory in nature, developed regularly (so new children can participate, and others can re-engage), encompassing of vulnerabilities and capacities, and child led. There are no 'wrong' depictions of risk.
- The integration of DRR within teacher training is the most logical way to embed DRR within the education system. Teachers are likely to serve a school for longer periods of time than other key stakeholders (children graduate and parents lose their connection, and the turnover among principals and local officials is high). One-off training by 'experts' is too large a task to be rolled out over an entire school system and to maintain training on a regular basis (although this should be part of a strategy).

3 CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

The EEPCT programme in the Philippines responded to the widespread damage inflicted upon the education sector by Typhoon Reming in Southern Luzon, and then latterly to the displacement of thousands of people in Mindanao on account of the complex emergency there. In both cases, the programme was mindful of the need to 'build back better' and look towards the future, and not only deal with the current-day crisis. This perspective is very helpful and capable of leveraging maximum DRR gains.

Unlike normal operations, in response to Typhoon Reming, UNICEF committed heavily to the structural rebuilding needs. The scale of the problem justified this approach, as it was argued that it was not possible to continue education without re-establishing schools themselves first. In some cases, which were specially focused on during this research study, EEPCT funds were used to build new multi-purpose school buildings that double-up as evacuation centres. In this way, UNICEF again ventured into less familiar territory. From a global perspective, although the use of schools as evacuation centres is not discouraged by UNICEF if this can be limited to a short time period, the ideal would be to separate schools and evacuation centres in preference for the latter linked with spaces such as community centres or gymnasiums.

However, the use of school buildings as evacuation centres in the context of the Philippines is well established and accepted. Indeed, there were no accounts of schools bemoaning the fact

that classrooms had a dual function. This was even the case when an EEPCT-built school building was used for two months by evacuees (some of this time coincided with school Christmas holidays). Nevertheless, for one month evacuees and school activities were overlapping, and during this time the children were taught in tents or under trees instead of their classroom. The situation in this case was not good, but education was not significantly interrupted, as teachers and children adapted to the circumstances to the best of their ability.

It seems that the advantages associated with the new style of classroom, which has kitchens, toilets and washing facilities, as well as being less affected by wind, rain and flooding, outweigh the disadvantage that comes should the building be used by evacuees. This perspective is understood more fully when it is appreciated that the most likely reason for evacuation is on account of a typhoon threat, in which case schools are suspended anyway.

Unless the buildings constructed by EEPCT are able to withstand an earthquake (which is not at all clear), and thus protect the children should this occur when they occupy the rooms, there are no direct DRR benefits to the children from the safe building design. Essentially, their benefits derive from the improved child-friendly space with good WASH facilities. For the good of schoolchildren across the region it is necessary to find ways to 'bridge the gap' between the structural integrity and functioning of a new multi-purpose building and the standard classroom structures provided by the Department of Education. For this to take hold, a cost-benefit analysis is required. Encouragingly, initial evidence suggests that this could be favourable, purely on the grounds of reduced annual maintenance and repair costs associated with the new EEPCT buildings.

A small component of the EEPCT funding was directed towards non-structural DRR. If this had been better balanced in terms of scope (not necessarily funding) with the structural aspects, the numerous positive outcomes for children could have been deepened in individual target schools and expanded to cover a much greater proportion of children living in vulnerable conditions. It is understood how it was the intention of UNICEF to scale up its DRR piloting of the non-structural work in the six schools, but the emergence of a new crisis in the country curtailed this. EEPCT was re-directed to respond to the complex emergency in Mindanao, particularly through support to establish TLCs for displaced children. Here, too, there is a sense that establishing spaces for children to go to school has taken precedence over other considerations, such as hazard exposure. This is all the more apparent in light of the destruction caused by Typhoon Washi to parts of Mindanao in the last month of EEPCT activities and during the course of this study.

Moving forward, UNICEF Philippines Country Plan No. 7 (2012–2017) embeds DRR within it, as it is recognized how increasing risks, including through climate change, are set to influence education further. There is also a sense that the experience accomplished through EEPCT in terms of DRR piloting in Albay and the need to establish schools in Mindanao as 'zones of peace' is the next logical step for education in emergencies. The enabling environment in the Philippines for the expansion of DRR in education to underpin such work is quite conducive, and so the consolidation and expansion of progress made has high potential.

3.2 Recommendations

A number of concrete recommendations for the Philippines programme came out of the research, including:

Unify education sector-wide drills

A mixed message was observed regarding evacuation drills. Whereas in the case of fire the observed schools all evacuate the children to a safe central area away from buildings, etc., for earthquakes one school trained children to 'drop, duck, cover', while another had children running to the central courtyard and covering their heads with anything handy (e.g., a book).

These drills could be improved upon in the following ways:

- Clear signal/message to trigger an evacuation;
- Less running – more orderly movement;
- Checking names against a register;
- Consistent message regarding what to do in an earthquake (should children attempt to get out of a one-story classroom through emergency exits, or dive under a desk? If the latter, then is this best practice, or should they curl up in a ball next to the strongest object such as a desk, so that they survive in the 'triangle of life' created by the space between the crushed object and the floor?); and
- School drills should be practiced in parallel with a wider Barangay drill, so as to ensure strong links and the resolution of any issues.

Expand hazard-mapping exercises

Capitalizing and encouraging further interest of the students, while strengthening links between school and community, could be achieved by engaging the children in generating community-based maps (not simply school-based hazard maps). These would consider hazards, vulnerabilities and capacities, and would be undertaken in close collaboration with community stakeholders, especially Barangay officials. Furthermore, this activity could be undertaken on an annual basis, because of the benefits to children in participating in their development rather than looking at a finished product.

