Public Disclosure Authorized

Public Disclosure Authorized

Document of

The World Bank

FOR OFFICIAL USE ONLY

Report No: ICR00005413

IMPLEMENTATION COMPLETION AND RESULTS REPORT

(TF-13820-AF)

ON A

GRANT

IN THE AMOUNT OF SDR122.2MILLION

(US$176.3 MILLION EQUIVALENT)

TO THE

ISLAMIC REPUBLIC OF AFGHANISTAN

FOR THE

AFGHANISTAN: NATIONAL HORTICULTURE AND LIVESTOCK PRODUCTIVITY PROJECT

November 17, 2021

Agriculture And Food Global Practice
South Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective December 30, 2020)

Currency Unit	=	Afghani (AFN)
US$1.00	=	AFN 77.1
US$1.00	=	SDR 0.69

FISCAL YEAR
July 1 - June 30

Regional Vice President:	Hartwig Schafer
Country Director:	Melinda Good
Regional Director:	John A. Roome
Practice Manager:	Loraine Ronchi
Task Team Leader(s):	Manievel Sene, Amanullah Alamzai
ICR Main Contributor:	Md Mansur Ahmed

ABBREVIATIONS AND ACRONYMS

AHDP	Animal Health Development Program
ARTF	Afghanistan Reconstruction Trust Fund
CDC	Community Development Council
CIG	Common Interest Group
DAIL	Provincial-level Directorate of Agriculture, Irrigation and Livestock
ESMF	Environment and Safeguard Management Framework
FFS	Farmer Field School
FLRC	Farmers' Learning and Resource Center
FM	Financial Management
GoIRA	Government of Islamic Republic of Afghanistan
GRM	Grievance Redressal Mechanism
HLP	Horticulture and Livestock Project
IPM	Integrated Pest Management
ISN	Interim Strategy Note
M&E	Monitoring and Evaluation
MIS	Management Information System
MAIL	Ministry of Agriculture, Irrigation, and Livestock
NADF	National Agriculture Development Framework
NHLP	National Horticulture and Livestock Project
PDO	Project Development Objective
TA	Technical Assistance
VFU	Veterinary Field Unit

TABLE OF CONTENTS

DATA SHEET

I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES 1

A. CONTEXT AT APPRAISAL 1

B. SIGNIFICANT CHANGES DURING IMPLEMENTATION (IF APPLICABLE) 5

II. OUTCOME 7

A. RELEVANCE OF PDOs 7

C. EFFICIENCY 15

D. JUSTIFICATION OF OVERALL OUTCOME RATING 17

E. OTHER OUTCOMES AND IMPACTS (IF ANY) 17

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME 19

A. KEY FACTORS DURING PREPARATION 19

B. KEY FACTORS DURING IMPLEMENTATION 20

IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME .. 23

A. QUALITY OF MONITORING AND EVALUATION (M&E) 23

B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE 24

C. BANK PERFORMANCE 26

D. RISK TO DEVELOPMENT OUTCOME 28

V. LESSONS AND RECOMMENDATIONS 28

ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS 30

ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION 51

ANNEX 3. PROJECT COST BY COMPONENT 53

ANNEX 4. EFFICIENCY ANALYSIS 54

ANNEX 5. BORROWER, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS ... 61

ANNEX 6. SUMMARY OF THE FEATURES AND BLOGS PUBLISHED BASED ON BENEFICIARY INTERVIEWS AND RESULTS FROM NHLP 62

DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P143841	Afghanistan: National Horticulture and Livestock Productivity Project
Country	**Financing Instrument**
Afghanistan	Investment Project Financing
Original EA Category	**Revised EA Category**
Partial Assessment (B)	

Organizations

Borrower	Implementing Agency
Ministry of Finance	Ministry of Agriculture, Irrigation and Livestock (MAIL)

Project Development Objective (PDO)

Original PDO

To promote adoption of improved production practices by target farmers, with gradual rollout of farmer-centric agriculturalservices systems and investment support.

Service delivery centered on farmers will promote in practice increased participation ofbeneficiaries both in defining the type of services required and in the delivery itself. The project would also promote improvedratio of overall costs reaching beneficiaries as direct investments. The aim is thus to promote sustainability, effectiveness andefficiency.

FINANCING

	Original Amount (US$)	Revised Amount (US$)	Actual Disbursed (US$)
World Bank Financing			
TF-13820	190,000,000	176,326,960	176,326,960
Total	**190,000,000**	**176,326,960**	**176,326,960**
Non-World Bank Financing			
Borrower/Recipient	14,600,000	9,723,388	9,723,388
Total	**14,600,000**	**9,723,388**	**9,723,388**
Total Project Cost	**204,600,000**	**186,050,348**	**186,050,348**

KEY DATES

Approval	Effectiveness	MTR Review	Original Closing	Actual Closing
12-Apr-2013	22-Dec-2012	05-Oct-2014	31-Dec-2018	31-Dec-2020

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US$M)	Key Revisions
29-Jun-2016	57.87	Additional Financing Change in Results Framework Change in Components and Cost Change in Loan Closing Date(s)
25-Jun-2020	169.73	Cancellation of Financing

KEY RATINGS

Outcome	Bank Performance	M&E Quality
Moderately Unsatisfactory	Moderately Unsatisfactory	Modest

RATINGS OF PROJECT PERFORMANCE IN ISRs

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US$M)
01	31-May-2013	Satisfactory	Satisfactory	5.00
02	30-Nov-2013	Satisfactory	Satisfactory	9.62
03	24-Jun-2014	Satisfactory	Satisfactory	18.57
04	03-Dec-2014	Satisfactory	Satisfactory	28.57
05	24-Jun-2015	Satisfactory	Satisfactory	37.19
06	21-Dec-2015	Satisfactory	Satisfactory	50.38
07	20-Jun-2016	Satisfactory	Satisfactory	57.87
08	19-Dec-2016	Satisfactory	Satisfactory	79.95
09	22-Jun-2017	Satisfactory	Satisfactory	94.73
10	24-Jan-2018	Satisfactory	Satisfactory	112.22
11	07-Sep-2018	Satisfactory	Satisfactory	128.22
12	15-Apr-2019	Satisfactory	Satisfactory	145.22
13	23-Sep-2019	Satisfactory	Moderately Satisfactory	160.22
14	14-May-2020	Satisfactory	Moderately Satisfactory	162.22
15	08-Jan-2021	Moderately Satisfactory	Moderately Satisfactory	176.25
16	13-Jan-2021	Moderately Satisfactory	Moderately Satisfactory	176.25

SECTORS AND THEMES

Sectors

Major Sector/Sector	(%)
Agriculture, Fishing and Forestry	**90**
Agricultural Extension, Research, and Other Support Activities	28
Fisheries	8
Crops	22
Public Administration - Agriculture, Fishing & Forestry	24
Livestock	8
Industry, Trade and Services	**10**
Agricultural markets, commercialization and agri-business	10

Themes

Major Theme/ Theme (Level 2)/ Theme (Level 3)	(%)
Human Development and Gender	**11**
Gender	11
Urban and Rural Development	**72**
Rural Development	72
Rural Markets	16
Rural Infrastructure and service delivery	47
Land Administration and Management	9
Environment and Natural Resource Management	**18**
Renewable Natural Resources Asset Management	18
Biodiversity	9
Landscape Management	9

ADM STAFF		
Role	**At Approval**	**At ICR**
Regional Vice President:	Isabel M. Guerrero	Hartwig Schafer
Country Director:	Robert J. Saum	Henry G. R. Kerali
Director:	Juergen Voegele	John A. Roome
Practice Manager:	Simeon Kacou Ehui	Loraine Ronchi
Task Team Leader(s):	Alvaro Juan Soler Bavosi	Manievel Sene, Amanullah Alamzai
ICR Contributing Author:		Md Mansur Ahmed

I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

A. CONTEXT AT APPRAISAL

Context

1. At the time of project appraisal, in 2012, the operating environment in Afghanistan remained extraordinarily challenging with weak rule of law, weak governance and administrative capacity, worsening poverty and worsening security issues. After decades of internal and external conflicts, Afghanistan was one of the world's poorest and least developed countries. The national poverty rate stood at 36 percent, and more than half of the population was considered vulnerable. Over 70 percent of the population lived in rural areas, where the incidence of poverty was the highest and rural poverty accounted for almost 84 percent of national poverty. In addition, the reduction of international troops in 2012, worsening security situation, and the associated decline in aid levels adversely affected consumer and investor confidence and resulted in a sharp decline in domestic demand. Generally, the development needs of the country remained vast; and much more needed to be done to increase rural productivity.

2. The performance of the agricultural sector remained crucial for both economic development and poverty reduction in Afghanistan. Agriculture was central to Afghanistan's economy and in 2010, the sector accounted for 31 percent of GDP and provided employment to 59 percent of the labor force. About 36 percent of households relied on farming as their main source of income, while another 6 percent depended on farm wages as their main source of income. Throughout history, the horticulture subsector supported the local population with food and other non-food products, as well as a rich variety of export products, including fresh and dried fruits, nuts, and essential oils. Before the onset of war (1977), horticulture (fresh and dried fruits) represented a substantial portion (41 percent) of Afghanistan's export earnings. The sector was, however, neglected during the next 25 years, while the development of the global horticulture industry was exceptional in terms of selection of improved varieties, better technology, and marketing. Similarly, the livestock economy had been gravely deteriorated since 1970s, when the country was self-sufficient in meat and milk. Between 2008 and 2011, Afghanistan imported a total of US$ 47.4 million of milk powder and US$74.5 million of chicken (meat), and imports were increasing. At the same time, livestock diseases increased in the absence of any structured livestock disease control system. In consequence, there was a fourfold increase in human brucellosis cases between 2007 (746 cases) and 2009 (3,015 cases).

