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The World Bank

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Report No: PAD4979

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT PAPER

ON A

PROPOSED ADDITIONAL LOAN

IN THE AMOUNT OF US$91.39 MILLION

TO UKRAINE

FOR A

Ukraine Emergency COVID-19 Response and Vaccination Project

RVP APPROVAL DATE MARCH 7, 2022

UNDER THE COVID-19 STRATEGIC PREPAREDNESS AND RESPONSE PROGRAM (SPRP)

USING THE MULTIPHASE PROGRAMMATIC APPROACH (MPA)

WITH A FINANCING ENVELOPE OF

UP TO US$ 6 BILLION APPROVED BY THE BOARD ON APRIL 2, 2020 AND

UP TO US$ 12 BILLION ADDITIONAL FINANCNG APPROVED BY THE BOARD

ON OCTOBER 13, 2020

Health, Nutrition & Population Global Practice
Europe And Central Asia Region

CURRENCY EQUIVALENTS

Exchange Rate Effective March 4, 2022

Currency Unit =	Ukrainian hryvnia (UAH)
UAH 30.05 =	US$1

FISCAL YEAR
January 1 - December 31

Regional Vice President:	Anna M. Bjerde
Country Director:	Arup Banerji
Regional Director:	Fadia M. Saadah
Practice Manager:	Tania Dmytraczenko
Task Team Leader(s):	Olena Doroshenko

ABBREVIATIONS AND ACRONYMS

AEFI	Adverse events following immunization
AF	Additional Financing
COVAX	COVID-19 Vaccines Global Access
COVID-19	Coronavirus Disease 2019
ESMF	Environmental and Social Management Framework
ESS	Environmental and Social Standards
EU	European Union
FM	Financial Management
FTCF	Fast Track COVID-19 Facility
Gavi	Gavi, the Vaccine Alliance
GDP	Gross Domestic Product
GoU	Government of Ukraine
GRS	Grievance Redress Service
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
MoH	Ministry of Health
MPA	Multiphase Programmatic Approach
NDVP	National Deployment and Vaccination Plan
NHSU	National Health Service of Ukraine
PAD	Project Appraisal Document
PBC	Performance-based condition
PCR	Polymerase Chain Reaction
PDO	Project Development Objective
PIU	Project Implementation Unit
POM	Project Operational Manual
PPSD	Project Procurement Strategy for Development
SARS-CoV-2	Severe Acute Respiratory Syndrome – Coronavirus disease
SEP	Stakeholder Engagement Plan
SOPs	Standard Operating Procedure
SPRP	Strategic Preparedness and Response Program, also known as Global COVID-19 MPA
STEP	Systematic Tracking of Exchanges in Procurement
UK	United Kingdom
UNICEF	United Nations Children's Fund
USA	United States of America
USAID	United States Agency for International Development
USD	United States Dollar
VAC	Vaccine Approval Criteria
VIRAT	Vaccine Introduction Readiness Assessment
VRAF	Vaccine Readiness Assessment Framework
WB	World Bank
WBG	World Bank Group
WHO	World Health Organization

Ukraine

AF2 to Ukraine Emergency COVID-19 Response and Vaccination project

TABLE OF CONTENTS

LIST OF TABLES

BASIC INFORMATION – PARENT (Ukraine Emergency COVID-19 Response and Vaccination Project - P175895)

Country	Product Line	Team Leader(s)		
Ukraine	IBRD/IDA	Olena Doroshenko		
Project ID	**Financing Instrument**	**Resp CC**	**Req CC**	**Practice Area (Lead)**
P175895	Investment Project Financing	HECHN (9318)	ECCEE (1607)	Health, Nutrition & Population

Implementing Agency: Ministry of Health of Ukraine

Is this a regionally tagged project?
No

Bank/IFC Collaboration

No

Approval Date	Closing Date	Expected Guarantee Expiration Date	Environmental and Social Risk Classification
10-May-2021	31-Mar-2023		Substantial

Financing & Implementation Modalities

[✓] Multiphase Programmatic Approach [MPA]	[ ] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[✓] Performance-Based Conditions (PBCs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a Non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[✓] Responding to Natural or Man-made disaster
[ ] Alternate Procurement Arrangements (APA)	[✓] Hands-on Expanded Implementation Support (HEIS)

Development Objective(s)

MPA Program Development Objective (PrDO)

The Program Development Objective is to prevent, detect and respond to the threat posed by COVID-19 and strengthen national systems for public health preparedness

Project Development Objectives (Phase 040)

The Program Development Objective is to prevent, detect and respond to the threat posed by COVID-19 and strengthen the national health system for public health preparedness in Ukraine.

Ratings (from Parent ISR)

	Implementation	
	17-Aug-2021	15-Nov-2021
Progress towards achievement of PDO	MS	MS
Overall Implementation Progress (IP)	MS	MS
Overall ESS Performance	S	S
Overall Risk	H	H
Financial Management	MS	MS
Project Management	MS	MS
Procurement	MS	MS
Monitoring and Evaluation	MS	MS

BASIC INFORMATION – ADDITIONAL FINANCING (AF2 to Ukraine Emergency COVID-19 Response and Vaccination project - P178817)

Project ID	Project Name	Additional Financing Type	Urgent Need or Capacity Constraints
P178817	AF2 to Ukraine Emergency COVID-19 Response and Vaccination project	Scale Up	Yes
Financing instrument	Product line	Approval Date	
Investment Project Financing	IBRD/IDA	30-Mar-2022	
Projected Date of Full Disbursement	Bank/IFC Collaboration		

31-Mar-2023	No		
Is this a regionally tagged project?			
No			

Financing & Implementation Modalities

[✓] Multiphase Programmatic Approach [MPA]	[ ] Series of Projects (SOP)
[ ] Fragile State(s)	[✓] Performance-Based Conditions (PBCs)
[ ] Small State(s)	[ ] Financial Intermediaries (FI)
[ ] Fragile within a Non-fragile Country	[ ] Project-Based Guarantee
[ ] Conflict	[✓] Responding to Natural or Man-made disaster
[ ] Alternate Procurement Arrangements (APA)	[ ] Hands-on, Enhanced Implementation Support (HEIS)
[ ] Contingent Emergency Response Component (CERC)	

Disbursement Summary (from Parent ISR)

Source of Funds	Net Commitments	Total Disbursed	Remaining Balance	Disbursed
IBRD	240.00	177.78	62.22	74 %
IDA				%
Grants				%

MPA Financing Data (US$, Millions)

MPA Program Financing Envelope	18,000,000,000.00

MPA FINANCING DETAILS (US$, Millions)

Board Approved MPA Financing Envelope:	18,000,000,000.00
MPA Program Financing Envelope:	18,000,000,000.00
of which Bank Financing (IBRD):	9,900,000,000.00
of which Bank Financing (IDA):	8,100,000,000.00
of which other financing sources:	0.00

PROJECT FINANCING DATA – ADDITIONAL FINANCING (AF2 to Ukraine Emergency COVID-19 Response and Vaccination project - P178817)

FINANCING DATA (US$, Millions)

SUMMARY (Total Financing)

	Current Financing	Proposed Additional Financing	Total Proposed Financing
Total Project Cost	240.00	91.39	331.39
Total Financing	240.00	91.39	331.39
of which IBRD/IDA	240.00	91.39	331.39
Financing Gap	0.00	0.00	0.00

DETAILS - Additional Financing

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	91.39

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any other Policy waiver(s)?

[✓] Yes [ ] No

Explanation

This project is being processed using the following waiver(s) granted through the Global SPRP MPA Project (P173789): (i) waiver to enable Management approval of individual projects under SPRP rated Substantial for Environmental and Social risks; and (ii) waiver with respect to the application of Anti-Corruption Guidelines (ACG) to Bank-financed procurement where retroactive financing is used.

Has the waiver(s) been endorsed or approved by Bank Management?

Approved by Management [✓] Endorsed by Management for Board Approval [ ] No [ ]

Explanation

https://worldbankgroup.sharepoint.com/sites/BOSSP/Official/Forms/AllItems.aspx?id=%2Fsites%2FBOSSP%2FOfficial%2Ff477fba6-9bfe-ea11-a815-000d3a9a9b65%2FBoard%20Documents%2F6a501644-5f04-eb11-a813-000d3a9a9b65%2FFinal_R2020-0193.pdf&parent=%2Fsites%2FBOSSP%2FOfficial%2Ff477fba6-9bfe-ea11-a815-000d3a9a9b65%2FBoard%20Documents%2F6a501644-5f04-eb11-a813-000d3a9a9b65%2FFinal_R2020-0193.pdf

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant
Labor and Working Conditions	Relevant
Resource Efficiency and Pollution Prevention and Management	Relevant
Community Health and Safety	Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Not Currently Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Not Currently Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
Cultural Heritage	Not Currently Relevant
Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

INSTITUTIONAL DATA

Practice Area (Lead)

Health, Nutrition & Population

Contributing Practice Areas

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

PROJECT TEAM

Bank Staff

Name	Role	Specialization	Unit
Olena Doroshenko	Team Leader (ADM Responsible)		HECHN
Dmytro Donets	Procurement Specialist (ADM Responsible)		EECRU
Barbara Ziolkowska	Procurement Specialist		EECRU
Irina Babich	Financial Management Specialist (ADM Responsible)		EECG1
Mariia Nikitova	Social Specialist (ADM Responsible)		SCASO
Oksana Rakovych	Environmental Specialist (ADM Responsible)		SCAEN
Anastasia Soltis	Procurement Team		ECCUA
Anastasiia Bihun	Team Member	Team Assistant	ECCUA
Anastasiia Zakharova	Team Member	Social Safeguards	SCASO
Caryn Bredenkamp	Team Member	Practice Leader	HECDR
Daria Gulei	Procurement Team		ECCUA
Juliana Chinyeaka Victor	Team Member		ECADE
Kathleen E. Krackenberger	Team Member		HECHN
Khrystyna Pak	Team Member		HECHN
Ma Dessirie Kalinski	Team Member		WFACS
Nataliia Lebedieva	Team Member	Environment Safeguards	SCAEN
Olga Khan	Team Member	Public Health	HECHN

Extended Team

Name	Title	Organization	Location

I. BACKGROUND AND RATIONALE FOR ADDITIONAL FINANCING

A. Introduction

1. **This Project Paper seeks the approval of the World Bank Regional Vice President of the Europe and Central Asia region to provide a loan of US$ 91.39 million for a second Additional Financing (AF2)** to the Ukraine COVID-19 Emergency Response and Vaccination Project (P175895).[1] The US$ 90 million original loan was approved on May 10, 2021, signed on May 17, 2021, and declared effective on July 30, 2021. The US$ 150 million first AF (AF1) loan was approved on December 10, 2021; it became effective on December 17, 2022.

