



**Màster en Relacions Internacionals Seguretat i Desenvolupament (MURISD)**

# COVAX as a Global Public Health initiative

Autora: Martina Benedetti Irigoyen

Tutor: Carlos D. Martín Faus

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Coordinador de la col·lecció: Dr. Rafael Grasa Hernández, [Rafael.Grasa@uab.cat](mailto:Rafael.Grasa@uab.cat).

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ABSTRACT: Amid the chaos that COVID 19 was causing, several actors created a partnership to try to lessen the impact of the pandemic. The COVAX Facility was meant to be a mechanism for global equitable access to vaccines. With ambitious goals and promises, it relied a lot on the solidarity and cooperation between countries. This policy paper intends to understand the need for the international community in providing Global Public Health, to analyze the weaknesses and strengths of COVAX, and also, to offer recommendation on how to improve it. This was done through the analysis of about 53 materials, including policy and academic papers, reports, databases and journalistic sources. After reevaluating the creation and development of COVAX, some flaws were found in its structure and implementation. Some of the main issues were allocation frameworks, transparency, solidarity framing, funding, accessibility, nationalism, and a restricted manufacturing base. These and other issues were addressed in the last chapter with the final recommendations. Despite it being aimed at COVAX's coordinators, it can also be used by other organizations and partnerships that want to have a base for other Global Public Health initiative

KEYWORDS: COVAX ; Global Public Health ; Vaccine distribution ; COVID-19 ; Vaccine inequity

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INTERNACIONALES, SEGURIDAD Y DESARROLLO**

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Author:

**Martina Benedetti Irigoyen**

Tutor:

**Carlos D. Martín Faus**

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**Firma**

## **Abstract**

Amid the chaos that COVID-19 was causing, several actors created a partnership to try to lessen the impact of the pandemic. The COVAX Facility was meant to be a mechanism for global equitable access to vaccines. With ambitious goals and promises, it relied a lot on the solidarity and cooperation between countries. This policy paper intends to understand the need for the international community in providing Global Public Health, to analyze the weaknesses and strengths of COVAX and also to offer recommendations on how to improve it. This was done through the analysis of about 53 materials, including policy and academic papers, reports, databases and journalistic sources. After evaluating the creation and development of COVAX, some flaws were found in its structure and implementation. Some of the main issues were: allocation frameworks, transparency, solidarity framing, funding, accessibility, nationalism, and a restricted manufacturing base. These and other issues were addressed in the last chapter with the final recommendations. Despite it being aimed at COVAX's coordinators, it can also be used by other organizations and partnerships that want to have a base for other Global Public Health initiatives.

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## List of acronyms

ACT	Access to COVID-19 Tools
AMC	Advance Market Commitment
APAs	Advance Purchase Agreements
CDC	Centers for Disease Control and Prevention
CEPI	Coalition for Epidemic Preparedness Innovations
COVID-19	Corona Virus Disease
GHSA	Global Health Security Agenda
GNI	Gross National Income
GPH	Global Public Health
HICs	High-Income Countries
HMICs	Higher-Middle-Income Countries
IHR	International Health Regulation
LICs	Low-Income Countries
LMICs	Lower-Middle-Income Countries
ODA	Official development assistance
PAHO	Pan American Health Organization
PHEIC	Public Health Emergency of International Concern
SEYLL	Standard Expected Years of Life Lost
SDGs	Sustainable Development Goals
UNICEF	United Nations Children's Fund
UNDP	United Nations Development Programme
WTO	World Trade Organization

## 1. Introduction

Producing, testing and approving vaccines is a very time-consuming and expensive process. In a situation like the one Corona Virus Disease (COVID-19) provoked, when the deadline is short and the conditions are not ideal, it gets even more complicated. Despite that, having an approved vaccine is still not enough. "They also need to be produced at scale, priced affordably, allocated globally so that they are available where needed, and widely deployed in local communities" (Wouters et al., 2021, p. 1023). This is in addition to ensuring vaccine boosters and the acceptance of vaccination in general.

"No one is safe until everyone is safe" is a powerful sentence that has been shared multiple times since the appearance of COVID-19. It did not take much to make it clear that a disease would not stop at the borders of each country and that it would take a lot of collaboration for this pandemic to be tackled. Nonetheless, even with this consensus, global partnerships still struggle to succeed more than two years after the first case was detected.

COVAX is a clear example of a Global Public Health (GPH) initiative that relied on cooperation and solidarity between countries. It is a global-risk sharing mechanism that aims to ensure equitable vaccine distribution. Divided into two phases, the first represented the period it would take to reach the vaccine coverage of 20% of the entire population. However, as of 1st of June 2022, upper-middle-income countries had around 82.1% of people with at least one dose, whilst for low-income countries (LICs), it reached only 16.3% of their population (Our World in Data, 2022).

While its main goals were not reached, it still had a huge impact, especially in countries that would not have had another option. Moreover, it was also responsible for donating over 1 billion doses to 144 countries and territories, with 85% of these doses directed to 86 low- and middle-income countries (UNICEF, 2022).

Even with the constant modifications due to COVID-19 still being present in our daily lives, it is still important to develop research and policy papers on Global Public Health initiatives as a way to encourage and improve their replication with different contexts and needs. Therefore, this policy paper is directed to COVAX's coordinators - Gavi, the Vaccine Alliance, the Coalition for Epidemic Preparedness Innovations (CEPI), the World Health Organization (WHO), and the delivery partner



UNICEF (United Nations Children's Fund). Additionally, it could be useful for other institutions, partnerships and agreements that want to learn from its achievements and mistakes in order to create other similar projects.

As for the objectives, they are: to understand the need for the international community in providing Global Public Health, to analyze the weaknesses and strengths of COVAX and to offer recommendations on how to improve COVAX. Through documentary and bibliographic research, quantitative and qualitative data its compared and analyzed. This information comes from eight sources of journalistic material, 27 reports and databases, and 18 policy and research papers.

By comparing their goals to the results achieved, the expectation is to be able to identify a few critical problems regarding, for example, funding, and operational and structural factors. The context will be detailed and it will be easier to understand how external conditions also played a big role in delaying their results. Furthermore, the recommendations are an outcome of the evaluation that will be carried out in chapter four.

The chapters are organized from general to specific aspects. The second one concentrated on Global Public Health and shows the need for initiatives that focus on that. Then, the next chapter lists several projects and agreements that have this objective and act globally. The fourth one is the whole analysis of COVAX, including the structure, strengths and weaknesses. Finally, the last chapter offers recommendations based on the problems that were found previously.

## **2. What is Global Public Health?**

In this chapter, the key concepts used for the final analysis will be briefly exposed in the form of a summarized state of the art. This will allow for the next chapters to be focused on more specific and content-related topics. As this policy paper revolves around Global Public Health, it is essential to explain how this terminology developed over the years.

“Global health” is the term that came after “international health”. Brown, Cueto & Fee (2006) suggested that this change came from a strategic need of the World Health Organization (WHO) to reposition itself when faced with challenges. “We argue that WHO began to refashion itself as the coordinator, strategic planner, and leader of global health initiatives as a strategy of survival in response to this transformed international political context” (Brown et al., 2006, p. 62).

