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Sustaining the Gains: *Feasibility of Risk Financing for Education*

Summary Report

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TABLE OF CONTENTS

Executive Summary	1
Key Findings.....	1
Key Opportunities and Challenges	1
Recommendations for next steps	3
1 Background and Context.....	4
1.1 Project background.....	4
1.2 Global context.....	4
1.3 GPE’s involvement.....	5
2 Building Education System Resilience	6
2.1 Recent developments in sovereign risk financing.....	7
3 Summaries of Task Reports.....	8
3.1 Task 1: Building the Policy Case.....	8
3.1.1 Identifying the problem.....	8
3.1.2 Quantifying the impacts of shocks.....	9
3.1.3 Cost savings potential is high.....	10
3.1.4 Conclusions of policy analysis	10
3.2 Task 2: Understanding and Addressing Natural Catastrophe Risk	11
3.3 Task 3: Management of Political Risk to Education Systems	12
4 Next Steps: Pilot Projects for Risk Financing	13
4.1 Addressing child nutrition after drought in sub-Saharan Africa through ARC.....	13
4.2 Covering cyclone risk to the education system in Madagascar through ARC	14
4.3 Pooled cover for multiple perils in small island ACP states	14
4.4 Natural catastrophe coverage in an un-modeled environment	15

EXECUTIVE SUMMARY

Key Findings

- **The impact of emergencies on education is significant.** Natural disasters and man-made shocks impact tens of millions of children every year, causing both direct damage (e.g. loss of classrooms and books) and, much more critically, indirect damage through lost schooling days, increased permanent drop-out rates, and interruption of the broader social benefits of the education environment (e.g. health, nutrition and security).
- **Risk financing¹ can help manage shocks associated with emergencies.** Risk financing, as has been developed and deployed within the development sector over the past decade, is applicable to the education sector and could be used immediately to better manage natural disaster shocks, specifically through utilizing the three existing sovereign risk pools and their parametric insurance instruments. The deployment of similar tools for political risk related shocks is untested and faces significant challenges. The benefits of risk financing can only be realized if it is part of a holistic risk management strategy embedded in education sector strategic plans and implemented with a view to building resilience in the medium to long term. Risk financing has a high benefit to cost ratio when it incentivizes risk reduction and contingency planning, and also when it finances explicit response actions which quickly and effectively reduce interruption in both school provision and attendance.
- **GPE can play a critical role in risk management and building resilience.** GPE is in a unique position to support the operationalization of risk management in the education sectors of partner countries. Developing the capacity of Ministries of Education and Local Education Groups to drive the building of resilience into Education Sector Plans is critical, as is the fostering of national and local ownership of risk management in education service provision. Further, key GPE donor partners have supported the development of sovereign disaster risk pools covering the majority of GPE partner countries², which can act as an efficient vehicle to execute risk financing.
- **Risk financing builds on GPE's core business to strengthen education systems.** GPE's business model and platform are appropriately positioned to support countries access a range of risk financing tools. Under existing institutional arrangements, there are immediate opportunities to piggy-back on existing mechanisms, and the evolution of GPE's institutional arrangements will open up a broader range of tools to explore, including the ability to support risk financing on a portfolio basis (*i.e.* across multiple countries in the same program).

Key Opportunities and Challenges

- Building resilience into ESPs and Ministry of Education operations is critical and will need up-front investment to:

¹ Risk financing in this context refers to the pre-planned flow of funds to address the impacts of unexpected shocks; risk financing tools include insurance, contingency funds / budgets, contingent credit lines, etc.

² In this report, 'GPE countries' and 'GPE partner countries' refer to the 89 countries that are already or which will be eligible for GPE financing under the financing and funding framework approved by the GPE Board in March 2017.

- Improve planning for education infrastructure development and post-disaster response; and
- Develop early warning linked to preparedness, which can be extremely effective in reducing impacts, particularly at the local level.
- Taking an holistic disaster risk management (DRM) and risk financing approach is not typical in the development sector, but this is changing and can be resourced under several donor initiatives:
 - Through the G7 InsuResilience initiative, led by UK and Germany, and the Insurance Development Forum of global public and private sector actors, as well as other developing programs, the disaster risk financing space continues to expand and bring opportunities.
 - UN-FCCC Paris Agreement commitments to managing loss and damage from climate disaster, allied with the Sustainable Development Goals and the UN Sendai Framework for Disaster Risk Reduction, create a particular opportunity for new financing to fund DRM at the sovereign (national government) level (or cascading down from the sovereign level).
- For GPE partner countries, risk is already there and has a cost which must be recognized, and sustainable financing flows must be in place to cover that risk:
 - The true costs of these risks are already there, but hidden in the complex humanitarian / development nexus.
 - Acknowledgment of risk ownership is a critical first step to implementing more cost-effective (and impactful) management approaches, including *ex ante* risk financing.
 - For the education sector, waiting for traditional appeals-based aid is not a credible option, so the opportunity is even greater for *ex ante* approaches than in the broader disaster response space.
 - FONDEN in Mexico is a gold standard for sovereign DRM systems, enabled by a dedicated financing source authorized in law, which allows for integrated financing of mitigation, preparedness and response, including insurance.

