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on the Economics of
Health for All

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Exploring innovative financing solutions for pandemic preparedness and response

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Abstract

The coronavirus disease (COVID-19) pandemic highlighted the fact that governments and international institutions were not financially equipped to address the health crisis. In terms of a global pandemic preparedness and response (PPR), even though COVID-19 is no longer deemed an international public health emergency of international

concern, an investment gap lingers between potential needs and current funding. This paper documents why investing in PPR is crucial from an economic perspective. Unfortunately, no comprehensive approach exists that draws on multiple financing mechanisms at the national and global levels to bridge this significant gap and prevent silos and competing interests. This document critically reviews different PPR financing tools that have been used or proposed in response to the COVID-19 pandemic, compares experiences and mechanisms at the global level, and assesses the tools' effectiveness, while identifying shortcomings. The aim of this document is to contribute to the international discussion on ways of improving the financial architecture for PPR.

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1. The importance of PPR financing

The COVID-19 pandemic has been one of the deadliest emergencies in modern history, with an excess global death toll exceeding 14.9 million¹, and continuing to rise. The true economic impact of the pandemic will probably never come to light. In mid-2020, the consulting firm McKinsey & Company estimated its cost at US\$9–US\$ 33 billion. According Gita Gopinath, former chief economist of the International Monetary Fund (IMF), at the beginning of 2022 the cost was approximately US\$ 13.8 trillion. More recent academic studies such as the one led by Larry Summers put the cost for the United States of America alone at US\$ 16 trillion.

Nevertheless, some of the pandemic's most enduring effects are social. According to the World Bank, the percentage of ten-year-olds who cannot read increased from 57% to 70% in low-income countries after the pandemic. Meanwhile, an Imperial College model indicated that the number of orphans was close to eight million by November 2022. Moreover, the pandemic has caused enormous setbacks for the Sustainable Development Goals (SDGs), with the World Bank saying that close to 100 million more people are now living in poverty. SDG 3—Health and well-being for all—is chief among the SDG goals that are struggling.

Although WHO declared an end to COVID-19 as a public health emergency of international concern on 5 May 2022, it is important to note that, the virus was still claiming a life every three minutes. The uneven distribution of vaccinations is contributing to the emergence of a so-called variant soup. This complicates the effort to forecast and manage new waves of infection, and creates an ideal environment for the emergence of a potentially catastrophic mutation. The COVID-19 outbreak has also disrupted access to treatment for other infectious diseases like tuberculosis and HIV/AIDS, and the pandemic continues to undermine decades of progress.”

The World Bank and WHO put at US\$ 31.1 billion the annual investment required to fund a future pandemic preparedness and response system. A gap of US\$ 10.5 billion per year seemingly exists between required investment on one hand, and existing and expected domestic and international PPR financing on the other. International financing could close the gap. In brief, investing a mere US\$ 1.30 per person on the planet in PPR could prevent another tragedy like COVID-19.

The human, economic and developmental costs of the pandemic clearly surpass the global need for PPR financing, even under the most conservative estimates. Despite this, the international community has been unable to establish a comprehensive PPR financing framework that is equipped

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to manage future outbreaks. The recent experience of the Pandemic Fund is an emblematic example. In the course of 2022, the Group of 20 championed the creation of a multilateral global fund in an attempt to close the US\$ 10.5 billion annual global PPR financing gap. Significant efforts to establish the fund amid a challenging international environment had yielded a mere US\$ 1,661.23 million in total contributions, as of May 2023, which falls short of global demand for international financing.

This analysis explores a range of financial instruments that can apply to PPR financing from an international perspective, and assesses their merits and drawbacks. Its investigation is grounded in a comprehensive review of academic literature on PPR financing, supplemented by in-depth interviews with an array of stakeholders. They include representatives from international financial institutions, credit rating agencies, insurance companies, asset managers, professionals within the private sector of the global financial industry, and civil society organizations.

2. Why is it so difficult to finance

From a public policy perspective, pandemics can be treated as an emergency or a disaster. The literature defines an emergency as an exceptional event that exceeds society's capabilities in terms of material and organizational resources. From a disaster-management perspective, the concepts of disaster and emergency are often considered synonymous, although the concept of disaster is somewhat more complex, encompassing social, economic, political or even psychological dimensions.,

While it is a major factor in determining the magnitude of the impact of a disaster, disaster management is a relatively new discipline in public policy.²⁰ Several arguments justify government intervention in this type of event. Some authors argue that human beings have a basic right to the protection of their person or property. From a distributive justice standpoint, an ethical imperative warrants the protection of people in the event of a disaster. On the other hand, the neoclassical economic theory

recognizes that a disaster paralyzes coordination in the private sector and that the resulting absence of an entity to direct a coherent and coordinated response makes it impossible to overcome the emergency. As such, from a narrow point of view of mainstream economics, disaster management can be understood as a market failure.

Any disaster management model must start from the definition of risk. Risk is defined as the product of hazard multiplied by the degree of vulnerability. Hazard is the probability that a disaster will occur, while vulnerability can be defined as the ability to cope with the expected value of the damage caused by the hazard, in a given social and economic environment. Although there is no single model of disaster management, different typologies exhibit common elements. Disaster-management models typically acknowledge the existence of four elements: mitigation, preparedness, response and recovery (FIGURE 1).²⁰

FIGURE 1:
What is a disaster management model?



At the core of disaster management is a thorough understanding of hazards and risks.

Mitigation includes any action aimed at reducing the probability of disaster occurring. Preparedness includes actions aimed at reducing vulnerability. The response stage is triggered once the disaster has occurred and involves executing the actions outlined in the preparation stage. Finally, the recovery stage comprises damage repair, restoration and reconstruction. The recovery should take into account the strengthening of mitigation and preparedness systems that will help face future crises.²⁰ Preparedness, as defined by WHO, is the ability of various stakeholders to anticipate and identify health emergencies or hazards and promptly respond to them. This requires knowledge, capabilities and systems that enable national authorities and multilateral organizations to recognize potential risks and rapidly mobilize resources during a crisis. No specific grouping of policy interventions exists for any stage of the disaster-management cycle during

a pandemic, and disagreement might arise in the initial and final stages. For example, in a report on the COVID-19 pandemic prepared for the Task Force meeting of the Group of 20 Health and Finance Track, the World Bank and WHO established that surveillance, collaborative intelligence and early warning were key elements of the early stages (preparation or mitigation). However, while primary healthcare's service delivery had a clear impact in mitigation, it did not feature in a PPR plan as a target for funding.¹ The concept of building back better, as part of an eventual recovery post-pandemic plan, has emerged in some policy circles. However the current PPR financing model, which emerged with the COVID-19 pandemic, does not consider this stage (BOX 1).¹⁶

¹ This report does not address the health service delivery function; it focuses on the financing and governance functions, allowing for each country to define how to deliver services.

