Public Disclosure Authorized

Report Number: ICRR0022838

# 1. Project Data

Project ID P167064	Project Name Vaccine Research and Development		ent
<b>Country</b> World	<b>Practio</b> Health,		
L/C/TF Number(s) TF-A9266	Closing Date (Original) 30-Jun-2021		Total Project Cost (USD 5,123,049.29
Bank Approval Date 23-Jan-2019	Closing 30-Jun-		
	IBRD/II	DA (USD)	Grants (USD)
Original Commitment	5,752,381.00		5,752,381.00
Revised Commitment	5,123,049.29		5,123,049.29
Actual	5,123,049.29		5,123,049.29
Prepared by	Reviewed by	ICR Review Coord	inator Group

# 2. Project Objectives and Components

# a. Objectives

The objective of the project was to develop and characterize viable HIV vaccine candidate(s) and other potential viral vectors as basic research for new technologies against infectious diseases of poverty (Grant Agreement, p. 5).

The Grant was provided by the HIV Vaccine Research and Development Single-Donor Trust Fund, administered by the World Bank, and the Grant Recipient was the International AIDS Vaccine Initiative (IAVI), headquartered in New York City. IAVI is a nonprofit scientific research organization for developing

vaccines and antibodies for HIV, tuberculosis, emerging infectious diseases, and neglected diseases. Its mission is to translate scientific discoveries into affordable and globally accessible public health solutions. IAVI's budget derives from both governments and foundations.

<u>Explanatory note on the term "characterization" in the PDO statement</u>: In virus-based vaccine research, characterization refers to the analysis of properties and similarities to other circulating viruses, focusing largely on genetic and antigenic aspects. Characterization is used for multiple purposes and plays an important role in the early assessment of how well a vaccine may work in the real world.

- b. Were the project objectives/key associated outcome targets revised during implementation? No
- c. Will a split evaluation be undertaken?
- d. Components

According to the Grant Agreement and the PAD (pp. 7-8), project components included the following:

### I. Research and Development (R&D) (Appraisal: US\$5.37 million; Actual: US\$4.73 million)

The component would support activities to develop an HIV vaccine candidate, including vector optimization and development of a related viral presentation platform. This would entail conducting research on the transcriptomic and immunological response to the Vesicular Stomatitis Virus (VSV)-vectored HIV vaccine candidates and applied research to address optimization of methods related to effective vaccine production. Activities to establish a VSV vector platform for developing vaccines against a variety of infectious diseases would also be included.

# Pillar 1. Detailed immunologic and transcriptomics analysis on samples collected from studies funded by IAVI and other collaborating partners:

Immunologic and transcriptomic analysis on samples would be carried out to discharge the following steps:

- Completion of an immunologic and virologic sample analysis associated with standard monitoring.
- Completion of advanced characterization of the Env-specific serum antibodies induced by vaccination.

(Note: "Env" acronym stands for envelope glycoproteins of a virus)

- Analysis of blood transcriptomic profiles at select time points after vaccination.
- If a derivative of VSV∆G-Env produces preclinical data superior to the original VSV∆G-Env chimeric virus vaccine, a pre-master virus seed (pre-MVS) would be derived to support future cGMP (current Good Manufacturing Practices) manufacturing.

# Pillar 2. Applied research aimed at developing a cell line that will support GMP-manufacturing of G-pseudo typed VSV∆G-Env:

Under the past IAVI/WB/Japan Partnership Program, work was initiated on modifying the Vero cell line to express the VSV G glycoprotein along with the human CD4 and CCR5 coreceptors needed to propagate VSV $\Delta$ G-Env. Although the results were not very satisfactory, they provided evidence that a G-pseudo typing cell line was feasible with further development and innovation. Hence, this pillar would address the optimization of methods related to effective vaccine production, and would include:

- Testing of the technical feasibility of four pseudo typing cell line approaches.
- As the lead pseudo typing cell line emerges, vaccine material would be produced and subjected to thorough analytics to show that it has properties comparable to the research vaccine shown to be efficacious in earlier studies.
- Production of a GMP compliant cell line for the selected cell line.