2. **On February 26, 2022, the Government of Ukraine (GoU) requested US$ 91.39 million for AF2 to scale-up existing activities, namely the purchase of COVID-19 vaccines.** Specifically, the total amount of the proposed AF2 is expected to be used for retroactive financing of Sinovac vaccines, for which a contract has already been signed. The GoU signed a contract with Sinovac in June 2021 for a total of 8.32 million doses of COVID-19 vaccines. Approximately one million doses of this contract were financed under the AF1. AF2 proposes to finance the remaining 7.3 million doses, an amount sufficient to vaccinate an additional nine percent of the population. Of the total 8.32 million doses contracted, all have been received in country and, as of February 24, 2022, approximately 7.7 million (93 percent) have been administered to vaccinate eligible persons. Vaccine administration has been verified by the electronic records of vaccine stocks. With AF2, the Project will cumulatively finance procurement of approximately 28.3 million COVID-19 vaccine doses, or an amount sufficient to cover approximately 14.2 million people with a two-dose regimen. Currently, all people who have received two doses of the COVID-19 vaccine are eligible to receive a booster dose after 180 days from the date of the second dose. Vaccines procured with the support of the Parent Project, AF1, and AF2 will be used for the initial and repeated vaccination of all eligible populations, including booster doses, in accordance with the latest recommendations. Vaccination in Ukraine remains voluntary, except for health workers, education staff and public servants, who were mandated to be vaccinated within one month after the regulation was approved on October 7, 2021. Access to vaccines for all population groups is free of charge.

3. **Vaccinations began in February 2021 and, as of February 23, 2022, 36.8 percent of the total population had been fully vaccinated**. Ukraine's vaccination program follows the National Vaccination Roadmap, which is an equivalent to the National Deployment and Vaccination Plan (NDVP); it was approved in December 2020 and later updated.[2] Initial vaccine rollout focused largely on select priority groups and organized teams and was progressively expanded to the entire population and deployed throughout the country as vaccine supplies increased. On the supply-side, the GoU managed to negotiate rapid procurement of vaccines, organize vaccination sites at primary health facilities (as well as mobile vaccination teams and walk-in points of mass vaccination), launch a communication campaign, prepare the information system, carry out capacity building activities and address weakness in the cold chain. The GoU has prioritized only Pfizer and Sinovac vaccines for bilateral procurements in the updated NDVP. More types of vaccines are available through the COVID-19 Vaccines Global Access (COVAX) Advance

[1] The Parent Project was prepared under the COVID-19 SPRP using the Multiphase Programmatic Approach (MPA), approved by the Board of Executive Directors on April 2, 2020, and the vaccines AF to the SPRP approved on October 13, 2020.
[2] The updated National Vaccination Roadmap was approved by the order of the MoH of Ukraine dated October 27, 2021, No. 2362 (https://zakon.rada.gov.ua/rada/show/v3018282-20#n10).

Market Commitment[3] mechanism and bilateral donations. On the demand-side, the slow up-take of vaccines and regular population surveys revealed higher than originally expected levels of hesitancy.[4] To improve vaccine acceptance, the Ministry of Health (MoH), in cooperation with partners, systematically reviews the barriers reported by people in getting vaccines and implements additional interventions to alleviate those barriers and address sources of disinformation. In addition, the GoU redoubled its commitment to vaccination efforts and, most recently, enacted a vaccination mandate for health workers, education staff and public servants, as noted above. As a result of these measures, vaccination of priority groups has improved – approximately 95 percent of medical staff and 98 percent of education staff have received at least one dose. As of February 23, 2022, 15.7 million Ukrainians (38 percent) having received one dose of the COVID-19 vaccine and 15.2 million (36.8 percent) are fully vaccinated. For additional information on the COVID-19 situation in Ukraine, see Annex 2.

4. **AF2 will facilitate World Bank support to maintaining progress in COVID-19 vaccination in Ukraine following the Russian invasion and in the midst of the ongoing war the country is facing**. The ongoing war continues to have severe human costs, causing a growing number of civilian casualties, interrupting livelihoods and damaging critical civilian infrastructure, including homes, water and sanitation, schools and health facilities. While the full impact remains to be seen, it is clear that current events jeopardize the significant progress made to date in deploying vaccines to the Ukrainian population.

B. Consistency with the Country Partnership Framework (CPF)

5. **The proposed AF2 is consistent with the current Ukraine CPF and World Bank Group's strategy to respond to the COVID-19 pandemic.** As noted in the Project Appraisal Document (PAD) of the Parent Project,[5] due to the emergency nature of the COVID-19 pandemic, AF2 was not included in the Ukraine CPF for FY17-FY21.[6] However, it is aligned with the focus areas and objectives of the CPF and the World Bank Group's COVID-19 Crisis Response Approach Paper. For additional details, see paragraph 32 of the PAD for the Parent Project (P175895).

C. Project Design and Scope

6. **The Project Development Objective (PDO) of the Parent Project is to prevent, detect and respond to the threat posed by COVID-19 and strengthen the national health system for public health preparedness in Ukraine.** The PDO will be achieved by supporting the GoU to purchase and deploy COVID-19 vaccines once associated performance-based conditions (PBCs) have been met. The Project is being implemented through two components. Component 1 (US$ 210 million) finances vaccine procurement, cold chain, waste management, and strengthening of COVID-19 testing activities and will be scaled-up with US$ 91.39 million in AF2. Specifically, AF2 resources under Component 1 will retroactively finance vaccines procured and financed by the GoU. Component 2 (US$ 30 million) finances payments to providers

[3] COVAX is a global initiative aimed at equitable access to COVID-19 vaccines led by the Gavi, the WHO, and the Coalition for Epidemic Preparedness Innovations, among others. Vaccines delivered through COVAX include AZD1222 Vaxzevria (AstraZeneca, AB, manufactured in Korea and Italia), BNT162b2/COMIRNATY Tozinameran (INN) (Pfizer/BioNTech), mRNA-1273 (Moderna), COVID-19 Vaccine (Vero Cell), Inactivated/ CoronavacTM (Sinovac Life Science Co. Ltd.)

[4] In the design of the Parent Project, hesitancy was estimated to be around 43 percent, but recent information indicates that hesitancy is increasing, standing at around 56 percent by mid-October 2021 (COVID Behaviors Dashboard https://covidbehaviors.org/). The main drivers of hesitancy are concerns about the possible side effects of vaccines – 32 percent of people reported that they plan to wait and see if vaccines are safe. An additional 24 percent of the vaccine hesitant population reported they don't believe they need a vaccine.

[5] Report No. PAD4349, dated May 10, 2021. https://documents1.worldbank.org/curated/en/734301622654411222/pdf/Ukraine-Emergency-COVID-19-Response-and-Vaccination-Project.pdf

[6] Report No. 114516-UA discussed by the World Bank Board of Executive Directors on June 20, 2017. https://documents1.worldbank.org/curated/en/847421498183265026/pdf/Ukraine-Country-Partnership-Framework-FY2017-21-05262017.pdf

for completion of COVID-19 vaccination for individuals from priority populations and is organized as reimbursement for agreed PBCs. See Annex 3 for additional details on the components of the Project.

D. Project Performance

7. **Progress towards achieving the PDO and overall implementation progress are both rated Moderately Satisfactory.** Activities under all Project components are progressing well and are on schedule. As of February 26, 2022, the disbursement of funds under the Project stands at 74 percent (US$ 178 million).[7]

8. **Implementation of activities under Component 1 is on track.** In terms of GoU procurement of COVID-19 vaccines, over 12.2 million doses were received through the COVAX mechanism. In addition, approximately 20 million doses from Pfizer and 8.3 million doses from Sinovac have been procured bilaterally through Crown Agents,[8] a GoU-authorized international procurement agency. Under the Parent Project, retroactive financing of vaccines procured bilaterally under the agreement of the MoH with Pfizer and Crown Agents has been approved, and US$ 30 million disbursed against the contract. Under AF1, an additional US$ 105 million of the same agreement of the MoH with Pfizer and Crown Agents was retroactively financed. In addition, AF1 included retroactive financing of vaccines procured bilaterally under the agreement with Sinovac and Crown Agents, acting on behalf of the MoH, and US$ 15 million has been disbursed. In addition to procurement of COVID-19 vaccines, Component 1 also supports MoH procurement of cold chain equipment for facilities providing COVID-19 vaccination. The MOH has already signed a contract with UNICEF, and deliveries of cold chain equipment are scheduled for June 2022.[9]

9. **Implementation of Component 2 is also progressing well.** The GOU is on track to fully vaccinate 10 million individuals from priority population groups against COVID-19 (PBC[10] linked to PDO indicator 2).). As of December 31, 2021, the MoH reports having reached 4,151,869 people (1,587,250 males, 2,546,619 females) from priority groups with COVID-19 vaccines, or 42 percent of the end-target value. Based on the achievement of PBCs, the Project has disbursed US$ 12.5 million for deployment expenditures the government has incurred. In addition, reported but unverified MoH data suggests that an additional 0.5 million people from priority groups of population have been vaccinated in 2022.

E. Rationale for Additional Financing

10. **The proposed AF2 will help close the GoU's financing gap for vaccines.** The COVAX Facility has supplied 12.2 million doses of COVID vaccines to Ukraine, an amount sufficient to cover approximately 15 percent of population with a two-dose regimen. In addition, the Parent Project and AF1 have financed vaccines for an additional 25 percent of the population. The GoU has an existing contract with several suppliers of vaccines, including Sinovac, which delivered 8.3 million vaccines, and Pfizer which has delivered 20 million doses in 2021. Retroactive financing of US$ 15 million of the Sinovac contract was processed under the AF1, covering approximately 973,500 vaccine doses. The entire value of AF2 (US$ 91.39 million) will cover the financial gap for the GoU's vaccine purchasing plans and will retroactively

[7] The original loan (IBRD 92500) has disbursed US$57.4 million of the total US$90 million (63.78 percent); the AF1 loan (IBRD 93150) has disbursed US$120.38 million of the total US$150 million (80.25 percent).
[8] Crown Agents Ltd. Is a GoU-authorized procurement agent for medical goods and supplies. The delivery schedule of the Sinovac vaccines has been agreed and all deliveries of the vaccines were completed in 2021.
[9] Delivery schedule will be reconfirmed with the stabilization of the current situation in Ukraine.
[10] Number of individuals from priority population groups who have received full COVID-19 vaccination from eligible providers in accordance with the agreed procedures.

finance 7.3 million doses of the Sinovac vaccine, covering an additional nine percent of the population.[11] The additional procurement of vaccines will support the achievement of the PDO and PBC/PDO indicator 2, which is that 10 million individuals from priority population groups have received full COVID-19 vaccination from eligible providers according to the agreed procedures. Vaccines procured under AF2 will be used for primary and repeated vaccinations, including booster doses. The importance of scaling-up procurement and deployment of vaccines is critical, particularly in view of ongoing war, internal displacement of large numbers of people, emergence of new virus variants[12] and current fiscal constraints.