3. Limited access to quality inputs, improved technologies, and extension support were key constraints to higher productivity in horticulture and livestock productivity. The Government's strategy for economic growth and poverty reduction included development of perennial horticulture and livestock as key activities. The Bank-financed Horticulture and Livestock Productivity (HLP) project supported the development of horticulture and livestock productivity by promoting an extension model based on farmer field schools[1] (FFS) methodology to enhance adoption of readily available improved technology in horticulture and livestock among target households in 11 focus districts in 11 Central and Northern provinces. At t closing, the project achieved and, in

[1] Farmers Field School (FFS) is a group-based informal approach for extension service delivery to educate farmers through learning-by-doing process. The FFS approach enables farmers' own decision-making based on their learning though regular field observations and collective analyses of the results, rather than adopting pre-designed techniques and solutions.

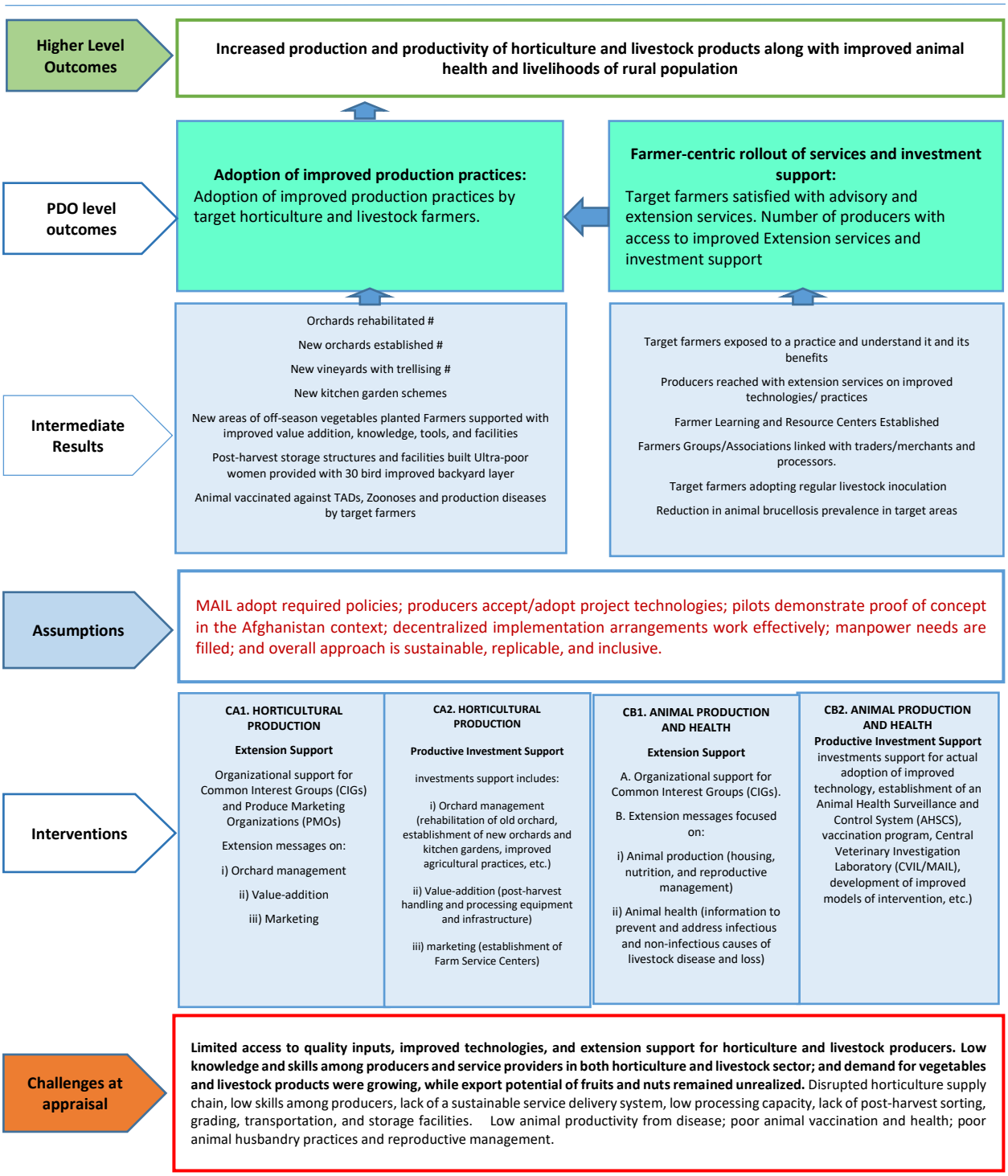
some cases, exceeded most of its targets in the results framework (RF). The project increased the adoption rate of improved production practices in horticulture and livestock, contributed to an increase of 48 percent in horticulture productivity among project beneficiaries; and supported improvement in poultry productivity with 24 percent increase of egg laying. HLP also supported the transfer of the last remaining –166– public Veterinary Field Units (VFUs) to the private sector, as a first step of its contribution towards improved service delivery. NHLP's design was built on the achievement and good performance of its predecessor project, HLP, expanding the geographical scope to 100 districts in 22 provinces—the first stage of a national rollout. One key difference, however, was that NHLP's implementation modality was structured to rely on the government and community institutions for service delivery—a departure from HLP which was heavily driven by international technical assistance. While this responded to the need to develop a more sustainable service delivery system in the country, it was not without its attendant challenges (see below). The change in the implementation modality was also expected to increase ownership of overall project implementation responsibilities by MAIL, which would reduce overhead costs and contribute to more effective and sustained support efforts.

4. With this context, the Government of the Islamic Republic of Afghanistan (GoIRA) prioritized improvement of agricultural productivity, particularly in the horticulture and livestock subsectors, under the 2008 National Agricultural Development Framework (NADF) through increasing the adoption of improved production technologies and strengthening the capacity of the institutions involved in extension service delivery. The National Horticulture and Livestock Project (NHLP) was designed to promote improved production practices in horticulture and livestock sectors which could offer opportunities for growth as well as for improved food and nutrition security among the rural population. Given the main challenge was the low knowledge and skills base among producers and service providers in the horticulture and livestock production chains, NHLP built on and strengthened the HLP extension models for both horticulture and livestock sectors. The main thrust of the approach was centered around a strategy geared towards putting in place a more robust, better performing and sustainable improved service delivery systems for horticulture and livestock sector.

Theory of Change (Results Chain)

5. The project was approved before the inclusion of a Theory of Change (ToC) in the Project Appraisal Document (PAD) became mandatory. The ToC below was constructed retroactively for the ICR, reflecting the objectives, **activities, and operational logic of the PAD (See Figure 1). The results chain maps the logic from project activities to the PDO-level outcomes and longer-term impact. NHLP's higher-level objective was to contribute to the overarching goal of increased productivity and overall production of horticultural products and improved animal production and health.**

Figure 1: Theory of Change: Afghanistan - National Horticulture and Livestock Project (P143841)



Project Development Objectives (PDOs)

6. **The Project Development Objectives was to promote adoption of improved production practices by target farmers, with gradual rollout of farmer-centric agricultural services systems and investment support[2].**

Key Expected Outcomes and Outcome Indicators

7. The first expected outcome of the project was to enhance the farmer-centric focus of extension service and the second outcome was to promote adoption of improved production practices. While the first outcome was the proposed channel through which the second would be achieved, it is in and of itself a key outcome given the key challenges of low knowledge and skills of the service providers at appraisal. Farmer-centric extension service was to promote increased participation of beneficiaries both in the definition of services required and in service delivery itself. Farmer-centric investment support was to improve the share of overall project expenditure reaching beneficiaries as direct investments. The PDO indicators to measure these two distinct outcomes are summarized below.

Table 1. Expected Outcomes and Evolution of PDO Indicators and Targets

Outcomes	PDO Indicator	Original Target
Outcome 1: To rollout farmer-centric agricultural service systems and investment support	#3. Target farmers satisfied with agricultural and rural advisory services (percentage)	75
	#4. Total expenditures directly reaching beneficiary farmers (percentage)	70
Outcome 2: To promote adoption of improved production practices	#1. Target farmers adopting elements of the horticulture technology packages (percentage)	70
	#2. Target farmers adopting elements of the livestock technology packages (percentage)	65

Components

8. **Component A: Horticultural Production (original estimate: US$56.0 million).** This component included two subcomponents: A1) support for extension and farm advisory services which would provide farmers with organizational support, and deliver extension focused on three main thematic areas: orchard management, value addition and marketing; and A2) investment support for improved productivity and market efficiency-support for tree crop horticulture (grapevines, stone fruits, tree nuts, citrus and others), vegetable crops, and dryland farming including pistachios orchards, and investments in farm or community level water harvesting structures, and higher efficiency irrigation systems.

9. **Component B: Animal Production and Health (original estimate: US$29.7 million).** This component included two subcomponents: B1) improved animal health service delivery to increase households' participation in vaccination programs and related animal health initiatives; and B2) improved animal production through investment support and investment packages to provide farmers with organizational support, and deliver extension focused on two main thematic areas: animal production and animal health; Investment support would have a two pronged approach: capacity building private sector and providing investment support required for actual adoption of improved packages; it would also support the establishment of an Animal Health Surveillance and Control System.

[2] The PDO is presented as stated in the legal/financing agreement

10. **Component 3. Implementation Management and Technical Assistance Support (Original estimate: US$28.9 million).** This component would provide: (a) overall project implementation management support, at national and regional levels, including project management on fiduciary and safeguard aspects, and an efficient monitoring and evaluation (M&E) system; and (b) technical assistance (TA) to inform implementation and policy development, and capacity building (CB) of MAIL to mainstream and ensure long term adequate staffing and ability at all levels of the service delivery systems being deployed.

B. SIGNIFICANT CHANGES DURING IMPLEMENTATION (IF APPLICABLE)

Revised PDOs and Outcome Targets

11. With the objective of scaling up project activities, NHLP received an additional financing (AF) of US$90 million (effective June 2016), increasing the grant from US$100 million to US$190 million, extending the closing date to December 31, 2020. Although the PDO remained unchanged throughout the project implementation period, the Results Framework, during the restructuring for the AF in 2016, was modified both in terms of some indicators and targets to streamline and ensure better alignment with PDO, and to include targets on gender-disaggregated number of beneficiaries.

