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Report No:

IMPLEMENTATION COMPLETION AND RESULTS REPORT

TF-B7871

ON A

SMALL GRANT

IN THE AMOUNT OF US$5 MILLION

TO THE

EAST, CENTRAL AND SOUTHERN AFRICA HEALTH COMMUNITY (ECSA-HC)

FOR THE

STRENGTHENING PANDEMIC PREPAREDNESS IN THE EASTERN, CENTRAL AND SOUTHERN AFRICA HEALTH COMMUNITY PROJECT

June 15, 2024

Health, Nutrition and Population Global Practice
Eastern and Southern Africa Region

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ABBREVIATIONS AND ACRONYMS

AAR	After Action Review
Africa CDC	Africa Centers for Disease Control and Prevention
AMR	Antimicrobial Resistance
AU	African Union
COP	Communities of Practice
COVID-19	Coronavirus Disease 2019
CPF	Country Partnership Framework
EAC	East African Community
EAPHLNP	East Africa Public Health Laboratory Networking Project
EBS	Event-Based Surveillance
ECSA-HC	East, Central and Southern Africa Health Community
EVD	Ebola Virus Disease
HEPRTF	Health Emergency Preparedness and Response Trust Fund
ICR	Implementation Completion and Results Report
IDSR	Integrated Disease Surveillance and Response
IHR	International Health Regulations
IPC	Infection Prevention and Control
IRI	Intermediate Results Indicator
JEE	Joint External Evaluation
MoH	Ministry of Health
NAPHS	National Action Plan for Health Security
PDO	Project Development Objective
PoE	Point of Entry
RAC	Regional Advisory Committee
SADC	Southern African Development Community
SATBHSSP	Southern Africa Tuberculosis and Health Systems Support Project
SPAR	States Parties Self-Assessment Annual Report
STAR	Strategic Tool for Assessing Risks
TA	Technical Assistance
TOT	Training of Trainers

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DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P176300	Strengthening Pandemic Preparedness in the Eastern, Central and Southern Africa Health Community Project
Country	**Financing Instrument**
Eastern and Southern Africa	Investment Project Financing
Original EA Category	**Revised EA Category**

Organizations

Borrower	Implementing Agency
East, Central and Southern Africa Health Community (ECSA-HC)	East, Central and Southern Africa Health Community (ECSA-HC)

Project Development Objective (PDO)

Original PDO

The project development objective is to support selected countries in Eastern and Southern Africa to improve preparedness capacity for public health emergencies.

FINANCING

	Original Amount (US$)	Revised Amount (US$)	Actual Disbursed (US$)
Donor Financing			
TF-B7871	5,000,000	5,000,000	5,000,000
Total	**5,000,000**	**5,000,000**	**5,000,000**
Total Project Cost	**5,000,000**	**5,000,000**	**5,000,000**

KEY DATES

Approval	Effectiveness	Original Closing	Actual Closing
04-Jan-2022	24-Feb-2022	31-Dec-2023	31-Dec-2023

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US$M)	Key Revisions

KEY RATINGS

Outcome	Bank Performance	M&E Quality
Highly Satisfactory	Satisfactory	High

RATINGS OF PROJECT PERFORMANCE IN ISRs

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US$M)
01	30-Jun-2022	Satisfactory	Satisfactory	1.00
02	16-Dec-2022	Satisfactory	Satisfactory	2.81
03	18-Dec-2023	Satisfactory	Satisfactory	5.00

ADM STAFF		
Role	At Approval	At ICR
Regional Vice President:	Hafez Ghanem	Victoria Kwakwa
Country Director:	Boutheina Guermazi	Boutheina Guermazi
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I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

Context

A. Regional Context

1. **At Appraisal, the Eastern and Southern Africa region was considered a hotspot for disease outbreaks.** Over the preceding decade, the region had experienced several disease outbreaks including 11 outbreaks of Ebola Virus Disease (EVD) in the Democratic Republic Congo (DRC) and 6 in Uganda; Marburg virus disease in Uganda, DRC, and Angola; and yellow fever and cholera in several countries. Malawi, Mozambique, Tanzania, and Zambia had recorded several outbreaks of plague and cholera. Mozambique had reported outbreaks of vaccine derived polio while Tanzania had reported outbreaks of Rift Valley fever and chikungunya fever.

2. **The project was prepared during the COVID-19 pandemic.** As of October 13, 2021, during project appraisal, Malawi had reported a cumulative total of 61,676 COVID-19 cases and 2,290 deaths; Mozambique (150,985 cases and 1,922 deaths); Rwanda (98,697 cases and 1,308 deaths); Zambia (209,347 cases and 3,654 deaths); and Tanzania (26,034 cases and 724 deaths following months of not reporting). The countries experienced systemic challenges in dealing with the pandemic including screening and surveillance at the points of entry (PoE) and porous border points, inadequate skills, staffing and countermeasures, and evolving knowledge on the pandemic.

3. **According to the World Health Organization (WHO) Joint External Evaluation (JEE) findings, all the countries were deficient in several common areas.**[1] These included (i) surveillance systems for early warning and response mechanisms to allow for swift responses; (ii) capacity to manage outbreaks at PoEs; (iii) antimicrobial surveillance and detection capacity; (iv) mapping of public health risks and resources; and (v) multi-hazard plans. According to JEE scores, Malawi and Mozambique scored under 40 percent (on a scale between 1 to 100), categorizing them among the Priority One countries with significant gaps in their preparedness and response capacity. Despite having scored over 40 percent, Rwanda, Zambia, Tanzania had shortfalls in key areas including (i) surveillance capacity for early warning systems; (ii) capacity to manage outbreaks at PoEs; (iii) mapping of public health risks and resources; and (iv) availability and execution of multi-hazard plans. A detailed breakdown of the JEE Scores for all the participating countries is presented in Annex 3. The project sought to address these preparedness gaps in the five countries (Malawi, Mozambique, Rwanda, Zambia, and Tanzania) selected based on: (i) the criteria set forth in the Health Emergency Preparedness and Response Trust Fund Program (HEPRTF) call for proposals[2], and (ii) expression of willingness to be part of the regional project.

B. Sectoral and Institutional Context

4. **With the rising burden of public health threats, countries in the region needed to strengthen their preparedness capacity to deal with the potential threats.** For example, Malawi required strengthening surveillance systems, laboratory capacity, and public health response at the PoEs. Zambia's needs were in the areas of cross border

[1] The JEE is a voluntary, externally validated assessment of 19 technical areas required to prevent, detect, and respond to health emergencies.

[2] Alignment with results framework, based on International Health Regulations (IHR), and national plan for health security/preparedness; coordination among national entities and partners; leveraging existing investments and incentivizing additional investments (domestic/international, financing/in-kind); operational feasibility and efficiency.

disease surveillance, capacity building for health personnel, laboratory testing capacity, and border screening. Mozambique also had similar challenges compounded by increased vulnerability to climate-related events, including frequent floods, cyclones, and droughts. While most countries had robust *indicator-based surveillance* (collection, monitoring and analysis of structured data), all were yet to establish Event-Based Surveillance (EBS) systems. In addition, while the countries had adopted antimicrobial resistance (AMR) surveillance, implementation was quite limited and fragmented.

5. **Countries in the region had adopted regional frameworks to facilitate cross-border collaboration on surveillance and preparedness**. The countries appreciated the importance of conducting joint responses during disease outbreaks and had established multi-disciplinary cross-border committees, held simulation exercises, and undertook joint investigations under the support and coordination of regional organizations such as ECSA-HC, East African Community (EAC) and Africa Centers for Disease Control and Prevention (Africa CDC). Despite the improved cross-border collaboration, more field and desktop simulation exercises were needed to test the regional contingency plans, PoE plans, and Standard Operating Procedures (SOPs). Furthermore, there was a need to continue strengthening the capacity of existing PoEs including cross-border surveillance committees, given the high staff turnover, and to establish new ones.

6. **ECSA-HC, a regional intergovernmental organization, was the grant recipient responsible for project implementation.**[3] ECSA-HC has nine members states and is mandated to foster and promote regional cooperation in health among member states. For non-member states like Rwanda and Mozambique, ECSA-HC usually enters Memoranda of Understanding (MoU). Prior to the project, it had successfully coordinated other regional projects financed by the World Bank,[4] Global Fund and other partners, in collaboration with other regional institutions such as the EAC, the Southern African Development Community (SADC), and Africa CDC, and in so doing, accumulated valuable experience in providing technical assistance (TA) to countries.

7. **The project design was informed by several lessons from previous projects and regional initiatives.** A coordinated regional approach to preparedness was found to be critical for cross country learning and synergies, underscoring the role of regional integration in addressing diseconomies of scale of small and fragmented markets; addressed global public goods and 'bads' that know no boundaries; and provided effective platforms for promoting regional cooperation, thereby aiding Africa's development. These lessons were also reflected in the REDISSE Program, a World Bank financed pandemic preparedness and response project for Africa West and Central subregion since 2016. The countries successfully undertook joint actions in several technical areas including joint cross border surveillance, information sharing, capacity transfer, and joint outbreak investigations. Member states adopted regional documents like the regional multi-hazard contingency plan for public health events of importance to support their own responses. ECSA-HC had previously leveraged its existing structures to coordinate regional activities while keeping the implementation arrangements lean and agile. For example, no new steering committee was established for the project; instead, the Regional Advisory Committee (RAC) for the Southern Africa Tuberculosis and Health Systems Support Project (SATBHSSP, P155658) which includes Principal/Permanent Secretaries of the respective Ministries of Health (MoHs) was leveraged to oversee the project. Additionally, the project leveraged the pool of experts and communities of practice (COP) established through other projects.

[3] The member countries are Kenya, Lesotho, Malawi, Mauritius, Eswatini, Tanzania, Uganda, Zambia, and Zimbabwe.
[4] East Africa Public Health Laboratory Networking Project (EAPHLNP, P111556), Southern Africa TB and Health Systems Project (SATBHSSP, P155658), and Regional Program for Cancer Registries (P163187)

Rationale for World Bank's Involvement

8. **The operation was consistent with the World Bank's Country Partnership Framework (CPF) for the project countries.** For Tanzania, the project contributed to Focus Area 2 (Boost human capital and social inclusion - A life cycle approach to human development challenges) aimed at improving quality of health care services (Report No. 121790-TZ, FY18-22). For Malawi, it was aligned with Focus Area 3 (strengthening human capital development) of the CPF for FY21-25 (Report No. 154505-MW). For Mozambique, the project was aligned with the CPF for FY17-21 (Report No. 104733-MZ) as revised in the Performance and Learning Review concluded in April 2020 (Report No. 144024-MZ). It was also aligned to Objective 6 on "*Improving Health Service Delivery*," within Pillar 2 on "*Investing in Human Capital*", which prioritizes provision of public health services. For Zambia, the project contributed to Focus Area II of the CPF for FY19-23 (Report No. 128467-ZA), which sought to facilitate inclusive human capital development, and specifically strengthened national capacity to respond to disease outbreaks and broader public health emergencies. For Rwanda, the project was aligned with Objective 1 on "*Improve Human Capital*", aimed at deepening Rwanda's human capital base, while supporting poor and vulnerable groups (Report No. 148876-RW, FY21-26). The project was also aligned to the World Bank's Africa Regional Integration and Cooperation Assistance Strategy (updated in December 2020) specifically Pillar 3 "Supporting Human Capital Development". Lastly, the project was aligned to the national plans of the member countries, complemented the ongoing COVID-19 emergency projects in these countries, and contributed to implementation the International Health Regulations (IHR) (2005), the Global Health Security Agenda, and IBRD/ IDA priorities for improving pandemic preparedness in the member countries.

9. **The World Bank had collaborated with ECSA-HC to implement health projects in the region.** Under the East Africa Public Health Laboratory Networking Project (EAPHLN, P111553), the countries were supported to establish a network of efficient, high quality, accessible public health laboratories for the diagnosis and surveillance of TB and other communicable diseases from 2010 to 2021. On the other hand, the SATBHSSP sought to: (i) improve coverage and quality of TB control and occupational lung disease services in targeted geographic areas of the participating countries; (ii) strengthen regional capacity to manage the burden of TB and occupational lung diseases; and (iii) strengthen country-level and cross-border preparedness and response to disease outbreaks. Additionally, it was reasonable to use public financing for the pandemic and outbreak preparedness particularly given the positive externalities of such investment.