Even if the origin and meaning of the latest term are still unclear to the authors mentioned, it is believed that it was not something that happened naturally, but with an ulterior motive. “International health” was usually used to target the control of epidemics between nations in the 19th and 20th centuries. However, ““Global health”, in general, implies consideration of the health needs of the people of the whole planet above the concerns of particular nations” (Brown et al., 2006, p. 62). Another important factor is that the term “global” refers to the importance of actors other than governmental or intergovernmental organizations, such as nongovernmental organizations, the media and transnational corporations.

Yach and Bettcher (1998) explained that the globalization of public health could be positive, but also dangerous. From the first angle, there is a bigger diffusion of technologies and ideas, but from another, it is easier to spread infectious diseases, for example. One solution they gave was the creation of more efficient information and surveillance systems, capable of giving early warnings to threats, similarly to what happened when the first case of COVID-19 was reported (WHO, 2020).

Moreover, Koplan et al. (2009, p. 1995) defined global health as:

An area for study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide. Global health emphasises transnational health issues, determinants, and solutions; involves many disciplines within and beyond the health sciences and promotes interdisciplinary collaboration, and is a synthesis of population-based prevention with individual-level clinical care.

Contrary to what Koplan et al. (2009) said about there being differences between global health and public health, Fried et al. (2010) believe that they are equivalent:

Both view health in terms of physical, mental, and social wellbeing, rather than merely the absence of disease. Both emphasise population-level policies, as well as individual approaches to health promotion. And both address the root causes of ill-health through a broad array of scientific, social, cultural, and economic strategies. (p. 535)

They describe public health as “global health for the public good, [...] benefiting all members of every society” (Fried et al., 2010, p. 536). Although it is clear that it is needed to invest in Global Public Health infrastructure to protect the population from transnational health threats, it is complex and expensive to do so (Rodier et al., 2007). This is due to the urgency of a:

strong national public health leadership and infrastructure, cross-border collaboration, capacity to identify problems rapidly and design real-time evidence-based solutions, well-trained and well-equipped workforces, well-functioning laboratories and service-delivery systems, capacity to sustain interventions, and ability to respond to unexpected events. (Rodier et al., 2007, p. 1448)

In a global health system, strengthening domestic health strengthens global health and vice versa, which reinforces that there is no need to compete for attention or resources (Fried et al., 2010, p. 536).

With the change of habits, shifts in dieting standards, tobacco and alcohol consumption, ageing and a sedentary lifestyle, non-communicable diseases (such as cardiovascular problems, diabetes, cancer, and chronic respiratory illnesses) have been rising globally and continue to be the main cause of death in the West (“The Global Health Regime”, 2013). These factors also increase the mortality rates in developing countries, affecting the socioeconomic status and preventing growth and development (“The Global Health Regime”, 2013).

Even with the development of technologies, new medical interventions and research, the current health scenario remains critical. Climate change, mental health disorders, high blood pressure, risk of epidemics and pandemics and treatment-resistant microbes are just a few of the recurring health challenges (Michaud, 2018). In addition, “global public health continues to be undermined by negative environmental, political, and economic factors from pollution to violent conflicts to limited food production, and even a new, man-made threat—the spectre of biological attacks” (“The Global Health Regime”, 2013).

The challenges of ensuring individual and public health security include:

The unfinished agenda of broadening access to the drugs, vaccines, and other interventions needed to control endemic diseases such as malaria,

acute lower respiratory tract infections, diarrheal diseases, measles, and tuberculosis, as well as to address the ongoing problems of HIV/AIDS, neglected tropical diseases, humanitarian emergencies, and global environmental changes. (Rodier et al., 2007, p. 1451)

As the effects of those and other health-related issues can cause consequences that cross borders, they require focused and constant attention. As Michaud (2018) stated, the quality and availability of health care are highly unequal. While rich countries have material and economic resources to deliver quality care with several professionals and hospitals, developing countries may lack that. This, associated with the lack of free health care, leads to “conditions that are manageable in rich countries and can be death sentences in poor countries that lack access to proper prevention, care and treatment” (Michaud, 2018, p. 97).

Moreover, economic growth is partly responsible for health improvements, as governments can use some of that money to invest in the health area. Not only that, it leads to access to better conditions and services, including clean water, sanitation and food security. Also, it can result in free healthcare services. Altogether, this contribution can promote better health outcomes, which in return helps to minimize the effects of poverty and inequality. As Michaud (2018, p. 92) indicated: “better health can drive economic growth; at the same time, rising incomes foster conditions for health improvements”.

As shown in this chapter, health is linked to social and economic well-being in a global way as it is not restricted to the borders of a country. The direct connection between Global Public Health and international development became even more evident when the Sustainable Development Goals (SDGs) were created by the United Nations General Assembly in 2015. They consist of 17 global goals to be achieved by 2030 as a plan of action to reduce poverty and inequity. Although “health” is mentioned in several goals, the third one is specifically focused on ensuring healthy lives and promoting well-being for all at all ages.

One of the nine targets is to achieve universal health coverage, including financial risk protection, access to quality essential healthcare services and access to safe, effective, quality and affordable essential medicines and vaccines for all. To achieve that, it is needed to support research, development and universal access to affordable vaccines and medicines; increase health financing and support the health

workforce in developing countries, and improve early warning systems for global health risks. Considering the importance of the facts just mentioned, this policy paper and its justification and relevance are directly linked to it ("2017 HLPF Thematic Review of SDG3", 2017).

Even if it is the third goal that is associated with health, other objectives are also related to it, such as SDG 2 (malnutrition), SDG 4 (childhood development), SDG 5 (eliminate all forms of violence and harmful practices against women and girls, universal access to sexual and reproductive health/rights), SDG 6 (access to drinking water and sanitation), SDG 7 (access to modern energy services), SDG 9 (enhance scientific research), SDG 11 (air quality and municipal waste), SDG 13 (resilience to natural disasters), and SDG 16 (reduce violence and related death rates). Similarly, by achieving the third goal, it will also help with eradicating poverty (SDG 1), promoting decent work and economic growth (SDG 8) and reducing inequality within and among countries ("2017 HLPF Thematic Review of SDG3", 2017).

Motivated by development, humanitarian, economic, and security interests, "countries should clarify priorities for the global health agenda, allocate more attention to health-related needs, advocate for greater accountability among nongovernmental organizations, and improve the monitoring and evaluation of global health initiatives" ("The Global Health Regime", 2013). As the Millennium Development Goals and then the SDGs were established, global health has become an essential topic of political debate in places like the UN General Assembly, and meetings of groups of countries and organizations. As a result, multiple agreements, legislations and projects were approved to encourage and monitor the progress in the international area of health and development.

### **3. Global Public Health Initiatives**

The use of international law related to public health activities was overlooked for a long period after the Second World War. Even if the potential for its use in Global Public Health was there, it only started to be explored in the second half of the 1990s (Fidler, 1999). With new policies, organizations (such as WHO) implemented and developed international instruments capable of monitoring and encouraging changes. It represented an important adjustment as "the nature of

public health problems in the era of globalization requires international cooperation and coordinated action through international law" (Fidler, 1999, p. 6).

In 2005, a global legal framework was agreed upon between the World Health Organization and 196 countries. The International Health Regulation (IHR) provided the countries' rights and obligations when handling public health events and emergencies that have the potential to cross borders (WHO, n.d.).