12. The original two PDO indicators that tracked results on the adoption of improved production practices remained unchanged with a slight increase in targets (targets were increased by 5 percentage points; PDO1 target was increased to 75%; and PDO2 target was increased to 70%) and some modifications in wording. However, the PDO indicator to assess the success of farmer-centric service delivery - total expenditures directly reaching to beneficiary farmers - was dropped and a new indicator-number of producers with improved post-production facilities/ tools and market access - was introduced to capture the outcomes from newly introduced activities for strengthening market access. The change was made for two reasons: the dropped indicator was more output related, and the newly introduced indicator aimed at measuring the progress against the planned marketing activities introduced with the AF. The other original PDO indicator to track results on the rollout of farmer-centric service delivery system - target farmers satisfied with agricultural and rural advisory services-remained with the original target but with some modification in wording (see Table 2 for a summary of revision to PDO indicators).

13. As part of the broader portfolio adjustment discussions for COVID-19 response carried out jointly by GoIRA and World Bank in June 2020, it was agreed to cancel US$12.5 million in. The cancellation was effective in June 2020 through global restructuring at the country level; no project level restructuring was required to reflect cancellation and the closing date of the project remained unchanged as December 31, 2020.

Table 2: Changes in PDO Indicators during the 2016 AF

PDO Indicators	Change	Rationale
Target farmers adopt elements of the horticulture technology packages promoted by NHLP	Maintained (Slightly modified) target increased from 70% to 75%	Target farmers made more specific. The previous definition of the indicator accounted all farmers in the project areas, while the new definition included only NHLP beneficiaries.
Target farmers adopt elements of the livestock technology packages promoted by NHLP	Maintained (Slightly modified) target increased from 65% to 70%	Target farmers made more specific. The previous definition of the indicator accounted all farmers in the project areas, while the new definition included only NHLP beneficiaries.

Total expenditures directly reaching beneficiary farmers (excluding farmer contribution): 70%	Dropped	As it was a more output related indicator.
Target farmers satisfied with agricultural services	Maintained with the original target figure of 75%, but with some modification in wording	Definition of services was made more specific.
Number of producers with improved post-production facilities/ tools and market access	New; target set at 181,140 producers	To measure progress against the marketing activities introduced under the AF operation.

Revised Components

14. **Component A: Horticultural Production (revised estimate with AF: US$125.4 million; actual cost: US$102.2 million).** The original project activities in Component A were scaled up with the 2016 AF and some new activities were added. For example, establishment of 250 Farmers' Learning and Resource Centers (FLRCs), which would house extension and farm advisory services, were added to the extension subcomponent (A1). The major revision under this component was to add a subcomponent (A3) to strengthen and formalize marketing activities. With the early success in on-farm production, the AF emphasized on the marketing of project outputs and focused on post-harvest handling and strengthening market linkages between producers and traders. The 2016 AF also increased the total target for producers reached with technical assistance for improved production practices from 97,500 to 254,000.

15. **Component B: Animal Production and Health (revised estimate with AF: US$ 53.4 million; actual cost: US$37.7 million).** Under Component B, the AF expanded geographic coverage of service delivery and increased proportion of households and animals directly impacted by the project. The AF also introduced new activities in the livestock program consisting of dairy, fisheries, and beekeeping. The AF aimed at developing 500 beekeeping enterprises by the project closing. The 2016 AF also added a market linkage sub-component, B3, reflecting an effort towards strengthening market access and value addition for livestock products. The subcomponent would focus on providing technical assistance to beneficiaries to capitalize temporal market opportunities and to work with private sector on developing milk collection infrastructure.

16. **Component C. Implementation Management and Technical Assistance Support (revised estimate with AF: US$39.45 million; actual cost: US$36.4 million).** The technical assistance support was scaled up to manage the expanded geographic and beneficiary numbers under the project.

Other Changes

17. The intermediate results indicators (IRIs) were revised with the 2016 AF: 13 new IRIs were introduced and 10 IRIs were removed from the RF. The other 15 IRIs were also modified in definition and their targets were raised to reflect the project's scaling up under the AF. The original RF, with over 25 IRIs, was complex, and the complexity remained even after the AF as the number of IRIs increased with the AF. The AF also made provision for additional technical assistance and capacity building support to MAIL to produce technical studies to inform implementation and policy development, including the piloting of mainstreaming of NHLP service delivery systems below the central level within MAIL.

18. Other significant changes revolved around implementation arrangements including: i) the engagement of the MAIL/DAIL extension staff at the district level to NHLP activities with visits to target communities to deliver extension messages and knowledge about best practices to ensure sustainability of the project outcomes; ii)

enhanced coordination with Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), United States Agency for International Development (USAID), and other donor funded programs to develop a well-coordinated approach for programs regarding regulatory issues of the sector; iii) the appointment of a capable International Finance Advisor to oversee overall financial management of the project; and iv) the improvement in farmers' contribution record system, monitoring of fund flows (including advances, payments, and settlement of advances), and the internal control system.

Rationale for Changes and Their Implication on the Original Theory of Change

19. Key changes under the AF were intended to scale up NHLP's regular project activities and strengthen the links between producers and traders, with a focus on post-harvest handling and processing. Promoting Farmer Learning Resource Centers (FLRC) was very important to strengthening extension system and improving delivery of key extension and advisory services to smallholder farmers. The inclusion of a market access agenda under both Components A and B as standalone subcomponents was intended to strengthen the market linkage between producers and traders of horticulture and livestock products as well as marketing services and integration of smallholders into target value chains. The inclusion was also intended to focus not only on improving productivity but also on increasing value addition in the horticulture and livestock subsectors. Other changes were meant to correct some constraints at design and bottlenecks in implementation, without any significant change to the logic of Theory of Change.

II. OUTCOME

A. RELEVANCE OF PDOs

Overall Rating: Substantial

Assessment of Relevance of PDOs and Rating

20. At appraisal, throughout implementation, and at closing, the Project remained aligned with the Bank's overall strategy for Afghanistan. The Project which spanned eight calendar years (January 2013 to December 2020) overlapped with two Bank strategy documents for Afghanistan: i) Interim Strategy Note (ISN) 2012-14 (extended to FY16), and ii) Country Partnership Framework (CPF) FY17-20 (extended past FY20 as per the Performance and Learning Review). The NHLP at closing was fully aligned with CPF FY17-20, directly with Pillar 2, particularly Objective 2.4 (Increased agricultural productivity) (Table 3). In addition, the Project also indirectly contributed to objectives 1 and 2 (building the legitimacy and capacity of institutions; and equitable service delivery) in ISN FY12-14, and with Pillar 1 (building strong and accountable institutions, particularly to Objective 1.3: Improved service delivery through enhanced citizens' engagement with the state; and cross-cutting issues of Gender and Climate Change) in CPF FY17-20. Since there were no shortcomings in the relevance to the country's vision and the CPF at closing, the relevance of PDO is rated Substantial.

Table 3. Consistency of PDO with WBG Strategies for Afghanistan

WBG Strategy	Project Relevant Strategic Pillar	Project Relevant Results, Outcomes, Objectives, or Indicators under Strategic Pillar
Interim Strategy Note FY12-FY14	Pillar 3. Inclusive growth and jobs	➢ Outcome 1. Agriculture growth ○ Indicator 4: Hectares of new orchards established
Country Partnership Framework FY17-FY20	Pillar 2. Supporting inclusive growth	➢ Objective 2.4 Increased agricultural productivity ○ Indicator 2.4.2. Increase in number of farmers with regular access to extension workers and/or irrigation services (and percent female)

B. ACHIEVEMENT OF PDOs (EFFICACY)

Overall Rating: Modest

21. The assessment of the Efficacy of the project outcomes is based primarily on two different data sources to inform on the intermediate and PDO indicators: First, the analysis of the data reported from the M&E system in the Results Framework (RF) (Annex 1) at closing; and second, on an external evaluation of the project completed in August 2020, four months before the project closing.[3] The external evaluation study is the only evaluation of the project to be carried out by a third-party independent firm and it captured most of the project's results up to early 2020. Not much implementation progress was made since the completion of the external evaluation due to the early impact of the pandemic. The data for key intermediate results indicators (IRIs) in the RF were collected through the annual outcome surveys and the regular process monitoring by the project's M&E system. Thus, the analysis of the project outcomes is based on the achievement of the PDO indicators, which have been measured by the external evaluation study. The achievement of the project outcomes was complemented by the IRIs, which have been tracked by the project M&E function. The findings and case studies from the third-party monitoring (TPM) supervisory agents, along with featured stories and blogs, based on interviews with the project beneficiaries, published in the World Bank website were also utilized for complementary assessment of some project outcomes, particularly the adoption of improved production practices, and to triangulate results reported in the RF. The latter two sources of information were limited in scope and are used just to triangulate the results in the RF at closing generated through the project M&E system and the external evaluation study. The borrower's planned Project Completion Report (PCR) at the closing could not be prepared due to weak M&E capacity, and due to the Covid-19 related emergency.

22. The PDO of NHLP was "to promote adoption of improved production practices by target farmers, with gradual rollout of farmer-centric agricultural services systems and investment support". The PDO was formulated in a two-tier approach[4], and the outcome of the adoption of improved production practices was expected to be achieved through the gradual rollout of farmer-centric agricultural services systems and investment support.

[3] The external evaluation study was conducted by a third-party independent international consulting firm, Vision Supply, following a mixed method approach. The methodology used to conduct this external evaluation was combination of desk review of the project documents, consultations with NHLP and MAIL staffs, structured interviews with beneficiary and control households through a household survey, semi-structured interviews with key informants, and focus group discussion (FGD) with beneficiaries. The evaluation study covered, through a stratified random sampling approach, a sample size of 18703 which includes 12469 beneficiaries and 6234 control households from 140 districts, out of 291 districts with NHLP activities, across 34 provinces. The sample included 55 percent male respondents and 45 percent female respondents. The evaluation study conducted 720 KIIs and 136 FGDs to triangulate the results from the household survey.

[4] It should be noted that the two-tier formulation of PDOs is not considered a good practice as par the OPCS guidelines.