BOX 1:

PPR SUBSYSTEMS WITHIN THE SCOPE OF THE COVID-19 PANDEMIC

In 2022, the World Bank and the World Health Organization prepared the report, *"Analysis of PPR architecture and financing needs and gaps"* for the Group of 20 Joint Finance and Health Task Force. The report introduces five core elements of PPR and sets a framework for global discussion on international PPR financing within the scope of the COVID-19 pandemic. It was presented as part of global initiatives to establish a fund to bridge the global gap in PPR financing. For each of the five core elements, the report describes several activities that the initiatives could finance. For its part, the traditional disaster-management model only offers certain elements of mitigation and preparedness.

PPR subsystems

➤ Surveillance, collaborative intelligence and early warning:

- discovering unknown zoonotic viral threats
- surveillance foundations comprising population representatives
- pathogen surveillance and sequencing
- specialized surveillance programmes
- notifiable diseases.

➤ Prioritized research and equitable access to medical countermeasures and essential supplies

- closing existing vaccine and therapeutic gaps
- scaling up vaccine manufacturing capacity
- supply chain preparation and global stockpiles.

➤ Public health and social measures and engaged, resilient communities

- limiting human/wildlife interactions, specific activities
- communication and messaging
- border-health routine capacities.

➤ Lifesaving, safe and scalable health interventions and resilient health systems

- national public health institutes
- streamlining of pandemic health systems, and health systems for health security.

➤ PPR strategy, coordination and emergency operations

- data integration
- emergency operations and emergency financial funds
- conducting regular assessments to highlight gaps in the healthcare system.

While international disaster protocols were designed to cope with events similar to the COVID-19 pandemic, many of the protocols failed to fully address the unprecedented scale and complexity of the outbreak. For example, the Sendai Protocol for Disaster Risk Reduction provides a framework to help design public policies for disaster management. It establishes principles that countries must follow to manage disasters and proposes general recommendations at the regional and international levels. However, it overlooks widespread disruptions in economic activity and the social impact of the COVID-19 pandemic.

Another example is the WHO Emergency Response Framework, which recognizes three levels of emergencies based on the scope of the international response required. However, the Framework does not distinguish between an international emergency involving a number of countries and a truly global event, such as a pandemic, that affects the entire planet. Similarly, the International Health Regulations do not include specific criteria for managing a global, generalized and simultaneous event. The WHO Health Emergency and Disaster Management Protocol recommends general principles for handling health emergencies, including pandemics. However, the significant variation in the characteristics of a pandemic event, depending on the originating pathogen, rules out a one-size-fits-all pandemic-management plan.

The Pandemic Influenza Preparedness and Response Plan (PIPRP), which was developed following the 2009 H1N1 influenza pandemic, defines six stages in the progression of pandemics in order to provide a framework for their management. The sixth phase of the plan involves a declaration of a global pandemic, which is defined as community transmission of the virus in two or more WHO regions, and explicitly acknowledges the possibility of a truly global event. The PIPRP follows a typical disaster-management plan, which involves taking clear mitigation and preparedness actions before the declaration of a pandemic, as well as during the pandemic and post-pandemic recovery phases.

The PIPRP places great emphasis on epidemiological surveillance in the pre-pandemic stage, as well as containment measures, including movement restrictions and lockdowns. Among response measures, priority is placed on containing the virus and on non-pharmacological interventions, such as mobility restrictions and the use of personal protective equipment. However, the response also includes applying pharmacological measures, for instance using antivirals and developing vaccines against a new strain.

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The COVID-19 pandemic response plan drew its inspiration from the PIPRP. Its drawbacks were that it lacked pharmacological interventions during the acute phase of the pandemic, and its non-pharmacological actions were devised for conditions consistent with the influenza contagion, not COVID-19 (BOX 2). The COVID-19 response primarily involved applying mobility restrictions and using personal protective equipment. As the pandemic progressed, it exposed the need for a comprehensive approach to PPR management and financing. Furthermore, the pandemic has unique features that undermine the effectiveness of existing emergency-management plans and their financing mechanisms.

BOX 2: LITERATURE REVIEW METHODOLOGY

Tracking PPR financing literature involved searching in Google Scholar, SCOPUS and PubMed for relevant published materials. The key terms used in the search were “pandemic preparedness and response financing,” “pandemic prevention, preparedness, and response financing,” “PPR financing”, with “financing” substituting “finance” and “funding” in some of the searches. The review only includes peer-reviewed papers. For some specific examples the next sections quote policy papers from multilateral agencies and WHO. National examples are not included because of they are scarce and might introduce bias in the review. However, Sparkes, Mirelman, Earle et al. (2023) provide an exposition of PPR financing focus at the national and local levels. Lastly, an important body of work produced between 2000 and 2022 is dedicated to the ATC-A and the Pandemic Fund, originally called the World Bank Financial Intermediary Fund. The review refers to part of these works in the corresponding sections.

Firstly, pandemics are steeped in uncertainty that defies planning for them. It is highly likely that a pandemic experience similar to COVID-19 will recur this century. Given the uncertainty surrounding pandemics, such emergencies do not necessarily follow political cycles. As such, they do not provide the necessary incentives for political leadership to focus on long-term planning and investment.

Secondly, pandemics make cross-sectoral demands. COVID-19 has demonstrated that pandemics have far-reaching effects beyond health care. According to IMF estimates, governments implemented more than 5,400 policy interventions at a total cost of 16.4% of the global gross domestic product, with only 9% of the cost going directly towards health.

Thirdly, pandemics make sizeable financial demands. Meeting the demands of a pandemic requires significant resources that cannot be covered by ordinary budget allocations. For example, the Access to COVID-19 Tools Accelerator (ACT-A) estimates that countries affiliated with this mechanism have sufficient resources to finance only 50% of the total financial needs occasioned by the COVID-19 pandemic.