This instrument of international law is supposed to lead to improvements in disease prevention, detection and response (Rodier et al., 2007). Following pre-determined criteria, the member states will identify if a specific threat in their territory could turn into a public health emergency of international concern. It not only refers to threats related to infectious diseases, but also natural disasters or industrial accidents that could interfere internationally (Rodier et al., 2007).

After a capacity assessment, the countries are required to develop action plans and build a public health infrastructure with qualified human resources. As the regulation demonstrates that it is needed to identify and control the spread of diseases when they are still local, it:

Calls for member states to develop, strengthen, and maintain core capacities to 1) detect, assess, notify, and report disease events, and 2) respond promptly and effectively to public health risks and public health emergencies of international concern. (Rodier et al., 2007, p. 1449)

As soon as a potential public health emergency of international concern (PHEIC) is notified, WHO coordinates a response to address the situation (CDC, 2022).

There are multiple examples of countries and organizations working together to fulfil the demands of this agreement. For instance, the Centers for Disease Control and Prevention (CDC) have global programs led by teams of multidisciplinary experts that aim to address more than 400 diseases and conditions (CDC, 2022).

Moreover, the Global Health Security Agenda (GHSA), a group of more than 70 countries and organizations, also targets the prevention, detection and response to infectious disease threats. As a collaborative and multisectoral initiative, "it is a political driver that seeks to enhance global health security, and accelerate compliance with the IHR and adherence to relevant international health security standards, frameworks, and strategies" (GHSA, 2018, p. 4).

Another tool related to mapping and evaluating efforts is the Global Health Security Index, which estimates the capacities of 195 countries to prepare for epidemics and pandemics. Their 2021 report stated that “although many countries were able to quickly develop capacities to address COVID-19, all countries remain dangerously unprepared for meeting future epidemic and pandemic threats” (Bell & Nuzzo, 2021, p. 5).

As previously stated, strengthening and improving Global Public Health systems is an expensive and complex activity. Therefore, a few essential actors are the donors and funders of various initiatives. An example is the Bill & Melinda Gates Foundation. It has invested more than \$2 billion to support the global response to COVID-19, including funding the development of new treatments and vaccines and ensuring equitable delivery of interventions and emergency responses (Bill & Melinda Gates Foundation, 2022).

It offered different grants to several organizations, such as the Coalition for Epidemic Preparedness Innovations (CEPI) to support the development and research of COVID-19 vaccine candidates that could be less expensive or easier to deliver. In addition, it provided “more than \$200 million to the Gavi COVAX Advance Market Commitment to help ensure that COVID-19 vaccines are accessible and affordable in low- and middle-income countries” (Bill & Melinda Gates Foundation, 2022, FAQ).

The Bill & Melinda Gates Foundation also co-founded and co-funded the CEPI, along with the governments of Norway and India, Wellcome, and the World Economic Forum. It is “an innovative global partnership between public, private, philanthropic, and civil society organisations” (CEPI, n.d., para. 1) to quicken the development of vaccines and provide equal access to them. Furthermore, with new vaccines available, but still out of reach for lower-income countries, the Bill & Melinda Gates Foundation and other partners (including WHO, UNICEF and the World Bank) created Gavi, the Vaccine Alliance. It is classified as a public-private global health partnership to increase access to immunization in developing countries (Gavi, 2022).

Using similar public-private alliances, it was possible to create multiple initiatives to fight specific diseases and situations. For instance, Roll Back Malaria was created in 1998 in a collaboration between the World Health Organization, the World Bank, UNICEF and the United Nations Development Programme (UNDP). It

"consists of development agencies, banks, private sector groups and researchers" aiming to combat this disease and its consequences (Nabarro, 1999, Abstract). Similarly, the Stop TB Partnership was established in 2000 (now administered by United Nations Office for Project Services and previously by WHO). It is a collaboration of 1,600 partner organizations around the world to end tuberculosis globally (StopTB, n.d.).

By bringing together different stakeholders, "within a few years, some 70 "global health partnerships" had been created" (Brown et al., 2006, p. 70). Likewise, similar initiatives were and still are being developed years after that. As shown in this chapter, there are multiple international coordination efforts for Global Public Health. The last one to be mentioned is COVAX, which will be detailed in the next chapter. It is a project created by a partnership between Gavi, CEPI and WHO, with UNICEF as the key delivery partner (WHO, 2022).

#### **4. COVAX**

In 2020, the Seventy-third World Health Assembly recognized "the role of extensive immunization against COVID-19 as a global public good" (World Health Assembly, 2020, p. 3). However, the process of vaccination consists of complex interconnected steps, such as the development of the vaccine, the test period and posterior approval, production in large quantity and distribution (Borowy, 2021). All activities mentioned depend on multiple external factors, and already represent an elaborate and expensive operation even when the emergency element is not present. Meanwhile, with the pressure of the general population, rising numbers of death resulting from COVID-19 and a race to develop a safe vaccine, it became even more complicated.

Two years and multiple approved vaccines later, global immunization is still a challenge that is being faced. In October 2021, the vaccination coverage ranged from 1% to over 70%, usually depending on the country's income level (WHO, 2021). As of June 25th 2022, less than 18% of people in low-income countries have received at least one dose, with more than 12 billion doses administered globally and 66.4% of the world population with at least one dose of a COVID-19 vaccine, according to the database Our World in Data (Ritchie et al., 2020).

This highly inequitable vaccine coverage can lead to several consequences, including an increase in the number of deaths that could be avoided in low-income



countries. Furthermore, from a global perspective, there is also the appearance of new variants and the slowness in the process of restoring economic losses caused by the pandemic. Given that, initiatives like COVAX represent a relevant attempt to promote Global Public Health.

#### **4.1. Description**

Before analyzing the successes and errors of this project, the context of its formulation will be detailed, as well as how its structure works and the goals initially proposed.

##### **4.1.1. Context**

To better understand what this initiative is, first it is needed to comprehend the context in which it was created. The Access to COVID-19 Tools (ACT) Accelerator is a collaboration launched in April 2020. Its goal is to accelerate production, development and access to COVID-19 tests, vaccines, and treatments around the world, in hopes to reduce the mortality and impact of this disease. It “brings together governments, scientists, businesses, civil society, and philanthropists and global health organizations (the Bill & Melinda Gates Foundation, CEPI, FIND, Gavi, The Global Fund, Unitaid, Wellcome, the WHO, and the World Bank)” (WHO, n.d., para. 2).

By addressing the cause, they hope this partnership will help to reduce the burden caused by the pandemic. Divided into four pillars of work, what links them together is the “Access and Allocation” workstream that aims to provide an equitable and fair distribution of all tools. The pillars are health system strengthening, treatment, diagnostics and vaccines (WHO, n.d.).

For the first, it refers to countries having the essential technical, financial and operational resources to use the tools in national interventions. In addition, “therapeutics” or “treatment” is present in all stages of the contamination: from the prevention to the treatment to the decrease of the chance of infecting others. Then, for the diagnostics part, it shows the need to increase access to tests, which leads to early detection and the recognition of new variants. Finally, the vaccines pillar seeks to end the “acute phase of the COVID-19 pandemic by the end of 2021 and to support countries’ needs and own goals to control the disease and reopen society in

2022 and beyond, contributing towards the 70% global vaccination target in 2022” (WHO, n.d., “Vaccines”).