- Data gaps are considerable in some places, slowing progress towards understanding the true cost of risk, which is vital to a structured risk management and financing approach. However:
 - The data to quantify the cost of risk is generally available, or could be developed using current technology, to the extent necessary to structure risk financing solutions, such as insurance, for natural disaster shocks across most GPE countries; while
 - For man-made crises, high uncertainty about the risk leads to un-affordable rates for current insurance products, and development of models to underpin more affordable parametric³ solutions is possible but will take significant time and resources.

Recommendations for next steps

- Emergencies are major disrupters to the delivery of education services across the developing world and significantly undermine the ability of education systems to sustain gains. Disruption to the delivery of education services can be minimized via a holistic disaster risk management and financing approach.
- We recommend that GPE should continue to explore how it can play a role in supporting the design and application of risk financing for education via its own work and by its partner countries. Two practical steps which could be taken in the short term are:
 - GPE, working closely with potential partner countries, should seek new and additional funds to prepare for and launch at least two of the proposed pilots identified in this report; and
 - GPE should continue to monitor the evolving disaster risk financing space to identify opportunities for engagement both directly and in partnership with individual countries, including advancing the quantification of political risk in advance of possible development and deployment of appropriate risk financing tools.

³ Parametric insurance uses externally measured or derived metric(s) as a basis for estimating the impact of a shock and the payout due under the insurance policy.

1 BACKGROUND AND CONTEXT

1.1 *Project background*

The project ‘Sustaining the Gains: Feasibility of Risk Financing for Education’ had three key tasks:

- Task 1, to identify the main causes of disruption to education and quantify their impact;
- Task 2, to investigate the applicability of existing catastrophe risk models and risk transfer programs to education; and
- Task 3, to explore the feasibility of political risk insurance for education systems.

A consulting team led by Willis Towers Watson, the leading global risk management, analytics and re/insurance brokerage company, and also comprising the Overseas Development Institute, the Start Network and Save the Children, have executed the project, utilizing targeted funding from the Rockefeller Foundation and consulting extensively with the GPE Secretariat.

1.2 *Global context*

This project is taking place within a broader and rapidly-evolving context of risk financing which is summarized below.

- **Within GPE:** GPE’s Board, in June 2016, mandated the Strategic Finance Working Group (SFWG) to develop an “ambitious and comprehensive” financing and funding framework (FFF). The SFWG in turn recognized the need to specifically investigate risk financing as part of GPE’s broader funding framework, given the critical need to build resilience of education systems in the face of increasing natural and man-made shocks and already low and decreasing funding for early response. The Board approved the FFF in March 2017.
- **Across the Education for Development Space:** To identify and secure financial resources to support progress towards the UN Sustainable Development Goal for education (SDG 4), the International Commission on Financing Global Education Opportunity (the ‘Education Commission’) was formed in mid-2015 as an outcome of the Oslo Summit on Education for Development. Humanitarian emergencies are the cause for half of the world’s primary school aged children not attending school, and education in emergencies became a key focus of the Education Commission.
- **At the Humanitarian / Development Nexus:** Building resilience is critical to sustainable development, and the need for structured risk management, including financing, has been recognized increasingly within the development community, particularly under the disaster risk management (e.g. Sendai framework) and climate change adaptation (e.g. Paris Agreement) agendas. More recently, and in light of the growing shortfall in traditional humanitarian financing, the emergency response community has broadly embraced the need for alternative financing models to facilitate more timely and pre-planned actions.
 - Donor, multi-lateral development bank, think tank and insurance industry led initiatives such as the German-led G7 InsuResilience initiative announced in June 2015 (and being broadened as part of Germany’s chairmanship of the G20), the World Bank’s Disaster Risk Financing and Insurance programming (mainly at the sovereign level,

with regional development banks increasingly involved), the Centre for Global Development Working Group which reported in April 2017⁴ (in which GPE has been an active participant), the formation and activities of the Insurance Development Forum (which evolved from the Political Champions for Disaster Resilience group), and the formation and activities of dedicated teams within both KfW Development Bank (as a vehicle for German government activities) and DFID's Private Sector Department (as a vehicle for UK Government activities) demonstrate the level of commitment to building resilience as an integral part of both humanitarian response and development activities.

1.3 GPE's involvement

The education sector has not yet engaged fully in recent developments in risk management and financing for development. However, through interaction with existing natural catastrophe sovereign insurance pools⁵ and support from the World Bank in particular, Ministries of Finance in many GPE countries have developed an understanding of disaster risk financing (DRF). Further, through UN-OCHA, UN-ISDR and many others, disaster preparedness and risk reduction have been mainstreamed into development thinking and sovereign government planning, including for the education sector (e.g. Worldwide Initiative for Safe Schools).