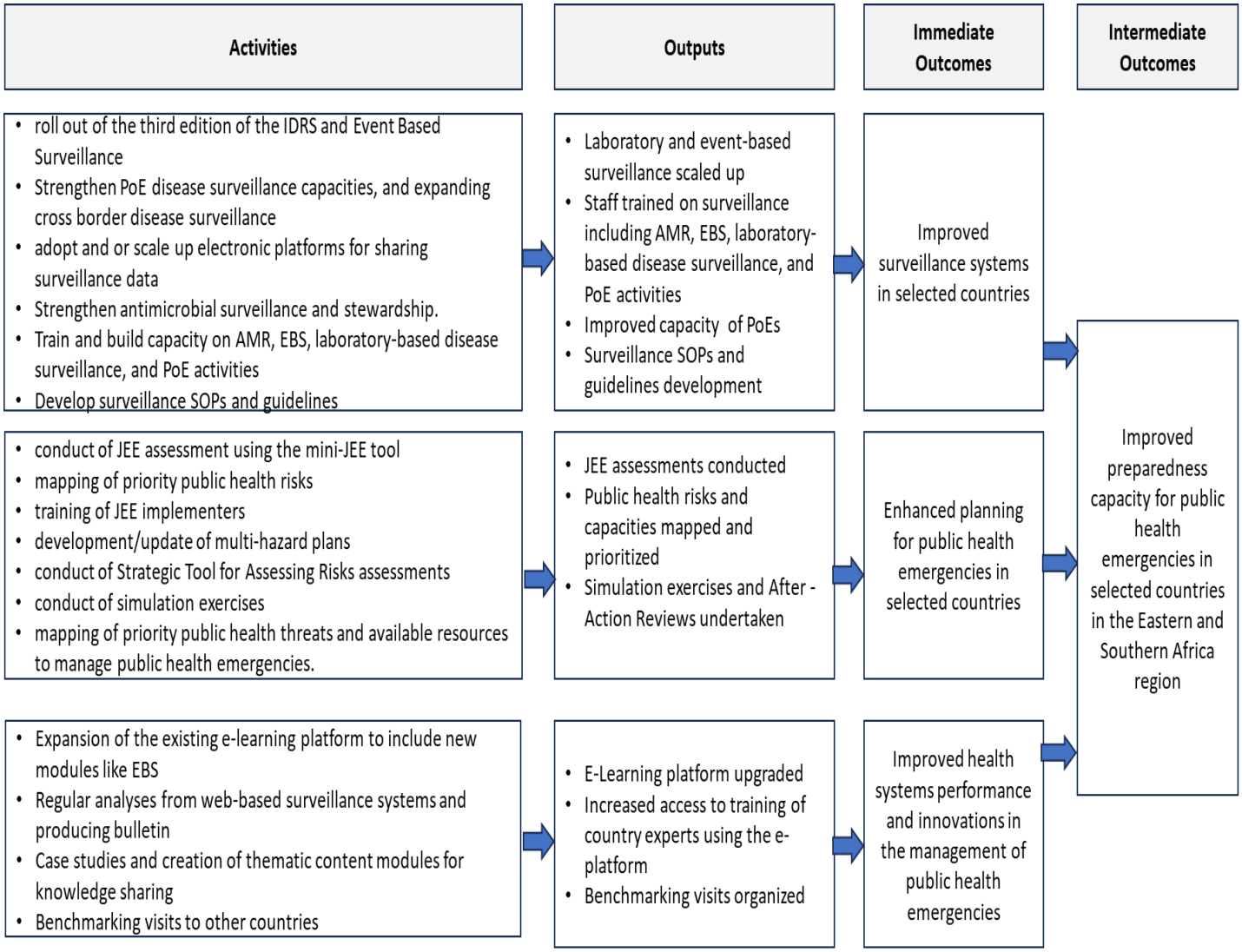
Theory of Change

10. The project's Theory of Change (TOC) has been reconstructed using information provided in the project paper notably the Project Development Objective and the results framework (page 27 – 30). The TOC (Figure 1) is underpinned by the premise that addressing critical gaps in surveillance capacity and improving public health preparedness planning would improve the preparedness capacity of the selected countries. The projects sought to enhance these two critical areas through addressing bottlenecks like in adequate staff capacity including low access to training opportunities, lack of relevant guidelines and Standard Operating Procedures for cross border disease surveillance, inadequate knowledge of critical risks and capacities, and weak governance especially for Antimicrobial Resistance.

11. The critical assumptions for the TOC include the following:

a) There would be strong government leadership and ownership in implementing regionally agreed upon decisions.
b) Adequate staff would be engaged to implement the project at both the regional and country levels.
c) Partners would strong support project activities at both the regional and national levels.

Figure 1. Theory of Change



Project Development Objectives (PDOs)

12. The project development objective (PDO) was to support selected countries in Eastern and Southern Africa to improve preparedness capacity for public health emergencies.

Expected Outcomes and Outcome Indicators

13. Improved capacity for public health emergencies was to be assessed through the following indicators:

i. Number of countries implementing harmonized regional cross-border travel protocols for priority diseases

ii. Number of countries with a score of 3 or above for at least 3 out of the following selected 5 JEE core indicators.
- R.1.1 Multi-hazard national public health emergency preparedness and response plan is developed and implemented
- R.1.2 Priority public health risks and resources are mapped and utilized
- PoE.1 Routine capacities are established at PoE
- P.3.4 Antimicrobial stewardship activities
- D.2.1 Indicator- and event-based surveillance systems

The Intermediate results indicators were:
- Number of countries that have developed country-specific guidelines/ protocols and tools to establish and roll out EBS
- Number of health personnel trained (on laboratory-based surveillance, AMR, IPC, Biosafety and Biosecurity)
- Number of countries with antimicrobial stewardship guidelines in place
- Number of personnel trained through the e-learning platform
- Number of cross-border zones for which risk assessment was conducted
- Number of countries supported to conduct multi-hazard risk and resource assessment

Components

14. The project was designed with four components as indicated below.

Component 1: Strengthening surveillance systems in selected countries

15. **The objective of this component was to support countries to strengthen surveillance systems by:** (i) rolling out the third edition of the Integrated Disease Surveillance and Response (IDSR) strategy (2019) with a focus on establishing EBS systems; (ii) enhancing PoE disease surveillance capacities, and expanding cross border disease surveillance; (iii) building capacity for laboratory-based disease surveillance; (iv) use of electronic platforms for sharing surveillance data; and (v) improving antimicrobial surveillance and stewardship for combatting AMR. Under EBS, the project prioritized (i) training on EBS and IDSR (3rd edition) for country teams, using the training curriculum developed in collaboration with the Africa CDC, (ii) mentorship of national trainers to cascade the training in their respective countries, (iii) development of generic regional guidelines/protocols and tools to establish and roll out EBS, and support country-specific adaption; and (iv) TA to countries to roll out EBS, in line with the findings from the baseline situational assessment.

16. **The project aimed to enhance cross border disease surveillance through several interventions** namely (i) regional Training of Trainers (ToT) for the port health staff on infection prevention and control (IPC); (ii) strengthen the performance of existing high-priority cross border surveillance committees to expand cross-border disease surveillance; (iii) joint cross-border disease surveillance activities, and (iv) harmonization of cross-border screening of travelers across national borders and implementation of cross-border activities by the countries. The capacity building activities for laboratory-based surveillance were through (i) strengthening of specimen transportation/referral systems in the project countries; (ii) technical training on molecular (Polymerase Chain Reaction and genetic sequencing) and other WHO recommended diagnostics; (iii) TA to national reference laboratories and other relevant laboratories to prepare proficiency testing materials; and (iv) support to countries to build local capacities for maintenance of biomedical

equipment. The component also prioritized AMR activities such as (i) adaptation of the generic regional antimicrobial stewardship (AMS) guidelines and develop country specific AMS guidelines; (ii) establishment of national teams of trainers on laboratory-based AMR surveillance, (iii) development of national AMR surveillance guidelines including AMR SOPs; and (iv) improvement of AMR data management and analysis capacity.

Component 2: Support selected countries to prepare for health emergencies

17. **This component aimed at supporting the selected countries to prepare for health emergencies through implementing various preparedness interventions**. The project sought to support countries to (i) conduct peer assessments of preparedness systems using a JEE score card using a customized/ mini-JEE tool, and (ii) map priority public health risks and to update/prepare multi-hazard public health emergency preparedness and response plans. To this end, the project supported the following activities: (i) training of national trainers from the project countries on the JEE tool; (ii) coordination and facilitation of peer to peer (inter-country) mini-JEE assessments; and (iii) coordination with the WHO to validate the peer assessment findings for publication. ECSA-HC utilized some of the funds to co-support the main JEE in Tanzania and Zambia with significant improvement noted on enhanced IHR core-capacities. Other actions that prioritized execution were: (i) training of representatives from the countries to identify and characterize risks using the WHO recommended tool (the Strategic Tool for Assessing Risks - STAR); (ii) consultative meetings of multi-sectoral experts in human, environmental, plant and animal health to review existing plans; (iii) development/update of multi-hazard plans; and (iv) conducting One Health simulation exercises, intra-action/after-action reviews as part of evaluating effectiveness of responses to health emergencies; (v) conducting risk assessment of public health events; and (vi) mapping of priority public health threats and available resources to manage public health emergencies.

Component 3. Strengthen health systems and innovations

18. **This component was designed to strengthen health systems for improved outbreak preparedness and response through innovations, building on existing platforms**. Key interventions included in this design were (i) expansion of the e-learning platform to include course modules in areas of community and facility based EBS, risk mapping, joint cross-border surveillance, preparedness and response, and infection prevention and control; (ii) regular analyses from web-based surveillance systems and producing bulletins; (iii) development of case studies and creation of thematic content modules for knowledge sharing; (iv) knowledge sharing through face-to-face, COP, and online learning; and (v) benchmarking visits to participating countries to provide learning opportunities. These actions among others supported learning in biosafety, biosecurity, surveillance, and operational research, and use of information and communications technology (ICT) and knowledge sharing through existing regional knowledge hubs through which national, regional, and global experts engage.

Component 4. Project Management

19. **The component focused on project management and coordination at the regional level through ECSA-HC and national structures**. It supported the following activities: (i) recruitment of project staff; (ii) project consulting costs; and (iii) project operational costs. Recruited key staff included (i) Medical Epidemiologist; (ii) AMR Senior Program Officer; (iii) System Design Officer (ICT); and (iv) Administrative Assistant. The project heavily leveraged the exiting staff capacity at ECSA-HC and in each country to execute fiduciary, monitoring and evaluation, and other technical functions.

Important changes to the project

20. **The project was implemented over a two-year period, and the project went through some changes**. For example, one of the PDO indicators "Number of countries implementing harmonized regional cross-border travel protocols for priority diseases", was achieved by project effectiveness as the African Union (AU) working with several partners including ECSA-HC had already expedited the adoption of AU-developed platform and protocols[5] to address the cross-border threats of COVID-19 which was ravaging the region's economy. The platform was developed by PanaBIOS Consortium and Econet Group as a public-private partnership with Africa CDC as a digital solution to support member states in verifying COVID-19 test certificates for travelers and to help harmonize entry and exit screening across Africa. The development of cross-border travel protocol for conditions beyond COVID-19 received little focus at a time when the entire region was more pre-occupied with the pandemic. Another indicator, "Number of countries scoring 60% on PoE routine capacities are established," was adopted by ECSA-HC and the countries in April 2023 to monitor progress towards achieving the PDO of the project, to complement the results framework.

II. OUTCOME

21. **The Outcome of the project was assessed based on the relevance of the PDO as well as the efficacy and efficiency of the operation**. The assessment of efficacy does not use the split rating methodology given that the scope and ambition of the project did not change significantly during its life span, in line with paragraph 60 of the ICR Bank Guidance for IPFs.

Assessment of the Relevance of the PDO

22. **The PDO is consistent with the existing World Bank Country Partnership Frameworks (CPFs) for the five countries at project closure.** The project remained aligned with the focus areas or strategic objectives of the participating countries' CPFs and global strategic direction as indicated in the rationale section. The region still faces disease outbreaks, a need for regional collaboration remains, and the project continues to be aligned with the corporate and regional strategic objectives. The relevance of the PDO is rated **High.**

Assessment of Achievement of Each Objective/Outcome

23. Assessment of Efficacy. The project objective was fully achieved with the two PDO indicators and the supplemental indicator added in April 2023 fully achieving or surpassing their endline targets (**Table 1**)**.** The endline target for the PDO indicator "Number of countries implementing harmonized regional cross-border travel protocols for priority diseases" was surpassed (target, 4 countries; achieved 5 countries). All the five project countries adopted the harmonized cross-border protocol. The second PDO indicator "Number of countries with a score of 3 or above for at least 3 out of selected 5 JEE core indicators" was fully achieved across the planned four countries. The additional indicator "Number

[5] It provides information on travel requirements at the departure and destination ports and access to a list of government approved laboratories for COVID-19 testing in African countries. It also allows travelers to upload their COVID-19 test results online for easy verification by port health and travel officials and helps in the detection of forged certificates thereby building trust and confidence in test results among governments and key actors.

of countries scoring 60% on PoE routine capacities are established"[6] was also fully achieved in the planned four countries. A detailed reflection of these achievements is provided in the Results Framework (**Annex 1**).

24. **The project invested in various intermediate outcomes, which contributed to the achievement of the PDO. Table 2** shows that apart from one intermediate results indicator (IRI) which was not achieved, all the remaining five surpassed their endline targets pointing to the activities' contributions toward the PDO. All the five project countries developed country-specific guidelines/ protocols and tools to establish and roll out EBS compared to the endline target of 4 countries. The number of health personnel trained (on laboratory-based surveillance, AMR, IPC, Biosafety and Biosecurity) exceeded the target of 300 six-fold, reaching a total of 1,963 personnel. Each country developed and implemented antimicrobial stewardship guidelines, surpassing the target by one. The following two IRIs exceeded their endline targets of 4: Number of cross-border zones for which risk assessment was conducted; and Number of countries supported to conduct multi-hazard risk and resource assessment. The only indicator that did not achieve the end target was "Number of personnel trained through the e-learning platform"; only 238 of the targeted 400 trainees were reached by the e-learning platform.