Even if it is not considered a body or organization, the Accelerator is co-led by nine leading global health organizations, which contributes to knowledge sharing and combines the expertise and experiences of all institutions involved. Furthermore, as a framework for collaboration, each pillar is managed by two to three partner agencies (WHO, n.d.). Since its creation, “the ACT Accelerator has supported the fastest, most coordinated, and successful global effort in history to develop tools to fight a disease and protect global health security” (WHO, n.d., para. 1).

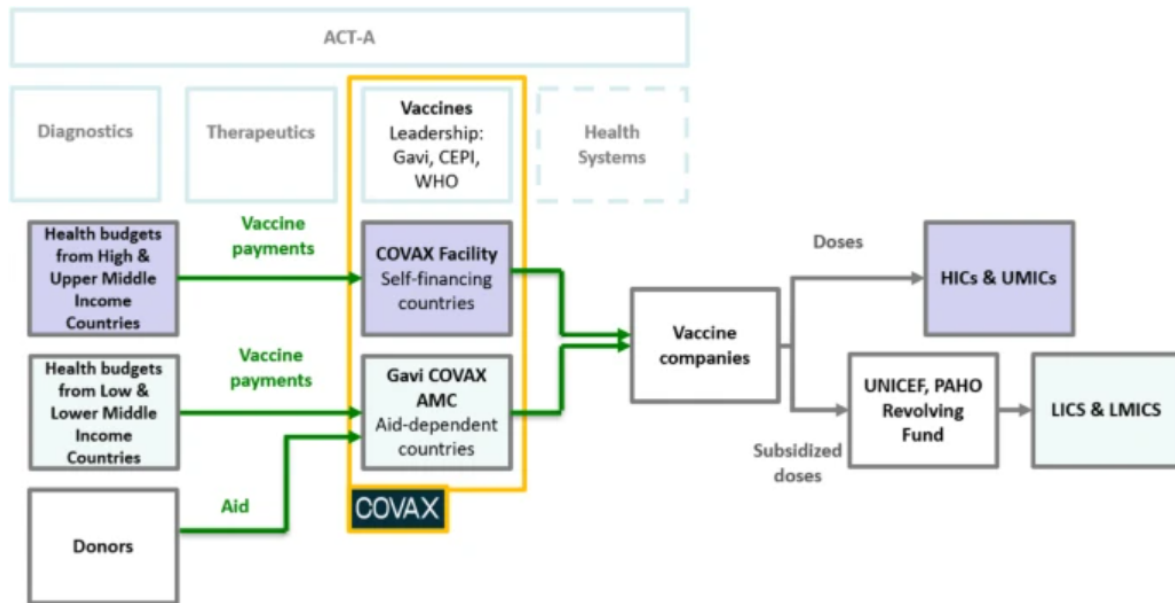
The Vaccines pillar is also known as COVAX, and its focus is to accelerate the research, development, supply and distribution capabilities. Led by Gavi, CEPI and WHO, with UNICEF as the global delivery partner and PAHO (Pan American Health Organization) covering the Americas. Through “global collaboration, with more than two-thirds of the world engaged – COVAX has the world’s largest and most diverse portfolio of COVID-19 vaccines” (Berkley, 2020, para. 1).

#### **4.1.2. How it works**

As soon as the vaccines were approved and considered safe, the countries that joined COVAX had access to this vaccine portfolio. Self-financing countries had sufficient doses for part of their population (between 10-50%), based on how much money was invested. Funded countries would receive doses for 20% of their population in the long term. They also contribute financially, but a big part of their funds comes from “official development assistance (ODA), philanthropic and private sector donations as well as some private investments” (Stein, 2021, p. 5).

To enable this to happen, Gavi created the COVAX Facility, a global procurement of vaccines. In addition, there is also a separate funding mechanism, the Gavi COVAX Advance Market Commitment (AMC). The combination of both is meant to facilitate the participation of all interested countries, regardless of their economic power, ensuring quick, fair and safe access to the vaccines. The diagram of the figure 1 exemplifies how it works:

Figure 1. COVAX was split into two buyers' and distribution clubs (Stein, 2021)



Note. From “Risky business: COVAX and the financialization of global vaccine equity”, by Stein, 2021, *Globalization And Health*, 17(1). <https://doi.org/https://doi.org/10.1186/s12992-021-00763-8>. Creative Commons Attribution 4.0 International License

The participants can be divided into three categories. First, the international organizations, such as WHO, UNICEF and the World Bank. Then, the states are separated into two subgroups: funded and self-financing states. Finally, the non-state actors, like Gavi and CEPI. Both of them are part of the high-level body that "coordinate, guide and resolve issues across COVAX" (WHO, 2020, “Cross-cutting”). Besides, there is also the presence of the pharmaceutical sector through representatives that do not have decision-making power, but help with operational input (von Bogdandy & Villarreal, 2021).

The Facility was constantly working to identify suitable vaccine candidates and incentivising the manufacturers to “expand their production capacity in advance of vaccines receiving regulatory approval” (Berkley, 2020, “What is the COVAX Facility?”). This way, they would be ready to produce them immediately after it was approved. Moreover, with the collective purchasing power from the multiple countries participating, COVAX would have a better chance of negotiating the prices with the manufacturers.

After researching, developing and buying the vaccines, there was another challenge to be faced. Thus, WHO developed a “fair allocation framework” that

would be used for the distribution of the vaccines once they were produced. It is rooted in the concept that access to tests, treatments and vaccines should not be determined by where this person lives (WHO, n.d.). “All participating states will have access to the vaccines procured by COVAX at the same time as well as proportionally” (von Bogdandy & Villarreal, 2021, pp. 107-108).

Based on the idea that 20% of a country’s population represents at-risk groups and essential workers, WHO would first prioritize them. Therefore, distributing the number of doses for 20% of every state’s population was the main goal, scheduled to take place in 2021 (WHO, 2020). Two exceptions to this model are: 1) when a country opted to get less than 20%, 2) about 5% of the total number of doses would be saved for specific or emergency situations (WHO, 2020). After reaching the target, the countries’ COVID risk profiles would be taken into consideration for the second phase of allocation.

#### **4.1.3. Goals**

As previously mentioned, the first goal was to reach an average vaccination coverage of 20% in all countries with an initial aim of 2 billion doses available by the end of 2021. In 2022, the global target is to achieve 70% of global coverage. In line with this new objective, COVAX aims to support countries to reach their individual vaccination ambitions and goals, which depend on their context and internal structure. Through pledges of US\$ 10 billion to the COVAX AMC, cost-sharing agreements, dose donations, and an additional 600 million doses for supply, COVAX expects to help the countries achieve better coverage (WHO, 2021).

For this new phase, it is required additional funding of at least US\$ 5.2 billion: US\$ 3.7 billion for a 600 million dose Pandemic Vaccine Pool, US\$ 1 billion to support routine immunization activities and US\$ 545 million to cover costs such as syringes, transport and insurance for donations. Although the Facility has money for the doses that were already ordered, the chief executive officer at Gavi, Dr. Berkley, explained that without this extra financing, there will be further delays in securing supplies, buying more vaccines and helping countries that are delayed in their vaccine campaigns (Jerving, 2022).