GPE is in a unique position to facilitate the adoption of risk financing to drive education sector resilience in its partner countries. GPE has strong relationships with Ministries of Education, both political and operational, and can help Ministers claim a seat at the table when risk financing is addressed at the sovereign level. And through ESPs and LEGs, GPE can encourage both embedding of DRM / DRF into planning and practical implementation of DRM / DRF strategies, including contingency planning for response.

GPE has developed two options for funding of rapid response within its current financing framework:

- Restructuring of an existing grant, which takes 2 to 3 months after a request is received; or
- Fast disbursement of up to 20% of an unprogrammed grant allocation (Maximum Country Allocation, MCA), again requiring 2 to 3 months for mobilization.

In both cases there is a significant opportunity cost, one of the reasons why the mechanisms were not used by Nepal after the 2015 earthquake. At the time the earthquake struck, a grant proposal had been developed but was not approved. Up to 20% of the MCA would have been available for early response, but that would have required subsequent revision of the grant application to account for the reduced funding available, and the Nepalese government opted instead to seek ad hoc funding for education sector recovery.

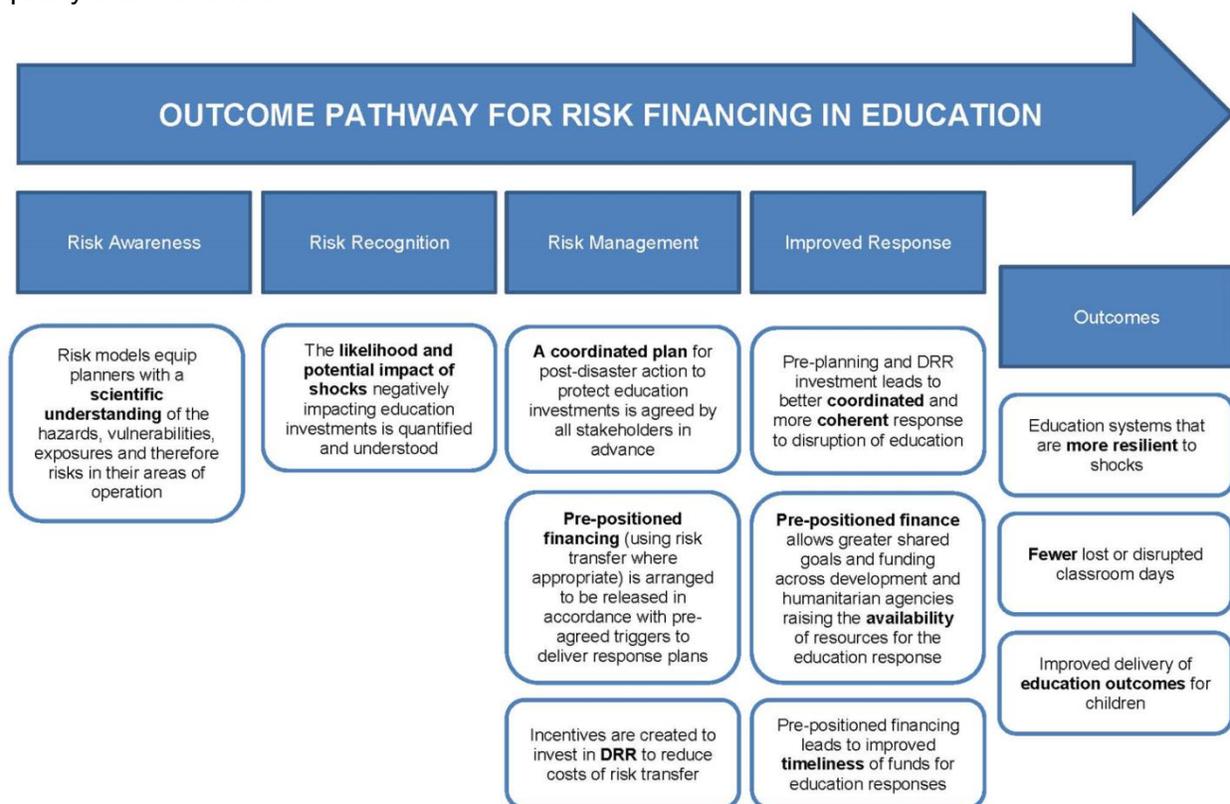
⁴ "Payouts for Perils": <https://www.cgdev.org/publication/payouts-for-perils-how-insurance-can-radically-improve-emergency-aid-report>

⁵ Sovereign parametric insurance programs have been developed in the last decade covering the Caribbean and Central America, Africa and the Pacific islands; see section 2.1 below

2 BUILDING EDUCATION SYSTEM RESILIENCE

For GPE partner countries to adopt a risk financing structure, they must develop a scientific understanding of risks to education delivery, their likelihood and potential impacts, and create pre-agreed response plans to utilize the proceeds of risk financing. Once risk is identified and quantified, cost-effective investment opportunities in disaster risk reduction (DRR) are incentivized through reduction in the need for and / or cost of risk financing, improving system resilience.