Table 1: Achievement of PDO-level and Intermediate Results Indicators

PDO	Outcome and intermediate result indicator	Baseline (31-Dec-2021)	End Target (31-Dec-2023)	Final achievement (31-Dec-2023)	Comment on percentage achievement
Support selected countries in Eastern and Southern Africa to improve preparedness capacity for public health emergencies	**PDO 1:** Number of countries implementing harmonized regional cross-border travel protocols for priority diseases (Number, Custom)	0	4	5	**>100%** Surpassed
	PDO 2: Number of countries with a score of 3 or above for at least 3 out of the following selected 5 JEE core indicators: • R.1.1 Multi-hazard national public health emergency preparedness and response plan is developed and implemented • R.1.2 Priority public health risks and resources are mapped and utilized • PoE.1 Routine capacities are established at PoE • P.3.4 Antimicrobial stewardship activities • D.2.1 Indicator- and event-based surveillance systems	0	4	4	**100%** Achieved
	Supplemental indicator: Number of countries scoring 60% on PoE routine capacities are established	0	4	4	**100%** Fully achieved (Adopted in April 2023)

Surpassed =100%+; Achieved/Substantially = 80%+; Partially Achieved = 65%-79%; Not Achieved = < 64

[6] This is a new indicator introduced after discussion held during the World Bank implementation support mission in March 2023 to complement the original indicator, which was largely achieved by the effectiveness date.

Table 2: Achievement of PDO-level and Intermediate Results Indicators

PDO	Outcome and intermediate result indicator	Baseline (31-Dec-2021)	End Target (31-Dec-2023)	Final achievement (31-Dec-2023)	Comment on percentage achievement
Support selected countries in Eastern and Southern Africa to improve preparedness capacity for public health emergencies	**IRI 1:** Number of countries that have developed country-specific guidelines/ protocols and tools to establish and roll out EBS	0	4	5	**>100%** Surpassed
	IRI 2: Number of health personnel trained (on laboratory-based surveillance, AMR, IPC, Biosafety and Biosecurity)	0	300	1963	**>100%** Surpassed
	IRI 3: Number of countries with antimicrobial stewardship guidelines in place	0	4	5	**>100%** Surpassed
	IRI 4: Number of personnel trained through the e-learning platform	0	400	238	**59.5%** Not achieved
	IRI 5: Number of cross-border zones for which risk assessment was conducted	0	4	5	**>100%** Surpassed
	IRI 6: Number of countries supported to conduct multi-hazard risk and resource assessment	0	4	5	**>100%** Surpassed

Surpassed =100%+; Achieved/Substantially = 80%+; Partially Achieved = 65%-79%; Not Achieved = < 64%

25. The intermediate outcomes were in turn supported by various project outputs as summarized under the following thematic areas – IDSR, EBS, PoE risks and capacity, AMS, laboratory-based surveillance, multi-hazard risk assessment and planning, and training.

26. IDSR

a) Financed the roll-out of the third edition of the IDSR strategy in selected regions of Rwanda, Tanzania, and Malawi and trained over 500 personnel. This activity led to improvements in the quality of IDSR with the completeness and timeliness of IDSR reporting increasing from 30 to 60 percent (Rwanda), 68 to 90 percent (Tanzania) and 10 to 90 percent (Malawi). The project helped Tanzania expand the network of sentinel sites for surveillance of respiratory diseases from 20 to 25, trained 70 health workers, established additional five respiratory disease surveillance sentinel sites.

b) Expanded the network of field epidemiologists in Tanzania by training 32 frontline health workers (through field epidemiology training programs, FETP).

27. EBS

a) Supported the five countries to adopt and or implement EBS. For example, the project supported Rwanda and Mozambique to adopt the regional framework for event-based surveillance (EBS)[7] and trained 44 multi-disciplinary experts for EBS implementation in the two countries.

[7] Event-based surveillance (EBS) is a public health surveillance system that uses information about specific events or situations to identify

b) Supported Zambia to develop, pilot and deploy digital EBS system and Tanzania to pilot and roll out digital EBS, with over 600 and over 400 signals processed in the system respectively by project closure.

28. PoE risks and capacity

a) Supported several activities at the PoE including risk assessments and response plans and capacity building. Disease surveillance was enhanced at PoEs at four border points between Kenya and Tanzania in 2022.

b) Conducted strategic risk assessment at PoEs to identify the potential risk and developed public health emergency response plans for the PoEs in Malawi, Zambia, Tanzania, and Rwanda.

c) Assessed IHR core capacity at PoEs in Malawi and Rwanda and supported the countries to develop action plans.

d) Conducted cross-border surveillance and response review and simulation exercises between Malawi and Tanzania to test cross-border traveler screening and contact tracing protocols.

29. Laboratory-based surveillance and AMS

a) Supported Mozambique to train 14 heads of the laboratories and focal persons from the National Institute of Health (INS) headquarters in laboratory management and leadership.

b) Strengthened Biosafety and Biosecurity measures in Mozambique, Rwanda, Tanzania, and Malawi.

c) Trained 25 and 20 laboratory professionals in Tanzania and Malawi, respectively, in laboratory Quality Management Systems thereby facilitating transitioning from ISO15189:2012 to ISO15189:2022 standards.

d) As part of efforts to strengthen AMS, the project supported AMS baseline and endline assessments, development of action plans and guidelines for surveillance, and training and mentorship of leaders and frontline workers. These efforts resulted in improved AMS performance of 33 hospitals across the five countries as shown in **Table 3.**

e) Key interventions that enabled the stellar performance of AMS were joint prioritization of actions following the joint capacity assessment and need to implement AMS actions as outlined in the country National Action Plans; co-creation of action plans; development of standardized stepwise approach of AMS guidance; development/ adoption of training packages; national ToT on AMS; development of action plan and following up cascade AMS training at selected sites within each country followed by mentorship by in country ToTs; linkage to national AMR structures for continuity; and data on point prevalence surveys collected and analyzed by the sites. In addition, country peer to peer capacity building, learning, knowledge exchange and best practice sharing activities were undertaken. A pool of in-country and regional experts was identified and facilitated to support the country level activities. ECSA-HC provided ongoing physical and virtual support to the counties and project sites.

and monitor public health threats. EBS systems are designed to detect outbreaks of infectious diseases, environmental hazards, and other public health emergencies by collecting, analyzing, and interpreting data from a variety of sources.

Table 3: Comparison of Antimicrobial Stewardship Capacity Assessment Results at Baseline and Endline

WHO AMS core element indicators	Average performance by element (33 hospitals across 5 countries)									
	Rwanda		Tanzania		Malawi		Zambia		Mozambique	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Presence of Drug and Therapeutic Committees (DTC), Infection Prevention and Control or AMS team	73%	91%	71%	93%	92%	91%	91%	95%	67%	84%
DTC Functionality	57%	72%	53%	84%	70%	61%	49%	85%	62%	85%
Leadership Commitment	22%	54%	37%	76%	69%	60%	56%	76%	53%	49%
Accountability and responsibility	29%	63%	29%	68%	75%	81%	72%	90%	68%	78%
AMS Actions	43%	69%	58%	83%	58%	72%	50%	88%	54%	67%
Education and training	28%	69%	25%	50%	69%	86%	54%	91%	33%	35%
Monitoring & surveillance	44%	62%	35%	67%	71%	71%	76%	86%	52%	64%
Reporting & feedback	27%	46%	19%	49%	49%	67%	46%	71%	28%	64%
Overall score	38%	65%	39%	73%	65%	72%	56%	85%	49%	68%

30. Outbreak preparedness planning

a) The project supported the State Party Annual Assessment and Reporting (SPAR) in the following three countries, and these were corroborated by WHO Africa Regional Office assessments: Rwanda (65 percent by the project and 65 percent by WHO); Tanzania (58 percent by the project and 62 percent by WHO); and Zambia (59 percent by the project and 53 percent by WHO).

b) JEEs in Tanzania and Zambia were supported, using the 3rd edition of the JEE tool with Tanzania's JEE score improving from 48% in 2016 to 60% in 2023 with 73% of the indicators demonstrating improved capacities between the score levels of 3 to 5. Improvements were also observed in Zambia where critical gaps previously existed, although the final report is not yet released. This assessment is informing the development of the Zambia National Action Plan for Health Security. **Table 4** shows that JEE scores related to the PDO indicator "Number of countries with a score of 3 or above for at least 3 out of the following selected 5 JEE core indicators" generally improved across the project countries. Beyond Tanzania and Zambia that were specifically supported to undertake JEE exercises, the project supported all the countries to address the gaps identified in the JEE by strengthening their IHR core capacity on preparedness and response to health emergencies, surveillance, strengthening of diagnostics capacity and laboratory systems including bio-risk, waste management and IPC, antimicrobial resistance and antimicrobial stewardship, data management, and JEE tool and assessments using the mini-JEE. It should, however, be noted that changes in JEE scores could be partly explained by changes to the JEE tool although overall, the number of technical areas is unchanged at 19, and indicators increased from 49 to 56 indicators between the 1st (2016) and the 2nd (2018) editions and the 3rd edition (2022).

c) The project supported Rwanda to prepare its first ever National Health Emergency Response Operational Plan (NHEROP) and Malawi to develop a transitional costed Annual Operational Plan (AOP) for the National Action Plan for Health Security (NAPHS).

d) Tanzania conducted After Action Reviews (AARs) for Marburg and COVID-19, and Zambia conducted a cholera AAR.

e) The project supported both JEE and SPARS activities to obtain detailed quantitative and qualitative data on the level of preparedness of the participating countries. While JEE provides a detailed, qualitative assessment of gaps, strengths, and weaknesses through an external team, offering in-depth analysis and recommendations, SPARS offer a quantitative, self-assessed, annual snapshot of progress and compliance with IHR requirements. It ensures regular monitoring and reporting of the implementation status of IHR core capacities. Findings from the JEE were used to inform the SPAR by identifying areas that need continuous monitoring and improvement. Conversely, the annual data from SPAR helped to track progress on the recommendations provided by the JEE, ensuring that countries are moving towards achieving the desired capacities.

f) The project was designed to measure performance on JEE indicators; yet JEEs are conducted less regularly (every five years) and the project was to run for a shorter duration. Accordingly, the annual SPARS assessments were used to measure progress across the project relevant JEE indicators.

Table 4: Details of the number of countries with a score of 3 or above for at least 3 out of the following selected 5 JEE core indicators

Metric (JEE Assessment Tool indicators)	*Mozambique*		*Rwanda*		*Tanzania*		*Zambia*		*Malawi*	
	Baseline 2021	*Final 2023*	*Baseline 2021*	*Final 2023*	*Baseline 2021*	*Final 2023*	*Baseline 2021*	*Final 2023*	*Baseline 2021*	*Final 2023*
P.3.4 Antimicrobial stewardship activities	1	1	1	3	1	4	3	3	1	3
D.2.1 Indicator and event-based surveillance systems	3	3	4	4	3	4	3	3	2	3
R.1.1 Multi-hazard national public health emergency preparedness and response plan is developed and implemented	1	3	2	3	2	3	1	3	3	3
R.1.2 Priority public health risks and resources are mapped and utilized	1	1	2	2	2	3	1	1	2	2
PoE.1 Routine capacities are established at PoE	2	3	2	3	2	3	1	1	1	3

31. Risk and capacity assessment

Supported all countries to conduct risk assessments for various conditions including health, climatic, and violence related shocks **(see Table 5)** and to develop risk calendars and multi-hazard contingency plans as follows: Malawi (10), Zambia (8), Rwanda (8), Tanzania (7) and Mozambique (6). The risk assessment provided valuable insights into the magnitude of various risks, including previously underrated ones like cholera and climatic conditions like floods. This facilitated the development of risk calendars to better prepare for outbreaks throughout the year, an innovation that had hitherto not

taken root in guiding the management of outbreaks across most countries. The project supported countries to conduct the WHO Strategic Tool for Assessing Risks (STAR) focused on understanding the potential impacts of various health threats and guiding strategic planning to mitigate these risks. The project risk assessments followed the WHO approach and involved collaboration with WHO and other relevant partners.