23. NHLP's extension service delivery process (as structured) for the horticulture and livestock components was to first organize the farming communities through formation of Common Interest Groups (CIGs) and then, the extension messages were to be delivered to CIG members through the Farmer Field Schools (FFSs)- which would serve as a hub for the exchange of information, demonstration of new technologies and farming techniques, and linking the producers with service providers, input suppliers, and buyers. CIGs would determine their needs in terms of extension messages, extension service delivery modalities, and the investment support. With the use of participatory approach in the FFS, the beneficiary farmers could directly observe the benefits of new technologies and practices demonstrated by the lead farmers and decide on the adoption of those technologies. Once CIG members expressed their interests to adopt new practices and technologies, they would be supported with appropriate investment packages. Thus, the process of gradual rollout of farmer-centric agricultural services systems and investment support is, in itself, critical enough to be considered as one of the two PDO outcomes. With the introduction of market access and value-addition services with the AF operation, this was included as an additional attribute in the farmer-centric services bundle.

24. The PDO indicators in the RF (see Table 4 and Annex 1) are utilized to assess the two expected PDO outcomes of NHLP. The first outcome (farmer centric services) is evaluated by the achievement of the following two PDO indicators: target farmers satisfied with agricultural and rural advisory services; and number of producers with improved post-production facilities, tools, and market access. The second outcome (adoption of technology packages) is evaluated by the achievement of the remaining two PDO indicators. The major project activities and outputs are also discussed, against their respective targets, because these activities and outputs, tracked as intermediate results indicators (IRIs), were meant to contribute to the achievement of the PDO outcomes. The final achievement of the project is indicated in the Table 4 below:

Table 4. Final Assessment of Project Achievements

PDO indicators	Baseline January, 2013	End Target (restructuring Jun 2016)	Achievement at Project Closing date	Achievement as % of targets	Comments
Outcome 1: gradual rollout of farmer-centric agricultural services systems and investment support					
Target farmers satisfied with agricultural services	50%	75%	94.10%	125%	The achievement at the closing significantly exceeded the target; performance of this PDO indicator is rated *Substantial*.
Number of producers with improved post-production facilities, tools, and market access-Total	Was not in original RF	181,140	106,066	58.6%	The project significantly fell short of achieving the target; performance of this PDO indicator is rated *Modest*.
Outcome 2: adoption of improved production practices by target farmers					
Target farmers adopt elements of the horticulture technology packages promoted by NHLP	0.00	75%	60.56%	80.7%	While the adoption rate of 60.56% is reasonably high in the context of FCV environment and the achievement could be considered 'Substantial', the project fell short of achieving the target for the PDO indicator. Moreover, many of the underlying numbers (IR indicators) behind the calculation of the adoption rate also fell short of the target. Achievement is therefore rated *Modest*.

Target farmers adopt elements of the livestock technology packages promoted by NHLP	0.00	70%	63.75%	91.1%	While the adoption rate of 63.75% is reasonably high in the context of FCV environment and the achievement could be considered 'Substantial', the project fell short of achieving the target for the PDO indicator. Moreover, many of the underlying numbers (IR indicators) behind the calculation of the adoption rate also fell short of the target. Achievement is rated *Modest*.

Assessment of Achievement of Each Objective/Outcome

Assessment of Outcome 1: Gradual rollout of farmer-centric agricultural services systems and investment support (this outcome also includes the market support services introduced with the AF operation)

25. The achievement of the outcome 1 is rated *Modest*. At closing, the first PDO indicator exceeded its end target, while the other PDO indicator achieved just above half of its end target set at the 2016 AF. The end target for the agriculture services delivery was 75 percent and the project achieved 94 percent, which is 125 percent of the original target. However, the end target for the post-production support services was 181,140 producers and at the closing, the project had achieved 106,066 producers or 59 percent of its end target.

26. NHLP supported beneficiaries through demand-driven approaches for **three broad categories of support: i) improving extension outreach by organizing farmers and providing technical assistance, ii) productive investment support to build capacity of beneficiaries in adoption of improved technology packages; and iii) market linkage support to beneficiaries.** Both extension and marketing support were demand driven and the farmers' centric approach was in-built into the project design. The active involvement of local communities such as Community Development Councils (CDC)[5], Veterinary Field Unit (VFU) and Extension Field Assistant (EFAs) contributed to moving towards a more farmers-centric implementation approach in delivering extension, investment, and marketing support. The investment support was also demand driven since the farmers were required to contribute to the investment partially (up to 50%) to reflect their commitment to the productive investments.

27. Despite the adoption of farmer-centric participatory process for agriculture services delivery, NHLP fell short of achieving many of its targets for investment and marketing support (see Table 5). All three sets of support-extension, investment, and marketing are considered critical for achieving the PDO Outcome 1. NHLP achieved the end targets for the extension outreach in both horticulture and livestock components: (a) the horticulture component of the project reached to 408,000 beneficiaries with support for extension outreach against the target of 254,000 beneficiaries; and (b) the livestock component achieved its target of 180,000 beneficiaries for extension outreach. However, both components did not achieve the end targets for investment support and capacity building support for marketing: (a) Under the horticulture component, beneficiaries supported with the investment packages and the market linkage capacity development were 365,000 beneficiaries and 17,000 beneficiaries (a total of 382,000 beneficiaries) against the targets of 380,000 beneficiaries and 67,000 beneficiaries respectively (a total of 447,000 beneficiaries); and (b) under the livestock and animal health component, NHLP supported investment packages and marketing capacity building to 33,000 beneficiaries and 71,000 beneficiaries (a total of 104,000 beneficiaries) against the targets of 41,500 beneficiaries and 159,000 beneficiaries respectively (a total of 200,000 beneficiaries). These

[5] NHLP used CDCs as entry point to promote potential beneficiary awareness about project activities and help coordinate different conduits of support.

results clearly demonstrate the partial achievement of the expected project objectives for PDO outcome 1 set at the 2016 AF and thus, justifies *Modest* rating for the first outcome.

Table 5: Actual number of beneficiaries reached with extension, investment, and marketing supports

Components	Activities	Actual Beneficiaries (in '000)	Targets (in '000)	Comment
Horticulture	**Extension Outreach**	**408**	**254**	**Exceeded**
	Investment Support	**365**	**380**	**Unmet**
	• Rehabilitated orchards	100	200	Unmet
	• New orchards and plantings	100	70	Exceeded
	• Grape trellising	4.0	3.6	Exceeded
	• Commercial horticulture	4.6	5.7	Unmet
	• Irrigation support	11	10	Exceeded
	• Kitchen gardens	144	90	Exceeded
	Marketing support under AF	**17**	**67**	**Unmet**
	• Post-harvest beneficiaries	16	59	Unmet
	• Producer marketing organizations	1	8	Unmet
Total for Horticulture	**After the adjustment of double counting in beneficiaries**	**425**	**447**	**Unmet**
Livestock:	**Extension Outreach**	**180**	**180**	**Met**
	Investment Support	**33**	**41.5**	**Unmet**
	• 100 bird poultry model for poor women	3	5	Unmet
	• 30 bird poultry model for ultra-poor women	25	35	Unmet
	• Aquaculture	4	1	Exceeded
	• Beekeeping	0.5	0.5	Met
	Marketing support activity under AF	**71**	**159**	**Unmet**
	• Post-harvest beneficiaries	65	94	Unmet
	• Producer marketing organizations	6	65	Unmet
Total for Livestock:	**After the adjustment of double counting in beneficiaries**	**251**	**339**	**Unmet**
Total beneficiaries for the project		**676 (86% of target)**	**786**	**Unmet**

Project Inputs and Outputs

Extension Outreach:

28 As demonstrated in Table 5 above, NHLP's extension outreach program was successful and achieved the targets set in the RF for both horticulture and livestock activities. Under the horticulture component, depending on the demand from CIGs, extension messages were delivered in following three main thematic areas: a) Orchard management, which included improved agronomic practices, Integrated Pest Management (IPM), On Farm Water Management (OFWM), and environmental issues; b) Value addition, which included improved harvesting and packaging practices, establishment of low-cost pre-cooling facilities, support for storage facilities, and improved transportation to minimize damage to the fruit; and c) Marketing, which included strengthening productive linkages among producer groups and traders, and providing capacity building support for the development and running of Farm Service Centers. NHLP extended its technical assistance for extension support to 408,263 beneficiaries in the horticulture sector, which is 161 percent of the target.

29. Under the livestock and animal health component, extension support was NHLP's main activity focusing on capacity building of the famers on good livestock management practices including animal housing, animal nutrition (feeds and feeding), livestock marketing, disease management and general management. Like the horticulture component, the extension service delivery under the livestock component provided direct support to 180,390 beneficiaries (target: 180,000 beneficiaries). Total of 929 VFUs and 3,157 FEAs were hired to provide demand-driven livestock extension service to over 200,000 farmers. The VFUs and FEAs also acted as Master Trainers in ToTs, ensuring retention of best practice knowledge at local level. NHLP also developed and promoted a sustainable business model for VFUs to provide regular extension services to livestock farmers. To ensure sustainability of its livestock program, NHLP gradually handed-over national brucellosis control program (NBCP) and sanitary mandate contracting scheme (SMCS) to Animal Health Directorate of MAIL and developed institutional capacity of the livestock extension department of MAIL. NHLP conducted 34 different trainings for the DAIL extension staffs to strengthen their capacity to provide extension support to beneficiary farmers effectively. Total of 9,329 DAIL staffs (women, 2,212; and men, 7,117) were trained against the target of 5,000 in the RF.

Productive Investment Support:

30. For gradual rollout of farmer-centric agricultural service systems and investment support, both horticulture and livestock components extended investment support to beneficiaries in many areas including rehabilitation of orchards, establishment of new orchards, orchards and vineyards management, integrated pest management (IPM), soil and water management, dry land horticulture, post-harvest market linkage improvement, poultry and aquaculture production, beekeeping, and animal health improvement. However, as demonstrated in Table 5, NHLP fell short of achieving many targets at project closing, and the performance was mixed.