This virtuous cycle is further enhanced through improved coordination and coherence in the response due to pre-planning and investment in DRR. These positive impacts are then amplified by the presence of reliable and potentially additional funding due to development and humanitarian organizations using *ex ante* risk financing to effectively pre-position funds for shocks, leading to a more rapid disbursement of funds following the shock. Improved response speed and effectiveness leads to education systems that are more resilient in the face of shocks, reduces the number of lost or disrupted classroom days, and avoids declines in educational quality and outcomes.



As illustrated above, risk management involves risk identification and assessment followed by the reduction of risk where possible and proactive management of the risk that cannot be mitigated through financial tools such as insurance. Education development gains are impacted through loss of or damage to infrastructure, malnutrition and other child health issues preventing school attendance, and general economic impacts which carry through to the education sector. Awareness of risk in education sector plan design and implementation can significantly expand

in-country capacity for proactive risk management. Even relatively simple risk assessment at the preparation phase can lead to inclusion of valuable risk reduction measures in education sector plans and investments and improve national resiliency. While some risks cannot be easily forecasted, others can be mitigated through practical measures such as, for example, building stronger schools in earthquake zones.

Insurance allows shock impacts to be financed through regular payments of premium. Some level of shock impact can usually be managed through the redistribution of financial resources (e.g. budgetary re-allocation) or use of contingency funds. For education, however, contingency funds are extremely hard to secure relative to other emergency needs, and budgetary reallocation has a high opportunity cost given the long-term nature of most education investment programs. Thus, for many shocks, such measures are insufficient to meet the immediate financing needs to rebuild and / or re-open schools, feed hungry children, and ensure that attendance rates rapidly return to pre-disaster levels.

The timing of finance flows after a disaster is also important, and liquidity for early response is often challenging, particularly at the sovereign level. *Ex post* financing (e.g. through humanitarian appeals) is slow and undependable, is focused primarily on interventions that can be justified as life-saving, and is not able to respond to short-term needs in the weeks after a disaster.

Early and targeted financing provides leverage to increase the coordination of stakeholders pre-shock and the timely disbursement of funds post-shock, enhancing the economic value of early intervention as compared to delayed interventions. Additionally, benefits are realized through pre-planning response activities and the knowledge of which key activities are most likely to help sustain gains, particularly where those activities can be implemented at the community / local level.

2.1 Recent developments in sovereign risk financing

Following the devastation wrought in the Caribbean by Hurricane Ivan in 2004, sovereign governments in that region, supported primarily by the World Bank and bi-lateral donors, explored and then implemented a formal sharing of risk, pooled for efficiency and controlled using an innovative form of risk transfer, parametric insurance. The success of the Caribbean Catastrophe Risk Insurance Facility (CCRIF) in cost-effectively turning regular and equal (on a per-risk basis) premium payments from multiple countries (16 participated in CCRIF when it launched in 2007) into fast payouts (within two weeks of a triggering event) which scaled with the size of the event, fostered similar programs for African Union member countries (ARC) and 15 Pacific islands (PCRAFI), with CCRIF also expanding to include an additional 6 Central American countries. Of the 89 financing-eligible GPE partner countries, almost three-quarters are eligible for coverage from these existing schemes.

To maximize the benefits of rapid payouts unique to parametric insurance programs, these schemes have targeted coverage for early recovery needs. In the case of ARC, payouts finance implementation of a pre-agreed contingency plans, ensuring early-action benefits are maximized and the needs of the most vulnerable are met first.

3 SUMMARIES OF TASK REPORTS

3.1 Task 1: Building the Policy Case

The Task 1 Report builds the case for rapid financing of education systems after disasters and crises. It incorporates a general scoping of what the problem is and how much is due to what type of disasters and crises, as well as documenting case studies. It also includes an assessment of the economic and social costs of the current approach for disaster response in the education sector and the benefits of moving to an ex ante approach using structured risk management tools. The team explored, in as much detail as the existing evidence allowed, the link between quantifiable losses to the education sector during shocks and education outcomes over the medium to long term. This included looking beyond physical damage (including loss of classroom use, teaching materials etc.) to impacts on access to and quality of education and broader education budget impacts, which are more closely linked to education outcomes.

3.1.1 Identifying the problem

GPE countries are vulnerable to various types of shocks that disrupt education delivery through four main channels: disruption to the presence of students, disruption to the education delivery system, disruption to the presence of the teaching workforce, and disruption to physical infrastructure. Different shocks cause disruption through different channels, but at the highest level their impact on education outcomes depends on the extent to which they lead to students not being taught for an extended period, students permanently dropping out of education systems, or lead to a decline in the quality of education that students experience.