» Pandemic Preparedness and Response is a global public good that demands global public investment. «

Fourthly, pandemics amplify structural market weaknesses, making them more intricate than a mere market failure. During a pandemic, financing alone is not enough. Economic systemic failure on a global level is a real possibility that can undermine the implementation of traditional financing solutions, including insurance. Besides, covering financial needs is no guarantee that global supply chains will have the capacity to provide the necessary goods and services to cope with the pandemic...

Finally, PPR is a global public good that demands global public investment. The global public good vision of health asserts that people can feel the effects of the health of other populations, regardless of location. It is impossible to separate people from the global benefits of and the negative impacts on health. The good health of one person is shared globally, making it nonexclusive and non-rivalrous on a global level. Global public health is more than just a traditional public good. Funding for pandemic preparedness and response requires global public health solutions that must be collectively financed.

The unique features have made it very difficult to implement a comprehensive financial plan to address the COVID-19 pandemic. It is important not to see the pandemic as an ordinary externality or a public good issue to be resolved and financed through traditional national or sub-national public interventions. As such, financing PPR cannot be viewed through the traditional lenses of public finance. Its scope, global reach, and systemic nature demand global-level solutions, and the leveraging of national and local tools.

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3. What are the ways in which to finance pandemic preparedness and response?

Academic literature on PPR financing is scarce (**BOX 2**). Existing research largely focuses on the international dimension of PPR and the role of financial institutions in providing funding to generate resources for health systems, for instance by developing vaccines, therapeutics and diagnostics to prevent pandemics from becoming humanitarian crises. The most relevant mechanisms discussed in the literature include the Coalition for Epidemic Preparedness Innovations, the WHO R&D Blueprint for Action to Prevent Epidemics, the Contingency Fund for Emergencies, and the WHO Health Emergencies and Health Systems Preparedness Programmes. All the mechanisms were plagued by lack of funding even before the COVID-19 pandemic.

» Before the COVID-19 outbreak, a few international financial institutions had specific funding mechanisms in place for PPR. «

The Global Public Investment (GPI) is an innovative approach to international public finance, whereby all countries contribute, benefit and make decisions on equal terms. Within a GPI framework, all countries contribute according to a proportional formula. They are empowered to make decisions through well-designed constituencies, based on key criteria such as income level. The approach is designed to increase transparency regarding countries and their health systems, ensuring both a greater volume of contributions to global funding initiatives and improved coordination across existing multilateral entities and implementing agencies.

Before the COVID-19 outbreak, a few international financial institutions had specific funding mechanisms in place for PPR. A notable example is the World Bank Group's International Development Association, which provides soft loans and grants to the 77 poorest countries to help them respond to high-burden disease outbreaks and prevent such outbreaks from becoming deadlier and costlier pandemics. Another prominent example is the Pandemic Emergency Financing Facility, established in 2017 by the World Bank, which offers funding in the form of grants and insurance payouts to help prevent outbreaks from turning into pandemics.

The literature suggests that various financing mechanisms can be adapted for PPR financing, such as fiscal bonds, levies on airline tickets or internet-based products, revolving funds from donor countries, and social impact bonds. Some of these tools are already in use for health programmes, including research and development, and could be adapted for PPR financing. During the COVID-19 pandemic, certain unconventional financing ideas came under discussion in academic circles. For example, economist Andrew Lo from the Massachusetts Institute of Technology's Sloan School of Management proposed a subscription-based funding model where countries contribute a small amount per citizen in exchange for access to vaccines that the funds help develop.

Both economic and medical literature emphasize the importance of universal health coverage (UHC) in PPR. Robust primary health care funding is essential for establishing effective links between global health security and UHC. This involves investing in strong health infrastructure, well-trained and protected health workers, ample funding, reliable supply chains, and evidence-based planning and coordination. PPR financing should put priority on strengthening primary health care capacities by pooling funds. Studies demonstrate that lack of effective primary health care can undermine countries' ability to respond equitably to COVID-19 and remain resilient in the face of multiple health and economic challenges.¹⁰ Given that outbreaks start and end at the local level, funding should centre on community health workers and public health services. Global health-security financing is crucial for promoting global solidarity because it funds common goods for health.

Academic studies also illustrate the interconnection between addressing PPR planning and financing on one hand, and inequality, on the other. Addressing such challenges will require both investment and political commitment. The COVID-19 pandemic has exacerbated pre-existing financing gaps for health, creating a major threat to recovery and overall health security:

"Financing for pandemic prevention and preparedness," a chapter in a forthcoming book authored by Susan Sparkes, Andrew Mirelman, Alexandra Earle, Ankur Rakesh, Qudsia Huda and Jonathan Abrahams extensively reviews the national and local dimensions of PPR financing. This work explores how to finance PPR at the national level, providing key considerations related to financing mechanisms, budget provisions, time horizons and accountability. It also presents key examples and case studies.

While existing literature has investigated and assessed various tools, little effort has been made to carry out a thorough review of a pandemic PPR financial toolkit. Several factors explain this. Initially, the public-finance response to COVID-19 centred on public financial management (PFM) and redirecting public expenditure towards fighting the pandemic. Simultaneously, the international community placed a high priority on the development of global funding mechanisms to contain COVID-19 and lay the foundation for a future PPR financial framework.

In the summer of 2022, the Secretariat of the WHO Council on the Economics of Health for All conducted comprehensive interviews with several stakeholders in the PPR financing landscape to gain insights that extend beyond existing literature. To accomplish this, the Secretariat engaged with officials and executives from international financial institutions like the World Bank, as well as executives from credit rating agencies, insurance companies, asset managers in the private financial sector, and civil society organizations. The discussions contributed to a more holistic understanding of the dynamic financial toolkit associated with PPR financing.

TABLE 1 presents the financial instruments identified by the Secretariat through the interviews. It is important to acknowledge that the tools serve distinct purposes. For example, certain instruments are more apt for the mitigation and preparedness phases of the disaster-management cycle, while others are better suited for the response stage. The summary in Table 1 represents a synthesis of conversations with stakeholders in the global financial industry, and covers well-established, tested instruments alongside emerging solutions and suggested ideas. This summary does not purport to be an exhaustive review of all possible financial instruments. Instead, it offers a foundational reference to address a glaring gap in existing literature. Subsequent sections of this document will provide an in-depth examination of each instrument.