F. National Capacity and COVID-19 Vaccination Plan

11. **The GoU published its NDVP on December 24, 2020, which continues to be updated as the in-country pandemic situation and the supplies of vaccines evolves.** The latest iteration of the NDVP was adopted by the MoH on October 27, 2021. The continuous development of the NDVP is led by the GoU, coordinated by the MoH, and includes the participation of the different government agencies and international organizations through the regular meetings of the Taskforce on Immunization (the World Bank is an observer) and the participation of experts from different areas. The World Bank and other partners worked with the MoH to update the NDVP to include information and requirements on cold chain, waste management, and social safeguards. The NDVP defines the essential aspects of the deployment of COVID-19 vaccination in Ukraine, including the priority groups for vaccination and vaccine delivery scenarios, platforms, and modalities. The procurement and deployment of COVID-19 vaccines is being coordinated with the GoU, UN agencies, and other international organizations, including the European Union (EU) and the United States Agency for International Development (USAID). WHO and UNICEF have provided technical assistance to the MoH for the development of the NDVP and have coordinated with COVAX. Below, Table 1 presents the summary of vaccination readiness, Table 2 summarizes the National Vaccine Coverage and Acquisition Plan, and Table 3 outlines the priority groups for vaccination in Ukraine.

[11] Bank financing for the COVID-19 vaccines and deployment will follow the Bank's Vaccine Approval Criteria. As of April 16, 2021, the Bank will accept as threshold for eligibility of IBRD/IDA resources in COVID-19 vaccine acquisition and/or deployment under all Bank-financed projects provided: (i) the vaccine has received regular or emergency licensure or authorization from at least one of the Stringent Regulatory Authorities identified by WHO for vaccines procured and/or supplied under the COVAX Facility, as may be amended from time to time by WHO; or (ii) the vaccine has received WHO Prequalification or Emergency Use Listing. According to the NDVP, Ukraine provides free-of-cost vaccination to the population; vaccines are universally available, regardless of the status of health coverage, nationality, gender, or ethnic group; and vaccination is not mandatory.

[12] The WHO recognizes five so-called "variants of concern" of the SARS-CoV-2: The P.1 variant (which was first documented in Brazil) commonly referred to as the Gamma variant, the Alpha variant (first documented in the UK), the Beta variant (first documented in South Africa), the Delta variant (first documented in India), and the Omicron variant. The WHO recommends that countries monitor and track these variants and carry out surveillance for new variants and share information with the global scientific community so that when significant variants are detected, countries may be informed about how to react to the variant and prevent its spread.

Table 1: Summary of Vaccination Readiness Findings from the VIRAT/VRAF 2.0 Assessment (as of February 22, 2022)[13]

Core Activity Areas	Assessment Area	Readiness and Measures to Address Key Gaps
A. Planning and Management	**A1. Vaccination objectives and targets**	**Readiness**: ***Completed.*** The COVID-19 vaccination program objectives and strategies have been defined and agreed by the key stakeholders on the national and regional levels. They are specified in the NDVP.
	A2. Regulation and Standards	**Readiness: *Completed.*** Simplified regulatory pathways for approval and registration of COVID-19 vaccines and medical products have been introduced by the Law of Ukraine #1075-IX, adopted on December 4, 2020. The GoU has signed the Model Indemnity Agreement with Gavi/COVAX and a bilateral indemnity agreement with AstraZeneca, Sinovac, and Pfizer. In addition, the GoU uses the existing mechanism for compensation for adverse effects following immunization (AEFI). The MoH has prepared and formally introduced standard operating procedures related to COVID-19 vaccination, including cold chain and waste management procedures.
	A3. Performance management and monitoring and evaluation	**Readiness: *Completed***. The GoU has already launched an electronic system for the registration of people receiving COVID-19 vaccination. The system was developed in consultation with the World Bank and includes all necessary parameters to track individual-level information, vaccines administered, and other data. Information about daily vaccination progress is daily updated and published at the MoH website *https://vaccination.covid19.gov.ua/* and website of the National Security Council *https://health-security.rnbo.gov.ua/vaccination*. Ukraine has developed and introduced electronic vaccination certificates, which are recognized in the EU. Ukraine's AEFI system is well established and functional. AEFI committees exist and provide routine monitoring and investigation of AEFI. The MoH, with the National Health Service of Ukraine (NHSU) and eHealth Center, has developed COVID-19 vaccination dashboards to update the statistics on COVID-19 vaccination progress on a daily basis.
	A4. Budgeting	**Readiness: *Completed.*** The costs of the COVID-19 vaccination program to cover 70 percent of the adult population have been estimated by the GoU and are reflected in the approved budgetary and planning documents. The Parent Project, AF1, and AF2 will support procurement of vaccines and help partially finance relevant deployment costs upon achievement of PBCs, including the vaccination of 10 million people from the agreed eligible groups of the population.
B. Supply and Distribution	**B1. Vaccines, Personal Protective Equipment, and other medical and non-medical supplies**	**Readiness: *Completed.*** Procurement of COVID-19 vaccines has been formalized into the 2021 State Budget, as has the procurement of necessary supplementary materials.
	B2. Logistics and cold chain	**Readiness: *Completed but in the process of further strengthening.*** Ukraine can store more than 100 million doses of +2 to +8 C vaccines. The current storage capacity of vaccines in ultracold temperatures is approximately 2.7 million doses. Additional equipment recently provided through COVAX will increase storage capacity to an additional 1,000 liters of ultra-cold chain capacity. Equipment procured within the Parent Project for laboratories is temporarily reprofiles to additionally increase ultra-cold chain capacity to provide storage for 3 million doses. The AF1 supports the procurement of refrigerators and related equipment for over 1,000 providers (comprising 3,000 vaccination points) through UNICEF.
	B3. Waste management	**Readiness: *In progress.*** Collection and disposal of medical waste is regulated by the respective state sanitary rules and norms. Waste management systems have been introduced and are regulated by the laws at the national and regional levels. Preliminary estimates of the additional needs in waste management equipment and supplies are available, and an additional assessment of waste management needs has been conducted by MoH in coordination with UNICEF, WHO, and the World Bank. Necessary investments in the waste management system is supported by the AF1 as well as waste disposal services for accumulated waste after COVID-19 vaccination.
C. Program Delivery	**C1. Community engagement and advocacy**	**Readiness: *Completed but in the process of further strengthening.*** The MoH has established a COVID-19 vaccination communication center, supported by USAID, UNICEF, and the Parent Project. The Parent Project and AF1 supports a hotline for all COVID-19 requests (including

[13] A multi-partner effort led by WHO and UNICEF developed the Vaccine Introduction Readiness Assessment Tool (VIRAT) to support countries in developing a roadmap to prepare for vaccine introduction and identify gaps to inform areas for potential support. Building upon the VIRAT, the World Bank developed the Vaccines Readiness Assessment Framework (VRAF) to help countries obtain granular information on gaps and associated costs and program financial resources for deployment of vaccines. To minimize burden and duplication, in November 2020, the VIRAT and VRAF tools were consolidated into one comprehensive framework, called VIRAT-VRAF 2.0.

		related to vaccination) from the population and medical personnel. Regular surveys about the readiness to vaccinate are conducted by the World Bank, WHO and other partners. The communication center regularly reports on the results of the communication campaigns and develops actions to address vaccine hesitancy in the population. The AF1 provides additional resources to cover communication through media, community mobilization campaigns, identification, and tackling disinformation as vaccine hesitancy in population is high. The Project Implementation Unit (PIU) in coordination with the World Bank conducts outreach interventions at the regional level.
	C2. Points of delivery	**Readiness: *Completed.*** Strategic points of delivery have been identified at the national and regional levels.
	C3. Vaccine safety surveillance	**Readiness: *Completed.*** MoH Order #996 identifies the composition, key duties and responsibilities of the central and regional AEFI rapid response teams. AEFI was updated for COVID-19 vaccination needs. Regular AEFI reports are presented to the Taskforce on Immunization.
D. Supporting Systems and Infrastructure	**D1. Data quality**	**Readiness: *Completed***. Information technology infrastructure has been identified and prepared for the needs of COVID-19 vaccination. COVID-19 vaccination records are routinely verified by the NHSU. Measures related to data security, including protecting data storage, delinking identifiers from personal health information and engaging in data minimization and conscious data collection were considered. Identification and targeting of adults with comorbidities are challenging in Ukraine. Within the framework of the existing Taskforce on Immunization, the MoH/Center of Public Health (CPH)/NHSU finalized relevant modules and rolled out trainings for users of the systems.
	D2. Infrastructure	**Readiness: *In progress.*** Assessment of providers identified gaps in terms of available infrastructure for infection control, vaccine storage, and waste management. The Parent Project supports investments in cold chain and waste management infrastructure. The AF1 supports additional assessments and inventory of the existing water and energy supply infrastructure (main and back-up). An assessment of providers' climate vulnerability and energy efficiency proposed under the Parent Project was planned for the beginning of 2022, but was postponed in light of the war.

Table 2: National Vaccine Coverage and Acquisition Plan (as of February 22, 2022)

Source of financing (IBRD, IDA, Trust Fund, GoU, Other)	Population Targeted (60 percent of the total population) (*)		Vaccines				Number of doses assigned	Number of doses in contract	Estimated total U$ (millions)	Meets WB VAC	Contract Status	Vaccines already arrived in the country (doses)
	%	Number	Source	Name	Price ($/dose)	Shipping ($/dose)						
COVAX and donations	20	8,400,000	COVAX	AstraZeneca Comirnaty Moderna mRNA Coronavac	n/a	n/a	16,000,000	TBC	n/a	Yes	Under execution	12,200,000
EU donations	4	1,683,200	EU countries	AstraZeneca	n/a	n/a	3,366,400	3,366,400	n/a	Yes	Delivered	3,366,400
Bilateral procurement, including IBRD	24.1	10,000,000	Pfizer	Comirnaty	n/a	0.27	20,001,150	20,001,150	Not disclosed (**)	Yes	Under execution	20,001,150
Bilateral procurement	2.3	950,000	Sinovac	Coronavac	17.85	inclusive	1,913,316	1,913,316	33.6	Yes	Delivered	1,913,316
Bilateral procurement, including IBRD	10	4,150,000	Sinovac	Coronavac	12.76	inclusive	8,320,000	8,320,000	106	Yes	Delivered	8,320,000
Total (all groups)	**60**[14]	**25,183,200**	**x**	**x**	**x**	**x**	**x**	**x**	**280**	**x**	**x**	**45,800,866**

(*) The target of vaccinating 60 percent of total population corresponds with the target of 70 percent of adult population defined in the NDVP
(**) The GoU and the World Bank have signed the non-disclosure agreement for this procurement. The World Bank has reviewed information

[14] The total of 61 percent is rounded to 60 percent to account for potential wastage. The estimate of 60 percent of population corresponds with the GoU target of vaccinating 70 percent of people in the age of 18 years and older, excluding estimated wastage of 2 percent of vaccines (the estimated number of people in this group is 35.3 million people).

on the terms and conditions of the DSA for Pfizer vaccines and found them acceptable.