Table 5: Risk profile for hazards identified by project countries

	Risk level *(High and Very High risk profiles)*					
Hazards	**Malawi**	**Tanzania**	**Mozambiqu**	**Zambia**	**Lesotho**	**Rwanda**
Cholera/Acute watery diarrhoea	Very High	High	Very High	High		Very High
Floods	Very High		Very High	High	High	High
Human Rabies	High		High	High	High	
COVID-19	High	Very High	Very High	Very High	Very High	Very High
Transportation accidents (RTA)	High		Very High	High	Very High	High
Ebola Virus Disease/VHF	High	High	High	High		High
AMR	High				Very High	Very High
Stormy rains	High	High				High
Poliomelitis	High		High			High
Cyclones	High		Very High			
Measles	High			High		High
Rubella	High			High		
Typhoid Fever	High					High
Pandemic Influenza		High				Very High
Earthquakes		High				
Yellow fever		High				
Aflatoxicosis		High				
Drought		High	High	High		
Transportation accidents (Marine)		High				
Radiation agents				High		
Plaque				High		
Chemical poisoning			Very High			
Terrorism			High			
Heat waves			High			
Monkey Pox						
Riftvalley Fever						Very High
Gastroenteritis/foodborne diseases						High
Mining/Quaries accidents						Very High
Landslides						High
	Very high risk					
	High risk					
	Not scoring high or very high risk					

32. Training through a regional e-learning platform

g) The project helped expand an existing ECSA-HC-developed e-learning platform by including modules on EBS, IPC, and AMS through experts from Tanzania, Rwanda, and Malawi. About 238 participants enrolled in the courses by project closure, far less than the endline target of 400 partly because of delays in upgrading the platform and delayed onboarding of the expert to design the platform.

Efficacy rating

33. From the above discussion, the overall efficacy of the PDO is rated **High**.

Assessment of the Efficiency of the Project

Economic Efficiency

34. **While no formal economic analysis was conducted both during project preparation and at ICR, the economic and public health rationale for strengthening health emergency preparedness is well established.** While a formal economic evaluation was not undertaken during the project design phase, the project was informed by a growing body of evidence indicating that investing in preparedness will be less costly than responding to epidemics and pandemics once they have occurred.[8] It reduces pandemic risks, and impacts are more than tenfold in that for every dollar spent on pandemic preparedness, the expected economic gain in averted deaths would be US$1,703[9]. Concurrent investments in health security and broader systems strengthening safeguard lives, livelihood, and economies as witnessed during the COVID-19 pandemic. Further, recent evidence from COVID-19, Ebola, and Zika have shown that early and effective preparedness is much less costly than the impacts of full-blown outbreaks/pandemics. The improvement of pandemic preparedness in terms of surveillance and planning is critical to helping the countries detect and respond to outbreaks more quickly enabling them to minimize health, livelihood and economic impacts of these outbreaks and pandemics. Preparedness improves resilience of service delivery systems and fosters intangible benefits like enhanced “peace of mind” of the population facilitating growth and development. With the risk profiling and having contingency plans for high-risk hazards in place, this keeps the systems ready to detect early and respond to health emergencies. The project further supported in developing risk calendars to guide the countries on seasonal occurrence of health emergencies and prepare in a timely manner.

Operational Efficiency

35. **The project design and implementation arrangement facilitated timely completion of the project.** The project was only implemented in two years with full disbursement and expenditures and realization of most of the planned results. This operational efficiency is largely attributed to a good project design informed by lessons from past projects and effective implementation arrangements at both the regional and national levels. For example, ECSA-HC focused on providing technical assistance and regional level capacity building activities, joint preparation of documents, and logistical support to countries allowing the countries leverage regional resources to contemporaneously execute in country activities. Effective partnerships and background regional cooperation facilitated joint actions including cross border

[8] Commission on a Global Health Risk Framework for the Future; National Academy of Medicine, Secretariat. The Neglected Dimension of Global Security: A Framework to Counter Infectious Disease Crises. Washington (DC): National Academies Press (US); 2016 May 16. 2, The Case for Investing in Pandemic Preparedness. Available from: https://www.ncbi.nlm.nih.gov/books/NBK368391/
[9] World Bank. Economic Analysis: Technical Note. AFE Health Emergency Preparedness, Response and Resilience MPA (P180127)

surveillance, assessment, and capacity building activities. In addition, ECSA-HC leveraged personnel and other resources from its own systems and ongoing projects hence minimizing expenditures for management costs. Furthermore, the model allowed for close collaboration between the beneficiary countries and ECSA-HC in executing the activities with ECSA-HC providing initial technical assistance and building a pool of experts in the countries and these experts were supported to further cascade the activities in the countries. ECSA-HC not only used the capacities built in one country to support another country (peer-to-peer mentorship) that further enhanced collaboration among the countries but also facilitated implementation without necessarily having to recruit consultants.

Efficiency Rating

36. Based on the economic and operational efficiency analyses, the overall efficiency for the project is **rated High.**

Overall Outcome Rating

37. The overall assessment of the project outcome rating is **Highly Satisfactory.** This rating is informed by the High rating for relevance, High rating for Efficacy, and High rating for Efficiency. There were no to minimal short comings across all the three outcome dimensions.

Other Outcomes and Impacts

38. No additional outcomes other than those directly related to the planned project outcomes have been documented.

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

39. **The project design was simple and informed by lessons from previous projects.** The project had a simple design and operational logic incorporating well-structured components informed by lessons from preceding projects, notably the EAPHLNP and SATBHSSP. The activities were aligned to the needs and context of the countries.

40. **The mixed regional and country approach optimized implementation effectiveness.** The approach included regionally implemented and country-led activities and joint work-planning sessions. The countries determined the detailed country priorities and work plans, fostering country buy-in, leadership, and ownership while ECSA-HC focused on regional level activities like providing overall guidance, coordination of logistics and tailored “non-intrusive” technical assistance which allowed the countries to learn as they executed interventions. Countries that demonstrated stronger leadership appear to have implemented more activities. ECSA-HC engaged with the MoHs, National Public Health Institutes (NPHIs), and other critical national structures to ensure that project activities were well-aligned to the national priorities and systems. In Zambia, the project was implemented through the Zambia NPHI with various focal units within the institute supporting different activities (Preparedness, Surveillance and Disease Intelligence, AMR, POE, etc.). In Malawi, the project worked through the Public Health institute of Malawi (PHIM) while in Rwanda, it worked through the Rwanda Biomedical Centre (RBC). Since Tanzania does not have an NPHI, the project was implemented through focal units of the MoH (Surveillance/Epidemiology and Disease Control, Public Health Emergency Operations Center, POE, Emergency Preparedness and Response). In Mozambique, activities were conducted through the National Institute of Health (INS), ANARME (National Authority for Regulatory Medicine on AMR) and the MoH Department of Epidemiology.

The countries identified a focal person for the project to coordinate the day-to-day activities including facilitating national level prioritization activities and activity requests and reporting to ECSA-HC.

41. **Resources and coordination infrastructure of other World Bank-financed projects were leveraged.** The project leveraged resources from the EAPHLNP and the SATBHSSP. It used the existing SATBHSSP structures and the Regional Advisory Committee (RAC) considering three countries (Malawi, Zambia, and Mozambique) are part of the two projects. The RAC adopted the membership of Tanzania and Rwanda to form a joint RAC and expanded membership to leverage on this platform for engagement, resources for convening the RAC governance meetings. ECSA-HC managed technical platforms like the regional communities of practice (CoP) were used to implement project activities especially under Component 3.

42. **The project benefited from strong technical capacity and fiduciary arrangements of ECSA-HC.** ECSA-HC demonstrated strong technical capacity in most areas, enabling it to effectively support the countries implement several impactful interventions in less than two years. The only areas that experienced initial delays were AMR activities and e-learning systems development following recruitment of the relevant experts. Fiduciary systems were strong, flexible, and well-integrated with country level actions leading to efficient procurement and effective financial management (FM) arrangements. Most procurements were completed timely and the FM processes like budgeting, internal controls, and reporting were satisfactorily executed.

43. **Collaboration with other partners and stakeholders:** The project collaborated with other World Bank financed projects, notably the SATBHSSP as well as regional and in-country partners to implement various interventions in the countries. In Malawi, some of the country experts were trained on various aspects of the project under the SATBHSSP. ECSA-HC worked with WHO on risk profiling, development of multi-hazard plans in Tanzania, Zambia, and Rwanda. For Mozambique, joint activities were undertaken with WHO on cholera hotspot mapping.. Other partners such as Africa CDC, WHO-AFRO, International Organization for Migration, United Kingdom Health Security Agency (UKHSA), USCDC, USAID, Global Fund, and ReAct took part in the activities under this project in different countries, cross border surveillance, EBS, preparedness planning, AMS, and laboratory surveillance either as participants or co-facilitators. Their own in-country project activities aligned with this project could have boosted the project activities, but the actual value of these contributions could not be effectively quantified.

IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

Quality of Monitoring and Evaluation

M&E Design

44. **The project had a clearly outlined Results Framework, with adequate indicators to measure the achievement of the PDO.** The results framework was clearly defined with well prioritized and adequate PDO indicators, IRI indicators and their respective baselines and targets. The monitoring and evaluation arrangements were well-defined with ECSA-HC reporting on the overall project performance. The M&E design is rated **High.**

M&E Implementation

45. ECSA-HC systematically collected and reported the M&E data. Most of the data were drawn from project reports and project financed assessments. The submitted data were collated, analyzed, and reported to stakeholders by ECSA-HC every six months. The project was able to report on most indicators within 10 months of effectiveness pointing to effective M&E arrangements. The M&E data were routinely integrated into annual reports of ECSA-HC to keep the stakeholders abreast of project performance. One of the original PDO indicators "Number of countries implementing harmonized regional cross-border travel protocols for priority diseases" had been achieved but was not formally changed. A complementary indicator "Number of countries scoring 60% on PoE routine capacities are established the implementing agency," was agreed upon during the April 2023 mission to help track progress of the PDO since but this too was not formally integrated into the results framework, and hence tracked offline. All the three indicators were included in the assessment of project performance. The M&E implementation is rated **Substantial.**

M&E Utilization

46. The M&E data were used to inform project management and decision-making at country and regional levels. The project performance reports were routinely presented to and discussed with the RAC, which provided recommendations to both the countries and ECSA-HC. The data were also used to prepare three Implementation Status and Results Reports (ISRs). M&E utilization is rated **High.**

Justification of Overall Rating of Quality of M&E

47. The overall quality of M&E is rated **High** given the High rating for both the M&E design and M&E utilization and Substantial rating for M&E implementation. The overall M&E system enabled systematic tracking of progress towards the PDO and facilitated decision-making.

Bank performance

48. Quality at entry is rated **Satisfactory**. The project remained relevant to World Bank and regional development priorities. Its design was informed by previous experiences including joint cross border disease surveillance, knowledge sharing, and development of strategic documents. The overall risk to PDO was assessed as Modest though a few areas had a Substantial risk rating (macroeconomic, technical design, institutional capacity, and stakeholder risks). Realistic and effective risk mitigation measures were identified for each substantial risk, and the project ended without these risks materializing.

49. Quality of supervision by the World Bank is rated **Satisfactory**. Implementation support missions were carried out every six months. Fiduciary and other subject matter technical specialists were part of the supervision missions to ensure effective all-round supervision. Issues affecting project implementation were candidly identified and reported in three ISRs. The task team was proactive and together with ECSA-HC identified key performance issues and had them addressed timely.

50. Based on the rating of quality at entry as **Satisfactory** and quality of supervision as **Satisfactory**, the overall rating of Bank performance is **Satisfactory**.

Environmental, Social, and Fiduciary Compliance

51. Environmental and social aspects. The environmental management and social performance remained Satisfactory throughout implementation. The required organizational structures to manage the risks including the grievance redress mechanism were in place and workers were employed in line with agreed requirements. The project engaged a wide range of stakeholders. No occupational health and safety incident was reported under the project. The World Bank noted some delays in the submission of environmental and social progress reports.

52. Fiduciary aspects. Both the procurement and FM performance ratings remained satisfactory throughout the project implementation period. With respect to FM, ECSA-HC maintained appropriate FM systems for project implementation resulting in timely submission of interim unaudited financial reports and audit reports.

Risk To Development Outcome

53. **The key risk to development outcomes and sustainability of regional actions is the limited funding dedicated to such activities.** With the project's closure, there is a risk that the cross-border and joint activities will wane. The participation of ECSA-HC in the Eastern and Southern Africa Health Emergency Preparedness, Response and Resilience using Multiphase Programmatic Approach (P180127) provides an opportunity to continue with some of the priority interventions.

V. LESSONS LEARNED AND RECOMMENDATIONS

(i) **Collaboration and partnerships are critical for the success of regional emergency preparedness initiatives**. The project activities involved the country governments and partners, leveraging their respective comparatives advantages. ECSA-HC facilitated joint planning, knowledge exchange, and technical assistance leveraging its inhouse technical experts and the network of experts whose capacity had been built over time in the region. It worked mainly with WHO (on preparedness activities) and Africa CDC (on AMR and rolling out EBS) across countries and in country partners such as IOM, USAID, UK Health Security, ReAct, and Elizabeth Glaser Pediatric AIDS Foundation who supported the subsequent roll out of some project interventions. **The design of similar projects in the future should deliberately incorporate strong partnerships at both the regional and national levels.**

(ii) **Regional entities like ECSA are well placed to implement multi-country interventions in an effective and cost-effective manner and to foster knowledge transfer.** ECSA-HC leveraged its experience in supporting countries and relevant regional bodies like the steering committees of other projects to provide project oversight. For instance, it leveraged its resources and the Regional Advisory Committee (RAC) of the SATBHSSP. The RAC provided technical advice to the project and oversight ensuring that the participating countries implemented the project according to the general project principles, guidelines, and practices. EAC-HC provided a robust and tested platform for knowledge sharing using both physical and online mechanisms. Joint cross border activities, simulation exercises, and shadow learning of new activities like SPARS provided excellent opportunities for south-to-south learning. The project affirmed ECSA-HC's ability to strategically coordinate, effectively manage resources, and engage multiple sectors, a good model for future actions. **Careful selection of activities that are best implemented or coordinated regionally is key to leveraging the benefit of regional and multi-country action.**

(iii) **The implementation model where countries defined national and regional priorities for financing with support from ECSA-HC fostered country and political leadership buy-in ensuring timely implementation**.