TABLE 1: PPR financing objectives

INSTRUMENT	MITIGATION	PREPAREDNESS	RESPONSE	RECOVERY
Public financial management				
Aligned budget formulation and allocation	No	No	Yes	No
Flexible budget execution	No	No	Yes	No
Tractable expenditure	No	No	Yes	No
International financing initiatives				
ACT-A	No	No	Yes	Unlikely that the mechanism is adapted to finance recovery
Pandemic Fund	Yes	Yes	It might finance partially some elements	Unlikely depending upon authorization
RTS	Yes	Yes	Unlikely since it would require rapid authorization and execution; it is not designed to work as continent credit	Possible depending upon authorization
PPR toolkit				
Insurance (Cat-Bonds)	No	No	Depends on the speed to have access to funds	Yes
Pandemic clause	No	No	Yes	Uncertain, since deferred payments could have an impact on fiscal space after the emergency
Credit enhancement of MDB	Yes	Yes	Depends on how quickly funds become available	Yes
Debt-to-health swaps	Yes	Yes	Unlikely, it would require negotiation during the emergency	Yes
Global taxation	Yes	Yes	Yes	Yes

4. Public financial management and the initial response to the pandemic

The most significant challenges facing PPR financing are fiscal constraints. Strategies to overcome them include tax policies, private sector-oriented incentives, insurance solutions, and raising resources from international donors. Specific financing mechanisms depend on the governance of PPR planning, as well as the nature of the actions to be financed. PPR financing tools fall into three broad categories: upfront capital investments for systems and infrastructure, sustained long-term financing for ongoing operations and recurrent costs, and rapidly scalable surge financing. It is important to strategically identify surge financing ahead of an emergency and ensure that it can be deployed rapidly.

Public revenues, including general taxation and government contributions, should be the cornerstone of funding for governments' response to health emergencies. Many elements of PPR are essentially public goods, and therefore free of charge, which limits the private sector's role in funding PPR, making it a public sector endeavour. Public financial management (PFM) comprises the rules and mechanisms that govern the allocation, use of and reporting on public funds. As public revenues are the primary funding sources for PPR, PFM has been an essential part of the health response to COVID-19, from a financial perspective.

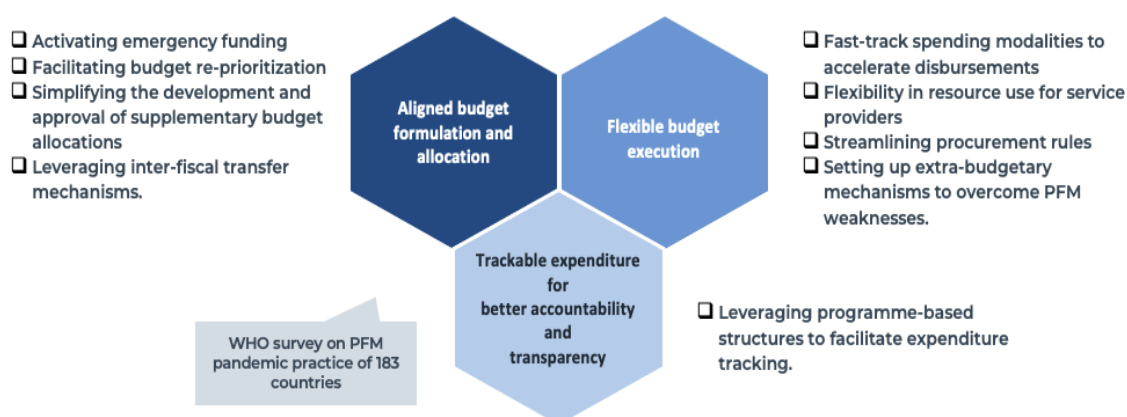
Between 2020 and 2022, WHO conducted a survey on the PFM pandemic practices of 183 countries. It established that countries with PFM practices that were aligned with budget formulation and allocation, flexible budget execution, and trackable expenditure for better accountability and transparency achieved the most success in financing the COVID-19 response (FIGURE 2).⁵⁴

The WHO survey found that, in terms of budget formulation and allocation, governments activated emergency funding, made it possible to revise budget priorities, simplified the development and approval of supplementary budgets, and leveraged inter-fiscal transfer mechanisms. Flexible budget execution measures included fast-tracking spending modalities to accelerate disbursements, providing flexibility in resource use for service providers, streamlining procurement rules, and setting-up extra-budgetary mechanisms to overcome PFM weaknesses. To ensure accountability and transparency, governments leveraged programme-based structures to facilitate expenditure tracking.

However, the emergency financing model for COVID-19 had some negative consequences. The pandemic evidently heightened the fragility of UHC in low-income countries because they reallocated health resources to the management of COVID-19, and away from funding for communicable diseases such as malaria, tuberculosis and HIV, as well as for non-communicable diseases.

WHO recommends several measures to enhance emergency PFM in order to address such challenges. The measures include i), accelerating programme-based budgeting reforms to align budgets with priority needs and emergency contexts ii), revising regulatory frameworks to enable front-line service providers to draw on financial resources in response to evolving circumstances iii), increasing flexibility for health facilities to draw on and expend financial resources while ensuring sound financial management and accountability iv), focusing on change and innovation in regular PFM systems and v), updating emergency procurement protocols.⁵⁴

FIGURE 2:
How did the world finance the COVID-19 pandemic response?



Source: WHO. Public financial management for effective response to health emergencies: key lessons from COVID-19 for balancing flexibility and accountability. Geneva: World Health Organization. 2022

5. International financing initiatives during the COVID-19 pandemic

During the COVID-19 pandemic, the international community widely discussed three high-profile international PPR financing efforts. Firstly, there was the ACT-A, a public-private partnership that sought to end the acute phase of the pandemic by deploying tests, treatments and vaccines worldwide through collaboration. Secondly, the Pandemic Fund, championed by the Group of 20 and structured as a Financial Intermediary Fund hosted by the World Bank, came into being to address the shortfall in global PPR financing. Finally, the IMF Resilience and Sustainability Trust (RST) was created to help low- and middle-income countries finance urgent health and climate needs.

The ACT-A sought to address the response to the COVID-19 pandemic, while the Pandemic Fund and the RTS were designed to better prepare the world for future pandemics. Insufficient funding represents the main challenge for the ACT-A and the Pandemic Fund. The challenges for the RTS concern potentially restrictive access rules and the requirement to meet traditional IMF conditionalities. All this underscores the fact that international funding mechanisms cannot single-handedly tackle the PPR challenge.