Table 3: Priority Groups for Vaccination in Ukraine

#	Population group in the National COVID-19 Vaccination Deployment Roadmap	Estimated number of people[15]	Percent of the total population
1	Health care workers, including persons directly involved in measures to combat COVID-19	681,196	1.6
2	Workers of the social sector, including social workers	156,871	0.4
3	Residents and staff of long-term care facilities	136,353	0.3
4	Elderly, 60 years and older	9,978,194	24.0
5	Military personnel (including the Armed Forces of Ukraine and the National Guard of Ukraine) participating in the Joint Force Operation	75,000	0.2
6	Employees of critical state security structures, including the State Emergency Service of Ukraine, the National Police of Ukraine, the National Guard of Ukraine, the Security Service of Ukraine, State Border Guard Service of Ukraine, military personnel of the Armed Forces of Ukraine, and the Ministry of Internal Affairs of Ukraine	1,088,644	2.6
7	Teachers and other education workers	737,705	1.8
8	Adults (aged 18 to 59 years) with comorbidities at risk for complications and death due to COVID-19 disease—people diagnosed with endocrine system disease, cardiovascular disease, chronic respiratory diseases, chronic diseases of the nervous system, chronic diseases of the urinary system, cancer, chronic diseases of the hematopoietic organs and blood	6,370,378	15.4
9	Other people and professional groups at high risk of being infected with COVID-19 but not included in the above groups, including people living in temporarily occupied territories	1,716,796	4.1
10	Persons in prisons and detention centers and employees of prisons and detention centers	78,400	0.2
	TOTAL	**21 million**	**50 percent**

II. DESCRIPTION OF ADDITIONAL FINANCING

A. Proposed Changes

12. **AF2 will expand COVID-19 vaccine financing**. The proposed activities are aligned with the original PDO, which will not change. Changes, described further below, include the scale up of activities under Component 1 related to vaccine procurement and deployment. The AF2 will increase the total project financing from US$ 240 million to US$ 331.39 million, as outlined in Table 4.

Changes in Component 1

13. **Component 1 activities will be scaled-up under Subcomponent 1.1**, increasing overall financing for Component 1 from US$ 210 million (original allocation under the Parent Project and AF1) to approximately US$ 301 million.

14. **The full amount of AF2 (US $91.39 million) will support the procurement of vaccines, all of which are likely to be financed retroactively**. As previously noted, AF2 will retroactively finance an existing contract for Sinovac vaccines, covering approximately 7.3 million additional doses. This contract has already been reviewed by the World Bank and approved for use of retroactive financing under the Parent Project. Parties of the contract have signed the applicable Anticorruption Guidelines and Sanctions Framework of the World Bank.

[15] With revisions introduced to the NDVP and approved by the MOH order of June 12, 2021

Table 4: Project Cost and Financing

Project Components	Parent Project, US$ million	AF1, US$ million	AF2, US$ million	Total IBRD Financing
Component 1: Strengthen public health system	60.0	150.0	91.39	301.39
Subcomponent 1.1: COVID-19 vaccination support:	40.0	150.0	91.39	281.39
Vaccine procurement	*30.0*	*120.0*	*91.39*	*241.39*
Communication and capacity building	*0.4*	*5.0*		*5.4*
IT upgrade	*0.6*	*3.0*		*3.6*
Cold chain	*3.0*	*14.0*		*17.0*
Waste management equipment	*6.0*	*8.0*		*14.0*
Subcomponent 1.2: COVID-19 testing	20.0	0.0		20.0
Component 2: Support service delivery	30.0	0.0		30.0
Total Cost:	**90.0**	**150.0**	**91.39**	**331.39**

Changes in Results Framework

15. **Relevant indicator of the Results Framework has been updated.** Given the scale-up in COVID-19 vaccine financing under Subcomponent 1.1, the target for the associated indicator "number of doses of COVID-19 vaccine procured with Project funding (Number)" has been increased from 20 million to 28.32 million to reflect the additional vaccines to be financed by the AF2.

Changes in Disbursement Arrangements

16. **Retroactive financing of up to 100 percent of the AF2 (US$91.39 million) will be available to allow financing of eligible expenditures incurred prior to the loan's signature** and after March 7, 2021, but no more than 12 months prior to the signature date. The increased limit for retroactive financing will help the GoU recover costs already incurred for vaccines that meet the World Bank's Vaccine Approval Criteria and procurement standards, and that have been or are scheduled to be deployed in accordance with the updated and approved Environmental and Social Management Framework (ESMF) for the AF2. The vaccines procured under the AF2 are used to vaccinate all population groups, including priority groups identified in the NDVP (see Table 3). Since the overall GoU target is to vaccinate 70 percent of the adult population (or 60 percent of the total population), a large part of the GoU priority vaccination target constitutes priority population groups that make up about 50 percent of the total Ukraine's population. Prioritized access to vaccines is supported in Component 2 of the Project through the use of PBCs. The breakdown of COVID-19 vaccine sourcing, including World Bank financing, is presented in Table 5.

Table 5: Summary of COVID-19 Vaccine Sourcing and Bank Financing

National plan target population (%)	Source of vaccine financing and population coverage					Specific vaccines and sourcing plans	Doses financed by the WB	Estimated allocation of WB financing
	COVAX grant	WB-financed		Other Financiers				
		Through COVAX	Direct purchase					
		0%		2.9%	National	Covishield: National		

60% of the population (70% of the adult population)	20% (including 2.5% from the United Sates)		5.2% (Parent Project) 19.9% (AF1) 8.8% (AF2)	4.0%	Donation from the EU countries	AstraZeneca: COVAX, donation from EU countries Coronavac: National/IBRD Pfizer: National/IBRD Pfizer: COVAX Moderna: COVAX/donation from United States	4.3 million (Parent Project) 16.7 million (AF1) 7.3 million (AF2)	**Purchase**: U$241 million (of which US$91M from the proposed AF2) **Deployment**: U$ 70 million (cold chain and waste management infrastructure, IT systems, communication, training, project administration and monitoring and evaluation) **Other (IBRD)**: U$20 million (COVID-19 testing)
TOTAL	**20%**	**0.0%**	**33.9%**	**6.9%**			**28.3 million**	**US$331 million**

B. Sustainability

17. **The proposed AF will help to ensure the sustainability of the GoU's COVID-19 response, even in the face of growing fiscal pressures.** The economy weathered the COVID-19 pandemic better than initially anticipated, but fiscal financing needs were still substantial. A material deterioration in risk sentiment began in mid-November 2021 as geopolitical tensions rose, and with Russian invasion since February 24, 2022, spending needs have risen while revenues are anticipated to drop sharply against the backdrop of diminished market access. Preliminary estimates by the World Bank indicate an unanticipated fiscal financing gap at US$ 11.9 billion, or 5.8 percent of Gross Domestic Product (GDP). By retroactively financing vaccine purchases, the AF2 will free up scarce fiscal resources for continued health spending, including to better control the COVID-19 pandemic, during and after the Project implementation period.

III. KEY RISKS

18. **The overall risk to achieving the PDO remains High.** The ratings for all risk categories are based on the assessments of residual risks after considering proposed mitigation measures and evaluating the implementation progress of the Parent Project and AF1. Notable changes to key risks include the increased political and governance risk (High) and the decrease technical design and fiduciary risks. Ratings are presented below, as well as risk mitigation strategies.

19. **Political and governance risk is revised from Substantial to High**. The GoU has invested significant resources to procure vaccines meeting the World Bank Vaccine Approval Criteria, organize the deployment of vaccines, and address vaccine hesitancy through information campaigns and incentives. However, the rapid escalation of the ongoing war and declaration of state of emergency by the GoU on

February 24, 2022, pose a huge risk to attaining effective control of the COVID-19 pandemic and strengthening the national health system, as envisaged in the PDO. While vaccination continues to remain available in some localities, a sustained and effective COVID-19 response is in jeopardy. While current situation puts implementation of COVID-19 policies at risk, however, as the situation evolves, the status of COVID-19 response will be further re-assessed

20. **Macroeconomic risk to achieving Project objectives is updated from Substantial to be High.** Ukraine continues to face fiscal constraints, which have been further exacerbated by the recent war. The GOU will likely continue to face constraints to its capacity to purchase of vaccines at scale, as well as implement other COVID-19-related response interventions and the delivery of routine health services. The AF2 specifically aims to mitigate this risk by providing retroactive financing for vaccine purchase. High residual macroeconomic risk will remain, particularly amidst the ongoing war.

21. **Sector strategies and policies risk remains Substantial.** Ukraine is currently implementing health financing and service delivery reforms. These reforms must include improvement of the ability of the public health system to provide the needed services in the middle of the COVID-19 pandemic. The current hostilities pose unprecedented challenges for the future of Ukraine's health system development. Recent investments in strengthening primary care and modernizing hospital care have contributed to the ability of the health system to continue provision of essential health services during the ongoing emergency. In addition, the new system of health care financing that was put in place in 2017 has proven to be a sustainable model during the ongoing emergency, as the NHSU provides agile financing to health care providers to sustain continuation of services. Although by design the AF2 provides resources to retroactively finance expenditures associated with the purchase of COVID-19 vaccines, of which the majority have been already delivered and administered, the risk remains Substantial given some of the uncertainty around the reforms and capacity to advance them. Risk mitigation remains challenging due to the uncertain nature and unpredictability of the war.

22. **Risk associated with the technical design of the Project remains High.** The residual risks are related to the slow COVID-19 vaccination deployment in Ukraine prior to the recent escalating war, mainly because of high vaccine hesiancy and bottlenecks in service delivery. Ongoing disruptions in service delivery may result in wastage of supplied vaccines. However, the problem of vaccine wastage will not be relevant to the AF2 because all vaccines that are subject to AF2 financing have already been administered. The MoH continues to offer COVID-19 vaccination to all interested. Ongoing Project activities will help continue COVID-19 vaccination campaign, where possible, by carefully planning the supply schedule and for all vaccines and their administration under very challenging circumstances.

23. **Institutional capacity risk for vaccine deployment is updated from Substantial to High.** Prior to the emergency situation caused by war, vaccine deployment, cold-chain, and distribution capacity had been strong and were supporting robust deployment of COVID-19 vaccines. Sinovac vaccines financed by the AF2 were available through all service delivery platforms (primary care ambulatories, mass vaccination centers, and mobile teams). Communication support was properly targeted to ensure expected uptake of COVID-19 vaccination in priority groups. This risk was additionally mitigated by the provision of technical support for immunization system strengthening needs, including conducting capacity assessments and community mobilization in coordination with WHO, Gavi, UNICEF, and other partners, as well as the implementation of citizen engagement activities and use of third-party independent non-government

organization monitoring of vaccine deployment. Stock of unutilized vaccines proposed for the financing in the AF2 makes only 6.5 percent of the total procured amount. Because of the long (24 month) shelf life of these vaccines and regular cold chain regime of +2-+8C for Sinovac vaccines, risks of wastage of these vaccines are moderate. However, over 6.4 million Pfizer vaccines procured under AF1 are still stored at the national and regional storages, and because of the war and consequent service delivery distractions are at a higher risk of wastage. Additionally, large numbers of internally displaced people and people crossing the border may create additional barriers to organize primary and repeated vaccination of eligible persons.