The costs of education delivery being disrupted can be divided into two broad categories:

- Short to medium term: The direct cost of recovery (e.g. rebuilding schools, resupplying classrooms, training new teachers), immediate costs of foregone provision (e.g. falling revenues from school fees), and the costs of temporary provision (e.g. providing temporary classrooms, learning materials etc.).
- Long term: The cost of lower learning outcomes, due to gaps in learning and permanent increases in the number of out of school children, to the child and society in terms of lost future earnings and negative impacts on child health and protection.

The existing structures for responding to shocks have proven to be of limited use in mitigating and preventing these costs. Education has historically been a low priority for humanitarian funding, consistently receiving less than 5% of humanitarian response financing, and being considered a secondary priority compared to other emergency needs, despite the high opportunity cost. This is exaggerated by the persistent shortfalls in humanitarian funding overall. The current form of humanitarian funding is also ill-suited to rebuilding education systems, due to its short budget window and focus on strictly short-term, life-saving aspects rather than learning outcomes, where impact is more long term.

Development financing has largely been unable to compensate for this gap, despite more resources being channeled to fragile contexts and post-conflict states in recent years. This is due to a combination of relatively slow disbursement rates and a disconnect in cultures and incentives

between development and humanitarian actors. This creates challenges in adequately planning for the impact of shocks and engaging in a rapid and coordinated response in their aftermath. Governments also find it challenging to expand, or even maintain, funding levels in the aftermath of a shock due to falls in government revenue that can lead to funding cuts, particularly if education is perceived as being a low priority in the context of a broader crisis.

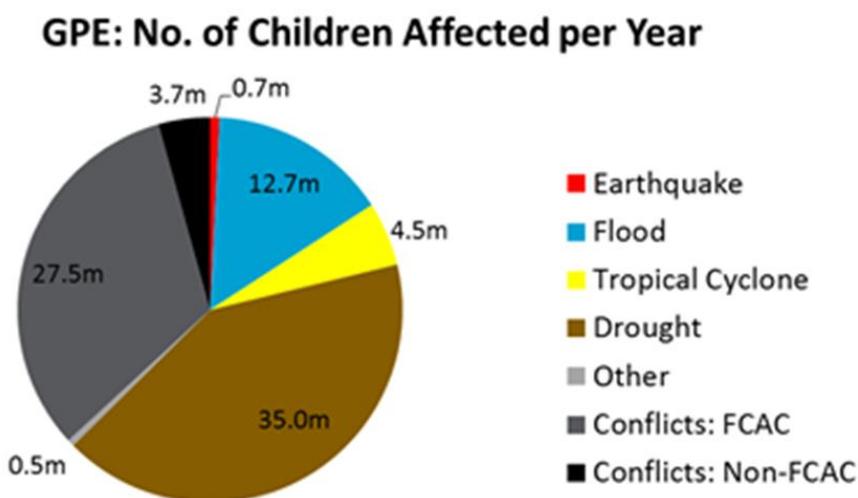
Prior planning linked to dedicated *ex ante* financing tools has the potential to speed recovery due to more timely payouts and to reduce short to medium term costs by improving coordination in line with pre-agreed response plans. This would in turn reduce the long-term costs of disruption on future earnings and health outcomes, by ensuring that children return to school more rapidly, thereby reducing the extent of foregone learning and limiting the number of additional children who permanently drop out of education.

These forms of *ex ante* planning and financing tools have been developed and utilized in other development sectors, as noted elsewhere in this document, and there is increasing interest within the education and broader international development community as to how they could be utilized alongside a range of other development financing tools.

3.1.2 Quantifying the impacts of shocks

Quantifying the impact of shocks on education systems and their broader costs is challenging due to a pervasive lack of data on the historical impact of natural and man-made shocks on education systems. The analysis contained in the report therefore relied on a relatively limited number of cases for which there was strong information and a larger number of cases for which there was data on at least some types of impact.

Analysis of data available from the period 2000-2016 produced an estimate that at least 84.5m children are affected by natural or man-made shocks in GPE countries every year, with drought and conflict in fragile and conflict affected countries (FCAC) being the main contributory shock types⁶.



The estimated direct losses to GPE country education systems from shocks over the same period amount to at least USD 1bn per year, with the total impact from man-made shocks likely to be greater than from natural disasters due to their prolonged nature. It is important to note that this

⁶ This analysis compares EM-DAT data on number of people affected and fatalities by peril, UCDP data on fatalities, and available PDNA data on number of children affected to derive a number of children affected by peril. A full methodology can be found in Annex 2 to the Task 1 Report.

figure does not include the long-term consequences of lower learning levels, for example in reducing future earnings and increasing societal costs (e.g. worse health outcomes leading to higher healthcare costs).