5.1. Access to COVID-19 Tools Accelerator

The Access to COVID-19 Tools Accelerator is a multistakeholder initiative quickly constructed in the early months of the COVID-19 pandemic. It is the largest international effort to achieve access to COVID-19 health technologies. The current mandate of the ACT-A is to accelerate the development and production of equitably accessible technologies that can end the acute phase of COVID-19. Initial stakeholders included the Gates Foundation, the Coalition for Epidemic Preparedness Innovations, Gavi, the Vaccine Alliance, the Global Fund to Fight AIDS, Tuberculosis and Malaria, Unitaid, Wellcome, WHO, the World Bank and three industry groups (the Developing Countries Vaccine Manufacturers Network, the International Federation of Pharmaceutical Manufacturers & Associations, and the International Generic and Biosimilar Medicines Association).

The ACT-A has evolved to include three vertical pillars: vaccines, headed by the Coalition for Epidemic Preparedness Innovations and Gavi, the Vaccine Alliance; therapeutics, headed by Unitaid and Wellcome Trust, and; diagnostics, headed by the Foundation for Innovative New Diagnostics. Additionally, it has a transversal component, Health Systems & Response Connector, jointly-led by the World Bank, WHO and the Global Fund, that coordinates work across the three other pillars. WHO also hosts a coordination hub that oversees and reports progress, mobilizes resources and engages with stakeholders.

» Key concerns about the ACT-A relate to the contribution mechanism. Many countries are not contributing their fair share, leading to underfunding. «

The ACT-A strategic plan and budget deliver US\$ 23.4 billion, which includes donor-grant financing along with contributions from sovereign and private donors (US\$ 16.8 billion). A further US\$ 24.6 billion in complementary funding is needed to cover additional in-country delivery costs. Such costs must be covered through domestic resources, including funding from Multilateral Development Banks (MDBs) at the individual country's discretion, and coordinated at the country level. The ACT-A proposes a fair share model to quantify voluntary contributions from countries to cover the total grant funding. The fair share is partly based on the IMF quota formula, and calculated on the basis of the size of countries' economies and how much they would benefit from a faster recovery of the global economy from COVID-19.

Key concerns about the ACT-A relate to the contribution mechanism. Many countries are not contributing their fair share, leading to underfunding. Meanwhile, those that have already provided their fair share might stop contributing to the effort. As of September 2022, ACT-A contributions had met less than 50% of its budget. During the acute phase of the COVID-19 pandemic, a significant body of literature sought ways of addressing shortcomings in the ACT-A. It called attention to funding challenges, problems with governance and the role of public and private stakeholders, as well as the political legitimacy of the partnership and its level of accountability.

5.2. The Pandemic Fund

Recommendations made by the Independent Panel and the Group of 20 High-Level Independent Panel centred on the creation of a Global PPR Fund to address challenges posed by pandemics. The fund was eventually established as a Financial Intermediary Fund, hosted by the World Bank.^{55,56}

» In 2022 [The Council on the Economics of Health for All] took part in the global discussions advocating policy principles. «

Prior to its creation, the Pandemic Fund raised several key questions on policy and the nature of international financing initiatives. This coincided with a broad debate on the Pandemic Fund and centred around four key elements: scope, legitimacy, governance and funding. Discussions considered whether the fund should be international aid or a shared investment in a global public good, and whether it should

finance structural health investments or epidemiological surveillance and early response. The discussions also touched on the fund's legitimacy, with emphasis on the role of WHO in ensuring inclusivity. Considerations on governance included representation in governing bodies and the choice between one dollar one vote or one seat one vote. Lastly, discussions on funding revolved around whether mechanisms should be binding or voluntary, and the need to prevent the cannibalization of other funds.^{42...} The WHO Council on the Economics of Health for All took part in the global discussions, advocating policy principles that the fund should follow, among them inclusivity, sustainability, sufficiency, accountability and complementarity. **(BOX 3)**

The Pandemic Fund was officially established in September 2022 to help close the global PPR financing gap. Its governing and administrative bodies consist of the Governing Board, which sets strategy and work programmes and makes funding decisions; the Secretariat, hosted by the World Bank; the Technical Advisory Panel, chaired by WHO, and; the Financial Trustee, a role assumed by the World Bank. The Pandemic Fund channels resources to beneficiaries through implementing entities. The Governing Board comprises a balanced representation from sovereign donors, potential beneficiary country governments (co-investors), contributing foundations and civil society organizations.

BOX 3: THE PANDEMIC FUND AND THE COUNCIL ON THE ECONOMICS OF HEALTH FOR ALL⁷⁰

The WHO Director-General Tedros Adhanom Ghebreyesus convened The Council on the Economics of Health for All in 2021. It aims to redefine ways to measure, produce and distribute value in health and well-being across the economy. In 2022 the Council worked to establish a global fund and reduce the world's vulnerability to future pandemics. This initiative developed into what is now the Pandemic Fund.

In April 2022, the Council published the statement "Building an inclusive global fund to address pandemic preparedness and response beyond COVID-19: policy principles and strategic considerations" recommending that any future global PPR funding mechanism should recognize certain essential principles. Firstly, it should start from the premise of inclusivity and universal access to the global public goods generated by the fund. Secondly, rather than fundraising during its early years, it needs to achieve sustainability, with multi-annual

funding contributions making it possible to focus on impact. Thirdly, it should have sufficient resources and a scale that matches the substantial gaps in the PPR landscape, and justify its creation as a new mechanism. Fourthly, it must uphold the highest standards of transparency and accountability to ensure public legitimacy and engagement. Lastly, it should pursue complementarities and additionalities within the existing landscape in order to become a central coordinating pillar of the global PPR architecture.

Such policy principles should serve as the cornerstone of a new PPR financial architecture that resets the world's thinking about health for all. This should shift from a nice-to-have charitable expense to a must-have collective investment that will protect current and future generations from catastrophic global health crises.