31. NHLP established total of 32,524 ha of new orchards and rehabilitated about 32,143 ha of existing orchards, which are 171 percent and 30 percent of the targets respectively (see Annex 1). The project supported grape trellising and high and medium density orchard production system for 801 ha against the target of 1030 ha, implying 79% achievement of the target. The project could only establish 36 Farmer Learning and Resource Centers (FLRC) at the closing, against the target of 250. The external evaluation study noted, however, that the farmer field school (FFS) approach for extension service delivery was an effective way to provide hands on training to the beneficiaries and to help farmers deciding on their required extension messages and investment support. Also, NHLP did achieve some of its targets for investment support. For example, the project brought 2805 ha new dry land area, against the target of 2500 ha, under high value horticulture because of improved irrigation technologies. The project established more than 143,657 kitchen gardening plots and saffron demos against the target of 90,000 schemes. Female beneficiaries received vegetable seeds, watering cans, up to 5 meters of plastic tunnels, and a Kitchen Gardening Manual, translated into the local languages, along with extension support by female extension workers. The external evaluation study noted that each female farmer cultivated 5 to 11 types of different vegetables in their kitchen gardens and the satisfaction level with the project support among women beneficiaries was quite high. In addition, NHLP supported beneficiaries with 1,360 small water harvesting structures, 19,202 IPM tools, 220 mobile plant clinics, 8902 micro greenhouses, 236 macro greenhouses, and 458 saffron plots. The external evaluation study confirmed that each of these activities significantly contributed to increase beneficiaries' earnings.

Marketing Support:

32. Under the marketing sub-component of the horticulture component, the project aimed at strengthening market linkages of beneficiary farmers but failed achieving most of the related targets at project closing. NHLP supported only 15,615 farmers with improved post-harvest knowledge and tools against the target of 35,000 farmers, implying only

44 percent achievement against the target (the achievement was just 23 percent in case of female farmers). At project closing, only 28 Farmers Groups/Associations were linked with traders/merchants and processors against the target of 200. The project aimed at linking 8,000 farmers with traders and processors and could only link only 1,167 farmers at the project closing, implying only 15 percent achievement of the target. However, NHLP supported the construction of 2010 raisin houses which is 138 percent of the target in the potential grape production provinces based on the interest and demand of targeted communities. The construction was implemented through CDCs with NHLP's financial support, but with 50% farmers' contribution. The project established 143 produce marketing organizations (PMO) with 27,335 members and assisted the PMOs collecting and analyzing market information to enhance their negotiation skills with buyers. The external evaluation study noted that the formation of PMOs strengthened beneficiaries' receiving better prices for their produces.

33. Under the livestock and animal health component, NHLP fell short of achieving the market support activity targets for ultra-poor and poor women beneficiaries. It supported 25,000 ultra-poor women, against the target of 35,000, and 3000 poor women, against the target of 5000. However, the external evaluation study noted that those women households that received NHLP's support with poultry experienced an increase of US$41 in their monthly income. NHLP failed to initiate the private-sector driven approach to support 50 dairy producer groups in peri-urban areas. Similarly, with only 302 producer groups, the project failed to achieve its target of linking 1,050 livestock producer groups with traders and processors. However, NHLP achieved its target of supporting warm-water aquaculture production system and beekeeping. The project established and delivered 20 aquaculture system, against the target of 6, to the beneficiaries. The project has supported a total of 500 beekeepers and achieved the project's set target for this activity. The evaluation study indicated that this activity increased a total of 25 kg honey production per cycle per beneficiary which increased households' monthly income by US$ 94 per month. While the project did achieve its target for animals vaccinated annually against TADs, Zoonoses and production diseases (actual: 15.2 million; target 15 million), it fell short of achieving the target for investment packages extended to famers (actual: 244; target: 400).

Assessment of Outcome 2: Adoption of improved production practices by target farmers

34. The achievement of the outcome 2 is rated *Modest*. At closing, horticulture technology packages were adopted by 60.56 percent of the project farmers, which is 81 percent of its target (Table 4). Improved livestock technology packages were adopted by 63.75 percent of the livestock producers, which is 91 percent of its target value. More importantly, the project beneficiary outreach was substantially lower than planned at appraisal. As such, even though the adoption rate achievement for the two indicators at 81 percent (horticulture) and 91 percent (livestock) of their target seems high, the absolute number of horticulture farmers and livestock producers that the project reached, and on which the adoption rates are computed is lower than expected at appraisal. Achievement of outcome 2 is therefore rated as *Modest*.

35. A good benchmark rate of adoption of improved horticulture and livestock practices in FCV context is difficult to obtain. The adoption rates for improved agricultural practices show a great variation across regions and agroecological zones. Despite substantial public resources being devoted to the development and provision of modern crop varieties in Sub-Saharan Africa (SSA) in the past decades, improved varieties accounted for 24% of the cereal crop area in SSA in 2000, compared to 59% in Latin America and 77% in South Asia (World Development Report, 2008). Evidence suggests that adoption of dairy technologies in East Africa is less than 20%, while the adoption of hybrid maize is 40-70% in Kenya and Tanzania (Odame et al., 2013). Mainly insufficient dissemination, training, and extension support are the key reasons behind to the low adoption rates of available improved agricultural technologies and management practices.

36. Accelerating adoption requires farmer-centric demand-driven extension support along with appropriate investment support and NHLP did adopt such approach to improve the adoption of agricultural practices. Its predecessor project, HLP demonstrated satisfactory performance of achieving high adoption rates of improved production practices in horticulture and livestock activities: 55% adoption rate for improved horticulture practices, and 62% for improved livestock practices. However, two important challenges in NHLP's design compromised the scale of outreach and adoption – decentralized and in-country government department-driven implementation modality and huge scale-up of the scope. This made the delivery of extension services and investment packages difficult leading to lower than targeted adoption rates. Also, the underlying numbers behind the calculation of adoption rates fell short for many intermediate indicators particularly those relating to investment packages and marketing support to beneficiaries.

37. Measurement of adoption rate of improved production practices is complex, and responding to this challenge, the adoption indicator was modified to refer to only NHLP beneficiary farmers that received technology packages from the project. As indicated in the discussion on PDO 1 Outcome, NHLP fell short in supporting the target number of beneficiaries with investment and marketing support for both horticulture and livestock components and thus, the base number of beneficiaries for the adoption rate computation is relatively lower compared to the actual targets. The absolute number of beneficiaries adopting improved technology packages is lower than the appraisal target.

38. The external evaluation study highlighted the effectiveness of NHLP's technical assistance and investment support to horticulture and livestock producers that contributed effectively towards increased production and productivity of beneficiaries. The study noted an overall increase of 6% in the productivity of large ruminants, 3% in the productivity of poultry, and a decrease of 10% milk spoilage. Due to NHLP's vaccination program, there was 10% decrease in brucellosis incidence which had very positive results on livestock productivity and decreased cost for treatments and medication.

39. Many feature stories and blogs that were published on the Bank website based on the interviews with beneficiaries highlighted the results achieved by those who received investment support from NHLP (Summary of these feature stories and blogs are presented in Annex 7). These stories demonstrate how various NHLP interventions contributed to the adoption of improved production practices and to the improvement of livelihoods, incomes, and women empowerment among the beneficiaries across the country. Even though the project fell short of achieving the targeted number of beneficiaries for technology adoption, there is ample evidence that for those beneficiaries that it did reach, the result was indeed transformative.

40. An independent firm hired to carry out Third-Party Monitoring for several ARTF funded projects (including NHLP) visited randomly selected project sites with water harvesting structures, raisin making houses, orchards (old and new) and poultry package services. The TPM assessments observed satisfactory outcome for the beneficiaries that did receive support from NHLP. Overall, the adoption rates are significant, and had the absolute beneficiary targets for investment and marketing support been met, the achievement of PDO Outcome 2 could have been rated as *Substantial*. However, due to lower than targeted number of beneficiaries being supported, the achievement is rated as *Modest*.

Justification of Overall Efficacy Rating

41. The overall efficacy rating is Modest given that both attributes of the PDO (farmer-centric services delivery and adoption of improved technology packages) are rated Modest.

C. EFFICIENCY

Assessment of Efficiency and Rating

Rating: Substantial

42. At appraisal, the Project Paper included a cost-benefit analysis (CBA) estimating the returns on 8,000 ha of new orchards and rehabilitating 6,000 ha of existing groves including grapes, almonds, apricots, apples and pomegranates, together with about 61,500 farmers improving livestock production and 6,000 women benefiting from the poultry component. Using the "with- and without-project" approach, the overall project ERR was estimated at 24.9 percent and the expected NPV was US$115 million in 2012 prices over a project life of 20 years.

43. An ex-post (ICRR) efficiency analysis considered the performance of the project components/sub-components. The analysis relied mostly on the information collected from the project's documents, monitoring and evaluation (M&E) database, the end-line survey, and other secondary data sources. Conservatively, all the project costs have been accounted for in the analysis. Administrative costs have been distributed to each component of the project on a prorated basis. Like appraisal, 20-year period is considered as the useful economic life of the project interventions for the analysis. The analysis considered the costs over the period starting from year 2013 till project completion in December 2020. The analysis is considered conservative as the benefits from increase in export of fruits, from GHG emissions, and from training and capacity building of the farmers as well as of the government officials could not be quantified due to insufficient data. Benefits were estimated at December 2020 constant values by updating all market prices and costs used for the crop and activity models with those prevailing at closing date. Farm-gate financial prices of inputs and outputs are estimated in 2020 prices, and their economic values are estimated by applying SCF at 0.9. Farm family labor was also valued for the economic analysis. The project benefits were expected to be derived from multiple and independent sources and were computed for horticulture farmers and livestock producers.

44. **Financial Analysis.** Benefits were mainly derived from the availability of more timely and adequate irrigation water for the previously distressed areas, better management at farm level and due to significant changes in cropping patterns towards higher value crops-mainly evolution of new orchards as well as rehabilitation of old ones. Since, an average farmer at Afghanistan likes to have one *jarib* (1/5th of ha) of orchards as part of farming, hence the financial analysis estimated the incremental income of one *jarib* of different orchards and computed the additional income, the benefitted household would have. For the households benefitted with the subcomponent of poultry, the income of a household has been estimated considering poultry units supported under the project.