#### Pillar 3. Construction and characterization of additional VSV-like vectors:

Related work aimed at advancing the development of additional VSV-like vaccine vectors to enable broader application of the chimeric virus vaccine platform to other viral diseases, including:

- Development of a characterized VSVNJ\(\Delta\)G-Env vector shown to have replicative capacity equivalent to the original VSVNJ\(\Delta\)G-Env counterpart based on VSVIND.
- Development and characterization of a second new vector, in addition to VSVNJ, based on an immunologically distant VSV-like virus to be determined after database sequence comparison.
- Advancement of the two new vectors based on VSVNJ and a VSV-like vector to the stage where production can be demonstrated. This would allow consideration of preclinical studies to address important questions about the effect of anti-VSVIND vector immunity affecting repeated vaccination with VSVIND vector or whether changing the vector genetic background is beneficial. Importantly, this would also produce two new vectors suitable for development of chimeric virus vaccines against a larger range of viral pathogens.

# II. Knowledge Dissemination and Coordination (non-R&D) (Appraisal: US\$0.38 million; Actual: US\$0.39 million)

Activities under this component would strengthen coordination among key global stakeholders to promote further engagements of the global scientific community, the private sector, and other stakeholders.

# Pillar 1. Regular scientific stakeholder meeting co-organized by key global stakeholders:

With the specific goal of reaching out to the global scientific community and private sector entities that potentially possess capabilities to advance the prevention of HIV infection through a diverse range of activities, including advancing research and development of vaccines and other biomedical innovations, IAVI would co-host meetings to present current and future priorities, and to discuss potential opportunities of

engagement with global partners. The first of such meetings was previously organized as part of the Universal Health Coverage Forum in December 2017 in Tokyo. The project would support holding subsequent meetings.

# Pillar 2. Development of communication and dissemination materials, including a website, on global health vaccine research:

To fill the gap of existing information about global health vaccine research, IAVI would develop communication material that outlines the common mission of relevant organizations and ways of engagement. Information would be shared though various means, including brochures, a website, and email updates with key information and announcements.

#### Pillar 3. Field visits to IAVI Clinical Research Centers:

Field visits by a small group of representatives from research organizations and private companies would be organized to provide an opportunity to learn about clinical capabilities and expertise developed with the support of IAVI in African and other developing countries, with a specific aim to explore possibilities for future engagement. Participants would include potential partners to be selected based on their interest, influencers who could emerge as champions for vaccine R&D and related initiatives, policy makers, and key stakeholders.

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates Cost and financing. The original cost at appraisal was estimated at US\$5.75 million, financed by a Trust Fund Grant administered by the Bank. The actual cost under the Grant was US\$5.12 million.

Note on broader funding of project activities: The ICR (p. 13) reported that IAVI also shared the cost of related activities. Between 2019-2021, the Grant contribution to the larger cost envelope was 54 percent in 2019, 36 percent in 2020, and 68 percent in 2021.

**Dates.** The project was approved on January 23, 2019. A short implementation period of 2.5 years was envisaged without a Mid-Term Review. The project closed as planned on June 30, 2021.

## 3. Relevance of Objectives

#### Rationale

Project objectives were responsive to R&D priorities to advance the potential development of an effective HIV vaccine. In 2020, there were 1.5 million new HIV infections worldwide, and about 37.7 million people were living with HIV/AIDS, according to UNAIDS. An HIV vaccine can protect individuals and communities at risk, and would minimize significant societal and economic impacts caused by HIV/AIDS.

More than 30 candidate vaccines have been developed so far, but only a few have been tested for efficacy in people. None of them has proven efficacious enough in long-term protection to be introduced into clinical practice. This series of failures, the absence of prospects for a fully effective vaccine in the near future, and uncertain long-term returns have reduced the incentive of pharmaceutical industries to further invest in vaccine R&D against HIV and pathogens of poverty (PAD, p. 5). But the technical basis for further investments in HIV vaccine research remains strong. A combination of antibodies, cell-mediated immune responses, and mucosal immunity may all be potentially needed in an effective HIV vaccine.

The Bank had previously supported IAVI through grants that were executed with high fiduciary standards. This project, as well as two previous projects with IAVI (Support to IAVI-Sendai Vector, P119051; and Support to Research and Development at the International AIDS Vaccine Initiative, P161232) built on the World Bank's financial oversight capability and convening power to bring different partners together and ensure effective oversight. IAVI has consistently raised parallel financing to support related work and a broader research portfolio. IAVI had an annual revenue of over US\$60 million in 2015, of which US\$38 million originated from governments and US\$24 million from foundations (PAD, p. 12).