As the Pandemic Fund has no specific target, its fundraising has been modest. As of May 2023, it had a total US\$ 1,661.23 million in contributions.¹⁸ The financing will support activities that strengthen and sustain PPR capacity, including disease surveillance, laboratories, emergency communication and management, health workforce capacities, and community engagement. The Pandemic Fund will also support projects at the regional and global levels, peer-to-peer learning, technical assistance and PPR capacity monitoring. Priority for the first round of funding will involve strengthening disease surveillance, laboratory systems and human resource capacity, in line with the International Health Regulations and a One Health approach.⁷¹

» [...] the Pandemic Fund should go hand in hand with efforts to guarantee the availability of funds for the response to epidemics and pandemics. «

According to certain authors, in order to cover all aspects of public health-emergency management, the Pandemic Fund should go hand in hand with efforts to guarantee the availability of funds for the response to epidemics and pandemics. Ideally, this would come in the form of enhanced support to existing response mechanisms, such as the United Nation's Central Emergency Response Fund, the WHO Contingency Fund for Emergencies or the World Bank's Health Emergency Preparedness and Response Umbrella Programme, and would involve improved alignment among them to address gaps. However, new financing mechanisms could also help bolster the Pandemic Fund.⁶⁹

5.3. Resilience Sustainability Trust

In 2021, the IMF agreed to a new allocation of special drawing rights and proposed to establish the Resilience and Sustainability Trust using unexpended special drawing rights from high-income countries. The RST is structured as a financing facility governed by IMF rules, and its initial sum of approximately US\$ 45 billion will be invested in health, climate and digitalization over the next five years.

The RST will help countries address challenges posed by pandemics and climate change by providing long-term financing. It will issue its loans on the condition that countries have a macroeconomic programme in place, and that they develop a substantive plan of high-quality policy measures in one or more focus areas.

However, there is a need to consider certain key policy questions when evaluating the RST. One major concern is whether potential IMF conditionalities are in line with the objectives of a PPR credit facility. Additionally, it is important to consider whether the impact of the pandemic on financial stability justifies the implementation of such a programme, and if it is appropriate for monetary policy to play a role in financing PPR and in general climate-change initiatives.

6. Towards a PPR portfolio approach

Multiple prevailing global crises (such as recovery from the COVID-19 pandemic, the war in Ukraine, debt, climate change, inflation and food insecurity) have put overwhelming constraints on fiscal space in low- and middle-income countries, which the Bretton Woods Institutions, the Group of 20 and in general, the international community, have failed to address in any meaningful way. This has created serious barriers to investment in health when countries need it the most. It is clear now that meeting the global PPR financing challenge will require a more holistic, bottom-up approach where poorer countries creatively leverage development finance, capital markets, domestic resource mobilization and debt-restructuring tools to create the fiscal space they need to invest in health.

Some countries put financial creativity at the core of their approach to PPR financing. For example, as part of Prime Minister Mia Mottley's stalwart leadership to increase fiscal space for climate vulnerable countries, Barbados negotiated in 2022 an innovative new pandemic clause in its sovereign bond, in line with recommendations from the Bridgetown Agenda. International financial institutions and asset managers have argued that a form of market-based insurance, called catastrophic bonds (CAT-Bonds), can also be effective in financing PPR. According to Bloomberg, as interest rates rise, and the world faces the threat of a new global recession, at least 19 countries run a serious risk of credit default. In such a challenging context, countries can leverage debt restructuring processes to meet their PPR needs through debt-to-health swaps, which the Global Fund has already implemented on a smaller scale.

The COVID-19 pandemic has demonstrated that there is no silver bullet global solution for PPR financing. The fight to ensure that countries' health systems and global health governance architecture are better prepared to confront future pandemics will instead require the so-called portfolio approach, with countries cobbling together the necessary investment from a range of sources.

» Barbados negotiated in 2022 an innovative new pandemic clause in its sovereign bond, in line with recommendations from the Bridgetown Agenda. «

This section presents further details of some of the instruments that could be integrated into the portfolio. It discusses the role of insurance and insurance-like instruments, pandemic clauses in sovereign debt, credit enhancement mechanisms, debt-to-health swaps, and global taxation initiatives. The purpose of all these mechanisms is to increase fiscal space and overcome, at least partially, the financial constraints that governments might face in addressing a health emergency.

»The COVID-19 pandemic has demonstrated that there is no silver bullet global solution for PPR financing. «

6.1. Insurance and PPR finance

The global and widespread nature of pandemics makes them uninsurable by definition. Since a pandemic affects market participants in all jurisdictions simultaneously, it is impossible, for insurance companies' balance sheets, to honour a global pandemic claim. This is because insurance companies rely on diversifying risks and the ability to spread them across multiple policyholders to be able to pay claims. However, a pandemic affects everyone at the same time, making it difficult for insurers to spread the risk and pay claims.

» The global and widespread nature of pandemics makes them uninsurable by definition. «

CAT-Bonds are an alternative to traditional insurance. They are a form of insurance securitization that creates risk-linked securities which transfer a specific set of risks from an issuer or sponsor to capital market investors. As such, the investors take on the risk of a loss caused by a catastrophe, or of a covered peril occurring, in return for attractive rates of investment return. Should a covered catastrophe occur, the investors lose some or all the principal they invested, and the issuer receives that money to cover their losses. The issuer is usually an insurance or reinsurance company, but sometimes a corporate or sovereign entity (FIGURE 3).

CAT-Bonds can be used to protect against pandemics, as long as capital markets with an appetite for pandemic risk can support the demand. However, the only pandemic catastrophe bond that has been issued is the World Bank's Pandemic Emergency Financing Facility, which officially closed on April 2021. It is worth mentioning that during the COVID-19 pandemic, it only managed to allocate a disappointing US\$ 195.84 million.

FIGURE 3:
It is possible to rely on insurance to finance pandemic response?

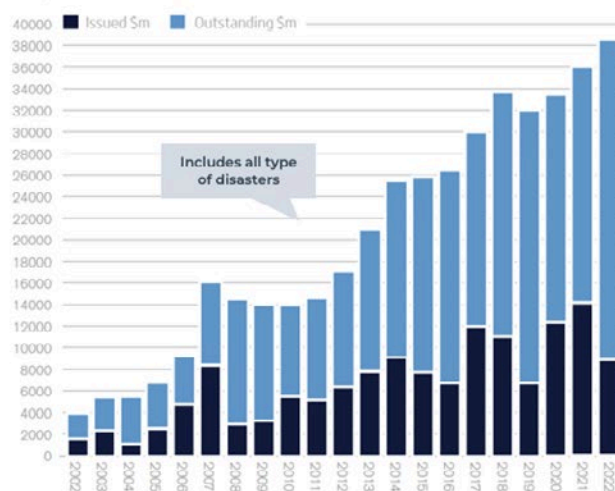
The global and widespread nature of a pandemic makes it uninsurable.