45. The farm modelling results confirm that the NHLP is having a positive impact on beneficiaries' net income per household. The analysis reveals that the farmer who placed new orchards at one jarib will have annual incremental income ranges from US$ 546 (Grapes without Trellises) to US$ 3,646 (High and medium density orchards) at full development (maturity). The farmers who rehabilitated old orchards will have annual incremental income of US$ 291 (apricot) to US$ 649 (other orchards) at full development. Under the components of "Livestock & Extension", per household annual incremental income has been estimated at US$ 486 from poultry unit (31,214 households benefitted under this subcomponent) and US$ 103 under the subcomponent of animal production and health. The increased capacity of the improved farms for horticulture production and income generation after the NHLP interventions is clearly perceived by farmers and by the other stakeholders, which is ultimate success of the project.

46. The ERR for the NHLP investments has been estimated at 28.1 percent, NPV with 6 percent discount rate at US$ 1461 million and NPV with 12 percent discount rate at US$ 585 million. The results are highly positive and higher than originally estimated at appraisal (ERR 24.9 percent). The difference in the values comparing with the appraisal estimates is since the NHLP achieved nearly full targets, rather beyond the targets in some subcomponents at lesser costs estimated at appraisal. The sensitivity analysis tested the robustness of the ERR considering if it takes 10 years instead of the assumed eight years in attaining the full development after completing the implementation. It is estimated that the ERR would drop to 22.6 percent. Even under the COVID-19 scenario, if the operational costs double, the EIRR does not fall below 15.6 percent, implying that the impact of the project is positive, and the investment was economically justifiable. The analysis proves that the value of ERR is robust, and reveals that the ERR is more sensitive to delay as compared to reduction in benefits.

47. **GHG Accounting**. The World Bank uses the Ex-Ante Carbon-Balance Tool (EX-ACT) to estimate the impact of agricultural investment lending on GHG emissions and carbon sequestration. EX-ACT is a land-based appraisal system for assessing a project's net carbon balance-used for NHLP. The analysis reveals a carbon sink of 2,175,410 tCO2-e or 87,016 tCO2e per year resulting from agricultural area improved under the project for new orchards and for rehabilitation of existing orchards. With the inclusion of climate co-benefits from the reduction of GHG emissions into the economic analysis, the ERR of the project is 29.2 percent and the ENPV is US$1533 million, considering the upper bound of carbon pricing in the World Bank guidelines.

48. **Implementation Efficiency**: Despite high economic efficiency, NHLP's implementation efficiency was weak. The project experienced several implementation challenges - severe start-up delays, project management positions remained unfilled for several years, poor contractual management system, weak M&E capacity, high staff turnover, and low procurement capacity. Despite using close to the entire allocation (95%), and overall expenditures in local currency terms (due to a depreciation of the Afghani currency) were 63% more than estimated at appraisal, NHLP did not achieve many targets at project closing. Issues relating to procurement and financial management led to an in-depth fiduciary review by INT and the review revealed significant weaknesses in the project management and fiduciary controls of NHLP, such as poor contract management, lack of integrity in staff hiring, weak asset management, differences in financial reports and underlying records, and shortcomings in internal and external audits.

49. However, it should be noted that PDO, scope, targets, and implementation modalities were deemed too ambitious given the high risks and low capacity FCV environment in Afghanistan. The unique operational environment faced by this project cannot be overstated: volatile security conditions, weak institutional capacity and experience, and inadequate fiduciary arrangements. Project implementation through government and community institutions with much less international technical assistance helped NHLP to reach large number of beneficiaries across Afghanistan with significantly low implementation costs. HLP supported 70,000 farmers with implementation costs of US$19.72 million, while NHLP supported 676,000 beneficiaries with implementation costs of US$36.4 million, implying the reduction of implementation cost per beneficiary by 80 percent, from US$282 to US$54. Thus, despite weak implementation efficiency, NHLP did demonstrate some efficiency gains from its predecessor project in terms of implementation cost per beneficiary.

50. On balance, efficiency is rated as *Substantial*. This rating accounts for the high economic efficiency at completion (relative to that at appraisal) and weak implementation efficiency in the context of the difficult operating environment and the implementation efficiency gains (implementation cost per beneficiary) compared with its predecessor project, HLP.

D. JUSTIFICATION OF OVERALL OUTCOME RATING

51. The overall Outcome rating for NHLP is Moderately Unsatisfactory (MU). This accounts for the Substantial rating for relevance of the PDO, Modest rating for efficacy, and Substantial rating for efficiency.

E. OTHER OUTCOMES AND IMPACTS (IF ANY)

Gender

52. The review of the project documents and findings of the external evaluation study illustrates that NHLP contributed to women's incomes and empowerment significantly. From the beginning, the project made significant effort to close gender gaps by ensuring female inclusion in the target beneficiaries with strong focus on activities where women's engagement is relatively high. The support for poultry activities was dedicated to women beneficiaries only. The Project exposed women farmers to improved farming technologies and practices. Therefore, support for off-season vegetable production, kitchen gardening, and poultry contributed to increasing income for women's participating in the project. NHLP provided trainings to both males and females' farmers and a good gender balance was maintained in case of training support with special attention to training venue location, transportation, and overall facilitation. NHLP contributed to introducing and building the capacity of female extension workers which is critical for working closely with female farmers. The project trained and engaged female para-vets through VFUs, in very VFU there was one male and one female para-vet. Also, NHLP provided basic nutrition training to female farmers which was highly welcomed by the beneficiaries.

53. The project benefitted 264,192 women, against the target of 220,400, accounting for 45% of total project beneficiaries. Under the horticulture component, NHLP supported 143,657 new kitchen gardens against the target of 90,000. Under the poultry sub-component, 3,000 Poor women with semi-commercial 100 bird model supported, and another 25,000 ultra-poor women were supported with the 30 bird improved backyard poultry. The project also worked on market linkages under kitchen gardening training women on collective purchases and sales and supported producers' groups by financing basic investment and/or providing input/assets for the group. The project also provided a platform for women come together, learn from each other, and have a social space which is high important especially in the rural areas for women. The success cases of NHLP's support to women beneficiaries were featured in multiple World Bank blogs and feature stories. Two feature stories (*Afghan Women Grow their Income through Kitchen Gardening* and *Kitchen Gardening Activities Empower Thousands of Unskilled Women in Eastern Afghanistan*) highlighted how NHLP's kitchen gardening program (provided training and gardening tools along with extension advise) helped thousands of women farmers improving their productivity, incomes, and overall food security.

Institutional Strengthening

54. Some progress has been made on the strengthening of institutions, but the aim to strengthen capacity at various levels and with various tools has not been fully realized. Involvement of MAIL/DAIL staff in service delivery and capacity building of farmers and promotion of best agricultural and livestock practices were the main elements of NHLP's sustainability. NHLP promoted local ownership by institutionalizing VFUS for effectiveness and suitable supply of services in the project. Under the horticulture component, institutional capacity was strengthened more from farmers side in terms of formation common interest groups (CIGs). It is important to note that these activities are very significant for the delivery of key services to smallholder farmers in terms of extension and advisory services (FLRCs) as well as marketing services and integration to value chains (linkage with buyer traders/merchants and processor). For the latter, however, NHLP could not address challenges in federating CIGs

into Producer Marketing Organizations (PMOs) given the limited institutional capacity of CIGs and the important support required for establishing PMOs.

55. For livestock activities, MAIL had taken over most of the project activities and is administering the vaccine campaign and all the sanitary mandate works which demonstrates the institutional ownership. Moreover, MAIL is supervising 25 provinces for brucellosis control program and 26 districts for sanitary mandate and contracting scheme where there is no more NHLP involvement, which is the robust evidence of its capacity.

56. As stated above, extension is one key component of the project which is almost institutionalized. NLHP promoted local ownership by institutionalizing CDCs and lead farmers and VFUs for the sake of effectiveness and suitable supply of services to project beneficiaries. The lead farmers eventually led the PMOs and FSCs at district level working as local, public, and private sector agents. The lead farmers and FEAs also acted as Master Trainers in ToTs, ensuring retention of BAP knowledge at local level. Moreover, the structures, orchards, trellising of vineyard and other NHLP interventions remain as the demonstration plots/structures that the farmers will continue to use to learn about GAPs even after closure of NHLP.

Mobilizing Private Sector Financing

57. Supporting the private sector is the key to sustainability, which NHLP tried to accomplish but the most important part of the support that is linking the producer with processor and markets was not pursued before the project closure in 2020. Establishing milk collection points and centers at clusters to enable the farmers to sell their surplus milk and other products was a very relevant activity but the project failed to implement it. Also, NHLP failed to implement two other planned activities for the private sector: supporting to 4 peri-urban private sector dairy driven entrepreneurs; and supporting to 50 private sector dairy entrepreneurs.

58. On the other hand, while NHLP did not track and measure mobilizing private sector financing explicitly, project beneficiaries did put their own money for some of the activities implemented by the project, mobilizing their private capital to cost share in some investments. Furthermore, several project-supported activities have contributed to strengthening the development of the private sector. For instance, Producer market organizations (PMO) were established after FFS trainings of specific horticulture products and linked to district Farmer Service Centers to build the linkages with private sector stakeholders (such as traders, middlemen and/or retailers). NHLP organized a total of 135,131 target households into 5,924 producer groups under orchard rehabilitation, kitchen gardening, livestock extension and poultry program. The PMOs were also trained in how to gather and analyze market information, to improve their awareness and capacity to negotiate with buyers. NHLP's influence was also felt in the integration of farmers in global value chains in at least two instances: The project's extension and investment support to horticulture producers, particularly raisin producers, motivated the collaboration of IFC and MIGA to catalyze private sector investment in Rikweda Fruit Process Company (Rikweda) and source raisins from NHLP farmers. Also, some of NHLP's women beneficiaries were connected to McCormick, an international supply chain company for agricultural products, which ensured better pricing for their produce, along with extension advices on post-harvest processing.