The development of an HIV vaccine is aligned with the World Bank vision to achieve progress on global public goods that are critical to global stability, poverty reduction, public health capacity, and equitable growth, and in reducing the incidence of diseases of poverty. Project objectives aligned with World Bank efforts to strengthen research and delivery systems for immunization, as investments in immunization constitute an important building block for Universal Health Coverage and poverty reduction. The objectives are also consistent with Bank-supported programs that prioritize capacity building in preventing, detecting, and responding to infectious disease threats (ICR, p. 9).

In terms of global public goods, Bank engagement signaled the importance of HIV vaccine R&D to the international market. By investing in IAVI efforts in vaccine research, the Bank supported a financing platform that can "crowd-in" other public contributors and the private sector. By indicating its commitment, the Bank would create a down-stream incentive to partially redress market failure in vaccine research and development (PAD, p. 10). More recently, the COVID-19 pandemic highlighted the importance of vaccine development and accessibility as a global public health good.

# Rating

High

# 4. Achievement of Objectives (Efficacy)

## **OBJECTIVE 1**

Objective

Develop a viable HIV vaccine candidate as basic research for new technologies against infectious diseases of poverty

Rationale

### Theory of change

The theory of change held that R&D activities would establish the technical steps needed for the creation of new vector forms and the development of cell lines through which they can be propagated and characterized. These outputs would plausibly contribute to the construction of new HIV vaccine candidates that are characterized and advanced towards product development.

Laboratory research activities would be undertaken at IAVI-owned laboratories and in other network laboratories associated with IAVI.

#### **Outputs**

Project outputs were related to: (i) research processes on the development of a cell line supporting GMP manufacturing of G-pseudo VSV∆G-ENV; and (ii) strengthening coordination among key global stakeholders to promote further engagements.

#### Intermediate Results

- Technical feasibility of two approaches to producing a VSV G pseudo typing cell, including G expression following extended cell passage and ability to propagate VSV∆G-Env vector, was determined in September 2019.
- Technical feasibility of: (a) DNA expression construct encoding alternative G glycoprotein less cytotoxic; and (b) DNA expression construct encoding alternative viral glycoprotein and supports VSV pseudo, was determined in December 2020.
- A GMP compliant cell line for use in GMP manufacturing of VSV based HIV vaccine vectors was demonstrated to be feasible in June 2021.
- Joint meetings to reach out to potential global partners were organized three times, and communication material was developed and shared with global partners and stakeholders. Dissemination of knowledge with global stakeholders was undertaken via various platforms, including a webpage, and in 2019, IAVI co-hosted one major conference. Field visits by potential global partners were organized, and, in 2020, pursuant to the COVID-19 pandemic, virtual interactions were held through webinars.

#### **Outcomes**

- 1. A GMP compliant cell line for use in the manufacturing of VSV-based HIV vaccine vectors was produced.
- 2. Joint learning events and meetings were developed with global partners in vaccine R&D for potential epidemic diseases and diseases of poverty.

The objective was fully achieved, as vector development was completed.

# Rating High

## **OBJECTIVE 2**

### **Objective**

Characterize a viable HIV vaccine candidate and other potential viral vectors as basic research for new technologies against infectious diseases of poverty

#### Rationale

Theory of change as under Objective 1, above.

**Outputs** were related to: (i) the collection of detailed immunologic and transcriptomics analysis on samples; and (ii) construction and characterization processes of two VSV-like vectors.

#### Intermediate results

- Completion of a primary sample analysis, antibody titers (Elisa) and T-cells from animals immunized with the VSV∆G-Env vector.
- Completion of advanced characterization of Env-specific serum antibodies induced by vaccination, including epitope specificity determination by binding and competition assays and evaluation of effects.
- Analysis of blood transcriptomic profiles at select time points after vaccination and how vaccination affected modular gene sets such as those connected to B- and T-cell responses was completed.
- Analysis of samples collected from animals from study IAVI#1601 and 3-4 small pilot studies conducted to specifically quantify and compare cytokines and chemokines induced by vaccination were undertaken.
- A VSV(NJ)∆G-Env vector shown to have replicative capacity equivalent to the original VSV∆G-Env counterpart based on VSV(IND) was constructed in September 2019.

- A second vector platform for further evaluation and development from among, but not limited to, VSV-like viruses (Cocal, Carajas, Maraba) or other more immunologically distant relatives, was identified in September 2019.
- In addition to VSV(NJ), a second new vector was developed and characterized in June 2021 based on an immunologically distant VSV-like virus to be determined after database sequence comparison.