There was strong alignment between national and regional strategic priorities that enabled the collaborating parties to jointly focus on the public good of health emergency preparedness. While major decisions on the overall strategies and action plan were decided regionally through the RAC, countries were given the opportunity to further fit the project's operations in their own context. This facilitated ownership, national commitment, and operational alignment. **For future regional project's, it is critical to ensure strong country ownership and political leadership by leveraging relevant existing coordination structures and engaging national political and technical leadership to assure alignment.**

(iv) **Investing in new technologies like the e-learning platform requires time and timely mobilization of inputs, especially technical expertise.** The intended outputs related to e-learning took long to be produced due to inherent challenges with the development of the relevant tools, socialization of the tools, and demand generation. The delays were primarily due to challenges in recruiting the technical specialist and implementing complementary interventions like awareness creation and mobilization of stakeholders, creation of partnerships to leverage existing resources, and training of users. ***Future IT interventions should plan for and establish necessary mechanism and resources as early as possible to address these challenges;*** and

(v) **Regionally financed cross border activities tend to wane once the regional funding stops.** Under this project, like the previous ECSA-HC implemented regional projects, sustaining regionally financed cross border activities beyond regional projects continues to be elusive. ***There is a need to pay special attention to developing more durable mechanisms for financing and sustaining cross border actions such as (i) developing cross border cooperation agreements for priority areas/PoEs; and (ii) integrating key cross border actors such as local authorities and resource persons in regional communities of practice and other capacity building activities.***

ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: Improved preparedness capacity for public health emergencies in selected countries in Eastern and Southern Africa

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of countries implementing harmonized regional cross-border travel protocols for priority diseases	Number	0.00 31-Dec-2021	4.00 31-Dec-2021	4.00 31-Dec-2023	5.00 31-Oct-2023

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of countries with a score of 3 or above for at least 3 out of the selected 5 JEE core indicators	Number	0.00 31-Dec-2021	4.00 31-Dec-2021	4.00 31-Dec-2023	4.00 31-Oct-2023

Comments (achievements against targets):

A.2 Intermediate Results Indicators

Component: Strengthening surveillance systems in selected countries

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of countries that have developed country-specific guidelines/ protocols and tools to establish and roll out EBS	Number	0.00 31-Dec-2021	4.00 31-Dec-2021	4.00 31-Dec-2023	5.00 31-Oct-2023

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of cross-border zones for which risk assessment was conducted	Number	0.00 31-Dec-2021	4.00 31-Dec-2021	4.00 31-Dec-2023	5.00 31-Oct-2023

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of health personnel trained (on laboratory-based surveillance, AMR, IPC, Biosafety and Biosecurity)	Number	0.00 31-Dec-2021	300.00 31-Dec-2021	300.00 31-Dec-2023	1983.00 31-Oct-2023
Comments (achievements against targets):					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of countries with antimicrobial stewardship guidelines in place	Number	0.00 31-Dec-2021	4.00 31-Dec-2021	4.00 31-Dec-2023	4.00 31-Oct-2023
Comments (achievements against targets):					

Component: Strengthen health systems and innovations

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of personnel trained through the e-learning platform	Number	0.00 31-Dec-2021	400.00 31-Dec-2021	400.00 31-Dec-2023	238.00 31-Oct-2023

Comments (achievements against targets):

Component: Support selected countries to prepare for health emergencies

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of countries supported to conduct multi-hazard risk and resource assessment	Number	0.00 31-Dec-2021	4.00 31-Dec-2021	4.00 31-Dec-2023	5.00 31-Oct-2023

Comments (achievements against targets):

B. ORGANIZATION OF THE ASSESSMENT OF THE PDO

Objective/Outcome 1: support selected countries in Eastern and Southern Africa to improve preparedness capacity for public health emergencies	
Outcome Indicators	1. Number of countries implementing harmonized regional cross-border travel protocols for priority diseases 2. Number of countries with a score of 3 or above for at least 3 out of the following selected 5 JEE core indicators. • R.1.1 Multi-hazard national public health emergency preparedness and response plan is developed and implemented • R.1.2 Priority public health risks and resources are mapped and utilized • PoE.1 Routine capacities are established at PoE • P.3.4 Antimicrobial stewardship activities • D.2.1 Indicator- and event-based surveillance systems
Intermediate Results Indicators	1. Number of countries that have developed country-specific guidelines/ protocols and tools to establish and roll out EBS 2. Number of health personnel trained (on laboratory-based surveillance, AMR, IPC, Biosafety and Biosecurity) 3. Number of countries with antimicrobial stewardship guidelines in place 4. Number of personnel trained through the e-learning platform 5. Number of cross-border zones for which risk assessment was conducted 6. Number of countries supported to conduct multi-hazard risk and resource assessment
Key Outputs by Component (linked to the achievement of the Objective/Outcome 1)	**Component 1: Strengthening surveillance systems in selected countries** 1. Rolled-out IDSR strategy in selected regions of Rwanda, Tanzania, and Malawi and trained over 500 personnel. 2. Supported Rwanda and Mozambique to adopt the regional framework for event-based surveillance (EBS) and trained 44 multi-disciplinary experts to support EBS implementation in the two countries. 3. Trained 2,201 personnel in various technical areas like laboratory-based surveillance, AMR, IPC, Biosafety and Biosecurity, EBS. 4. Supported Tanzania to expand the network of sentinel sites for surveillance of respiratory diseases from 20 to 25 5. Trained 25 and 20 laboratory professionals in Tanzania and Malawi, respectively on laboratory Quality Management Systems thereby facilitating transitioning from ISO15189:2012 to ISO15189:2022 standards.

	6. Enhanced AMR performance across 33 hospitals in the five countries. **Component 2: Support selected countries to prepare for health emergencies** 7. Supported Tanzania, Rwanda, and Zambia to conduct SPARs and supported Tanzania and Zambia to conduct JEE 8. Supported countries to conduct risks assessment, develop operational plans and undertake AARs **Component 3. Strengthen health systems and innovations** 9. Expanded an existing ECSA-HC developed e-learning platform to train 238 participants 10. Supported Zambia to develop, pilot and deploy digital EBS system and Tanzania to pilot and roll out digital EBS.

ANNEX 2. PROJECT COST BY COMPONENT

Components	Amount at Approval (US$M)	Actual at Project Closing (US$M)	Percentage of Approval (US$M)
Component 1: Strengthening surveillance systems in selected countries	0	1.44	0
Component 2: Support selected countries to prepare for health emergencies	0	1.40	0
Component 3. Strengthen health systems and innovations	0	1.00	0
Component 4. Project Management	0	1.16	0
Total	**0.00**	**5.00**	**0.00**

ANNEX 3. JEE SCORE OF THE PARTICIPATING COUNTRIES AS OF 2019

Metric (JEE Assessment Tool indicators)	*Mozambique*	*Rwanda*	*Tanzania*	*Zambia*	*Malawi*
P.1.1 Legislation, laws, regulations, administrative requirements, policies, or other government instruments in place are sufficient for implementation of IHR.	2	3	2	2	2
P.1.2 The state can demonstrate that it has adjusted and aligned its domestic legislation, policies, and administrative arrangements to enable compliance with the IHR (2005).	2	3	3	2	2
P.2.1 A functional mechanism is established for the coordination and integration of relevant sectors in the implementation of IHR	2	3	3	1	1
P.3.1 Antimicrobial resistance (AMR) detection	1	1	1	4	1
P.3.2 Surveillance of infections caused by AMR pathogens	2	1	1	4	3
P.3.3 Healthcare associated infection (HCAI) prevention control programs	3	1	3	3	2
P.3.4 Antimicrobial stewardship activities	1	1	1	3	1
P.4.1 Surveillance systems in place for priority zoonotic diseases/pathogens	3	3	2	3	1
P.4.2 Veterinary or Animal Health Workforce	4	3	2	4	1
P.4.3 Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional	2	3	3	1	1
P.5.1 Mechanisms are established and functioning for detecting and responding to foodborne disease and food contamination.	3	3	2	2	1
P.6.1 Whole-of-government biosafety and biosecurity system is in place for human, animal, and agriculture facilities	2	3	2	2	1
P.6.2 Biosafety and biosecurity training practices	2	3	3	1	1
P.7.1 Vaccine coverage (measles) as part of national program	3	5	4	4	1
P.7.2 National vaccine access and delivery	4	5	4	4	3
D.1.1 Laboratory testing for detection of priority diseases	3	4	3	4	4
D.1.2 Specimen referral and transport system	3	3	2	2	2
D.1.3 Effective modern point of care and laboratory-based diagnostics	2	3	3	3	2
D.1.4 Laboratory Quality System	2	4	3	3	2
D.2.1 Indicator and event-based surveillance systems	3	4	3	3	2
D.2.2 Interoperable, interconnected, e-reporting system	2	2	3	2	2
D.2.3 Integration and analysis of surveillance data	3	4	4	3	2
D.2.4 Syndromic surveillance systems	3/2	4	3	3	2
D.3.1 System for efficient reporting to WHO, FAO and OIE	3	3	2	2	2
D.3.2 Reporting network and protocols in country	2	2	2	2	2
D.4.1 Human resources are available to implement IHR core capacity requirements	2	2	3	3	2

Metric (JEE Assessment Tool indicators)	*Mozambique*	*Rwanda*	*Tanzania*	*Zambia*	*Malawi*
D.4.2 Applied epidemiology training program in place such as FETP	3	3	3	3	2
D.4.3 Workforce strategy	3	3	2.5	2	2
R.1.1 Multi-hazard national public health emergency preparedness and response plan is developed and implemented	1	2	2	1	3
R.1.2 Priority public health risks and resources are mapped and utilized	1	2	2	1	2
R.2.1 Capacity to Activate Emergency Operations	4	2	2	2	1
R.2.2 Emergency Operations Centre Operating Procedures and Plan	5	3	3	1	1
R.2.3 Emergency Operations Program	3	4	1	1	1
R.2.4 Case management procedures are implemented for IHR relevant hazards	2	2	2	2	2
R.3.1 Public Health and Security Authorities, (e.g., Law Enforcement, Border Control, Customs) are linked during a suspect or confirmed biological event	2	5	2	1	1
R.4.1 System is in place for sending and receiving medical countermeasures during a public health emergency	2	2	2	1	1
R.4.2 System is in place for sending and receiving health personnel during a public health emergency	4	1	2	1	1
R.4.3 Case management procedures implemented for IHR relevant hazards					1
R.5.1 Risk Communication Systems (plans, mechanisms, etc.)	2	1	2	2	1
R.5.2 Internal and Partner Communication and Coordination	3	5	2	3	2
R.5.3 Public Communication	4	5	2	4	2
R.5.4 Communication Engagement with Affected Communities	3	4	2	3	2
R.5.5 Dynamic Listening and Rumor Management	3	4	2	4	1
PoE.1 Routine capacities are established at PoE	2	2	2	1	1
PoE.2 Effective Public Health Response at Points of Entry	2	1	2	1	1
CE.1 Mechanisms are established and functioning for detecting and responding to chemical events or emergencies	2	3	3	2	1
CE.2 Enabling environment is in place for management of chemical event	2	3	3	3	1
RE.1 Mechanisms are established and functioning for detecting and responding to radiological and nuclear emergencies	2	3	2	2	1
RE.2 Enabling environment is in place for management of Radiation Emergencies	2	3	3	2	1
Average score	**2.5**	**2.9**	**2.4**	**2.4**	**1.6**
Overall Performance (%)	**40**	**58**	**48**	**47**	**32**

ANNEX 4. RECIPIENT'S ICR

1.0 Background of the Project

The East Central and Southern Africa Health Community (ECSAHC) is a Regional inter-governmental health organization established in 1974 by Member States, under the Convention for the establishment of the Commonwealth Regional Health Community for East, Central and Southern Africa. It was established as a permanent mechanism for fostering and promoting regional cooperation in health among member states in acknowledgement of the fact that health and disease do not observe borders. The mandate of ECSA-HC is to foster and encourage regional cooperation in health and to strengthen capacity to address the health needs of its member states, to attain the highest standards of health for the people of the region. Currently ECSA- HC membership includes Eswatini, Kenya, Lesotho, Malawi, Mauritius, Tanzania, Uganda, Zambia, and Zimbabwe.

ECSA-HC has successfully coordinated regional projects supported by the World Bank, Global Fund and other partners on inter-country disease surveillance, preparedness, and response activities in Eastern and Southern Africa, partnering with other regional institutions such as the East African Community (EAC), the Southern Africa Development Cooperation (SADC), AUDA-NEPAD and Africa CDC among others.