3.1.3 *Cost savings potential is high*

Cost-benefit analysis is challenging due to scarcity of data, particularly in terms of longitudinal studies that examine the long-term costs of shocks (e.g. on future earnings, education outcomes etc.) and that explore the linkages between more rapid disbursement, the speed of the recovery and disruption of education delivery. The analysis therefore used a range of scenarios on the potential impacts of *ex ante* financing on the speed of the recovery and applied these to a small number of recent crises for which there is more complete data on long-term costs – specifically looking at case studies in the Democratic Republic of the Congo, Pakistan and Syria.

The main driver of the high benefit to cost ratios is rapid disbursement of funds leading to a faster recovery and so (i) reducing the length of time that children are not in school and learning, and (ii) limiting any rise in the number of permanently out-of-school-children due to the shock and subsequent disruption. Estimates of savings vary from crisis to crisis and on the assumptions made regarding the impact of rapid disbursement, but can be substantial – far outweighing the direct costs of crises.

For a given crisis, savings can reach as much as 2,230%⁷ of the direct education costs of a given crisis (based on a 50% reduction in lost school days and a halving of the increase in numbers of permanently out of school children⁸).

It is important to note that these figures are likely to underestimate the benefits of using *ex ante* financing tools for education shocks. The figures on long-term costs were limited to estimates of foregone earning power and so do not incorporate other societal costs such as impacts on health outcomes etc. that are generally acknowledge to be substantial. The analysis also concentrated on the impacts of a more rapid response and recovery, and so does not incorporate estimates related to improved response effectiveness, reduced management costs or additional funds, all of which could result from *ex ante* financing tools promoting better planning and coordination for the response.

3.1.4 *Conclusions of policy analysis*

The potential dividend of improving resilience and the effectiveness of the response to shocks in the education sector is large. The long-term costs of disruption to education provision are high and there is a lack of early response financing that could speed recovery rates. These challenges may also be compounded where pre-shock funding levels cannot be maintained and the response is not well coordinated due to a lack of pre-planning for the response. The low priority given to

⁷ This figure is based on three case studies in conflict settings and the potential benefits of faster, planned response supported by more predictable funding.

⁸ This assumes that a structured risk management approach, including *ex ante* risk financing, halves the time that education is disrupted and halves the number of children who permanently leave education following a shock, relative to the status quo. It is the most optimistic of a series of projections presented in the Task 1 Report.

education in these circumstances can lead to a diversion of resources away from education and education sector plans to other, more urgent areas, resulting in high long-term opportunity costs.

Analysis shows that the long-term economic costs of shocks to education delivery vastly outweigh direct damage costs, but that these are very poorly documented, as are robust estimates of derivative social costs of lost learning time, issues of post-shock trauma etc. These suggest that improvements in the speed and effectiveness of the response could have a considerable impact in reducing the costs of shocks in the long-term.

These cost-benefit ratios are likely to be highest where there is both planning for and implementation of an early response, supported by access to quick funding (via parametric insurance). This should not only result in a shorter period of disruption, but also reduce the costs of the response through better management and greater coordination.

3.2 Task 2: Understanding and Addressing Natural Catastrophe Risk

The Task 2 Report explores the applicability of existing catastrophe models and risk transfer structures and how they can be adapted to the education sector. It identifies current tools and services which can be quickly accessed and adapted to meet the risk management needs of the education sector in developing countries, and documents the gaps which would need to be filled to allow for developing countries to quantify and finance a response to the impact of natural disasters on their education sectors.

The advent of natural catastrophe models thirty years ago has driven a shift from qualitative to quantitative analysis of global natural hazards, exposures and vulnerabilities, and provides a rigorous foundation for building resilience across all sectors and all development levels. These models build understanding of risk, can identify the most cost-effective risk reduction investments, and are the basis for identifying risk financing needs and implementing risk financing tools. These same models have spurred the development of parametric insurance instruments, which bring efficiency in transaction and claims settlement costs as well as the ability to pay out rapidly and to be flexible in terms of coverage design.

Natural hazards represent a substantial portion of the overall risk profile for education systems globally and many GPE partner countries are highly vulnerable. Current tools and services which can be quickly accessed and adapted to meet the risk management needs of the education sector in developing countries have been identified, and data gaps have been highlighted. While education specific risk models are rare, most developing countries, including most of the 89 GPE partner countries, are covered by some level of hazard and risk modeling. Through the use of proxies or collection of additional exposure information, detailed risk assessments for education systems are possible almost universally and covering most of the main natural hazard perils.