#### **Outcomes**

- 1. VSV-∆G (HIV. Env) vector was fully characterized, including in immunological, genetic, and cellular propagation aspects.
- 2. Two further novel vectors, VSV(NJ) and a novel VSV-like vector, were constructed and characterized.

The objective was fully achieved, as vector characterization was satisfactorily completed.

Rating High

#### **OVERALL EFFICACY**

#### Rationale

The two objectives to develop and characterize viable HIV vaccine candidate(s) and other potential viral vectors as basic research for new technologies against infectious diseases of poverty were fully achieved. The aggregation of achievements is consistent with a high efficacy rating. Importantly, the project created new opportunities to advance the search for an HIV vaccine while concurrently sharing information with stakeholders and partners within the global scientific community to advance HIV vaccine research and other viral disease vaccines.

# **Overall Efficacy Rating**

High

# 5. Efficiency

The PAD referred to past modeling and economic analysis of a future HIV vaccine and suggested that a preventive HIV vaccine appeared to be cost-effective (PAD p. 13). The PAD's analysis argued that an effective vaccine would ultimately reduce treatment costs over time, and that the high public health value of a vaccine and projected savings of US\$1.5 billion per year by 2070 justify current investments into vaccine R&D. But, according to the PAD, new mechanisms of international cooperation and R&D incentive provisions would be needed to maximize the success of vaccine research and development. These could include advance purchase commitments, issuance of vaccine bonds, or development of other innovative mechanisms (PAD, p. 13).

The ICR's economic analysis appropriately focused on efficiency aspects of the R&D operation itself to assess the extent to which project resources were used efficiently. The ICR explained that assessing the efficiency of this operation according to traditional metrics was not straightforward, but that the project contributed to eliminating technical risks inherent to vector construction, preclinical development, manufacturing processes, and clinical safety, all of which would increase the probability of bringing a virally vectored HIV vaccine to the market. Since risks and costs of product development in these highly specialized research areas are complicated and often commercially confidential, comparative costs per unit of input or per unit of output would be difficult to establish. The ICR also noted that, given the intrinsic unpredictability of biological research, strict adherence to predetermined timelines is frequently not achievable in similar undertakings, but that the project did adhere to its timelines and engaged independent experts to monitor efficacy aspects of R&D.

In terms of implementation, and except for challenges arising from COVID-19 restrictions (ICR, p. 14), there were no substantive implementation issues affecting project efficiency. Activities were completed within the expected timeframe. IAVI adjusted project activities related to sharing and disseminating knowledge based on face-to-face meetings and international travel by shifting to virtual platforms in 2020 through a series of webinars, and by expanding the availability of on-line communications and materials (ICR, p. 10 and p. 39).

There were no extensions of the closing date. The overall pattern of actual costs across categories was similar to initial cost projections at appraisal. The project disbursed 89 percent of its allocated grant proceeds. During the ICRR interview on March 23, 2022, the task team leader noted the difficulty in pinpointing the reasons for this marginal difference in Grant utilization. However, this ICR Review assumes that the COVID-19 pandemic and the utilization of IAVI's own funding (see Section 2e) may have been contributing factors.

## **Efficiency Rating**

Substantial

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal		0	0 □ Not Applicable
ICR Estimate		0	0 □ Not Applicable

\* Refers to percent of total project cost for which ERR/FRR was calculated.

#### 6. Outcome

Relevance of objectives is rated high, as development objectives were responsive to R&D priorities that would advance the potential development of an effective HIV vaccine, and remained consistent with World Bank strategies to support global public goods that address diseases of poverty. Efficacy is rated high as objectives were fully achieved. Efficiency is rated substantial because, in spite of difficulties in applying traditional measures of efficiency to this R&D investment, the value for money was reasonably assumed, and aspects of design and optimal implementation contributed to efficiency. The overall outcome is rated highly satisfactory, indicative of essentially no shortcomings in the project's preparation, implementation, and achievement.

a. Outcome Rating Highly Satisfactory

# 7. Risk to Development Outcome

As the project consisted of research, there is no risk that scientific data and the production know-how gained through the HIV vaccine optimization and testing processes would be lost or reversed. However, the potential of slow progress in taking the new scientific findings forward to a viable vaccine for human testing is substantial. There are limited sources of funding for the development of HIV vaccine and other vaccines, as these require significant financial inputs and time, and do not always align with short-term funding cycles and program priorities of donors. The R&D progress gained by this grant was important in advancing the development of VSV vaccine vectors, not only for HIV but also for other vaccine platforms. The project provided opportunities for IAVI to provide a coordination platform for vaccine stakeholders and to expand opportunities for resource mobilization. As an example of enhanced support sources, the task team leader mentioned (clarifications of March 23, 2022) US agencies, such as the National Institutes of Health, United States Agency for International Development, and the United States Department of Defense.