Since a pandemic affects market participants in all jurisdictions at the same time, it is impossible, for insurance companies' balance sheets, to honor a global pandemic claim.

Catastrophic Bonds may be used for pandemic insurance, as long as capital markets with an appetite for pandemic risk can support the demand.

The only existing Pandemic Catastrophic Bond is the World Bank's Pandemic Emergency Financing Facility, which officially closed on April 2021.

Global Catastrophic Bond market
US\$ million



Sources: World Bank. Fact Sheet: Pandemic Emergency Financing Facility. Washington (DC): World Bank; 2021 and Credit Suisse. Q2 2022 Catastrophe: Spreads Widen in Third Busiest Cat Bond Q2. Artemis, London: Artemis; 2022

6.2. Pandemic clauses and sovereign debt

Pandemic clauses have been built into sovereign bond indentures following the experience of natural disaster clauses. Natural disaster clauses allow for the deferral of payment of interest and of the principal in the event of a specified natural disaster, such as a hurricane. Such clauses increase fiscal space by creating a debt relief buffer to help pay for some of the financial impacts of natural catastrophes. Typically a well-defined event, such as a certain category of hurricane hitting the country, triggers the clause. It is a common practice in corporate debt markets, as banks and bondholders regularly issue financial instruments with natural-disaster clauses.

Like natural disaster clauses, pandemic clauses allow for the deferral of the payment of interest and of the principal in the event of a pandemic. Barbados issued the first bond with a pandemic clause in 2022. The pandemic clause in the bond allows Barbados to defer interest payments for up to two years in the event of a pandemic. The clause also allows for a principal deferral of up to five years, with a cap of 50% of the original principal amount.

The main advantage of pandemic clauses is that they provide a way for countries to raise capital and address pandemics by exchanging debt for funding that can be used for agreed purposes. In principle, the freed cash flow is enough to pay for a significant portion of the pandemic response. Pandemic clauses could be an alternative to insurance and can provide governments with a way to increase fiscal space by creating a debt relief buffer to help pay for the financial impacts of

a pandemic. For reference, according to the World Bank’s debt service payment database, low-income countries paid US\$ 3.34 billion to service their debts in 2020 while low- and middle-income countries paid US\$ 104.87 billion. Meanwhile, the ACT-Accelerator requires US\$ 23 billion in funding for the fiscal year 2021–2022. However, it is essential to have an independent third party’s definition of an objective trigger to ensure appropriate use of such clauses (FIGURE 4).

6.3. Credit enhancement and Multilateral Development Banks

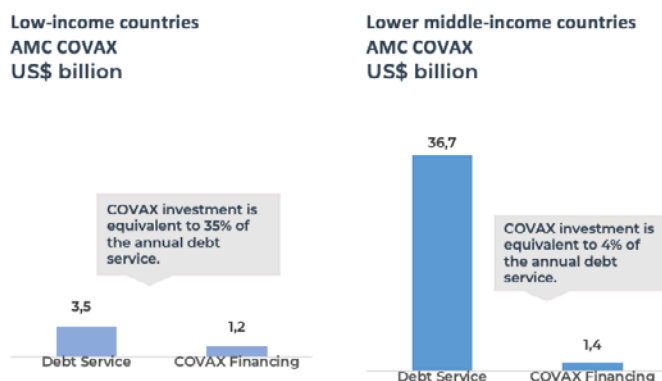
According to the capital adequacy report by the Group of 20, Multilateral Development Banks (MDBs) are holding back reserves that could be leveraged for concessional development finance. By providing guarantees, MDBs can enhance credit, offering an important near-term opportunity to increase resources for PPR finance, particularly in middle-income countries.


One example of a successful, similar initiative is the International Finance Facility for Education. The initiative uses a model that could be replicated for PPR finance. Issuing bonds backed by government guarantees enabled the International Finance Facility for Education to raise significant funding for education. It is possible to adapt this model for PPR finance and apply it to the health sector. However, this may increase risk exposure and potentially affect credit ratings. For example, AAA credit-rating targets of MDBs may limit the initiative’s scope.

FIGURE 4:
Pandemic clauses: an alternative to insurance?

- ❑ The pandemic clause builds upon the experience of natural disaster clauses, so it is not an entirely new instrument for sovereign issuers.
- ❑ In principle, the freed cash flow is enough to pay for a significant portion of the pandemic response.
- ❑ An independent third party’s definition of an objective trigger is essential.

What is the impact of spreads, liquidity and credit rating?



 Barbados issued the first bond with a pandemic clause in 2022.

6.4. Debt-to-health-swaps

According to the IMF, as interest rates rise and the world faces the threat of a new global recession, over 60% of low-income countries and over 25% of emerging markets are in debt, or at risk of debt distress. Countries can also leverage debt restructuring processes to meet their PPR needs. For example, they could undertake debt-to-health swaps, which the Global Fund already has implemented on a smaller scale. It is possible to scale this up in the same way that Belize did recently with its successful debt-for-nature swap.

Debt swaps are a unique financial mechanism that allows low-income countries to raise capital and address environmental and other policies by exchanging debt for funding for specified purposes. The swaps typically involve negotiations, as part of debt restructuring, with official creditors, such as the Paris Club. They require the debtor country to meet certain qualifications, including heavy indebtedness and lack debt-relief options.

Despite their potential benefits, debt swaps can be difficult to implement, and require thorough preparation, including pre-feasibility studies and strong fiscal capacity. The debtor nation must have the ability to manage the funds and ensure that they serve the specified purpose.

» Despite their potential benefits, debt swaps can be difficult to implement, and require thorough preparation, including pre-feasibility studies and strong fiscal capacity. «

In the health sector, the Debt2Health programme is an example of a debt-swap programme that has been implemented. In the programme, the creditor foregoes repayment of a loan in exchange for the debtor nation investing the freed-up resources into a Global Fund-supported programme. The debtor nation aligns the investments with its national health strategy, targeting programmes that concern HIV, tuberculosis and malaria as well as those that help build resilient and sustainable systems for health.