There are a number of risk financing modalities being deployed in the public sector of developing countries. In the past decade, the use of parametric insurance to finance early response by sovereign governments has been tested, with the aim of reducing the overall impacts of natural disaster events. Straddling the development and humanitarian spaces, such instruments have the potential to both protect development gains and increase the timeliness and effectiveness of national and international response. When deployed alongside early warning tools and contingency planning activities, such financing mechanisms can have great impact even when financial flows are relatively small. Many GPE partner countries are already engaging with and

utilizing risk transfer instruments from one of the three regional sovereign risk pools, providing opportunities for piloting risk financing for education.

Actionable strategies have been developed for pilot countries where catastrophe models underpinning risk finance products exist and where GPE has active engagements. Through these potential pilot programs (as discussed in Next Steps), GPE might test risk financing for education to support the building of resilience in education sector plans.

3.3 Task 3: Management of Political Risk to Education Systems

The Task 3 Report investigates whether risk financing for political risk is feasible. This includes investigation of the particular needs for political and conflict-related situations, building on the findings of Task 1. It also includes an exploration of the potential risk management and risk transfer tools which could be deployed to help build education sector resilience to political risk impacts, including the possibility of parametric political risk insurance.

As well as being exposed to natural hazards, GPE partner countries have a significant exposure to political risk related shocks including conflict, coups d'état, civil unrest, political instability, population displacement and refugee flows. Whilst these shocks can be unpredictable, they are manageable and can be understood using risk catastrophe modelling techniques and scenarios in order to reduce risk and mitigate loss.

This effort must begin with data and is crucial to build resilience for GPE and its partner countries to these shocks. Currently, the available data is inconsistent, and in the worst cases absent. Education sector plans offer an opportunity to collect consistent and specific political risk data at the country level.

Consistent and comparable data collection must be a priority in order to achieve a risk financing strategy. Whilst parametric insurance is not currently in existence to address political risk related shocks, the development of transparently defined triggers to inform an index of political shocks could be undertaken by GPE. The benefits, as identified for natural hazard shocks, can be replicated for political risk related shocks. To increase the predictability of post-shock funding for political risks, impacts, costs, and needs must first be quantified. With this in place, there is greater clarity on how to adequately pre-position finance. Further, this will require contingency planning and greater coordination of stakeholders, mitigating losses.

Risk financing for political risk related shocks is feasible. A comprehensive and structured disaster risk management approach is needed to build resilience for the education sector to political risk related shocks.

Building upon GPE and the Chadian Government's leadership in accessing the accelerating financing mechanism to meet the needs of the refugee population, an additional concept of embedding triggers based on an index is an example of how GPE can use a risk-sensitive financing mechanism to provide the benefits of insurance protection without the risk transfer.

4 NEXT STEPS: PILOT PROJECTS FOR RISK FINANCING

This final section of the summary report briefly introduces four possible pilot natural disaster risk financing projects directed at the education sector, the first two of which are implementable in the short term, presuming appropriate country partner engagement, the third requires significant governance and operational developments within GPE to facilitate its portfolio approach, and the final one requires a significant investment in education risk modeling before a risk financing structure and program can be developed.

All four address natural rather than man-made risk; as reported from Task 3 of this project, cost-effective financing solutions for political risk are not currently available and, while potential pathways can be mapped to test approaches similar to those for natural disaster risk, significant investments will be required to prepare for and facilitate such testing.

Further background to and details of these potential pilots is provided in section 6 of the Task 2 Report, and a summary term sheet for each of the two immediately implementable pilots is provided as Annex 15 to the Task 2 Report.

4.1 *Addressing child nutrition after drought in sub-Saharan Africa through ARC*

This pilot project aims to build on two key pillars which are already in place to increase resilience against food insecurity impacts on child nutrition / health and education outcomes in times of drought in sub-Saharan Africa, namely:

- GPE already supports some school feeding programs; scaling these up in response to more severe food insecurity has high value in extending the gains being made; and
- ARC has already provided parametric drought insurance coverage to 8 GPE countries; contingency plans in several of these already include school feeding as one of the response programs funded by insurance payouts.

ARC has three modalities for engagement in risk financing; one for sovereigns (the core program, which includes strict Standards & Guidelines for contingency planning, and requirement for certification of plans both prior to insurance purchase and prior to a triggered payout being made), one for IOs and NGOs (Replica Coverage, for which the contingency planning requirements are somewhat looser though do require full coordination with the replicated sovereign), and a third for non-stakeholders (including the private sector) which allows for use of ARC's modeling platform to structure parametric insurance coverage, subject to demonstration of development benefits.

As an example of what might be possible under this pilot, the current drought in Somalia was used as a case study. It is estimated that for a US\$5 million annual premium, a payout of around US\$20 million would have become due late in 2016, which could have supported an early-implemented school-feeding program for half a million children (assuming US\$40 per person cost for 4-5 months, the average across the current ARC program). This is likely to have saved US\$80 million to US\$100 million in response expenditure which had to await appeals-based funding, and the benefits would be much greater when taking into account lost schooling for those children kept in class by being nourished and secured.