At the same time, the ICR (p. 18) noted that the Bank opted to encourage funding of future R&D efforts through the Coalition for Epidemic Preparedness Innovations (CEPI) instead of a single-donor trust fund model. CEPI has a comparative advantage with its large portfolio of investments that can provide additional benefits to the wider vaccine community through both funding and associated knowledge, including research access, in this specialized technical area of vaccine R&D.

<u>Explanatory Note</u>: CEPI is a foundation that was launched in 2017 at the World Economic Forum. It receives donations from public, private, philanthropic, and civil society organizations to finance independent research projects for the development of vaccines against emerging infectious diseases.

#### 8. Assessment of Bank Performance

## a. Quality-at-Entry

Project preparation benefited from previous experience in Bank-administered grants, including flexibility and broad technical engagement and information exchange between the recipient, stakeholders, and the Bank. IAVI, as Grant Recipient and project implementing agency, would oversee all activities and would be responsible for laboratory research arrangements, procurement, financial management, safeguard compliance, and reporting (PAD, p. 11).

Financial management assessment was carried out at appraisal and was considered adequate to meet the Bank's minimum fiduciary requirements under OP/BP 10.0. As noted in Section 3, previous grants were executed by IAVI with a high fiduciary standard. IAVI's Finance and Administration Unit was headed by a Chief Financial Officer, and had 20 financial management staff and qualified accountants. Financial management risks were assessed as moderate and had adequate mitigation measures (PAD, pp. 26-29). IAVI's accounts were audited by an international accounting firm (Gelman, Rosenberg and Freedman), and recent audit reports were unqualified. Procurement was to be carried out by IAVI in accordance with Bank guidelines and provisions stipulated in the agreed procurement plan. IAVI's staff included specialists in grant management, procurement, and contracting. IAVI prepared a project procurement strategy and a procurement plan for the entire project period (PAD, p. 32).

Environmental safeguards with a focus on biosafety were well prepared and built on an existing robust program on environment, health, and safety aspects at IAVI that was consistent with OP 4.01 requirements (PAD, p. 15). M&E plans and arrangements were well prepared.

Quality-at-Entry Rating Highly Satisfactory

#### b. Quality of supervision

The World Bank Team's supervision tasks benefited from prior experience in working with IAVI. The ICR noted that supervision was characterized by close interactions, communications, and monitoring, facilitated by an effective professional relationship between the World Bank and IAVI teams. Two supervision missions were carried out every year. The task team leader further elaborated on March 23, 2022 that, in addition to IAVI and Bank teams, representatives from the US National Institutes of Health, industry, and specialized consultants participated in supervision missions. A consolidated progress report was shared with the Bank once a year through IAVI focal point. The consolidated report was updated twice a year. It included a Table of Milestones with binary indicators on achievements.

The ICR reported that continuous communication and coordination was maintained during the implementation period and that documentation was very strong (ICR, p. 17).

Quality of Supervision Rating Highly Satisfactory

# **Overall Bank Performance Rating**

**Highly Satisfactory** 

## 9. M&E Design, Implementation, & Utilization

#### a. M&E Design

The objectives were clearly specified and were captured by the selected indicators. The theory of change was clearly illustrated and supported by a results framework that was highly relevant to a research operation. Indicators were binary (Yes/No) and allowed objective assessment of achievements.

## b. M&E Implementation

M&E implementation proceeded as planned. The reporting process was discussed in Section 8b. Adjustments were made when testing showed inadequate results for a vector candidate, at which time the research shifted to a different vector. Adjustments were also made during the COVID-19 pandemic restrictions that necessitated a remote working environment, in lieu of in-person interactions, for deliberations and knowledge sharing.