As a way of raising donations and showing the importance of the initiative, WHO (n.d.) argues that:

Financing the ACT Accelerator is not a cost and nor is it charity, it is an investment with strong returns. The International Monetary Fund estimates that a US\$50 billion roadmap investment would bring the pandemic to an end faster and generate US\$ 9 trillion in economic return by 2025. (para. 5)

## **4.2. Analysis**

After understanding the design process and its basic characteristics, the focus becomes the identification and evaluation of strengths and weaknesses.

### **4.2.1. Strengths**

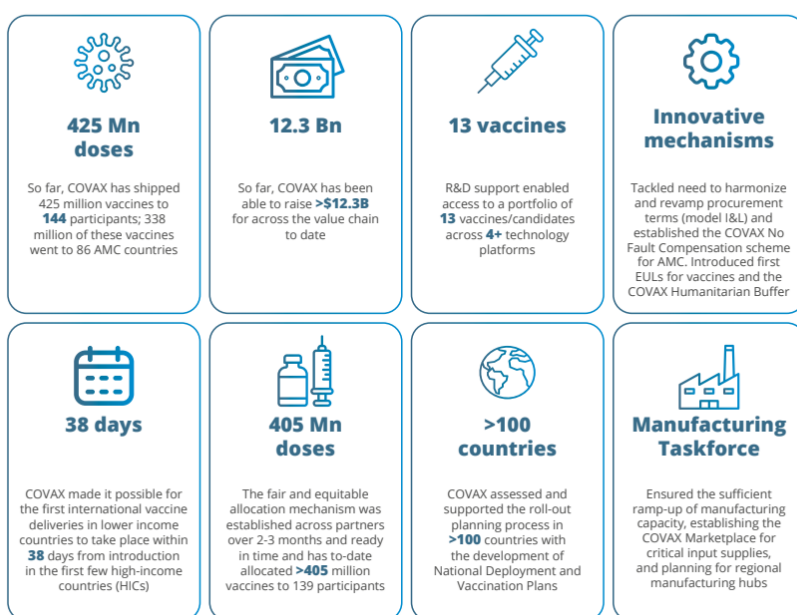
This initiative provided positive results for both groups of countries and, consequently, benefited the global population. For low- and lower-middle-income countries (LMICs), COVAX represented a lifeline, as they would probably be unable to afford the vaccines otherwise (Berkley, 2020). Other countries with no bilateral deals were also helped by the mechanism. If, even with this aid, it was still challenging to go through this period, it is discouraging to imagine how it could have been without it.

For self-financing states, COVAX is reflected as an insurance policy that would “significantly increase their chances of securing vaccines, even if their own bilateral deals fail” (Berkley, 2020, “What is the COVAX Facility?”). It became a viable and advantageous alternative, as the final prices of vaccines and which ones would be later approved were not known facts at the beginning.

Moreover, the fact that COVAX was framed as a solidarity action has its benefits, such as offering a way for self-financing countries to help fight COVID-19 and, as a result, having a positive image as a benevolent state. Also, in this way, there would be some pressure and public expectation that high-income countries (HICs) and higher-middle-income countries (HMICs) would help with large donations.

Although its goals were ambitious and were not always met, COVAX had significant accomplishments, such as the ones indicated in the figure 2:

Figure 2. Major achievements to September 2021 for COVAX, the Vaccines Pillar



*Note.* From “ACT-Accelerator Strategic Plan & Budget, October 2021 to September 2022”, by WHO, 2021. <https://www.who.int/publications/m/item/act-accelerator-strategic-plan-budget-october-2021-to-september-2022>. Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO)

On top of that, COVAX offered to help to donate the doses that were being shared by countries that already had enough for their population. This new role accelerated and facilitated the distribution of the doses, decreasing the chances of wasting them due to their expiration dates (COVAX, 2020).

Less than three months after the period mentioned in the image (September 2021), the number of doses delivered grew to 907 million (including the ones donated and facilitated). “December has seen the highest amount of doses shipped through COVAX with a record 306 million doses, compared to 155 million doses shipped in November” (UNICEF, 2021, “Market updates”). At that moment, donated (363 million) and facilitated (180 million) doses represented 70% of global donations (UNICEF, 2021). In January 2022, COVAX reached the donation mark of over 1 billion doses to 144 countries and territories, with 85% of these doses directed to 86 low- and middle-income countries (UNICEF, 2022).

#### 4.2.2. Weakness

Through documentary and bibliographic research, it became clear how intense and interconnected are the problems that COVAX faced and is still facing. The context was an essential part of how it all developed, showing that external

conditions had the potential to impact and influence as much as internal ones. A few major issues detected were allocation frameworks, insufficient funding, framing the initiative as a solidarity action, vaccine nationalism, a need for a broader manufacturing base, intellectual property rights, vaccine scarcity and lack of transparency.

In order to hopefully have the participation of the self-financing group, Gavi made two compromises. The first was changing the idea that COVAX would determine which products and volume would be allocated to each country. There was a new category of purchase called “Optional Purchase Arrangement”, which let the buyers have the choice of deciding which vaccines they would receive. In return, they would have to pay a higher fee. The second change was allowing the countries to buy more vaccines than the 20% agreed, reaching up to 50%. Kate Elder, an advisor for Médecins Sans Frontières, claimed that both new scenarios displayed clear inequality and that “Gavi lost valuable time last year coaxing rich countries to join COVAX” (Usher, 2021, p. 2323), especially by letting the United Kingdom dictate the terms of their participation.

Elder (2021) considered naive the thought that every country would be part of the mechanism and that the time spent on convincing them not only delayed the fundraising, but also weakened COVAX. After all, with early funding, the doses would be guaranteed proportionately sooner.

Gavin Yamey was part of a group to debate the design of COVAX in 2020. He reflected that, for future pandemics, there has to be a new way of dealing with incentivising the rich. Or, as he suggested, “a compulsory mechanism where every nation participates” (Usher, 2021, p. 2323).

Although the benefits of COVAX being framed as a solidarity act were listed previously, there is also a problematic part. By doing so, “it makes it look like vaccine development and distribution is more of a humanitarian act, rather than an international legal obligation that is not optional on the part of states (Desierto, 2021, p. 18). Desierto (2021) defends that there should be an appeal to the rule of law:

So much of the framing of the entire issue of vaccine distribution is a framing of equity for the sake of equity, not as a legal norm but as an appeal to aid on the part of the developing world. (p. 18)

Akshaya Kumar, Director of Crisis Advocacy of the Human Rights Watch, believes that institutional failure is related to international aid being seen as a charity (Torreele & Amon, 2021). She quoted South Africa's delegation interventions at the World Trade Organization (WTO) TRIPS Council, "the problem with philanthropy is that it cannot buy equality" (Thiru, 2021, para. 3). Then, Kumar stated that there needs to be a collective perceptive of human rights as fundamental. On the contrary, the institutional response will be unsuccessful (Torreele & Amon, 2021).