The Eastern and Southern Africa (ECSA) region lies in a hotspot with increased risk of occurrence of disease outbreaks. The threat of infectious diseases to human life has been recognized for a long time. The Eastern and Southern Africa region has experienced numerous disease outbreaks (e.g., Ebola, Marburg, yellow fever, dengue, cholera, chikungunya) over the past decade and is increasingly vulnerable to emerging and reemerging infectious diseases (EIDs). While some progress has been made, the region remains inadequately prepared to deal with these frequent regional and global public health threats.

The World Bank under the Health Emergency Preparedness and Response Umbrella Program (HEPR Program) trust-fund program provided support to ECSA-HC to implement a regional project, the Strengthening Pandemic Preparedness for Eastern and Southern Africa. The project covered five countries namely, Malawi, Mozambique, Rwanda, Tanzania and Zambia.

1.1 The Project Development Objective

The project development objective was to support selected countries in Eastern and Southern Africa to improve preparedness capacity for health emergencies.

2.0 The Project Outcomes

2.1 Relevance and coherence of the PDO

The PDO was highly relevant from appraisal through to the end of the project. The PDO was fully aligned with the priorities and objectives of the HEPRTF umbrella trust fund program. Within the preparedness pillar, three mutually complementary components/themes were prioritized for this regional initiative based on JEE benchmarking, namely: (i) strengthening surveillance systems; (ii) preparing for health emergencies; and (iii) enhancing health systems, while promoting innovations and knowledge sharing and use of digital technology. The project was aligned to the CPFs of the five beneficiary countries. It contributed to the implementation of the International Health Regulations (IHR) (2005), the Global Health Security Agenda, and IBRD/ IDA priorities for improving pandemic preparedness; and complements investments in health systems strengthening, disease control and surveillance by other partners.

Project components and subcomponents

2.1.1 Component 1: Strengthening Surveillance Systems in Project Countries

Sub-component 1.1: Enhancing event-based surveillance and cross-border disease surveillance and emergency preparedness.

Supported rollout of event-based surveillance (EBS) and Integrated Disease Surveillance and Response. The project supported the project countries to roll out the IDSR strategy in selected regions. Over the period, the project supported (a) Rwanda, Tanzania, and Malawi to roll-out the IDSR strategy by training over 500 frontline health workers (305 front line workers in Kigali region, Rwanda; 279 in Singida region, Tanzania; and in Malawi districts of Ntchisi, Kasungu and Nkhotakota). The completeness and timeliness of IDSR priority disease reporting improved from 30 to 60 percent (Rwanda), 68 to 90 percent (Tanzania) and 10 to 90 percent (Malawi) respectively.

Event-based surveillance (EBS)[10]*:* Rwanda and Mozambique were supported to adopt regional framework for event-based surveillance (EBS) and trained multi-sectoral & multi-disciplinary teams of experts (20 in Rwanda and 24 in Mozambique) to support the implementation of EBS in these countries. This effort is aimed at supplementing indicator-based surveillance (IDSR) to further enhance early warning and response systems to health emergencies. Malawi, Rwanda and Zambia have already commenced application of EBS, and reports are being received from community and health facilities Plans to cascade the training and roll out of the EBS program to further lower levels of the health system are underway. Electronic EBS was rolled out in Zambia and Tanzania with over 600 and over 400 signals reported in the system.

Enhancing surveillance of respiratory diseases: Tanzania prioritized the need to expand the network of sentinel sites for surveillance of respiratory diseases. The project supported training of over 70 health workers (41 and 32 in Singida and Mwanza regions respectively) and established additional five respiratory disease surveillance sentinel sites, which are currently being used to monitor COVID-19 transmission. Scaling up of the influenza surveillance sentinel sites will provide enhanced country capacity for surveillance.

Expanding network of field epidemiologists*:* The project supported training of a cohort of 32 frontline health workers in Tanzania (Lindi, Mtwara, and Zanzibar regions) in field epidemiology (through field epidemiology training programs, FETP).

Enhanced capacity for point of entry disease surveillance and expand cross border disease surveillance.

Expanding capacities at points of entry (PoE): In collaboration with WHO, ECSA-HC supported participating countries to strengthen PoE IHR capacities. In November 2022, Tanzania and Kenya conducted joint assessment of the points of entry along their common border. These included the paired PoEs of Holili/Taveta, Isabenia/Isabenia, Namanga/Namanga and Horo Horo/Lunga-Lunga respectively. In April 2023, the project further supported assessment of IHR core capacity at points of entry of Kamuzu and Chileka International airports, Mchinji, Mwanza and Dedza ground crossing PoEs in Malawi and Mfuwe International airport and Mwami ground crossing in Zambia. In September 2023 supported Kigali International Airport (KIA), Gatuna OSBP, Rusumo OSBP, Cyanika OSBP, La Corniche OSBP, Ruganda lake port located in Karongi, Kagitumba OSBP, Poids Lourd border post, Rusizi I border post, Rusizi II border post, Bugarama border post and Akanyaru Haut

[10] Event-based surveillance (EBS) is a public health surveillance system that uses information about specific events or situations to identify and monitor public health threats. EBS systems are designed to detect outbreaks of infectious diseases, environmental hazards, and other public health emergencies by collecting, analyzing, and interpreting data from a variety of sources.

border post were also assessed in Rwanda. These countries have been supported to develop action plans for mitigation of identified gaps to improve IHR core capacities and therefore JEE scores.

Conducted Strategic Risk Assessment for the PoEs to identify the Potential Risk and Develop Public Health Emergency Response Plans for the PoEs. This was done in Malawi: (Chileka, Kamuzu International Airport, Mchinji and Dedza ground crossing PoEs), Zambia: (Mwami ground crossing PoE), Tanzania: (Holili and Tarakea ground crossing), Rwanda: Kigali International Airport, Poids Lourd, Gatuna, Rusumo. The cross-cutting hazards with highest risk levels were Pneumonia, Covid-19, Ebola, Marburg Virus Disease, Tuberculosis, Cholera, Poliomyelitis and Rabies. After the assessment, the PoEs were supported to developed PoE Specific Public Health Emergency Response Plan which included the mitigation measures for the high and moderate risk hazards.

Cross-border surveillance and response: A review of cross-border surveillance across the Malawi-Tanzania border was held in the wake of the polio outbreak in Malawi in April 2022. During a cross-border meeting involving 62 participants of a multi-sectoral, multi-disciplinary mix, discussions were held to improve cross-border surveillance between the two neighboring countries. A simulation exercise was held to test cross-border traveler screening and contact tracing protocols.

Sub-component 1.2. Building capacity for laboratory-based surveillance and antimicrobial resistance surveillance

Capacity building of Heads of Public Health and TB Reference Laboratories in Management and Leadership: The project supported the Mozambique to train heads of the laboratories and focal person from the National Institute of Health (INS) headquarter from 12th to 16th December 2022 in Maputo Province. In total, 14 participants were trained in laboratory management and leadership through a program developed by ECSA-HC. As the laboratories become fully operational, the basics of management and leadership functions has been established in the country.

Strengthening of biosafety and biosecurity: The detection and effective response to any Public Health Emergency requires knowledge of hazards for any disease, condition or event that may threaten the health of the public. ECSA-HC supported the project countries in strengthening Biosafety and Biosecurity under One Health Approach as per the international standards.

Laboratory Quality improvement through implementation of Quality Management Systems: To effectively ensure quality results and laboratory functions in line with national and international standards, ECSA-HC through the SPP project, supported the project countries build their capacities to implement the requirements of new ISO 15189:2022. Tanzania and Malawi received support to train 25 and 20 laboratory professionals, respectively.

Surveillance of Antimicrobial resistance: Antimicrobial resistance (AMR) is a growing global public health concern especially in Africa, where access to antimicrobial agents is often limited and misuse and overuse are common. The project is supporting two sets of intervention on AMR i.e. Laboratory AMR surveillance and antimicrobial stewardship (AMS)[11]. Implementation of AMS in project countries face challenges, such as limited resources, poor laboratory capacity and infrastructure, and expertise. Through the SPP project, ECSA HC has embraced a stepwise approach to support the project countries build their capacities for conducting antimicrobial resistance surveillance and establishment of antimicrobial stewardship programs at the National

[11] Antimicrobial stewardship (AMS) refers to a set of coordinated interventions implemented to promote appropriate use of antimicrobial agents, reduce costs of care, improve patient outcomes and reduce the risk of AMR. These are implemented by a multidisciplinary team

and Health facility levels involving (i) baseline assessment; (ii) establishment of action plan and guidelines for AMR surveillance and AMS; (iii) training and mentorship for establishment of AMR surveillance and AMR programs; and (iv) data collection through the established systems.

In the course of the project two new partnerships were created as an extension of work done through collaboration with the Commonwealth Partnerships for Antimicrobial Stewardship (CwPAMS) Project to strengthen AMS through Fleming Funding under THET and a virtual capacity building initiative TEACH-AMS in collaboration with the American Society for Microbiology and Project ECHO.

2.1.2 Component 2: Support Countries to Prepare for Health Emergencies

Support countries to conduct peer assessments of preparedness systems using a JEE score card using a customized/ mini-JEE tool

Peer State Party Annual Assessment and Reporting (SPAR)[12] assessment

In accordance with Article 54 of The International Health Regulations (2005) and WHA resolution 61.2, all IHR States Parties and WHO are required to report to the WHA on a yearly basis on their implementation of the Regulations. ECSA-HC through the project supported the MoH Tanzania to conduct their annual peer-SPAR between 22nd to 25th November 2022. A total of 48 technical staff representing line of Ministries (President Office, Region Administrative and Local Government (PORALG), Prime Minister office (PMO), Ministry of Live Stock and Fisheries (MoLF) Representatives from Zanzibar, Representatives from Research and Academic Institutions (MUHAS, SUA), Regulatory bodies (TBS and GCLA), Institutions (TVLA), Regional Authorities, WHO secretariat, Partners (ECSA-HC, CDC, PATH, AMREF and JHPIEGO) and technical representatives from Zambia and Malawi participated in the meeting. The Malawi and Zambia experience would inform the infant process of establishing a NPHI in Tanzania. The representatives of Zambia and Malawi found the exchange of experiences and practice during a joint SPAR very useful and proposed that a structured input by visiting teams should be encouraged. Through the same platform, the team came up with priorities of priority activities that were included in one-year National Action Plan for Health Security. The overall core capacity average for Tanzania in the year 2022 was 58% against 62% for the WHO AFRO and global average was 44%. Tanzania has designated 13 points of entries among them three (3) are sea-ports, five (5) airports and five (5) ground crossing.

For Rwanda the annual SPAR was conducted in November 2022.The overall score for the core-capacity average was 65% against 65% for WHO AFRO region and 59% global average. Rwanda has designated 23 PoEs among them 2 are ports, 2 airports and 19 ground crossings. Zambia has also conducted their annual SPAR in January 2023. Their overall core capacity average was 59% against 53% for WHO AFRO region and 66% global average. Zambia has designated 14 PoEs among them 1 is port, 4 airports and 9 ground crossings.

Joint External Evaluation (JEE)

The project supported Tanzania to conduct their second Joint External Evaluation (JEE), this evaluation was a joint exercise between multisectoral team of experts from the United Republic of Tanzania and an external team of experts who participated in a weeklong evaluation from the 14th to the 18th of August 2023 in Dar es Salaam, Tanzania. The evaluation started with the self-assessment which was conducted on 10th to 15th July 2023. The main objective of the evaluation was to assess the ability of existing national structures and resources

[12] The SPAR (State Party Self-Assessment Annual Reporting) tool consists of 24 indicators for the 13 IHR capacities needed to detect, assess, notify, report and respond to public health risk and acute events of domestic and international concern. For each of the 13 capacities, one to three indicators are used to measure the status of each capacity

to meet the minimum requirements described in Annex 1 of the IHR and to contribute towards global health security.

The JEE tool specifically determines the current capacity, including gaps and needs; measures progress on work implemented across the IHR (2005) Core capacities and finally highlights the strengths, challenges, gaps and needs for current and prospective support, as well as to inform country-level planning and priority setting. All the technical areas have specific indicators that were examined across a spectrum of capacity, level 1 indicating no capacity and level 5 indicating sustainable capacity. For Tanzania there has been demonstrated progress across all the nineteen technical areas with sustained capacities in two of the technical areas. In 74% of the indicators, Tanzania has demonstrated developed capacities between the score levels of 3 to 5. Although the JEE tool has evolved with new indicators added and others modified, there was overall improvement in the JEE score from 48% in 2016 to 60% in 2023.

The project also supported Zambia during their preparation for the Self-assessment of the JEE and during the self-assessment which was conducted between 28th of August to 1st September 2023, with the same aim of ensuring that the country has current capacity for core IHR elements and measured progress on work implemented across the IHR (2005) Core capacity in Zambia. The second Zambia Joint Evaluation was held between 2nd and 6th October 2023. The final scores are being compiled. Zambia scored 47% in 2016.