Integrate DRR in teacher training

Teachers in one school referred to themselves as being "only partially cooked" with respect to DRR messages, and there were many requests for expert input to refresh knowledge. It has been considerable time since the TABI training – so the message is gradually weakening. To help circumvent the continued need for training to maintain knowledge and awareness, but also to keep pace with staff changes (particularly principals), the integration of DRR in teacher training proposed by the UNICEF Philippines country office is sound and should be supported.

Enhance education policy framework and planning tools at local and national levels to reflect DRR and Education in Emergencies perspective and context

This encompasses building on the recent work carried out in developing a national DRRM/Education in Emergencies Policy Framework, and the provision of technical assistance for the DepEd Central Office to refine the guidelines/manuals for the School Improvement Plans and Division Education Development Plan.

Further utilize natural entry points at the school level for DRR

Schools 'beautification' days could be used as ideal moments to carry out repairs, etc., to make the school safer. One school reported how waste materials are recycled, which brings in a small additional income to the school. It was not apparent that this was used in a way that deliberately attempts to enhance school safety, but this could be a logical approach – for example, funds could be put towards further environmental management activities or the purchase of emergency items (i.e., a fire extinguisher or a megaphone, etc., especially as it was remarked how schools require more emergency items).

Nurture the engagement and development of boys, as well as girls, as local DRR champions in their schools and communities

One method to help with this could be through the greater use of awards as incentives for DRR and recognition of good work, such as that of the children who raised the alarm and responded so positively to the fire at Binitayan Elementary School, as well as by ensuring a gender balance in training, etc.

Channel the enthusiasm of children to understand and carry out environmentally based projects in the community that enhance DRR

For example, experiences highlighted by schools already included the safeguarding and planting of trees as a means to create safer schools and communities. In another example, the community's interest in being provided with a rain gauge to help monitor conditions and presumably predict threats from flash floods and mudslides could be picked up by the school. Children could be actively involved in registering conditions and developing a local community early warning system.

Utilize innovative approaches to school-community DRR links as demonstrated by others

Materials and training by other NGOs (SCF and Plan) seem highly complimentary – with creative ideas to maximize interest and uptake (e.g., competition among children that resulted in one group producing a 3D hazard model of their community complete with mock-ups made by family members of their own homes, and a child-led weekly DRR radio show).

Consider the sustainability of the School DRRM Council

Consider whether the School DRRM Council, as a stand-alone committee of children, parents, teachers and local government officials is the most sustainable model. Typical good practice would be to integrate DRR within an existing structure, such as for schools –perhaps the PTA or a governing body. However, in the case of the Albay DRR pilot experience, it seems that the

SDRRM Councils are sustaining themselves as they are operational despite, in some cases, the original principal who was party to the DRR pilot activities having moved schools.

Enhance DRR advocacy with local school boards

As education is not devolved, there is limited scope for the uptake of DRR with LGU education stakeholders. One entry point, however, is through the local school boards. At a provincial level, they are jointly chaired by the Provincial Governor and DepEd, and in the case of cities and municipalities, by the city or town mayor and a DepEd District Supervisor or Principal. These boards provide opportunity for interaction, and hence advocacy and mobilization on DRR.

Develop better integration between school and LGU-based official early warning system signals

It is important that individual schools receive and act upon the timely delivery of a warning from local officials. Strong links must be established in support of a fully integrated approach – radio and TV and mobile funds/text messages would be the main mode of communication, ahead of the use of church bells and then, at a school level, bells, whistles and loud hailers.

Foster climate change links

Climate change and disasters were treated synonymously by many stakeholders. It is clear that climate change can be an effective entry point for introducing concepts on disaster risk with local communities and school personnel.

Support, and utilize if appropriate, the development of a pool of specialized DRR trainers

Save the Children, for example, has been building a pool of trainers that includes APSEMO and the police, as well as others. It is important that DRR training and workshops are delivered by experienced DRR resource people.

Ensure that hazard-resistant buildings, especially LAPUS buildings with concrete roofs, have taken seismic risk into account in their design and construction

The overwhelming emphasis regarding disaster risk in Albay is in terms of typhoons, as well as the Mayon Volcano. The seismic risk did not receive much attention, aside from in relation to drills. It is imperative that school buildings are as safe as possible. Furthermore, if it is anticipated that in an earthquake a 'safe school' could collapse, children and teachers should, at a minimum, know how to react (see above recommendation). Hiding under a wooden desk is not going to save a child should a concrete roof collapse.

Leverage known benefits of the hazard-resistant school building experience to advocate for DepEd uptake of building/retrofitting safe schools

Many view the development of the LAPUS buildings as best practice school construction. Indeed, similar structures, frequently supported by the Government of Spain, were also evident as the team travelled between UNICEF-supported schools. The simple evaluation above suggests that LAPUS buildings are less expensive per square foot than standard DepEd

buildings, when both capital and maintenance costs are included throughout a 10-year time frame. Advocacy work around the cost effectiveness of LAPUS building design can help to leverage improvement to schools across the region. The enabling environment is quite conducive, should evidence be presented clearly.

Increase the emphasis on DRR in the context of complex emergencies

Especially in light of the damage caused by Typhoon Washi in Mindanao, but also the impacts of localized flooding affecting some TLCs, it is necessary to capitalize on the 'window of opportunity' to leverage DRR outcomes for children. This will be based on the ultimate goal of providing children with a safe learning environment, in light of all hazards (natural and man-made) that they may be exposed to, and thereby provide an environment most able to support children psychologically and in terms of their education.

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