Poverty Reduction and Shared Prosperity

59. NHLP focused on rural areas, where incidence of poverty is highest, and it did target poor and ultra-poor women to support with the poultry investment package. The project had covered most provinces with high rural poverty rates. The external evaluation study results showcased a significant positive change in beneficiaries' livelihoods and incomes. The *Jobs from Agriculture in Afghanistan* report estimated that NHLP's horticulture activities created about 10,000 FTE jobs and most of these resulted from direct job creation effects. The report also demonstrated that the livestock extension activities supported a significant number of indirect jobs through extending farmers employment time for livestock rearing activities. The improvement in farmers' livelihoods and incomes with project support has been demonstrated in many World Bank blogs and feature stories throughout the project life. For example, the blog-*Farming innovations improve livelihoods and incomes in Afghanistan's Balkh Province*-(December 5, 2017) demonstrated how NHLP's support of improved practices and technologies along with extension support enhanced productivity and incomes of farmers in Balkh province. The selection criteria of the NHLP was also pro-poor and targeting and engaging women was explicit in both the initial project design and AF in 2016. Under the livestock component, the project did support 28,000 poor women beneficiaries (25,000 ultra-poor women and 3,000 poor women) with investment packages of 30 layer/ broiler model and 100 layer/ broiler model respectively. While the poverty impact of NHLP was not assessed separately, the external evaluation study revealed that the poultry activities increased, on average, US$ 80 per month among the poor and ultra-poor women beneficiaries-a net monthly income increase of USD 40 for ultra-poor women who were supported by the 30-layers poultry model and a net monthly income increase of USD 123 for poor women who were supported with the 100 layer and broiler model. The external evaluation study also revealed that NHLP's support contributed to an increase of US$94 per month among the bee keeping beneficiaries; an increase of US$ 430 net income/ cycle/ pond among the fishpond beneficiaries; and a 10% decrease in milk spoilage among the dairy beneficiaries.

Other Unintended Outcomes and Impacts

60. After the breakout of COVID-19 pandemic, NHLP has contributed to awareness and developed extension material and distributed it to the lead farmers, extensions workers and veterinary field units to inform the farmers to take the precaution measures. The project also provided equipment and testing kits for the COVID-19.

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

A. KEY FACTORS DURING PREPARATION

61. Based on the experience of earlier IDA and ARTF projects in Afghanistan, given the still volatile security situation, and limited institutional capacity, the project, at preparation, anticipated serious and tangible challenges throughout the implementation period. While project design was like its predecessor HLP, MAIL still had limited capacity (technical, managerial, and fiduciary) and experience along with insufficient transparency in its personnel management and accountability in procurement and contract management. Risks related to the low capacity of ID/MAIL, and the high capacity needs for coordination were adequately identified at design.

62. **Design/technical risks:** The project preparation identified substantial risks related to stakeholders' limited buy-in of project support, limited capacity of local implementation support agents, and limited ownership of MAIL Directorates which was crucial for sustaining project investments and development outcomes. To mitigate the low buy-in risks, the project planned to act on expressed demand from potential beneficiaries and involve local lead farmers for extension delivery and group development. Also, project focused on traditionally female

dominated activities for larger female involvement. To ensure, MAIL's ownership, the project emphasized on implementation modality with greater role for MAIL in project activities. However, The AF in 2016 expanded the scope of the project in terms of both geography and activities without much mitigation measures to the expanded risks emerged from the wider project scope. During the AF, the Bank supervision did not identify the key issues including fiduciary and M&E data integrity.

63. **Procurement risks:** Procurement was identified as a major risk and the weak capacity of MAIL was identified as a constraint. The High-risk rating for the procurement automatically reduced the value threshold for prior review in Afghanistan. Yet, a large number of procurement packages fell under post review due to small value size of the procurement packages. Mitigation measures such providing periodic training and inclusion of an International Procurement Advisor (IPA) was not adequate and specific enough to address future procurement challenges faced by the project. Also, the project paper for the AF in 2016 stressed less on the procurement risks as it noted that, moving forward, the IMST would better manage procurement processes in accordance with the agreed standard because (a) the ISMT had learned from past experiences; (b) it hired additional staff, particularly an International Advisor to addresses the capacity gap; (c) procurement activities under the AF were of the same scale and complexity as the original project; and (d) the Ministry's leadership supports the reform agenda.

64. **Financial management risks:** Financial management was also identified as a major risk due to weak internal controls at MAIL with risk of misappropriation of funds and delay in preparation and submission of acceptable financial reports. Appropriate mitigation measures were put in place to minimize FM risks. However, the mitigation measures did not adequately reflect some select fiduciary risks that have been identified by the in-depth fiduciary review in later stage of the project and, NHLP did not follow the mitigation measures diligently. The in-depth fiduciary review revealed significant weaknesses in the fiduciary controls of NHLP, including: (i) poor contract management; (ii) integrity concerns in staff hiring; (iii) extensive reliance on cash payments; (iv) weak asset management; (v) payments in excess of the approved budget and without specific No Objection Letter (NOL) from the Bank; vi) differences in financial reports and underlying records; and (vii) shortcomings in internal and external audits. The review resulted in declaring approximately $2 million as ineligible expenditures.

65. **Monitoring and Evaluation Risks:** There were technical gaps in data collection and design, particularly given the absence of an external M&E agency in the M&E system. The initial Results Framework was complex, and many indicators were not specific enough. Therefore, the RF had been streamlined significantly during the 2016 AF. The revised RF was simple and clear, and included key output measures at the component level and appropriate outcomes measures at the PDO level, with baseline and target values included, where possible.

B. KEY FACTORS DURING IMPLEMENTATION

66. **Worsened security situation:** Afghanistan is a fragile country that witnessed constant conflicts throughout the project implementation period. Conflict and insecurity progressively worsened. This resulted in less attraction and retention of national staff, international consultants, and firms for project activities. Since 2014, field visits were not part of the implementation supervision missions due to security concerns. The TPM became the primary vehicle for non-PIU supervision. Also, NHLP established itself as the single largest nonpolitical agriculture development program in the rural communities. In all cases the lead farmers, CIGs, CDCs, and the Veterinary Field Units became key to mitigating emerging security risks.

67. **Procurement delays:** The project became effective soon after Board approval, but procurement delays affected implementation significantly throughout the project life. It took almost three years to fill all the positions in the Project's Procurement Unit. Most of the procurement assignments were not processed timely and, in most cases,

the evaluation process in procurement took longer than the agreed timeline. For example, the recruitment of a firm for the mid-term evaluation took more than three years and the evaluation was carried out at the closing year of the project. Successive AMs noted the delays in the procurement process at MAIL which affected all World Bank funded projects, and offered assistance (such as a Workshop to be hosted by the Bank, to review current practices and identify bottlenecks and provide suggestions accordingly). However, in many cases, recommendations made in AMs were not followed up diligently. Even at the later stage of the project implementation, it was noticed that the time taken for completion of the procurement process was lengthy, and, in some cases, it took more than 100 days for the MAIL to complete the contract award (starting from Bid/Proposal opening).

68. **Fiduciary Issues:** The concerns regarding fiduciary issues were raised persistently in successive ISMs, AMs, and management letters. Control and compliance mechanisms of the procurement unit have been weak throughout the project life and it has been reflected in many AMs. For example, in 2016, the PPR of 12 procurement cases with a total value of about USD 2 million identified major deviations of procurement guidelines in three cases. The AM for the ISM in November 2016, raising this concern, noted that these cases were downplayed by NHLP management as minor ones. Addressing these cases could reduce the extent of deviations from procurement guidelines in future contracts. External audits repeatedly identified questionable/ineligible expenditure and deviations from the agreed CDC Procurement Manual.

69. The project lacked a functional contract management system. Inadequacy in internal controls were also reflected in different AMs. The Bank as the ARTF trustee with the fiduciary responsibility, initiated the in-depth review of NHLP in April 2019 to verify expenditure eligibility, economical and efficient use of funds and operations of the project control mechanisms. The in-depth fiduciary review revealed numerous control weaknesses in the ways in which the MAIL managed NHLP. The review identified and confirmed several systemic fiduciary issues in procurement that indicate a breakdown and a lack of integrity in the process and procurement function within NHLP and MAIL. Multiple instances of factual errors in bid evaluation reports were noted that benefited selective bidders. The limitations also extended to the Bank where (i) its supervision missed or overlooked some red flags and/or (ii) its supervision identified fiduciary issues and red flags, offered corrective actions such as establishment of contract management system and recruiting quality procurement staffs, and however, (iii) it did not ensure that the MAIL appropriately followed up on and remediated identified issues.

70. **Institutional control:** The complexity of the project, capacity constraints, and the weak institutional environment all contributed to implementation gaps. Moreover, the overall governance structure of NHLP did not always function as intended. The Project Implementation Manual (PIM) lacked details on how to carry out specific control activities and who was responsible for each activity, and there were instances of non-compliance with the prescribed procedures. Furthermore, although shortcomings were flagged in audit reports and aide memoires, MAIL and NHLP often failed to follow up and rectify the observed weaknesses. A critical weakness in NHLP' service delivery structure was the lack of institutional control in providing benefits to farmers and collecting contributions.

71. The project has suffered from numerous allegations regarding malpractices of distribution of benefits like sapling procurement and distribution, which may have been easier to spot and address had institutional controls been present. Institutional control lacked despite that CIG as a community level institution was a key player in NHLP's service delivery structure. Over the years, CIGs did not evolve beyond a loose agglomeration of farmers under a lead farmer at the level of a CDC. This was a major lost opportunity since CDCs do have the authority to provide

a degree of oversight for government projects at their level. The CIGs were never brought under the CDCs, oversight, or advisory mandate. Also, the CIG never got its own clear mandate, it had no role in procuring and distributing benefits, or collecting and channeling farmer contributions since these were done by NHLP team. The CIG also suffered from a complete lack of record keeping.

72. **Weak M&E Oversight:** The weak M&E capacity of the project has been always an issue. The key M&E positions remained vacant till the 2016 AF. The project did not complete the mid-term review evaluation on time, which was a missed opportunity to inform the project's decision-making process. Instead, an external evaluation study was completed in August 2020, just four months before the project closing. The delay in conducting MTR was raised in a couple of AMs but was not addressed properly. The Bank team should have been more prudent and persistent regarding this important M&E milestone by raising this concern in successive AMs. The weak M&E capacity has also been reflected in persistent problem in M&E data quality (e.g., high overlap in MIS beneficiary data) and the lack of project completion report for NHLP. Despite the agreed action on the preparation of the Project Completion Report (PCR) during the ICRR mission, NHLP did not prepare the PCR at the closing. The PCR could have been an important information source for the ICRR.