6.5. Global taxation

The global narrative on PPR financing is a narrow prism that overlooks important aspects of such financing. It is important to start by understanding that investing in health is key to creating an inclusive economy. To achieve this, there is a need to restructure the economy, calling into question existing frameworks and underlying assumptions and tools, and finding alternatives.

As the world leaves behind the COVID-19 pandemic and a new normality sets in, focus on the evolution of the global PPR financing gap has gradually shifted, from a discussion on funding to one on governance. Current discussions revolve around topics such as the relationship between UHC and PPR, the global emergency framework, and regional collaboration, which are important, but do not address the main concern: the nature of PPR as a global public good. The need for a global tax governance to finance PPR is the elephant in the room, and it is a problem about global public goods. Unfortunately, few international stakeholders are willing to address the issue.

A number of ideas could help push this topic to the centre of the PPR financing global debate. For example, there is a need to treat multinationals as unitary businesses and use a formula to allocate their global profits among countries. This would discard the century-old system of transferring pricing, which allows multinationals to evade taxation. It is important to anchor this new system in the global effective minimum tax.

There is also a need to discuss current corporate tax regimes, which allow firms to deduct virtually all costs. When corporations in industries with high market concentration and monopoly or monopsony power are taxed, the result is similar to a pure profit tax, also known as economic rent. This type of taxation does not interfere with the economic decisions made by these companies. They do not lead to higher prices, less investment or lower wages and employment. As such, it is possible to raise taxes without fear of adverse effects on growth or welfare. The major distortions and gross inequities in the current international tax system come from inadequate enforcement and large loopholes.

Finally, it is vital to make offshore wealth ownership more transparent by creating national asset registries and ultimately a global asset registry, to record and publish data on the beneficial ownership of all major property whether physical, financial or immaterial. This would not only facilitate effective taxation of income and assets worldwide, but also promote public policy debate on economic inequality and, ultimately, social power.

7. The urgent need for a new global financial architecture for PPR

Challenges to global public goods demand globally coordinated solutions implemented by international institutions. In November 2021, the World Health Assembly agreed to form an Intergovernmental Negotiating Body to draft and negotiate a WHO convention, agreement, or other international PPR instrument (informally known as the pandemic accord), with the intent of adopting it under Article 19 of the WHO Constitution or other suitable provisions.

In February 2023 WHO published a preliminary draft of the future pandemic accord. The accord seeks to resolve the problem of unequal access to vaccines, tests, masks and other pandemic-related supplies, that occurred during the COVID-19 pandemic. It also tackles issues concerning intellectual property rights, and presents a spectrum of perspectives. These range from labelling the intellectual property rights on life-saving medical technologies as direct threats to global health, to acknowledging the importance of such rights in medical advancement. Additionally, the treaty proposes a system for sharing information on outbreaks and pathogens.⁹⁸

From the financial perspective, the pandemic accord must lead the transition from the status quo, an outdated and ineffective donor-beneficiary model that projects PPR as a development project. It is important instead to understand that—despite their diverse manifestations worldwide—needs, gaps, benefits and responsibilities are shared and universal in the role they play in preventing global health crises. Moreover, any future pandemic accord must place a high priority on equity, enhance preparedness, foster solidarity and encourage a whole-of-society and whole-of-government approach.

A reimagined PPR financial framework must make it a priority to reverse the adverse effects of public administration and financial reforms. Damaging strict austerity measures are often behind such reforms, which have led to significant health budget cuts. This new architecture should also focus on reallocating resources towards health investments that incorporate health services, preparedness, innovation, workforce development, and that address the social determinants of health. Lastly, ministries of finance must consistently incorporate PPR into national budget plans as a recurring investment, treating it as an integral component of government strategies rather than a discretionary cost susceptible to cuts during fiscal crises.^{75,99}

The pandemic has laid bare the world's vulnerability to risks that carry immense human, economic and social consequences. Yet, it has also demonstrated humanity's ability to harness creativity and ingenuity to confront a crisis that initially seemed insurmountable. The development of vaccines within a year is a historic accomplishment that should inspire hope and optimism.

» The world cannot afford to revert to antiquated, pre-COVID-19 approaches to health financing. «

A partnership involving the government and the private and social sectors can help develop public policies that build stronger and more resilient societies. Devising strategies to tackle health emergencies is not an impossible goal, and should be embraced as a viable and achievable mission. The world has accomplished such missions, even amid formidable challenges. It is essential to remember the extraordinary triumph that was the eradication of smallpox, a milestone in human history, which occurred at the height of the Cold War. This testifies to humankind's ability to overcome adversity in pursuit of the greater good.

The world cannot afford to revert to antiquated, pre-COVID-19 approaches to health financing. It is vital to recognize the need for a new PPR financial architecture that redirects existing funding towards the achievement of Health for All. The pandemic accord presents an opportunity for a collective commitment to a renewed social contract that puts the creation of shared values and global public goods ahead of profit extraction. Such a commitment can move society closer to a truly global PPR framework that ensures future generations will never face the devastating consequences of a world ill-equipped to handle a global pandemic

BOX 4:**RETHINKING PANDEMIC PREPAREDNESS AND RESPONSE**

COVID-19 revealed the vulnerability of economic, financial and social systems, exposing failures in pandemic management. It underscored the challenges that multinational actors, national governments and the private sector face in marshalling resources. Building resilience for future health emergencies makes it necessary to re-evaluate economic theories and current interpretive frameworks.

The WHO Council on the Economics of Health for All seeks to position health as a public policy priority, with national and global economies and financial systems designed to support this goal. There is a need to consider the true **value** of PPR, which transcends cost-benefit analyses or gross domestic product-based metrics. PPR is crucial for resilient societies, as it protects lives and helps guarantee societal continuity. PPR financing decisions must take into account the consequences of inaction.

It is necessary to treat PPR **financing**, like all health financing, as a long-term investment rather than a short-term expense. Governments must put long-term investments ahead of short-term fiscal goals, and acknowledge that health is not an appropriate target for austerity measures.

PPR extends beyond immediate crisis responses. It makes it necessary to develop State **capacity** and fortify health systems to tackle structural issues. PPR should be anchored in the principles of building back better and in recommitment to universal health coverage as a worldwide objective.

Lastly, reimagining health **innovation** is essential. International investment strategies play a decisive role in recognizing crucial health innovations, like vaccines, as global common goods. It is vital to establish global public institutions to address these challenges and secure funding.

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