The proposed 5-year pilot project would require an indicative budget in the order of \$11 million, which would cover the annual premium costs for half a million covered individuals each year, plus a 10% margin to support technical assistance in contingency planning, use of early warning information, and general disaster risk management support for the education sector.

4.2 *Covering cyclone risk to the education system in Madagascar through ARC*

This pilot project again aims to build on two key pillars which are already in place to increase resilience against the impacts of tropical cyclones on the education system in Madagascar, namely:

- GPE and its donor and NGO partners have consistently supported, and the Ministry of Education is committed to investing in community-driven early recovery and re-starting of schools in Madagascar; and
- ARC has a parametric tropical cyclone model and product which captures loss and damage at the sovereign level and which, based on assessment of a recent cyclone impact, can be reasonably scaled down to capture impact on the education system.

ARC's three modalities as outlined in section 4.1 above would again be available; in this case, contingency plans specific to response in the education sector have not been developed by the Government but such plans are reasonably well developed at the community level, and formalizing financial resource flow to support action under such plans would drive even more effective response implementation.

Using cyclone Enawo, which impacted the northeast coastal areas of Madagascar in March 2017, as an example, the ARC model estimated US\$53 million in damage and loss, of which an estimated 10% can be attributed to the education sector as direct damage. For a US\$1 million annual premium, the payout for education recovery would have met 75% of the sector needs as stated in the humanitarian appeal, with financing delivered before, or at worst very soon after, the appeal was issued (approximately two weeks after impact).

The proposed 5-year pilot project would require an indicative budget in the order of US\$5.5 million, which would cover premium costs for an annual coverage limit of around US\$10 million, plus a 10% margin to support technical assistance in contingency planning, use of early warning information, and general disaster risk management support for the education sector.

4.3 *Pooled cover for multiple perils in small island ACP states*

GPE partners with multiple small island developing states in the Caribbean, Africa and the Pacific, as well as with several other African and Central American countries, all of which are covered by risk modeling for multiple sudden-onset natural perils including earthquakes and tropical cyclones. These risk models are operating as the basis for sovereign parametric insurance contracts under the auspices of CCRIF SPC (for the Caribbean and Central America), ARC (for the Southwest Indian Ocean countries) or PCRAFI Facility (for the Pacific).

This pilot would facilitate collaboration between all three risk pools as well as the included GPE countries, and envisages GPE purchasing (or at least channeling funding for purchase), directly

from each pool, parametric insurance for the Ministry of Education in that country, at an equal (relative) level. Such funding for insurance purchase would be tied to contingency planning in the case of a payout, to incentives for risk reduction embedded within ESPs, and should be underpinned by holding of contingency funds by GPE which could be deployed in a more flexible manner to cover smaller events and basis risk in the parametric models.

A more complex construct which would maximize the risk diversification benefits of covering all of these countries, or some significant subset of them, would be for GPE to set up its own risk financing vehicle and license the respective parametric models, so that it could effectively insure each of the ministries of education within the portfolio, and then reinsure on a portfolio basis. While theoretically attractive, this construct would require significant work to both set up and operate on an on-going basis, with potential diversification benefits likely to be rather limited in pure financial terms (assuming insurance policies from each pool would be priced in the same way as the sovereign coverage currently being offered), though independence of operations would be a significant benefit to this approach.

4.4 *Natural catastrophe coverage in an un-modeled environment*

This potential pilot would take significant resources to bring to market, before any of the lessons of a live program could start to be learned. However, the three potential pilots described above do not cover any of the large Asian countries where GPE and its partners have large investments in education systems, and where natural catastrophes frequently undermine the gains made in delivery of education services.

Four potential targets for such a pilot are flooding in Pakistan, flooding or tropical cyclone impacts in Bangladesh, flooding in Myanmar or earthquake impacts in Nepal. None of these countries has natural catastrophe modeling in place suitable for underpinning a parametric insurance program, and while the national risk profile for these hazards is quantified to a reasonable degree (except for flooding in Myanmar), the risk to education systems is largely undocumented, with little data available to undertake the necessary analysis (although there are recent experiences to draw upon as a guide).

There are sovereign disaster risk financing conversations taking place in all four of these countries, involving World Bank, Asian Development Bank and others. One potential avenue for moving this possible pilot forward would be to involve the Ministry of Education directly in these sovereign conversations (which generally include Ministry of Finance and the agency responsible for disaster risk management), link LEGs to disaster risk management departments and committees particularly for contingency planning purposes, and coordinate risk reduction activities in the education sector being undertaken under GPE and partner funding to national programs and commitments.

In this way, the education sector could provide an opportunity for sovereign government and its partners to pilot structured disaster risk management and financing, bringing with it new financing which the education sector might not otherwise receive. Developments in sovereign risk financing in Asia will be funded by donors directly or via the MDBs, and GPE's existing relationships with key donors is the natural entry-point for developing support for a pilot program like this.