24. **Joint fiduciary risk has been revised from High to Substantial**. Joint fiduciary risk has been revised from High to Substantial. The procurement and financial management (FM) risks assessed for the parent Project, AF1, and specifically for the AF2, cover risks, including of fraud and corruption, associated with the procurement and distribution of vaccines and concurrent measures. Risks specific to this project are outlined below. The risks for the AF2 are minimal, as procurement and financial documents for the procurement of Sinovac vaccines were already reviewed and cleared for partial financing under the AF1. The MoH with the Bank's support has updated the original Project Procurement Strategy for Development (PPSD) and the procurement plan that covers the parent Project, AF1 and AF2. Independent external audits will be extended to oversee and identify any deficiencies in the internal control systems that may arise within AF2.

- **Procurement risk is Substantial.** The procurement of COVID-19 vaccines was already assessed by the Bank within the contracts and other supporting documents signed and found acceptable under the Parent Project and AF1. The contract proposed for financing under the AF2 is fully implemented: vaccines have been delivered, distributed, and administered. The Bank will additionally review the proposed contract and related supplementary materials in request of retroactive financing. The software used to record distribution and utilization, as well as verification procedures, was found acceptable to the World Bank. Residual risks remain that the paperwork on procurement may be disrupted because of connectivity problem and availability of the GoU staff to ensure processing of procurement documentation in Systematic Tracking of Exchanges in Procurement (STEP).
- **FM risk is Substantial.** FM aspects of bilateral contracts for COVID-19 vaccines were assessed under the Parent Project and AF1. AF2 will finance the balance of payments within the same contract that was financed under the AF1. Payment information has been provided to the World Bank. The residual risks are due to the emergency nature of this operation, carried out during the time of greater uncertainly regarding smooth and undisrupted operations and World Bank support and oversight still limited to virtual support and monitoring.

25. **The Environmental and Social risks remain Substantial.** The Environmental and Social risks remain Substantial. The MoH has prepared the ESMF for the parent Project and AF1. The ESMF will also cover AF2 activities, as well as procedures for the screening and the identification of environmental and social risks and mitigation measures to be implemented for the various proposed activities, including the establishment of effective on-site medical waste management, storage, transportation, and disposal schemes. Mitigation measures will be based on WHO's COVID-19 response technical guidance on limiting viral contagion in healthcare facilities, World Bank Group Environmental, Health and Safety Guidelines and other good international industry practices. The ESMF includes an Infection Control and Waste Management Plan, which describes in detail appropriate waste management practices applicable under

the AF2. The updated ESMF and Stakeholder Engagement Plan (SEP), which include activities of the AF2 project, were prepared by the MoH and cleared by the World Bank. The documents include the requirement to conduct an environmental and social assessment of vaccine distribution, cold chain, and waste management aspects of vaccines eligible for retroactive financing in AF2. However, given the current country situation, it is impossible to disclose the ESMF and SEP for the AF2 on the official MoH site or hold consultations with stakeholders at this time. The MoH has a strong capacity and commitment to continue the consultative process and will resume it, as well as redisclose ethe updated ESMF and SEP on its official website, once the situation in the country allows. In addition, a comprehensive social engagement strategy is in place under the parent Project and the AF1, including robust communication outreach measures, a Grievance Redress Mechanism and SEP that will be rolled out for AF2 activities.

26. **Stakeholder risk associated with the implementation of the Project remains Substantial**. Project implementation success depends a lot on strong coordination with different partners engaged at each stage. To support effective coordination with different stakeholders engaged in the COVID-19 vaccination deployment, the PIU and World Bank team conduct regular coordination meetings with the PIU and UN organizations under ongoing COVID-19 response activities to exchange information and assist in resolving implementation issues related to the vaccination. Financing from partners to support COVID-19 response will be complemented by the AF2.

27. **Other**. The residual risk related to data collection, processing, and privacy during implementation of the NDVP is upgraded from Moderate to Substantial because of possible disruptions during the state of emergency and ongoing war. The identification of priority groups requires access to electronic medical records, including through the NHSU, and to registries of other priority groups where possible. Risks to data collection, processing, and privacy may arise from: (i) access to personally identifiable and sensitive information by unauthorized personnel; (ii) gaps in regulation on data privacy and protections; and (iii) breaches to cybersecurity, which is exacerbated by the risk of cyber-attacks arising from the ongoing war. There are regulations protecting personal information, including health-related data, of an individual. Electronic and paper-based data collection and reporting forms that contain personal information are stored in a manner that prevents unauthorized access to sensitive and confidential information. Cases of confidential data and information exchange between systems, and/or service providers related to testing, treatment and monitoring of COVID-19 are defined by specific regulations. Aggregated data being reported without any personal identification. A similar approach is being developed for the needs of COVID-19 vaccination campaign. To mitigate the residual risk, the existing regulations and tools will have been, and will continue to be updated regularly to reflect requirements for data use, processing, and privacy under the COVID-19 vaccine deployment in emergency circumstances.

IV. APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis

28. **The economic rationale for investment in COVID-19 vaccines is strong, considering the massive and continuing health and economic losses due to the pandemic**. COVID-19 vaccination will have the major effect on prevention of new COVID-19 cases and complications related to COVID-19. In addition, as AF2 will support retroactive financing of vaccines, it will also serve to free up MoH resources at a critical juncture, which could be reinvested in other needed areas of health spending.

29. **By supporting COVID-19 vaccination, AF2 will contribute to the economic recovery of Ukraine.** COVID-19 has caused a significant negative economic impact in Ukraine, with a marked reduction in growth of the GDP and increased in poverty. The successful development, production, and delivery of a vaccine has the potential to reverse these negative trends, generating benefits that will far exceed vaccine-related costs. Even at levels of imperfect effectiveness, a COVID-19 vaccine that is introduced and deployed effectively to priority populations can assist in significantly reducing mortality and the spread of the coronavirus and accelerating a safe reopening of key sectors of the economy that are impacted. It can also reverse human capital losses by ensuring schools are reopened. The effective administration of a COVID-19 vaccine will also help avoid the associated health care costs for potentially millions of additional cases of infection and associated health-related impoverishment. Global experience with immunization against diseases shows that by avoiding these and other health costs, vaccines are one of the best buys in public health.

B. Institutional and Implementation Arrangements

30. **Given the satisfactory pace and quality of implementation of the Parent Project and AF1 to date, institutional and implementation arrangements will remain unchanged.** The PIU will implement the activities financed by the AF2 under the direction of the MoH. The PIU consists of MoH technical, fiduciary, administrative staff, and local experts at the central level who manage the implementation of Project activities, including monitoring and evaluation. Implementation of citizen engagement activities is carried out by the PIU team in collaboration with a third-party, independent, non-government organization financed by the World Bank. The full details on operational procedures that guide Project implementation are outlined in the Project Operational Manual (POM). Any required updates to the POM will be processed and approved. The FM responsibilities for the AF2 will remain with the MoH/PIU. The PIU has the required capacity in implementing partner-funded projects; it is adequately staffed, and appropriate controls and procedures have been instituted. There will be no change in FM and disbursement arrangements for the AF2. Activities to be supported by the AF2 do not entail any significant risks beyond those already outlined in the Parent Project. Given that the proposed activities are largely a scale-up of activities currently being financed, social and environmental risks remain unchanged.

C. Financial Management

31. **The AF will use the same FM and disbursement arrangements to those in place for the implementation of the Parent Project and AF1,** including same internal controls and mechanisms at the MoH. Internal procedures of the MoH, including internal procedures and division of responsibilities, are documented in the POM. The MoH, through the PIU, will continue to be in charge of all FM and disbursement functions under Component 1, which is extended by AF2, including making all Project related payments.

32. **The existing finance staff of the PIU have built capacity during the past years, and remaining issues are being addressed through regular monitoring process**. This includes hiring of additional FM staff, streamlining the process of preparation/submission of withdrawal applications, as well as the overall improved quality of withdrawal applications. Existing MoH FM staff are part of the PIU, and they continue working on FM aspects of AF2. The staffing, accounting, and reporting systems of NHSU continue to be acceptable to support implementation of AF2. The PIU will continue submitting quarterly Interim Financial Reports to the World Bank. Auditing requirements in place for Parent Project and AF1 will be extended to AF2.

33. **Disbursement:** The proceeds of the AF2 will be disbursed in accordance with traditional disbursement procedures of the World Bank, such as retroactive reimbursement accompanied by appropriate supporting documentation—summary sheets with records and/or statement of expenditures in accordance with the procedures described in the World Bank's Disbursement Guidelines. The borrower will use a pooled Designated Account in USD, same as for the Parent Project and AF1. Similar to the Parent Project and AF1, AF2 will be fast disbursing operation.

D. Procurement

34. **Procurement will continue to be carried out in accordance with the World Bank's Procurement Regulations** for IPF Borrowers for Goods, Works, Non-Consulting and Consulting Services, dated November 2020. The Project will be subject to the World Bank's Anti-Corruption Guidelines, dated October 15, 2006, revised in January 2011, and in July 2016 (Guidelines on Preventing and Combatting Fraud and Corruption in Projects financed by IBRD Loans and IDA Credits and Grants) as well.

35. **Use of STEP:** The AF2 will continue to use STEP to plan, record, and track procurement transactions. It is mandatory for all procurement transactions for post and prior review packages under the Project to be respectively recorded in or processed through the World Bank's procurement planning and tracking system, STEP. Vaccine contracts will be processed in STEP.

36. **The major planned procurements under this AF2 will include only retroactive financing the purchase of COVID-19 vaccines, which will be reflected in the updated PPSD.** A streamlined short version of the PPSD was prepared by the MoH for the parent and AF1 project and will be updated to reflect changes resulting from AF2 with support from the World Bank and the existing PIU. The PPSD reflects risk mitigation measures that may be necessary and a revised procurement plan. All the selection methods defined in the Procurement Regulations can be used, but priority will be given to streamlined and simple procedures and to those which ensure expedited delivery.

37. **Retroactive Financing is considered under the Project subject to the conditions defined in Section V, 5.1 and 5.2 of the World Bank's Procurement Regulations for Borrowers**. In accordance with the Procurement Regulations, the World Bank requires the application of, and compliance with, the World Bank's Anti-Corruption Guidelines, including without limitation the World Bank's right to sanction and the World Bank's inspection and audit rights.