In addition, Judith Bueno de Mesquita, Co-Deputy Director of the Human Rights Centre at the University of Essex, reflected that "the fragmentation of international law and weak accountability for obligations of international cooperation inhibit the enjoyment of the right to vaccines on the basis of global equality" (Torreele & Amon, 2021, p. 276). Similarly, the President of Médecins Sans Frontières Suisse, Reveka Papadopoulou, believes that countries securing bilateral deals with manufacturers instead of joining forces is a direct indication of failing multilateralism (Torreele & Amon, 2021). She considered it "unacceptable that states openly disregard international mechanisms for sharing doses and undermine global solidarity, with, to a certain degree, the acceptance or even demand of a big portion of the population" (Torreele & Amon, 2021, p. 276).

As part of a plausible explanation, Sharifah Sekalala, a Professor at the University of Warwick, proposed the idea that, currently, there is not a lot of confidence in global institutions (Torreele & Amon, 2021). This could reduce the collaboration on global solidarity initiatives, as some of them are underfunded and declining.

From another perspective, it was expected. Iris Borowy (2021) simplified this controversial issue:

A global distribution of COVID-19 vaccines according to people's needs requires that stake holders, including companies, governments, scientists, and citizens, act altruistically, potentially putting the interests and the wellbeing of themselves and those near them behind those of unknown people far away. But pure altruism is not the human condition. Neither is pure selfishness. In the real world, people make decisions on the basis of different, sometimes contradictory incentives. (p. 151)



Taylor (2021) claimed that it was known from economic and epidemiological modelling that COVAX's idea of equally distributing vaccines was the best way of fighting the pandemic. However, "we also know from experience that the world does not really work this way" (Taylor, 2021, Nationalism will win, so let's plan for it). Likewise, Yamey also acknowledged that it was predictable for the HICs and HMICs to participate in bilateral vaccine deals (Usher, 2021). However, the expectation was that they would also choose COVAX as an extra assurance.

As of March 2021, there were at least 137 agreements between countries and drugmakers (Randall et al., 2021), with some countries reserving two to three times the amount of doses needed to inoculate their whole population. Although it was foreseeable that leaders would focus on their commitment to protecting their population, "normative claims have emerged on the need for national decision-makers to take into account the needs of persons in other states, as an extension of the obligation to respect, protect and fulfil human rights beyond their territories" (von Bogdandy & Villarreal, 2021, p. 100). Von Bogdandy & Villarreal (2021) complement that leaving countries last in the supply chain could lead to "potentially catastrophic consequences" (p.100).

Nonetheless, the dynamic of the advance purchase agreements (APAs) is self-reinforcing:

As more countries procure doses directly, concerns about the liability of COVAX's supply heighten, thus creating greater incentives for countries to procure doses on their own. The incentives to procure vaccines this way increases further after positive trial results are announced, which reduces the risk of purchasing in advance for the successful vaccines. (Wouters et al., 2021, p. 1028)

By allowing its members to sign bilateral vaccine deals, COVAX was left behind in the vaccine purchase line. As pharmaceutical companies prioritized who gave them the best deals and the initial expected collective buying power could not be achieved, "the original notion of a global vaccine hub more or less collapsed" (Usher, 2021, p. 2325). As a result, COVAX had to use a traditional aid-financed approach, leaving "lower-income countries wholly at the mercy of wealthy nations and profit-driven companies" (Usher, 2021, p. 2325).

Additionally, a related consequence is that even in periods with a decreased number of available doses, COVAX still would need to reserve about one in five doses for some HICs and HMICs (Usher, 2021, p. 2323). “While the access inequities have widened, Gavi has had to justify sending vaccines to countries that have already vaccinated a large portion of their populations at the same time as deliveries to the very poorest countries have barely begun” (Usher, 2021, p. 2324). Nevertheless, it was still part of the agreement.

Vaccine scarcity also resulted from pharmaceutical monopolies specifically in the areas of manufacturing capability and intellectual property (Torreele & Amon, 2021). As for the first problem, many believed that “ensuring equitable access to vaccines globally means that manufacturing must be global” (Taylor, 2021, “Equitable distribution must begin with equitable manufacturing”).

With a lack of a broader manufacturing base for all the vaccines that were expected to be delivered, COVAX was dependent on the Serum Institute of India. After a massive outbreak of COVID-19 cases affected India, they had to suspend exports in March 2021, leaving COVAX with a decreased supply and no other replacement option. Further concerns “include supply bottlenecks; distribution and transportation issues, such as infrastructure challenges that impede successful delivery (e.g., lack of cold chain storage); and additional supply-side challenges” (Savoy & Méndez-Leal, 2021, p. 2).

The second area surrounding the mentioned pharmaceutical monopolies is connected to intellectual property. In December 2020, the Amnesty International established:

All pharmaceutical corporations and research institutions working on a vaccine must share the science, technological know-how, and intellectual property behind their vaccine so enough safe and effective doses can be produced. Governments must also ensure that the pharmaceutical industry puts people’s lives before profits. (Borowy, 2021, p. 160)

Professor Lawrence Gostin argues that “there can be no solution to the global vaccine crisis without governments placing pressure on big pharma, including waiving intellectual property rights and technology transfer” (Usher, 2021, p. 2325). A clear example was a waiver of international intellectual property rights under TRIPS, proposed by a few countries at the WTO Trips Council (von Bogdandy & Villarreal,

2021). If approved, any pharmaceutical manufacturer would be able to produce and distribute COVID-19 vaccines, following specific criteria and authorisation.

Judith de Mesquita addresses the “seemingly entirely separate spheres of international human rights law and international trade law” (Torreele & Amon, 2021, p. 276) and correlates the hoarding of vaccines and the waive rejection as a result of this disintegration. In agreement, Fatima hopes that this case will “show the world why treating medicines as a commodity is not normal and fuels inequality in access to lifesaving interventions” (Torreele & Amon, 2021, p. 280).

From one perspective, it is clear to see how waiving patents could benefit the general population by allowing the other manufacturers to reproduce the vaccines in different parts of the world. Regardless, there is also the other side that expresses that patent rights exist to incentivize innovations and research. After all, pharmaceutical companies are still paid organizations that seek profit, even if a major debate is how to define “how much profit is ethical and how much constitutes greed” (Borowy, 2021, p. 160). Meanwhile, “other observers have argued that forcing manufacturers to divert attention and manpower from production to building up laboratory capacity for complicated processes elsewhere would end up slowing rather than accelerating production” (Borowy, 2021, p. 162).

Another issue with COVAX seems to be its lack of transparency. Even if the price per dose was announced, “hardly any information about vaccine manufacturing costs, advance payment contracts or “push” and “pull” subsidies have been made public. COVAX’s vaccine delivery schedules and delivery enforcement mechanisms are also largely unknown” (Stein, 2021, p. 7). Not only as an issue related to transparency, but also to what could be seen as potential disorganization, countries that relied on COVAX for their vaccines were not sure of which vaccines would be distributed and at what time. Consequently, it was difficult for the governments to organize their immunization programmes. “Similarly, uncertainty about COVAX supply complicates governments’ decisions about how to acquire the best vaccine portfolios for their populations, including doses beyond those covered by COVAX” (Wouters et al., 2021, p. 1028).

Alternatively, “making its supply deals public, including prices and delivery schedules, and clearly communicating about the gaps, could drive urgency and more transparency across the board” (Taylor, 2021, “Messaging matters”). This also

includes the fact that there is usually no press release showing big deliveries of doses to self-financing countries.