Support countries to conduct Intra Action Review /After Action Review

AAR provides an opportunity for member states to discuss an event, that focuses on performance standards and enables review what happened, why it happened, and how to sustain strengths and improve on weaknesses. AAR aids the country to identify immediate and longer-term corrective actions for future outbreak responses. The project supported Tanzania to conduct AAR for Marburg and COVID-19 while Zambia was supported to conduct Cholera AAR. Some observations are highlighted below: -

Support Countries to develop National Cholera Multisectoral Elimination Plan (MCEP)

Cholera remains a global threat to public health and an indicator of inequity and lack of social development. It is a disease transmitted through fecal-contaminated water and food of public health importance that can cause severe acute watery diarrhea with severe dehydration. In October 2017, Global Task Force on Cholera Control (GTFCC) partners launched a strategy for cholera control, a global roadmap to 2030 where a countries-led strategy aims to reduce cholera deaths by 90% and to eliminate cholera in as many as 20 countries by 2030. Rwanda has joined other countries in this ambitious battle. The project supported Rwanda in the development of the plan that will guide Rwanda's cholera elimination effort through 2030. The overall objective of the developed a cholera elimination multisectoral plan was to sustainably address the burden of cholera in Rwanda and provide guidance on assessing situational analysis of cholera outbreaks, establishing a Multisectoral approach in prevention and response to cholera outbreaks, enhancing surveillance and response to cholera outbreaks, and developed the implementation plan.

Support Countries to Develop Guidelines for the Surveillance, Investigation and Response of the Food and Water Borne Diseases

Foodborne diseases are a growing public health problem throughout the world and cause a considerable burden of disability and mortality. The most common clinical presentation of foodborne disease is gastrointestinal symptoms. Other serious consequences include kidney and liver failure, brain and neurological disorders, reactive arthritis, and cancer. Antimicrobial resistant microbes can be transmitted through the food

chain, via direct contact between animals and humans or through the environment. Each year, an estimated 700, 000 people die around the globe because of antimicrobial resistant infections.

The project has supported Rwanda in the development of the guidelines for the surveillance, investigation and response of the food and water borne disease which was done in in Musanze District between 7th to 11th August 2023.The main objectives of the guideline were to strengthen the surveillance and response of food and water borne diseases/ events in Rwanda. The main outcome of the workshop was the food and waterborne surveillance and response guidelines developed. These guidelines included selected priority food and waterborne diseases for surveillance, the surveillance scope, methods/approach and coverage, the roles and responsibilities of stakeholders and information sharing mechanism and process and data use.

Support Countries in the Development of the Annual Operational Plans for Health Security

National Action Plan for Health Security (NAPHS) serves as a crucial strategic document for enhancing health security capabilities in the countries. To effectively implement the NAPHS, the development of a transitional costed AOP was essential because it will provide a detailed roadmap, associated costs for priority activities and optimize available resources. This contributes to successful implementation of the NAPHS, safeguarding the population against health emergencies and pandemics. The project has supported Malawi in the development a transitional costed Annual Operational Plan (AOP) for Malawi's NAPHS. The workshop was held from 25th to 29th September 2023 in Salima District. The AOP will also set the tone for preparations for the Joint External Evaluation scheduled for early next year.

Support countries to map priority public health risks and to update/prepare multi-hazard public health emergency preparedness and response plans.

Five countries (Mozambique, Zambia, Malawi, Tanzania and Rwanda) were supported to conduct risk assessments and develop multi-hazard plans as follows.

Assessment of Public health Risks and hazards through an all-hazards approach: In Mozambique, assessment of risks and prioritization of hazards using the WHO Strategic tool for assessing risks (STAR) was conducted in May 2023 with the aim of Identifying priority threats, assess the vulnerability and capacity of the Mozambique health system for effective preparedness to manage public health emergencies, plan and prioritize public health emergency readiness and preparedness activities and proposing appropriate actions to prevent, mitigate or reduce the impact of potential hazards likely to lead to health emergencies. The assessment was conducted by the participants from the ministries of health, Agriculture, environment of Mozambique, together with the partners including ECSA-HC, WHO and Village reach. Following the assessment 13 hazards were identified to have very high and high risk as follows: Covid-19, Cholera, Tuberculosis, malaria, HIV, Road Traffic Accident, Riverine floods, Tropical cyclones, Food poisoning, Rabies, Poliomyelitis, Viral hemorrhagic fever, Arbovirus, stagnant water, Terrorism in Cabo Delgado, lack of clean water, Drought, Heat waves. Furthermore, HIV, TB and Malaria hazards were dropped for the priority list due to the fact that they have well established and strong vertical programs which can take care of the daily follow up and mitigation activities of the hazards.

Zambia: The assessment identified a total of 18 hazards for input into the matrix. In order to limit the number of hazards, a prioritization was carried out by limiting the selection to the hazards with severe impact with probable likelihood of occurring and very likely with moderate impact in the population at risk. Based on this criterion, only 12 hazards were considered for further consideration as follows; COVID-19 (Very high risk); Cholera/Acute watery diarrhea (AWD; High risk), Anthrax (High risk); Plague (High risk); Ebola Virus Disease

(High risk); Measles (High risk); Road Traffic Accidents (RTA; High risk); Radiation Agents (High risk); Mining (Emissions)(High risk); Droughts (High risk); Floods (High risk);Monkeypox (Low risk). Monkeypox had a minor impact with probable likelihood of occurrence. However, as of 23rd July 2022, on the World Health Organization declared Monkeypox outbreak a global health emergency. Due to the high probability of introduction in the country despite the low impact of the disease. Although the declaration does not impose requirements on Zambia, it however serves as an urgent call to action by the member states. The meeting considered Monkey pox as a priority disease for which strengthening of preparedness was required. In line with the declaration, the country views the Monkeypox outbreak as a significant enough threat to Zambia and global health for which a coordinated international response is needed.

In **Malawi** out of the 26 hazards identified, the country identified two (2) hazards with very high-risk including cholera and floods. Those that are at high risk (11) included antimicrobial resistance, poliomyelitis, COVID-19, cyclone, road traffic accidents, Ebola virus disease, measles, rubella, stormy rains, typhoid fever and rabies. Those considered as posing moderate risk were seven (7) and include, earth tremors, highly pathogenic influenza, food poisoning, dry spells, structural collapse (building collapse, dam/bridge failure), monkeypox and radiation agents. Six (6) hazards including anthrax, violent demonstrations, gas leak/fuel spillage, chemical spills fire and trypanosomiasis were considered low risk and no hazard was considered of very low risk. Seasonality of the different hazards was determined where applicable, and compiled into a risk calendar that can be used to ensure high level of preparedness for the different hazards before the season of occurrence.

Tanzania identified the hazards with its main consequences and the following hazards were identified; COVID-19, Cholera / Acute Watery diarrhoea, Storm, Ebola Virus Disease, Aflatoxicosis, Drought, Pandemic Influenza, Earth Quake, Yellow Fever, Chemical agents, Transportation's accidents, Plague, Anthrax, Tsunami, Flood, Landslide, Monkeypox, Rift Valley Fever, Radiation agents, Cyber-attack, Mining hazards, Poliomyelitis and Volcanic activity. Covid 19 was identified as very high-risk hazard followed by Cholera / Acute Watery diarrhea, Storm, Ebola Virus Disease, Aflatoxicosis, Draught, Pandemic Influenza, Earthquakes, Yellow Fever, Chemical agents and Transportation's accidents as high risk.

Rwanda identified the hazards as follows ; Biological Hazards: COVID-19, Cholera / Acute Watery diarrhoea, Gastroenteritis/foodborne disease, Ebola Virus Disease, Marburg Virus Disease Anti-microbial Resistance, Aflatoxicosis , Rabies, Measles, Typhoid fever, Influenza Monkeypox, Poliomyelitis, Rift Valley Fever, Brucellosis, Hydro-meteorological Hazards : Storm, Drought, Earthquake, Flood, Landslide, Volcanic activity and Technological Hazards : Chemical spillage, Road Traffic accidents, Structural fires, Nuclear/Radiological exposure , Mining/quarries accident. Out of those Rift valley fever, Mining/Quarries accidents, Cholera/Acute watery Diarrhea, COVID-19, Influenza and Anti-microbial Resistance were identified as very high risk. Road Traffic Accidents, Gastroenteritis/Food borne Diseases Poliomyelitis, Typhoid Fever, Measles Flood, Storm, Landslide and Ebola virus Disease were identified as high-risk hazards.

Development of multi-hazard/all hazards preparedness and response plan

The identified hazards posing high risk or very high risk were then used during the development of the multi-hazard response plan for Mozambique, Zambia, Malawi, Tanzania and Rwanda. All the five countries were supported to develop/update their multi-hazard preparedness and response plans. Rwanda developed their NHEROP for the first time in February 2023, this was after successfully conducting their risk assessment using STAR toolkit in the January 2023.

Support countries to Develop Hazard Specific Contingency Plans Based on Prioritized Hazards

Contingency planning for high and very high-risk hazards is scenario-based and elaborates the hazard-specific mitigation, preparedness, and response measures. These plans are aimed at ensuring early detection and contain the hazard in order to avoid/reduce the spread and thus reduce the morbidity and mortality of the event in public health emergencies. It also aimed at strengthening capacity to prepare for and prevent outbreaks/disasters; as well as responding promptly to public health emergencies including disasters and guiding actions for the post-emergency (recovery) period.

The project support Malawi to developed 10 contingency plans from the list of hazards and these include Cholera, Ebola Virus Disease, Typhoid fever, Measles/Rubella, Rabies, Monkey pox, Polio, Floods, Cyclones stormy rains and Road Traffic Accidents. Scenarios for occurrence of each hazard were developed including the mitigation strategies and preparedness interventions. Zambia developed eight contingency plans includes Mpox, Viral Hemorrhagic fevers, Measles, radiation hazards, Anthrax, Floods, Rabies, and cholera. The project also supported Mozambique in which they developed six contingency plans of Road Traffic Accidents, Cholera, Rabies, Floods, Poliomyelitis and Measles

2.1.3 Component 3: Strengthen health systems and innovations

E-learning

The e-learning platform has been expanded to include EBS, IPC, and AMS training modules. Tanzania, Rwanda and Malawi were supported by ECSA-HC to develop the above modules. Enhanced accessibility to the learning materials developed which minimizes the cost of carrying out conventional training sessions. About 186 participants are undertaking various online courses through the platform.

Event-based surveillance applications: Zambia was successfully supported to develop, pilot and deploy their digital EBS system. Tanzania was also successfully supported by ECSA-HC in piloting and rolling out their digital EBS. Zambia was supported to develop and roll out the electronic EBS model that has recorded 600 signals out of which 26 have been verified as events of concern for suspected rabies, scabies, measles and other high-risk events. In Tanzania, with the support of project, 826 Community Health Workers (CHWs), Health Officers, and Health Care Workers (HCWs) were trained, accelerating the roll-out of the digital EBS system in 5 Districts. This initiative has led to significant progress in real-time surveillance, with a total of 439 alerts received from the region. These include four suspected measles events across Tanganyika District Council, Nsimbo District Council, Mpimbwe, and Mlele District Councils, as well as 1 suspected food poisoning event in Tanganyika District Council. ECSA-HC is in the final stages of finalizing country protocols to assist Rwanda in updating its digital EBS.

2.2 Effectiveness

Effectiveness of achieving development outcomes as measured by the extent of achievement of the PDO and respective Intermediate Results performance. This section describes the overall progress of the project against expected results (outcome and intermediate outcome indicators performances). The PDO represents the overarching goal or objective that a project aimed to achieve. It is a statement of the desired long-term impact or change that the project intends to make in the target area. The effectiveness of achieving development outcomes is assessed by evaluating the extent to which the project successfully accomplishes its PDO.

Intermediate Results: Intermediate results are specific and measurable milestones or achievements that contribute directly to the attainment of the overall project objective (PDO). These are the stepping stones or incremental changes that, when combined, lead to the fulfillment of the larger goal. Effectiveness is measured by the project's success in delivering these intermediate results.

2.2.1 The project Results Framework: Focused on accountability for results. There are Two Project Outcome Indicators (POI) and Six Intermediate Outcome Indicators (IOI). The PDO-level indicators aim to measure two major aspects of epidemic preparedness: (i) *enhanced surveillance capacity*; and (ii) *improved public health preparedness planning*.

Achievements of the PDO

The PDO and IOI Results Framework Analysis

The 2023 final report indicates that two out of two project outcome indicators and five out of six intermediate outcome indicators have been fully and partially achieved, while one out of six intermediate outcome indicators has not been achieved. This makes the overall performance of 87.5%* percent (100 percent of the Project Outcome Indicators and 83 percent of the Intermediate Outcome Indicators). The project performed well (achieved/surpassed target set for Year 2 (2023) on the following indicators: POI# 1: Number of countries scoring 60% on PoE routine capacities are established, while partially achieved on POI#2: Number of countries scoring 60% in at least 3 of the 5 selected JEE core capacity indicators. The project performed well on the following intermediate outcome indicators: IOI#1. Number of countries that have developed country-specific guidelines/ protocols and tools to establish and roll out EBS, IOI #2. Number of countries supported to conduct multi-hazard risk and resource assessment, IOI#3. Number of countries supported to develop/update multi-hazard plans, IOI#4. Number of health personnel trained and IOI# 5. Number of countries with antimicrobial stewardship guidelines in place. IOI#6 - Number of personnel trained through the e-learning platform, this is due to delay in migration/upgrading the system and secondly the traction on physical sessions where numbers were surpassed affected the achievement on e-learning. However, this is likely to improve going forward.