38. **Procurement function will be carried out by the MoH with the support of the existing PIU and the team currently implementing WB-financed projects**. The PIU's team has sufficient experience with the World Bank procedures (under the 2011 World Bank's Procurement/Consultants Guidelines as well as the 2020 version of Procurement Regulations). Procurement performance for Ukraine Emergency COVID-19 Response and Vaccination Project was rated as *Moderately Satisfactory* in November 2021. PIU is experienced in processing and regularizing retroactive financing of COVID-19 vaccines (completed within the parent and AF1 project), which will facilitate further additional retroactive financing envisaged by the AF2.

39. **The World Bank's oversight of procurement will be done through implementation support**. All vaccine contracts irrespective of their value will be subject to prior review.

E. Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

F. Environmental and Social

40. **The environmental risk rating for the AF2 remains Substantial**. Similar to the Parent Project, AF2 will have long-term positive environmental and social impacts as it will strengthen the public health system overall and specifically improve COVID-19 surveillance, monitoring, prevention and containment. However, In the short-term, there could be some environmental risks during AF2 implementation. The COVID-19 vaccination rollout poses a lot of uncertainties, that may need an adaptive management approach. The main environmental risks identified are: (i) the Occupational Health and Safety issues related to testing and handling of supplies during vaccination; (ii) the logistical challenges in transporting vaccines across the country in a timely manner, adhering to the recommended temperature and transportation requirements; (iii) production and management of medical healthcare waste; (iv) community health and safety issues related to unforeseen effects of vaccination, traffic/road safety risks associated with transporting vaccines as well as with handling, transportation and disposal of hazardous and infectious healthcare waste. These risks are covered by Environmental and Social Standards (ESSs) 1, ESS 2, ESS 3, ESS 4, and ESS 10. Healthcare waste and chemical wastes (including wastewater, disposed of vaccines, reagents, infected materials, etc.) can have a substantial impact on the environment and human health. Wastes that may be generated from health facilities/ labs could include liquid contaminated waste, chemicals and other hazardous materials, and other waste, including sharps used in diagnosis and treatment. All of this requires special handling and disposal as it may pose a risk to health care workers from occupational infections and to the communities if not disposed of properly. The “cold chain” storage, handling, and transportation of the vaccines also require adhering to stringent health and safety standards and practices to minimize associated risks. Old and outdated refrigerators containing ozone depleting substances must also be safely disposed of in accordance with applicable national and international practices. The implementing agency has prepared ESMF for the Parent Project that will cover AF2 activities and will cover the procedures for the screening and the identification of the environmental and social risks as well as the mitigation measures to be implemented for the various proposed activities, including the establishment of effective on-site medical waste management, storage, transportation, and disposal schemes. The updated ESMF will be approved and disclosed. Mitigation measures will be based on WHO technical guidance on COVID-19 response on limiting viral contagion in healthcare facilities, World Bank Group EHS Guidelines and other good international industry practice. The ESMF includes an Infection Control and Waste Management Plan, which will describe in detail appropriate waste management practices to be utilized under the AF2.

41. **The social risks for the AF2 remain substantial, given there may be substantial gaps in coverage of the most vulnerable and disadvantaged groups**. Other social risks are related to community health and safety-related outcomes, especially associated with labor management, ensuring proper conditions of work for workforce, management of worker relationships, potential sexual exploitation and abuse/sexual harassment and provision of adequate support. Given the available information on detailed

vaccines distribution protocol followed by the country at this stage, measures will need to be taken to address key drivers of their exclusion by modifying COVID-19 assistance programs. The Parent Project has designed a comprehensive social engagement strategy including robust communication outreach measures, Grievance Redress Mechanism and Stakeholder Engagement Plan that will be rolled out for the AF2 activities. The GoU, with the assistance of donor partners including the World Bank, has prepared a VRAF and elaborated a NDVP that outlines detailed procedures and protocols for implementation of COVID-19 vaccination and proposes measures for effective vaccination procedures for the population.

42. **Additionally, Ukraine's economy is increasingly vulnerable to the impact of climate change**. In particular, Ukraine is vulnerable to wildfire, droughts, high temperatures, heatwaves, heavy precipitation, mudslides, and floods. Ukraine has adopted the Low Carbon Development Strategy 2030 and the Energy and Climate Change National Plan 2021-2030. In the context of these pre-existing vulnerabilities and opportunities and the current COVID-19 pandemic, the success of Ukraine's future economic development and the implementation of key reforms depends heavily on the effectiveness of COVID-19 response and recovery measures. The goals of the GoU's COVID-19 response plan are to increase economic growth, attract foreign direct investment, and create new jobs while dealing with the COVID-19 crisis, and minimizing its impact on the most vulnerable. Further strengthening of the public health system and success of the COVID-19 vaccination campaign in the coming years will in many ways define the ability of the country to recover from the economic pressures and improve fiscal space for continued transformation and delivery of more efficient and quality services for Ukraine's population. For additional details, see paragraphs 14 and 15 of the PAD for P175895.

43. **Climate**. This AF has been screened for short- and long-term climate change and disaster risks and overall risk rating is Moderate. Together, the Parent Project, AF1 and AF2 seek to address Ukraine's climate vulnerability by contributing to climate change adaptation through activities in Component 1 and additional assessments. Such activities include the purchase of COVID-19 vaccines and investments in climate-friendly modernization of the country's cold chain, health facilities and laboratories. For additional details, see paragraphs 88, 89 and 90 of the PAD for Parent Project (P175895).

44. **Gender.** The gender activities of the parent Project, AF1 and AF2 will continue to be supported and further strengthened in the AF2, including gender-nuanced capacity-building and communication campaign to support COVID-19 vaccination uptake with tailored messages to tackle potential vaccine hesitancy that target both men and women, as well as grievance mechanisms to receive, register and address concerns and grievances related to sexual harassment, sexual exploitation and abuse that ensure issues are addressed in a safe and confidential manner, including through referral of survivors to gender-based violence service providers. Furthermore, the AF2 will continue to contribute to gender equality by ensuring fair treatment in immunization efforts and equitable access to vaccines financed by the AF2. As of February 24, 2022, more vaccinations were administered to females (17,326,450 doses or 55 percent of total) than to males (14,385,294 doses or 45 percent of total).

45. **Citizen engagement.** Implementation of the citizen engagement activities outlined in the SEP for the parent Project and AF1 will continue to be carried out by the PIU team in collaboration with third-party independent non-government organizations (NGOs) organization financed by the Bank. The Project conducts comprehensive analysis of the vaccination process and the reasons behind low uptake of vaccines, specifically among the elderly population (60 years and older). Pilot activities under the parent

Project and AF1 were carried out in several regions of the country. Training of local NGOs has been conducted and will continue, including awareness building about citizen engagement activities under the Project, mechanisms for the vaccination monitoring, opportunities of citizen engagement though the online platform, detection of corruption risks or malpractices. In addition, all communication related to the COVID-19 engagement strategy will continue to be reviewed and analyzed in order to determine key gaps in coverage and awareness among the population, as well as to detect challenges and misinformation within the COVID-vaccination information flow.

V. WORLD BANK GRIEVANCE REDRESS

46. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit *http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service*. For information on how to submit complaints to the World Bank Inspection Panel, please visit *www.inspectionpanel.org*

VI SUMMARY TABLE OF CHANGES

	Changed	Not Changed
Results Framework	✓	
Components and Cost	✓	
Implementing Agency		✓
Project's Development Objectives		✓
Loan Closing Date(s)		✓
Cancellations Proposed		✓
Reallocation between Disbursement Categories		✓
Disbursements Arrangements		✓
Legal Covenants		✓
Institutional Arrangements		✓
Financial Management		✓
Procurement		✓
Implementation Schedule		✓
Other Change(s)		✓

VII DETAILED CHANGE(S)

MPA PROGRAM DEVELOPMENT OBJECTIVE

Current MPA Program Development Objective

The Program Development Objective is to prevent, detect and respond to the threat posed by COVID-19 and strengthen national systems for public health preparedness

Proposed New MPA Program Development Objective

EXPECTED MPA PROGRAM RESULTS

Current Expected MPA Results and their Indicators for the MPA Program

Progress towards the achievement of the PDO would be measured by outcome indicators. Individual country-specific projects (or phases) under the MPA Program will identify relevant indicators, including among others:

- Country has activated their public health Emergency Operations Centre or a coordination mechanism for COVID-19;
- Number of designated laboratories with COVID-19 diagnostic equipment, test kits, and reagents;
- Number of acute healthcare facilities with isolation capacity;
- Number of suspected cases of COVID-19 reported and investigated per approved protocol;
- Number of diagnosed cases treated per approved protocol;
- Personal and community non-pharmaceutical interventions adopted by the country (e.g., installation of handwashing facilities, provision of supplies and behavior change campaigns, continuity of water and sanitation service provision in public facilities and households, schools closures, telework and remote meetings, reduce/cancel mass gatherings);
- Policies, regulations, guidelines, or other relevant government strategic documents incorporating a multi-sectoral health approach developed/or revised and adopted;
- Multi-sectoral operationalmechanism for coordinated response to outbreaks by human, animal and wildlife sectors in place;
- Coordinated surveillance systemsin place in the animal health and public health sectors for zoonotic diseases/pathogens identified as joint priorities; and
- Mechanisms for responding to infectious and potential zoonotic diseases established and functional; and
- Outbreak/pandemic emergency risk communication plan and activities developed and tested

Proposed Expected MPA Results and their Indicators for the MPA Program

COMPONENTS

Current Component Name	Current Cost (US$, millions)	Action	Proposed Component Name	Proposed Cost (US$, millions)
Strengthen public health system	210.00	Revised	Strengthen public health system	301.39

Support service delivery	30.00	Revised	Support service delivery	30.00
TOTAL	**240.00**			**331.39**

Expected Disbursements (in US$)

Fiscal Year	Annual	Cumulative
2021	0.00	0.00
2022	281,391,740.00	281,391,740.00
2023	50,000,000.00	331,391,740.00

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Latest ISR Rating	Current Rating
Political and Governance	Substantial	High
Macroeconomic	Substantial	High
Sector Strategies and Policies	Substantial	Substantial
Technical Design of Project or Program	High	High
Institutional Capacity for Implementation and Sustainability	Substantial	High
Fiduciary	High	Substantial
Environment and Social	Substantial	Substantial
Stakeholders	Substantial	Substantial
Other	Moderate	Substantial
Overall	High	High

LEGAL COVENANTS – AF2 to Ukraine Emergency COVID-19 Response and Vaccination project (P178817)

Sections and Description
No information available

Conditions

VIII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Ukraine

AF2 to Ukraine Emergency COVID-19 Response and Vaccination project

Project Development Objective(s)

The Program Development Objective is to prevent, detect and respond to the threat posed by COVID-19 and strengthen the national health system for public health preparedness in Ukraine.