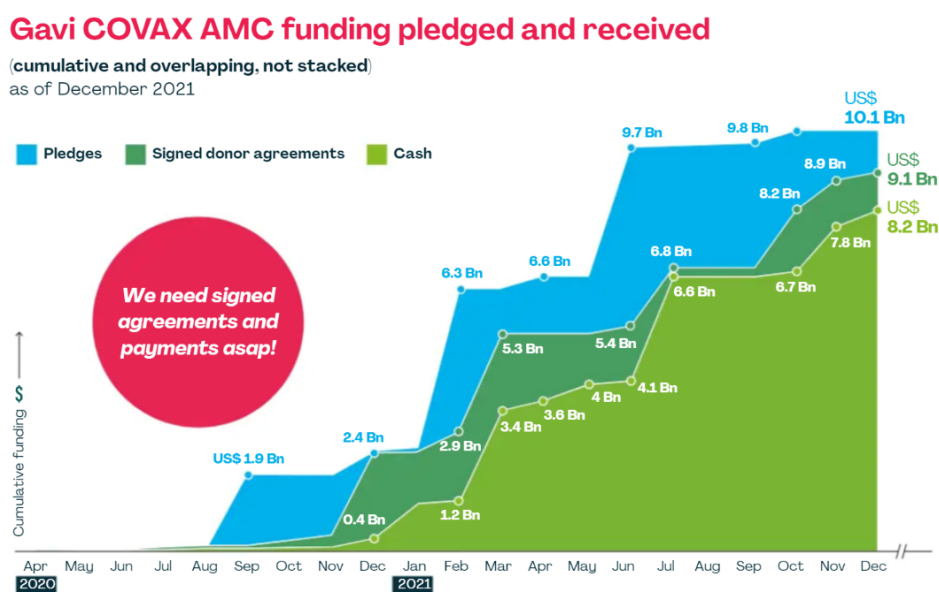
In terms of allocation, there are also some issues to consider. Albeit COVAX's allocation model was clearly more organized and efficient than countries competing against each other to secure more doses for their population, it was not necessarily the best option.

For instance, Lisa Herzog and colleagues (Herzog et al., 2021) exposed a few criticisms of the current model. First, the vaccines would be sent to countries with a relatively low risk of death and general impact in the same proportion as to states where the need for harm reduction is more immediate. Then, the authors also point out that COVAX claims to treat all interests with equal care, but "treating people identically regardless of their circumstances is not equal respect. Rather, this principle requires responding to people's different needs with equal consideration" (Herzog et al., 2021, p.2). Consequently, the aim should be to seek equity and not equality.

The weaknesses of the allocation framework are evidenced when added to the fact that there were not enough doses. Although before it was positively mentioned how COVAX delivered 1 billion doses until January 2022, it is still extremely low compared to what was promised. On the same day, this mark was reached, about 78% of the population of high and upper-middle-income countries had been vaccinated with at least one dose, in comparison to only 9.1% of people in low-income countries (Our World in Data, 2022).

By December 2020, COVAX had only received US\$ 400 million in cash, making it unviable to secure the expected amount of doses (Gavi, 2022). As a way of managing this problem, early funding was and still is being encouraged. In the figure 3, it is clear how late the cash was received:

Figure 3. Gavi COVAX AMC Funding pledge and received



*Note.* From “*The Gavi COVAX AMC 2022 Investment Opportunity*”, by Gavi, 2022 <https://www.gavi.org/investing-gavi/resource-mobilisation-process/gavi-covax-amc-2022-investment-opportunity>.

Without the money, the delay in the purchase and distribution of doses strongly affected several countries. Fatima Hassan, Founder of the Health Justice Initiative, reported that at the end of March 2021, South Africa was still waiting for the first vaccine delivery (Torreele & Amon, 2021, p. 276). Ultimately, they managed to obtain a clinical trial supply that offered the vaccination of 250,000 health care workers. A few months later, in June 2021, COVAX was responsible for delivering less than 4% of the doses administered globally (Usher, 2021).

In some cases, even with the vaccines available, there was still a lack of access to them. Sharifah explained that several places, such as India, Uganda and South Africa, rely on technologies throughout the vaccination process (Torreele & Amon, 2021). It goes from having a digital application to access the vaccine information to using digital ID systems to book the appointment. She reports that, in a few cases, low-income people, migrants and older people could end up being excluded because of that. It goes against non-discriminatory distribution, which “entails priority based solely on clinical need, not knowledge of or familiarity with technology” (Torreele & Amon, 2021, “Technological barriers to access”).

However, that is not the only case of having vaccines available but not being able to use them. As a major consequence of hoarding more vaccines than needed for the immunization of the whole population, many countries are currently facing a

new challenge: doses expiring. In December 2021, the UNICEF Supply Division director, Etleva Kadilli revealed that over a hundred million doses donated through COVAX were refused by developing countries due to their remaining shelf life being too short (EuroNews, 2022). For most states in that situation, the doses need to have a longer period of duration to be able to get to “hard-to-reach areas and in fragile contexts” (EuroNews, 2022, para. 4). From October to November 2021, 15 million doses were also refused. A month later, Nigeria had to incinerate more than a million doses (EuroNews, 2022).

Canada represents how extreme this situation is. With a population of about 38 million habitants, more than 400 million COVID-19 shots were bought after signing APAs with seven different vaccine producers (Tasker, 2021). As a result of doses not being used or donated in time, around 15 million of them have expired so far, and probably more will expire over the next few months (Nardi, 2022). Tedros Ghebreyesus, WHO General Director, criticized that “too often countries receive unscheduled shipments of doses close to expiring with far too little transparency about when the doses arrive, what vaccine and in what quantities” (Barnéoud, 2022).

In sum, this chapter aimed to show the relevance of COVAX, describe its implementation and analyze the weaknesses and strengths of the initiative. Therefore, now it will be possible to offer recommendations based on the problems encountered.

Table 1. Strengths and weaknesses of COVAX

<b>Strengths</b>	<b>Weaknesses</b>
More than 1 billion of distributed doses	Not enough doses, mainly due to: a need for a broader manufacturing base, intellectual property rights and vaccine scarcity
Doses distributed to 144 countries and territories	Allocation framework needs improvement
Raised more than \$12 billion for across the value chain until September 2021	Not enough cash was received in comparison to pledges and agreements. Currently, they need US\$ 5.2 billion.
Represented the only option to countries that could not secure APAs	Those countries did not know how to plan their campaigns as it was not sure which vaccines they would receive and

	when
Serve as an insurance policy for HICs and LMICs	Due to vaccine nationalism and more countries signing bilateral deals, there was less risk. Therefore, this incentive was no longer so relevant. With less countries participating, a collective purchasing power was not as strong as expected
The solidarity framework offers self-funding countries the opportunity to help others in need and there is also the presence of public pressure and expectation of donations	Relies heavily on the solidarity of self-financing countries and makes it seen as an additional action, not necessary
Dose-sharing facilitator	Millions of doses denied and expired
Has the world's largest and most diverse portfolio of COVID-19 vaccines	Lack of transparency and lack of access in some circumstances

*Note.* Own creation.