#### c. M&E Utilization

M&E findings were used for regular project monitoring and were shared with global development partners and stakeholders. Findings were used to extend efforts that may attract more support from bilateral donors and foundations to advance R&D technologies in the guest for a potential HIV vaccine.

# **M&E Quality Rating**

High

#### 10. Other Issues

#### a. Safeguards

<u>Overview</u>: The project complied with environmental safeguards, and the safeguard rating was satisfactory, reflecting adequate performance and compliance.

The project triggered Environmental Assessment OP/BP 4.01 and was classified under category B in view of potential biosafety risks. An assessment of IAVI's safeguard capacity concluded that IAVI had adequate rules, procedures, staffing, and systems consistent with World Bank safeguard requirements. An

Environmental Management Plan was prepared and complied with. IAVI's existing environmental, health, and safety management program included standard operating procedures that dealt with the management of key risks, including a chemical hygiene plan, laboratory biosafety and security plan, biosafety manual, safety procedures, safety audit checklist, and post-exposure plan. The safeguard-related program was managed by a safety committee that met on a monthly basis and was responsible for training, recording, and monitoring incidents and for revisions to standard operating procedures.

# b. Fiduciary Compliance

<u>Overview</u>: The ICR reported that financial management performance was robust throughout project implementation (ICR, p. 16).

IAVI had an Audit & Finance Committee that was responsible for ensuring integrity and reliability of IAVI's financial management and reporting, and for facilitating independent verification and oversight of whistleblower reports. Financial statements were approved by the Committee and shared with its Board of Directors. IAVI did not have an internal audit function, and external audits were carried out by an international accounting firm (see Section 8a). The audit report for 2020 was unqualified, and the final audit is expected in June 2022.

Procurement complied with Bank guidelines, and no issues were reported. The procurement plan and related updates were processed through the World Bank electronic procurement system (Systematic Tracking of Exchanges in Procurement or STEP). Main procurement consisted of consulting services and research equipment. As goods and services were very specific, only a few suppliers could participate in competitive bids. Goods were procured through the comparison of at least three quotations. For the core research work, Seattle Biomedical Research Institute was directly selected.

c. Unintended impacts (Positive or Negative)
None reported (ICR, p. 14).

## d. Other

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11. Ratings			
Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Highly Satisfactory	Highly Satisfactory	

Bank Performance	Highly Satisfactory	Highly Satisfactory
Quality of M&E	High	High
Quality of ICR		High

#### 12. Lessons

The ICR (pp. 17-19) offered the following lessons, partially restated by IEG:

Vaccine R&D can play an important role as a global public good. The project resulted in important scientific information for HIV vaccine optimization and testing processes. Beyond HIV, the project assisted IAVI to expand its VSV-based vaccines program to other high-risk viral pathogens. Vaccine development that would address existing and emerging public health threats is recognized as a critical global public good. The project is likely to incentivize private sector investments to accelerate R&D for HIV and other diseases impacting low- and middle-income countries.

**World Bank support can advance innovative research operations.** The Bank's engagement assisted IAVI in its ability to attract more support from bilateral donors and foundations to advance R&D technologies, and donors appreciated the application of the Bank's rigorous processes and practices, and its convening capabilities.

The task team leader also identified the following lesson during the ICRR interview:

Scientific information and technology resulting from R&D would be useful only if the knowledge is shared and disseminated with stakeholders to stimulate product development partnerships. Driven by its support to global public goods, the Bank contributed through the project to moderating some market failures in product development for a potential HIV vaccine and other potential vaccines against viral diseases, and the project effectively shared the acquired knowledge with various stakeholders to support product development partnerships.

#### 13. Assessment Recommended?

No

# 14. Comments on Quality of ICR

In the context of an intricate R&D operation, the ICR was remarkably clear, concise, and tightly written with close links between the narrative, evidence, and ratings. It was sharply results-oriented and substantiated by a set of observations and findings that were aligned to the PDO. The theory of change, that concurrently reflected an action theory, was well articulated. It illustrated the pathway between activities, outputs, and intended outcomes. It also contributed to explaining how conclusions and ratings were reached. The ICR provided a



complete and candid critique of the project, and was supported by a thorough analysis. The ICR followed guidelines and was internally consistent. The lessons were based on project experience and were anchored in the ICR's narrative. The ICR had a minor lapse in fully explaining aspects of reporting by the Grant Recipient and the Bank's supervision process, but these were satisfactorily clarified during the TTL interview.

a. Quality of ICR Rating High