Project Development Objective Indicators by Objectives/ Outcomes

Indicator Name	PBC	Baseline	Intermediate Targets			End Target
			1	2	3	
Strengthen public health system						
Number of health care facilities participating in the COVID-19 vaccination program that have functional cold chain and waste management equipment (Number)		0.00				1,000.00
Daily maximum number of Government-financed tests for COVID-19 (Number)		41,885.00	50,000.00			60,000.00
Support service delivery						
Number of individuals from a baseline of 0 from priority population groups that have received full COVID-19 vaccination	PBC 1	0.00	1,200,000.00	4,000,000.00	8,000,000.00	10,000,000.00

Indicator Name	PBC	Baseline	Intermediate Targets			End Target
			1	2	3	
from selected health care providers following the agreed procedures (Number)						
of them males (Number)		0.00				5,000,000.00
of them females (Number)		0.00				5,000,000.00

Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	End Target
Strengthen public health system			
The National COVID-19 Vaccination Deployment Roadmap, prepared and approved by the Government of Ukraine, is regularly updated (Yes/No)		Yes	Yes
Vaccine stock management tools and operating procedures updated to reflect the characteristics of COVID-19 vaccines (Yes/No)		No	Yes
Standard operating procedures (SOPs) or guidelines established for collection and disposal of medical waste to the relevant stakeholders (Yes/No)		No	Yes
National tools developed: vaccination card/certificate - facility-based nominal registers and/or tally sheets, vaccination reports (paper and/or electronic) to monitor vaccination (Yes/No)		No	Yes
Health information system collecting sex and age disaggregated data on COVID-19 indicators for testing and vaccines (Yes/No)		No	Yes

Indicator Name	PBC	Baseline	End Target
Number of doses of COVID-19 vaccine procured with Project funding (Number)		0.00	28,320,000.00
Action: This indicator has been Revised			
Electronic appointment for vaccination is used to deploy vaccinations for eligible patients. (Percentage)		0.00	30.00
Support service delivery			
Guidelines, documented procedures and tools for planning and conducting vaccine pharmacovigilance activities (Yes/No)		No	Yes
Number of health workers trained in infection, prevention, and control (Number)		0.00	1,000.00
of them males (Number)		0.00	300.00
of them females (Number)		0.00	700.00
Number of calls to the COVID-19 hotline are received and addressed to advise on COVID-19 vaccination (Number)		0.00	100,000.00
calls received and addressed from females (Number)		0.00	70,000.00
calls received and addressed from males (Number)		0.00	30,000.00
Share of project-supported primary care facilities that used the citizen feedback to enhance the access and quality of COVID-19 vaccinations (Percentage)		0.00	40.00
Communication and community mobilization campaign for COVID-19 vaccination that is targeting priority populations is implemented and monitored (Yes/No)		No	Yes

Monitoring & Evaluation Plan: PDO Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Number of health care facilities participating in the COVID-19 vaccination program that have functional cold chain and waste management equipment	The AF will add resources to strengthen the readiness of the health care system to increase COVID-19 vaccination capacity. In particular, and at the facility level, it will help to modernize the cold chain and waste management equipment in facilities that will be involved in COVID-19 vaccination deployment. Such modernization is essential to help decrease wastage of vaccines, improve energy efficiency (thus minimizing climate impact), and ensure that medical waste from COVID-19 vaccination is managed properly to mitigate potential human and environmental health hazards.	Every 6 months	MOH	Review of the tool prepared by the MOH	CPH under the MOH
Daily maximum number of Government-financed tests for COVID-19	This indicator measures the number of PCR and COVID-19 antigen tests performed daily by providers financed	Every 6 months	MOH	Daily reports collected from Government-financed laboratories	CPH under the MOH

	by Government resources.			and facilities providing care to COVID-19 patients on the number of COVID-19 tests performed. The target is achieved if on average during the reported month the number of PCR and antigen COVID-19 tests conducted in Government-financed laboratories and facilities (public and private) meets or exceeds the target.	
Number of individuals from a baseline of 0 from priority population groups that have received full COVID-19 vaccination from selected health care providers following the agreed procedures	The indicator tracks the number of eligible people fully vaccinated from COVID-19 using vaccines that meet Bank's vaccine approval criteria. The indicator will be reported disaggregated by gender – number of males and females.	Every 6 months	MOH and NHSU	Using eHealth system acceptable to the Bank	MOH/NHSU
of them males					
of them females					

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
The National COVID-19 Vaccination Deployment Roadmap, prepared and approved by the Government of Ukraine, is regularly updated	The GoU began to implement the National Vaccination Roadmap, which is equivalent to the National Deployment and Vaccination Plan (NDVP), approved in December 2020 and later updated. The latest iteration of the NDVP, acceptable to the Bank, was adopted by the MoH on July 21, 2021. The continuous development of the NDVP is led by the GoU, coordinated by the MoH, and includes the participation of the different government agencies and international organizations through the regular meetings of the Taskforce on Immunization (the World Bank is an observer) and the participation of experts from different areas.	Every 6 months	MOH	Review of the MOH reports and current version of the NDVP	MOH/PIU
Vaccine stock management tools and operating procedures updated to reflect	IT upgrade supported by the Parent Project and the	Every 6 months.	MOH	Review of the progress reports.	MOH

the characteristics of COVID-19 vaccines	AF will support the update of vaccine stock management tools.				
Standard operating procedures (SOPs) or guidelines established for collection and disposal of medical waste to the relevant stakeholders	The Project supports the development and implementation of the SOPs or guidelines established for the collection and disposal of medical waste to the relevant stakeholders.	Every 6 months.	MOH/CPH	Progress reports, monitoring visits.	MOH/PIU
National tools developed: vaccination card/certificate - facility-based nominal registers and/or tally sheets, vaccination reports (paper and/or electronic) to monitor vaccination	The project will support and review the acceptability of the national tools developed: vaccination card/certificate - facility-based nominal registers and/or tally sheets, vaccination reports (paper and/or electronic) to monitor vaccination.	Every 6 months.	MOH/NHSU	Review of the progress reports and monitoring tools.	MOH
Health information system collecting sex and age disaggregated data on COVID-19 indicators for testing and vaccines	The PDO indicator of the project will support coverage of at least 10,000,000 people from eligible groups with COVID-19 vaccination. The data on the sex and age of vaccinated people will be required. Update of the data system to allow disaggregation of data of	Every 6 months, finish upon achievement	MOH	Verification of data fields included in the IT system for COVID-19 vaccine management and COVID-19 testing	MOH

	COVID-19 tests by sex will be supported by the project				
Number of doses of COVID-19 vaccine procured with Project funding	This indicator will help monitor the progress in the acquisition of Bank-financed vaccines. The Parent Project supported the procurement of 4.3 million doses of Pfizer vaccines. The AF1 finances the purchase of additional COVID-19 vaccines from Pfizer and Sinovac to cover up to additional 16.5 million doses of vaccines. The AF2 finances an additional 7.3 million Sinovac vaccines.	Every 6 months.	MOH	Progress reports	MOH
Electronic appointment for vaccination is used to deploy vaccinations for eligible patients.	The AF will support the development of an additional module in the eHealth system that will enable sending automatized invitations to vaccination appointments. The indicator will help measure the share of vaccinations that will be initiated through the appointment system after its implementation. The	Every 6 months.	MOH, e-Health Center, NHSU	Progress reports	MOH

	electronic health information system will allow issuing invitations to people to offer health services (e.g. COVID-19 vaccination).				
Guidelines, documented procedures and tools for planning and conducting vaccine pharmacovigilance activities	The indicator will monitor the fulfillment of the requirement that guidelines, documented procedures, and tools for planning and conducting vaccine pharmacovigilance activities are in place.	Every 6 months	MOH	Review of the progress reports and documentation.	MOH
Number of health workers trained in infection, prevention, and control	Facilities that will benefit from project support will receive trainings on COVID-19 vaccine deployment, and specifically on infection, prevention, and control.	Every 6 months	MOH/CPH	Training reports and attendance sheets with relevant data of participants (specialization, place of work, sex, etc.)	MOH
of them males					
of them females					
Number of calls to the COVID-19 hotline are received and addressed to advise on COVID-19 vaccination	The indicator will measure the utilization of the Project-supported hotline, specifically, the number of calls to the COVID-19 hotline are received and addressed to advise on COVID-19 vaccination	Every 6 months	MOH	Reports from the hotline operator	MOH

calls received and addressed from females					
calls received and addressed from males					
Share of project-supported primary care facilities that used the citizen feedback to enhance the access and quality of COVID-19 vaccinations	The indicator will help to measure that the feedback from citizens collected during the project was utilized by facilities participating in the delivery of COVID-19 vaccination to eligible people	Every 6 months	Reports from facilities	MOH submitting requests to facilities	MOH
Communication and community mobilization campaign for COVID-19 vaccination that is targeting priority populations is implemented and monitored	The indicator will include communication and social mobilization events supported by the AF, such as community mobilization campaigns, TV communication series, and visual printed materials, etc.	Every 6 months	MOH, COVID-19 vaccination center in the MOH	Reports and justifications of communication and outreach events conducted	MOH

Performance-Based Conditions Matrix				
PBC 1	Number of individuals from a baseline of 0 from priority population groups that have received full COVID-19 vaccination from selected health care providers following the agreed procedures			
Type of PBC	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Outcome	Yes	Number	30,000,000.00	33.30
Baseline	0.00			
2021	4,000,000.00		3,600,000.00	vaccination costs of US$3 per individual fully vaccinated
2022	8,000,000.00		20,400,000.00	vaccination costs of US$3 per individual fully vaccinated
2023			6,000,000.00	vaccination costs of US$3 per individual fully vaccinated

Verification Protocol Table: Performance-Based Conditions	
PBC1	Number of individuals from a baseline of 0 from priority population groups that have received full COVID-19 vaccination from selected health care providers following the agreed procedures
Description	The indicator tracks the number of eligible people fully vaccinated from COVID-19 using vaccines that meet Bank's vaccine approval criteria. The indicator will be reported disaggregated by gender – number of males and females.
Data source/ Agency	NHSU/MOH on numbers of people vaccinated and reported expenditures
Verification Entity	The World Bank team
Procedure	The eHealth module, acceptable to the World Bank, will be deployed for managing the data of people that are eligible to

	receive COVID-19 vaccines. Such data will be connected to already existing patient registries set up in the course of the health reform and used for electronic health and medical records. The verification process of data submitted by facilities on numbers of people vaccinated from COVID-19 will be organized by the NHSU, using data analysis technologies and, as necessary, visits to providers participating in the delivery of COVID-19 vaccines to compare the actual data versus data reported in the electronic system, check compliance with contracting requirements, etc. The proposed verification system will be evaluated by the World Bank team, and it may additionally verify those validated results presented by the NHSU, including additional spot visits, data collection, etc. The World Bank team will also conduct verification of eligible expenditures. Providers contracted for the delivery of COVID-19 vaccines must comply with the World Bank's requirements on vaccine financing, which will be spelled out in the specifications to the services issued by the NHSU. Such specifications will be built of the applicable obligations under the Environmental and Social Commitment Plan, environmental and social obligations related to COVID-19 activities. The project will reimburse costs associated with the delivery of COVID-19 vaccines that meet World Bank's standards, therefore a data system will need to keep track of specific vaccines delivered to each patient. The Project will support activities to support public information about the availability and executed vaccinations. Information from all vaccination sites will be collected to publicize on a daily basis the number of vaccine doses available, number of vaccine appointments, number of vaccines administered to the people, number of people who received the vaccine and entered into the digital registry.