## 5. Recommendations and conclusion

It required innovative thinking and multidisciplinary efforts to implement an initiative that had to be developed at the same time that COVID-19 was still a mystery, as “it is a difficult thing to build the car while you are driving it” (Taylor, 2021). Throughout its duration, it was changing and transforming itself according to new challenges and dynamics that were faced. About two years later, it is possible to make some suggestions of what can be improved.

The recommendations are divided into three categories on how to address different problems: 1) Design-based difficulties, 2) Vaccine scarcity and 3) Access to vaccines. As COVAX is mainly about distribution, the classification is based on a timeline: before (1), during (2) and after (3) distribution. Nonetheless, most issues mentioned are interconnected and interdependent.

### 5.1. Design-based difficulties

The issues mentioned below are related to the conceptualization and elaboration of COVAX. Therefore, if there are flaws in their structure, it affects all

following phases. They are allocation frameworks, transparency, solidarity framing and funding.

### **5.1.1. Allocation frameworks**

WHO's modelling experts should create a committee to re-evaluate possible changes to the allocation framework. The team would cover several areas, such as ethicists, public health care specialists, experts in allocation frameworks and distribution, and part of the medical community such as infectologists and epidemiologists, among others. Currently, several studies are comparing different distribution models that could be useful for analysis. For instance, a potential change would be to focus on need-based allocation (Herzog et al., 2021) or global health security capacity (GHSA, 2018). Some of the indicators could be standard expected years of life lost (SEYLL), loss of gross national income (GNI) or even the Global Health Security Index.

If the concerns were how to encourage self-financing countries to donate, it could be mentioned that it is in their best interest to have doses available if they experienced an outbreak (which has happened several times). Nonetheless, it is also related to the next recommendation and with the intent that the countries that have more financial conditions would not donate just out of self-interest, but out of recognition of public need.

### **5.1.2. Solidarity framing and funding**

It would be interesting to consider framing initiatives like COVAX as a need and an obligation of every state. It could be done with “a compulsory mechanism where every nation participates” (Usher, 2021, p. 2323). Even if it could potentially be difficult to have mandatory participation, at least then there would be greater public pressure. Governments could come together in a global agreement to establish roles, and norms and create a shared response plan. In the same way that the 17 Sustainable Development Goals represented an international call for action and were adopted by all United Nations Member States, an equivalent effort could be taken in this case.

As high-, higher-middle-, and lower-middle-income countries increase their vaccination coverage, less focus the media gives to COVID-19. An option to keep bringing attention (and, consequently, donations) would be to invest in the



development of research that reinforces that it is necessary to achieve vaccination coverage in all countries so that the current situation can truly improve.

### **5.1.3. Transparency**

It is necessary to show commitment to be clearer and more transparent with data, especially with vaccine manufacturing costs, delivery schedules and agreements with pharmaceutical companies. Also, sharing difficulties and failures can increase credibility and trust. This could be done through official reports that later would also have the function of inspiring other initiatives like this one.

## **5.2. Vaccine scarcity**

For a long period, it was impossible to produce the number of doses needed for minimum worldwide coverage. Along with other factors, vaccine nationalism, a restricted manufacturing base and intellectual property rights were part of the problem.

### **5.2.1. Vaccine nationalism**

As part of the global agreement mentioned before, there could be a limit on the number of vaccines that can be purchased by each country in a way to avoid hoarding doses. An additional condition would be that countries would have to commit to donating one dose for each additional dose purchased beyond the ideal limit. A less extreme option would be that for every X dose purchased, a percentage of the batch would be donated. Even though they are not traditional alternatives, “vaccine nationalism is inevitable and this should be integrated into the design from the start” (Taylor, 2021).

### **5.2.2. Manufacturing base and intellectual property rights**

Supply shortages, insufficient manufacturing hubs and patents still represent a major delay to reach equitable access to vaccines. Although COVAX is unable to change intellectual property rights, it could certainly promote and incentivize a debate about it. Additionally, It should also consider the possibility of supply constraints to be prepared to deal with it.

In theory, diversifying and increasing the manufacturing base from the start would lead to less dependence on specific companies or regions, allowing

low-income regions to manage their supply. In practice, an alternative is to encourage cooperation between companies and invest in technical problems that still need attention, like export restrictions, training local staff, and lack of basic materials such as syringes.

### **5.3. Access to vaccines**

If there are available vaccines, they should be able to get to the arms of the population as soon as possible. At times, this does not happen in a quick and easy way, especially due to expiring doses, accessibility and vaccine hesitancy.

#### **5.3.1. Expiring doses**

When COVAX went through a stage of inability to produce and distribute enough doses to meet demand, it gained another role: dose-sharing facilitator. Albeit it could be considered a success in terms of the number of donated doses, it is still a challenge to keep them from expiring before they are used. To avoid wasting doses, the donor countries need to give early notice and make sure that they share the material with the maximum possible amount of remaining shelf life. As a way of holding accountability, it could be created a public database that showed all of the vaccine supplies available, divided by country and expiration date. An additional feature can be a similar database but with the doses needed to achieve the expected vaccine coverage for each country. This way, it would be easier to check in advance which donor/recipient combination would be most efficient.

#### **5.3.2. Accessibility and vaccine hesitancy**

Due to several aspects, enabling accessibility has become a situation where joint efforts are needed. Therefore, it is essential to create systems to reach people, establishing a network of trust between the population and the health system.

Encourage the vaccination of groups that may have greater difficulty in accessing it, such as refugees, people with little technological knowledge, and hard-to-reach areas, among others, through pop-up clinics in strategic points door-to-door vaccination campaigns. Another possibility that has been used and should be encouraged is combining health campaigns, like vaccines for different diseases that could be taken on the same day. Additionally, booster incentive campaigns focused on areas with lower adherence may also include partnerships

with brands that offer a discount when presenting the vaccination card. Likewise, as a way to combat misinformation, promote and disseminate scientific articles that show up-to-date data on vaccine safety, in a language accessible to the general public.

#### **5.4. Conclusion**

Even before the creation of COVAX, the SDGs were already focused on “providing access for all to safe, effective, quality and affordable medicines and vaccines” (“2017 HLPF Thematic Review of SDG3”, 2017, p. 1). As previously mentioned, they represent a global collaboration that should be used as inspiration and a starting point for other Global Public Health initiatives.

During the COVID-19 pandemic, there were a lot of assumptions about international solidarity. However, when it was related to practical issues, it appears as if the governments did not recognise it was a collective duty to act as a united community the same way they did when signing the commitment for the SDGs.

Although the Sustainable Development Goals are not legally binding, they represent certain expectations of how the countries involved need to act to achieve the proposed goals. Nonetheless, an equivalent effort should be made for other GPH activities like COVAX, especially because all countries will soon have to show even more integration to decrease the delay that was brought by this period in all areas of development.

Even with all struggles that COVAX faced, it still represented a big step toward new Global Public Health initiatives. With these suggestions, it is hoped that this work will be useful both in reprogramming the mechanism now and in encouraging other similar ambitions. COVAX could represent a standard model of how to deal with equitable worldwide distribution, which could be replicated in other pandemics. With the help of preparedness and response teams and strategies, all countries could identify and fill their gaps, leading to long-term health system strengthening.

Alternatively, if COVAX became an everlasting initiative, it could develop global distribution programs for multiple vaccines. With established guidelines, intense monitoring and the strengthening of Global Public Health policies, it would help to build health system resilience worldwide.

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