2.3 Operational efficiency

Strategic Coordination and Collaboration: ECSA-HC showcased exceptional coordination with ministries of health and international organizations across multiple countries. This was pivotal in addressing the complexities of cross-border health threats, leading to a unified and effective regional response to pandemic challenges. The organization's leadership facilitated a collaborative environment that was essential for the project's overarching success this included joint work planning with the countries. ECSA-HC convened a joint work planning session during the project launch in Maputo Mozambique, where stakeholders from all project countries were invited. Countries shared their priorities and gaps on disease surveillance and preparedness for health emergencies which needed to be supported by the project. The joint planning exercise facilitated the timely consolidation of the regional priorities into a regional work plan to guide the implementation of the project.

At regional level, ECSA-HC through other projects, had staff sharing expertise and resources for instance between the SATBHSSP and the SPP Project. Additional joint communities of practice and regional advisory committees were held between the SATBHSSP and SPP project both financed by the World Bank and led to savings towards support critical technical support.

Developed human resource capacity and established a pool of experts within the Region that were utilized to support project implementation in the countries: ECSA-HC developed and established a pool of experts in the Region in all technical areas supported by the project, this served as addition resource to the project staff based at ECSA-HC. These team of experts have been deployed to support countries whenever request arises, so countries have been supporting and learning from each other in the course of project implementation i.e. Experts from Tanzania supported the IHR core capacity assessments in Malawi, Zambia and Rwanda while

experts from Malawi supported the Strategic Risk Assessment in Zambia and Kingdom of Lesotho, Tanzania also supported Malawi and Mozambique in conducting Intra Action Review and After Action Review for cross border Cholera outbreak. These activities would have required services of a consultant coming from outside Africa and would have consumed a lot of resources. This implementation modality of developing human resource capacity and utilizing local experts to support each other has enabled ECSA-HC to timely implement a number of activities some concurrently while some in parallel and conclude the project within the allocated time.

Multi-Sectoral Engagement: ECSA-HC's approach to engaging various sectors significantly bolstered the project. Collaboration with healthcare providers, community leaders, and international health agencies like the Africa Centre for Disease Control and the World Health Organization created a comprehensive response framework. This multi-sectoral engagement ensured that all aspects of pandemic preparedness were addressed, from grassroots community involvement to high-level policymaking.

Effective Resource Allocation and Management: The efficient management of resources provided by the World Bank was a cornerstone of ECSA-HC's operational strategy. Funds were allocated judiciously and transparently, ensuring optimal utilization across different facets of the project. This approach not only maximized the impact of the financial resources but also ensured that they were directed towards the most critical areas of need.

Country-Level Implementation Support: ECSA-HC played a crucial role in facilitating the implementation of activities in the project countries. This included providing technical assistance, building capacities, and offering necessary resources, thereby ensuring that each country could effectively execute their designated pandemic preparedness activities.

Innovative Health Solutions: ECSA-HC’s commitment to innovation was evident in their adoption of advanced health strategies and technologies. This forward-thinking approach was instrumental in enhancing disease surveillance systems and improving healthcare infrastructures, thereby bolstering the region's readiness for health emergencies.

Building Resilient Health Systems: ECSA-HC's efforts extended beyond immediate pandemic response to strengthening the overall resilience of health systems in the project countries. This long-term perspective was crucial for the sustained ability of these nations to manage future health crises.

Monitoring and Evaluation for Continuous Improvement: Rigorous monitoring and evaluation mechanisms were put in place by ECSA-HC to track the project's progress. As the lead implementing agency, ECSA-HC has been conducting quarterly follow-up meeting with the countries to review the status of implementation of planned activities and get updates from the countries on new priorities that emerged, ECSA-HC also convened the Regional Advisory Committee annually to review and give guidance on the implementation of the project.

3.0 Factors that affected project performance and achievement of results both during project preparing and implementation.

Project design: The design of the project facilitated achievement of the project results. The approach included regional implemented activities and country-led activities and a joint work-planning sessions for countries to raise their priorities for implementation. ECSA-HC provided technical assistance to develop capacities of the key staff that would then lead in the implementation of country-led activities as ECSA-HC provided logistical facilitation to ensure implementation was undertaken. This ensured that activities were undertaken in parallel in different countries.

Leverage on other Bank projects: ECSA-HC leveraged on resources from a World Bank-funded sister project, SATBHSSP for greater impacts. ECSA-HC has leveraged on already established structures under the SATBHSSP including the governance structure at the highest level, the Regional Advisory Committee (RAC) considering three countries (Malawi, Zambia, and Mozambique) are part of the two projects. The RAC was comprised of Principal secretaries of Ministries of responsible for Health, Labour and Mines as well as technical experts and the main function is to review project performance and provide advisory on high impact interventions to consider. The RAC adopted the membership of Tanzania and Rwanda to form a joint RAC and expanded membership to leverage on this platform for engagement, resources for convening the RAC governance meetings. Similarly, ECSA-HC coordinates regional communities of practice (CoP), the technical arm of the project and the membership have been expanded to include Tanzania and Rwanda.

Engagement with other partners and stakeholders: The project is collaborating with regional and in-country partners to implement various interventions in the countries. On the surveillance, points of entry (PoE), roll out of IDSR and preparedness activities, ECSA-HC has been collaborating with WHO Afro (mainly the regional hub for Epidemic Preparedness and response) & respective country offices, IOM, UK Health Security Agency (UKHSA) and USCDC supporting countries in assessing risks, developing multi-hazard plans, contingency plans for high risk and very high-risk hazards and testing these plans through simulations. Africa CDC has been involved in the establishment of event-based surveillance (EBS) in the various countries collaborating with Africa CDC headquarters and the respective regional coordinating centers. ECSA-HC has commenced discussions with ReAct to harmonize the implementation of antimicrobial stewardship (AMS) activities in Zambia. ReAct has been supporting some aspects of AMS in the country and ECSA-HC through the project would like to build on the gains and avoid duplication. Global fund supported regional laboratory strengthening project with Uganda Supra National Reference Laboratory (USRL) is also a key partner from which resources including additional technical assistance to jointly support the countries on laboratory-based activities was leveraged.

Multi-sectoral involvement has been critical bringing together experts from various ministries/sectors to discuss critical emergency preparedness initiatives. This involved mainly participants from the Ministries of Health, agriculture, environment, security, transport, immigration, wildlife etc.

Buy-in for preparedness programs by political leadership at country level is a necessity for success. As the activities were prioritized by the countries, buy-in process was possible from the top leadership that acted as a catalyst for the implementation.

The pandemic of COVID-19 helped to raise awareness of country teams on the need for preparedness to a greater extent and hence countries were willing to put structures to strengthen preparedness to health emergencies.

4.0 ECSA Performance effectiveness in addressing key factors that affected project preparation, implementation, and outcomes.

The implementation model with **regional-led and country-led activities** has helped to have a rapid take-off on this project with engagement of other partners including WHO, Africa CDC, IOM among others to build synergies and sustainability. While at the regional level there was a small number of experts providing technical assistance to the countries. This is mitigated by the initial strategy of developing capacity and establishing a pool of experts in the region that can be called upon to provide peer support to counter-part countries as they also learn. This approach did not only provide additional capacity but also enhanced inter-countries collaborations and peer-mentorship.

Several activities require multi-sectoral collaboration. Bringing together experts from different sectors at times is a challenge. Through the **coordination of the MoH focal unit** and timely engagement of the relevant sectors has helped to ensure involvement of the key ministries. The countries provided focal persons that have been very critical to coordinate the activities implementation at the country level and ensure harmony amongst the various sectors involved in the implementation.

Budget and disbursement procedures: The project received disbursements in a timely manner that enabled the execution of activities to be seamless and without a halt. Implementation was accelerated to the time the project run low on funds and had to slow down. The countries priorities were still many but had to take priorities of priorities towards the end of the project.

Establishment of counter-part specialist linkage: While the team at the regional level worked as one unit, each team had specific thematic areas on while to take lead including laboratory, antimicrobial resistance, preparedness, surveillance and point-of-entry, ICT, training and capacity building and M&E. Each of the project team members were linked with counterparts in the countries responsible for the thematic areas above for smooth execution of the approved activities. This ensured smooth implementation with limited bureaucracy.

5.0 Lessons Learned

The operational efficiency demonstrated by ECSA-HC in this project underscores several vital lessons:

- The importance of strategic coordination and collaboration in managing complex, multi-country health initiatives.
- The effectiveness of a multi-sectoral approach in creating comprehensive and sustainable health solutions.
- The necessity of efficient and transparent resource management for the success of large-scale health projects.
- ECSA-HC's operational efficiency, with the support of the World Bank, was instrumental in the successful implementation of the project. The organization's ability to strategically coordinate, effectively manage resources, and engage multiple sectors set a high standard for future health initiatives and provides a replicable model for similar projects across the region.

6.0 Sustainability

The project has contributed to achieve several results and ensuring sustainability is critical for long-term impact. Here are some measures and proposals to consider beyond the closing date:

- Capacity building: the project supported all the project countries to develop training material/guidelines and trained master trainers in different topics of surveillance, preparedness, laboratory, and AMR. Examples on these includes Event Based Surveillance, implementation of IDSR 3rd edition, laboratory proficiency testing, biosafety and biosecurity, AMR surveillance and antimicrobial stewardship, etc. Use of these experts available in the countries to train others will empower them to sustain the capacity building efforts independently.
- Technology integration: the project supported the implementation of digital solutions for data collection, monitoring, and communication for EBS. The system is available for use at no cost, serving as a sustainable platform for the countries (including those that did not participate in the project).

- Partnerships and networking: ECSA-HC worked with the project countries and fostered partnership with international organizations and local implementing partners to ensure sustainability of funding, resources, and expertise. Thus, countries can continue engaging with those organizations (WHO, FETP, Africa CDC, IOM, GAVI, UNICEF etc.) to sustain the work started/done under the project.
- Cross sector collaboration: through establishment of cross border committees, the project taught all the project countries that collaboration with sectors beyond healthcare, such as education, agriculture, environment etc. is key to address the socio-economic impacts of pandemics. This holistic approach ensures a more resilient health system and countries should continue promoting multisectoral collaboration for sustainability of their interventions. In addition, the communities of practice networks where countries can share experiences, best practices, and resources should continue even beyond the project.

7.0 Recommendations for future operations

Countries involved in future operations related to pandemic preparedness, should consider the following:

- **Regular simulation exercises**: Countries to conduct regular simulation outbreak scenarios or drills involving multiple countries. This helps test communication channels, response strategies, and cross-border cooperation.
- **Cross-border surveillance**: Countries are encouraged to continue with the ongoing collaboration amongst them through cross border committees and information sharing to enable early detection and coordinated responses to potential outbreaks that might cross borders of participating countries.

ANNEX 5. SUPPORTING DOCUMENTS

1. Project papers/PADs - East Africa Public Health Laboratory Networking Project (EAPHLNP, P111556) and Southern Africa TB and Health Systems Project (SATBHSSP, P155658)
2. Project paper for Strengthening Pandemic Preparedness in the Eastern, Central and Southern Africa Health Community Project
3. Implementation Status and Results Reports for the for Strengthening Pandemic Preparedness in the Eastern, Central and Southern Africa Health Community Project – Sequences 1-3
4. ECSA-HC Completion Report for the Strengthening Pandemic Preparedness in the Eastern, Central and Southern Africa Health Community Project
5. HEPR Implementation Progress Report - September 30, 2023
6. Ministry of Health. 2022. Strategic risk assessment for health emergency plan in United Republic of Tanzania. Technical Report
7. Ministry of Health. 2022. Strategic risk assessment for health emergency plan in United Republic of Zambia. Technical Report
8. Ministry of Health. 2023. Strategic Risk Assessment for Health Emergency Planning in Rwanda
9. Ministry of Health. 2022. Malawi Multi-Hazard Emergency Response Plan 2022-2024
10. Ministry of Health. 2023. Relatório Técnico De Avaliação Estratégica De Riscos À Saúde Pública Para Planificação De Emergências
11. World Bank. 2022. Putting Pandemics Behind Us: Investing in One Health to Reduce Risks of Emerging Infectious Diseases. © Washington, DC. http://hdl.handle.net/10986/38200 License: CC BY 3.0 IGO.
12. Commission on a Global Health Risk Framework for the Future; National Academy of Medicine, Secretariat. The Neglected Dimension of Global Security: A Framework to Counter Infectious Disease Crises. Washington (DC): National Academies Press (US); 2016 May 16. 2, The Case for Investing in Pandemic Preparedness. Available from: *https://www.ncbi.nlm.nih.gov/books/NBK368391/*