ANNEX 1: SUMMARY TABLE ON VACCINE DEVELOPMENT AND APPROVAL STATUS (as of 2/18/2022)

1.	BioNTech Manufacturing GmbH	BNT162b2/COMIRNATY Tozinameran (INN)	United Kingdom: December 2, 2020 Canada: December 9, 2020 United States of America: December 11, 2020 European Union: December 21, 2020 Switzerland: December 19, 2020 Australia: January 25, 2021	Nucleoside modified mNRA	EMA	**Finalized: December 31, 2020** **Additional sites:** • Baxter Oncology GmbH Germany (DP). 30/06/2021 • Novartis Switzerland. 08/07/2021 • Mibe (Dermapharm) Germany (DP). 16/07/2021 • Delpharm, Saint-Remy FRANCE (DP). 17/09/2021 • Siegfried Hameln GmbH, Germany (DP). 11/11/2021 • Patheon Italia S.p.A, Italy (DP). 07/12/2021 **Shelf-life extension:** 09 months at -70 to - 90°C. 20/09/2021 • Sanofi-Aventis Deutschland GmbH Germany 06/10/2021 **Diluent suppliers:** • Pfizer Perth, AustraliaFresenius Kabi, USA 18/06/2021 • Fresenius Kabi, USA 20/09/2021 • Pfizer Manufacturing Belgium 30/11/2021

						Booster dose approved for adults 18 years of age and older December 17, 2021. Age extension to children 5 – 11 years of age February 12, 2022.
3.	AstraZeneca, AB	AZD1222 Vaxzevria	UK: December 30, 2020 EU: January 29, 2021 Australia: February 16, 2021 (overseas manufacturing); March 21, 2021 (for local manufacturing by CSL – Seqirus) Canada: February 26, 2021	Recombinant ChAdOx1 adenoviralvector encoding the Spike protein antigen of the SARS-CoV-2.	EMA	**Core data finalized. April 16, 2021** **Additional sites:** • SK-Catalent • Wuxi (DS). April 16, 2021 • Chemo Spain. April 30, 2021 • Amylin Ohio US (DP). July 23, 2021
					MFDS KOREA	**Finalized. February 15, 2021**
					Japan MHLW/PMDA	**Finalized. July 9, 2021** **Additional site:** Nipro Pharma Corporation Ise, Japan. October 11, 2021
					Australia TGA	**Finalized. July 9, 2021** **Additional site:** Siam Bioscience Co., Ltd Thailand. October 11, 2021
					COFEPRIS (Mexico) ANMAT (Argentina)	**Finalized. December 23, 2021**

3.	Serum Institute of India Pvt.Ltd	Covishield (ChAdOx1_nCoV-19)		Recombinant ChAdOx1 adenoviral vector encoding the Spike proteinantigen of the SARS-CoV-2.	DCGI	**Finalized. February 15, 2021** DS and DP Manjari Bk Pune. 11/12/2021
4.	Serum Institute of India Pvt.Ltd	COVOVAX™ COVID-19 vaccine (SARS-CoV-2 rS Protein Nanoparticle [Recombinant])		Recombinant nanoparticle prefusion spike protein formulated with Matrix-M™ adjuvant	DCGI	**Finalized. December 17, 2021**
5.	Moderna	mRNA-1273	USA: December 18, 2020 Canada: December 23, 2020 EU: January 6, 2021 Switzerland: January 12, 2021 UK: January 8, 2021	mNRA-based vaccine encapsulatedin lipid nanoparticle (LNP)	EMA	**Finalized. April 30, 2021** Shelf-life extension to 9 months -20±5°C, February 14, 2022
					USFDA	**Additional Sites. August 6, 2021** • ModernaTx. Norwood (DS) • Catalent Indiana, LLC (DP) • Lonza Biologics, Inc. Portsmouth, USA (DS) • Baxter, Bloomington, USA (DP)
					MFDS	**Finalized. December 23, 2021**
6.	Beijing Institute of Biological Products Co., Ltd. (BIBP)	SARS-CoV-2 Vaccine (Vero Cell), Inactivated (InCoV)		Inactivated, produced in Vero cells	NMPA	**Finalized. May 7, 2021** *2 and 5 dose presentation (new manufacturing site) -- TBC after ongoing inspection*

7.	Sinovac Life Sciences Co., Ltd.Sinovac Life Sciences Co., Ltd.	COVID-19 Vaccine (VeroCell), Inactivated/ Coronavac™		Inactivated, produced in Vero cells		**Finalized. June 1, 2021** **Two-dose presentation. September 30, 2021**
8.	Janssen–Cilag International NV	Ad26.COV2.S	USA: February 27, 2021 Canada: March 5, 2021 EU: March 11, 2021 Switzerland: March 22, 2021 UK: May 28, 2021 Australia: June 25, 2021	Recombinant, replication-incompetent adenovirus type 26 (Ad26) vectored vaccine encoding the (SARS-CoV-2) Spike (S) protein	EMA	**Core data finalized (US +NL sites). March 12, 2021** **Additional sites:** • Aspen RSA (DP). June 25, 2021 • Catalent Agnani Italy (DP). July 2, 2021 • Grand River Aseptic Manufacturing Inc., USA. November 5, 2021 • MSD (Merck(, West Point/PA, USA (DP). November 5, 2021 • Sanofi Pasteur France (DP). January 27, 2022
9.	Bharat Biotech, India	SARS-CoV-2 Vaccine, Inactivated (Vero Cell)/ COVAXIN		Whole-Virion Inactivated Vero Cell	DCGI	**Finalized. November 3, 2021**
10.	Novavax	NVX-CoV2373/Nuvaxovid		Recombinant nanoparticle prefusion spike protein formulated with Matrix-M™ adjuvant	EMA	**Finalized. December 20, 2021**

ANNEX 2: LATEST COVID-19 SITUATION IN THE COUNTRY

1. **As of February 23, 2022, Ukraine had 5.01 million cases and 112,173 cumulative deaths** and is the fifth most affected country in the Europe and Central Asia region in terms of an absolute number of deaths.[16] The peak number of 43,778 cases was registered on February 4, 2022, the situation has abated during February 2022 with 22,440 COVID-19 cases reported on February 22, 2022.

2. **To mitigate the negative consequences of the COVID-19 pandemic, the GoU has invested significant resources to finance COVID-19 measures.** In response to the emerging global recommendations precipitated by the emergence of more contagious and virulent variants, the Government plans to vaccinate 70 percent of the adult population (or 60 percent of total population). Currently, messenger ribonucleic acid (mRNA) vaccines, a novel technology used in the VAC-compliant vaccines commercialized by Moderna and Pfizer BioNTech, are widely available in Ukraine. This type of vaccine has shown to be effective against new emerging virus variants.[17] To date, it has invested US$279 million to procure COVID-19 vaccines and has secured over 45 million vaccine doses both from COVAX and through bilateral contracts sufficient to cover up to 60 percent of the country's population.[18] In addition, the GOU has invested resources to provide access to COVID-19 testing and treatment. It is estimated that the Program of Medical Guarantees (PMG) was expanded in 2020 by approximately US$964 million to cover expenditures of COVID-19 care and increase the salary of staff engaged in the providing of care to patients with COVID-19.

3. **Vaccine deployment is progressing well, with 15.7 million Ukrainians (38 percent) having received one dose of the COVID-19 vaccine and 15.2 million (36.8 percent) being fully vaccinated.** Despite this progress, the GoU still faces a financing gap to reach its target of 70 percent vaccination in 2022. Protection of the key priority groups has improved recently after the targeted efforts of the MoH. It constitutes 95 percent coverage with at least one dose among medical staff and over 98 percent of education staff. However, only 43 percent of people in the age 60-69 years old, 34 percent of people in the age 70-79 years old, and 16 percent of adults in the age of 80 years and older have received at least one dose of vaccine. Activities to increase protection of these groups are prioritized by the GoU. MoH, jointly with partners, is analyzing new options of how vaccination pace can be further improved to decrease the current 2.3 percent mortality in COVID-19-coded cases.

[16] Behind Russia, the United Kingdom, Italy, France, and Germany.
[17] https://www.biorxiv.org/content/10.1101/2021.05.09.443299v1
[18] Of that total, 12.2 million doses were made available through COVAX Advance Market Commitment mechanism, and 30.2 million doses were procured bilaterally through government-authorized international procurement agency (Crown Agents).

ANNEX 3: SUMMARY OF THE PARENT PROJECT COMPONENTS

1. **Component 1: Strengthen public health system (US$210 million).** This component covers the procurement of over 21 million doses of COVID-19 vaccines, procurement of cold chain and waste management equipment. It also supports vaccination campaigns and the development of essential vaccine management information systems. Finally, it is strengthening disease surveillance systems by increasing the testing capacity of public laboratories and health facilities. The Project's resources are allocated to improve laboratory and health management information systems to facilitate referrals of eligible patients for COVID-19 testing, recording, and on-time virtual sharing of information.

2. **Component 2: Support service delivery (US$30 million).** This component reimburses the Government of Ukraine for expenditures paid to health facilities to cover the delivery of COVID-19 vaccines to eligible populations. Such payments are organized as a separate COVID-19 vaccination package within the Program of Medical Guarantees, administered by the NHSU. Such expenditures include "surge staffing"—additional staff time needed to provide COVID-19 vaccination, hazard pay, additional personal protective equipment, fuel, and small consumables. Through this approach, public providers financed by the NHSU provide COVID-19 vaccination following specifications and standards of practice agreed with the World Bank. The Project's financing of these payments is conditional on achieving agreed PBCs to ensure that vaccines are administered to people from select priority population groups identified in the NDVP, namely: medical and non-medical staff of health care facilities, social workers, residents and staff of long-term care facilities, people aged 60 years and older, teachers and education workers, and adults with comorbidities. Additionally, vaccines administered to people from selected priority groups supported by the Parent Project must meet the vaccine eligibility criteria of the World Bank.

ANNEX 4: Status Project-supported COVID-19 vaccine doses delivered and administered

(by vaccine type)

Vaccine type	Delivered to country	Used as of 28/02/2022	Balance of vaccines in stock	Percent of unused vaccines
Pfizer/COMIRNATY™	20,001,150	13,533,400	6,467,750	32 percent
Sinovac/CORONAVAC	8,320,000	7,724,900	595,100	7 percent
Total	**28,321,150**	**21,258,300**	**7,062,850**	**25 percent**