73. In early stage of project implementation, there were gaps in M&E oversight and support from the World Bank, particularly in evaluation and the completion of surveys. After the 2016 AF the Bank team started to review the M&E results presented by the project and the crack in the M&E design started to appear. The concern regarding the M&E issues have been first flagged in the AM for ISM in June 2016 and it did prevail till the project closing. There were technical gaps in data collection and design, particularly given the absence of an external M&E agency. After the 2015 AF, the Bank team pushed for hiring a M&E firm to support the project improving M&E quality, but it did not happen till the project closing in 2020. In some cases, the Bank team utilized the option for third party monitoring institutions which verified project results through field visits and complement the findings from the external evaluation.

74. **Other Factors within World Bank's Control:** The World Bank was reasonably proactive in allowing for corrective action and for scaling up of successes, despite a high turnover of TTLs. This was demonstrated by an initial flagging of poor procurement performance and weak implementation capacity. During the AF in 2016, the task team engaged with the Ministry's leadership to respond to the audit observations and to improve the capacity of the procurement team to mitigate any potential future issues. However, inclusion of market access activities with a subcomponent in each major component was ambitious and was not backed up by enough and sound technical assessment of its feasibility. The project lagged significantly in the implementation of those newly introduced activities and most related IRIs remained unmet at the project closing. Yet, the PDO and IP ratings in successive AMs did not reflect the challenges NHLP faced during implementation.

75. Also, four TTLs were engaged through the project life and there was some lack of continuity and therefore of persistence in pushing some concerns (particularly related to M&E issues) throughout the implementation period. For example, during the 2016 AF, NHLP agreed to hire an M&E consulting firm for the M&E system, but it was not pursued enough after the change in project leadership within the Bank. Given the Bank's policy on shorter limited terms for FCV staff assignments for reasons of mental health and safety, high turnover was unavoidable, being a product of this policy. Other factors included uncertainty around actual size of grant cancellation for the Covid-19 response, which also contributed to slowdown in implementation activities in the last year of the project. After the spread of Covid-19 pandemic in March 2020, the World Bank and the GoIRA planned cancellation of the entire undisbursed grant in the amount of US$23 million at the time and close the

project ahead of its December 31, 2020 original closing date. However, it was decided on June 26, 2020 to cancel the uncommitted amount of US$12.5.

76. **Covid-19 and impacts.** The pandemic and related measures affected NHLP activities throughout country as lockdown and border closure issues caused delay in the supply of procured inputs. Project implementation had slowed down from March 2020 since a large share of project staff was affected by COVID-19, creating shortage of human resources to implement activities. To limit COVID-19 transmission, the PMU changed the advisory and extension approach from group gathering to sub-group and individual contact to keep social distance, but this arrangement increased workload of lead farmers and extension workers. In addition, the COVID-19 pandemic shifted the priorities and the Bank's focus on the portfolio adjustments led the decision to cancel the balance of the financing grant. Together with portfolio adjustment and shifting of priorities, the COVID-19 pandemic stalled project implementation from April-December 2020.

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

A. QUALITY OF MONITORING AND EVALUATION (M&E)

M&E Design

77. The M&E system was designed to serve as a management tool to support decision making, learning, accountability, and results monitoring with following two key components: (i) concurrent monitoring of physical and financial progress; and (ii) monitoring PDO and intermediate outcome indicators through periodic outcome surveys. The Implementation Management Support Team (IMST) in MAIL was expected to carry out the M&E functions of the project. The M&E system was expected to expand M&E capacity used by HLP, the predecessor project of NHLP, in data collection, analysis, and reporting to effectively function as an integral part of project management. NHLP was also expected to engage MAIL M&E officers at district level –where available– and build capacity in data collection. Key functions of the M&E system were outlined with reasonable clarity at the preparation stage. During the restructuring for AF, the RF was streamlined and PDO indicators along with Intermediate results indicators were modified further to reflect project performance better in the RF. The M&E design also noted down the data collection process and analytical design for the performance evaluation of the project.

78. However, the M&E system had three design shortcomings: (a) there were technical gaps in data collection and design, particularly given the absence of an external M&E agency and the proposed international TA; (b) it did not specify regular thematic studies to conduct to aid improvement of project performance; and (c) the initial RF was complex and the definition of some of the PDO indicators were ambiguous which had to be modified during the restructuring in 2016. Moreover, the scope of the indicators was too broad and did not fully capable of attributing with project activities.

M&E Implementation

79. The recruitment of all staffs for the M&E unit in the regions and HQ took long time and the team was not fully onboard even before the AF in 2016. However, the Management Information System (MIS) started collecting data from the second year of the project and continued throughout the life of the project. The M&E team prepared regularly quarterly and annual progress report and submitted formally to the Bank for their review and comments. However, in the early stage of the project, the quality and reliability of MIS data, particularly the double counting of beneficiaries, was not flagged by the Bank team and thus, the project continued to rely on the MIS data to

measure project's performance. Therefore, the project maintained its satisfactory outcome till 2018 when the quality issues in the M&E data has been flagged by the World Bank M&E specialist. Much of the downgrading in ratings in recent ISMs was mainly because the project did not have quality data on tracking results. In later stage of the project, the Task Team provided handholding and hands-on support to the NHLP M&E team to overcome the data challenges. Nevertheless, there have been significant gains in creating a comprehensive beneficiary database, which is largely free of overlaps

M&E Utilization

80. The collected MIS data was utilized to prepare periodic reports and track project achievements. Output information crucially informed management and decision-making. Data on outcomes did inform the upscaling of the project in 2016 (AF). During the decision on AF in 2016, the PDO indicators were on track achieving their targets. However, the identification of data quality issue in 2018 (particularly overlapping in beneficiaries' data in the MIS) made it difficult utilizing pre-AF M&E data for measuring project performance.

Justification of Overall Rating of Quality of M&E

81. The Quality of M&E is rated Modest. This rating considers the moderate shortcomings in M&E design, and the significant shortcomings in M&E implementation and utilization. The M&E of the project was well designed but there were challenges in its implementation which limited the use of the results in measuring project performance. However, the M&E system for the project did overcome some of these challenges with support from the M&E specialist from the Bank team and produced a reliable external evaluation of the project.

B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE

82. **Safeguards:** The project prepared Pest Management Plan (PMP), ESMF and ESMPs which NHLP largely adhered to during the project implementation. A GRM system for the project was established and accessible to beneficiaries and public. The project prepared and implemented relevant site specific ESMPs using the ESMF tools and the PMP plan for the subprojects. NHLP has developed and applied some good IPM approaches for managing pest and diseases in the relevant project areas. NHLP has carried out an Environmental and Social Safeguards auditing with the help of an independent consultant. The auditing report highlighted some achievements and issues regarding environmental safeguards compliance. By the project closing, the overall safeguards rating (and those for the first three triggered policies with ratings), was Moderately Satisfactory. However, there were issues that remained unresolved at closing: (i) the PMU did not get sufficient data on field level monitoring and reporting mechanism; (ii) the safeguards management plans for aquaculture, poultry farms were not available; (iii) the Occupational Health and Safety (OHS) including COVID-19 Infection Prevention and Control (IPC) system were not reported satisfactorily; (iv) lack of data on the environmental and social audit report; (vi) lack of progress report on the implementation of pest management/integrated pest management issues; (vii) the Project did not have any Environmental and Pest Management Focal Point and it was not clear which of the audit report recommendations were complied with.

83. A comprehensive and effective GRM system was established with an approved GRM manual and with an easy access to project affected people. Since the beginning of the project, 367 grievances have been registered and resolved. The grievance report indicates that a total of 147 grievance registered against distribution of Off-type varieties and 22 grievance for dried saplings. out of 367 grievances, 44 grievances were registered by women under the NHLP GRM system. These complaints were largely related to the quality and late delivery of inputs and

services delivered by the project staff, suppliers, and contractors. Complaints reported, addressed, and pending is being followed up by the safeguards team, and is being reviewed by the Bank team.

84. **Procurement:** Procurement for the NHLP project was an issue throughout the project implementation period with challenges such as long delays, integrity, inability to hire qualified procurement staff etc. While the project was rated as Satisfactory with respect to implementation and achievement of development objectives, several concerns of potential fraud and corruption on the part of MAIL and NHLP were raised publicly and with the Bank, which prompted the in-depth fiduciary review of the project, discussed above. The Bank as the ARTF trustee with the fiduciary responsibility, initiated the in-depth review of NHLP in April 2019 to verify expenditure eligibility, economical and efficient use of funds and operations of the project control mechanisms. The project in-depth fiduciary review identified several deviations from agreed procurement procedures and arrangements and some of the observed deviations have been declared as ineligible expenditures. As a result, procurement was rated Unsatisfactory at the closing.

85. Financial Management: The FM performance rating of the project remained Moderately Satisfactory until the last ISM in November 2020 when it was downgraded to Moderately Unsatisfactory based on the findings of the in-depth fiduciary review report, and the results of the external audit report for 2019. The project team submitted Interim Unaudited Financial Reports (IUFR) and audited Financial Statements on time with acceptable quality. As per the latest The Interim Unaudited Financial Reports (IUFR)/ SOEs for the 4th Quarter 2020, which ended on December 22, 2020, the project had a cumulative disbursement of US$176.25 million against the commitment of US$176.33 million. The project's responsiveness to audit and supervision observations improved over time and currently there was no pending unaddressed audit observation at closure.

86. The disbursement rate remained satisfactory and most of the issues raised in the implementation support mission were addressed. Some key FM issues raised during the different missions included: (a) delayed budget allocation for field activities; (b) lack of a proper system to record farmers' contribution to project investment support programs; and (c) in certain instances, non-compliance with petty cash guidelines. These issues were raised during the missions and corrective actions were taken by the ministry to improve the situation. During the AF, it was expected that the project FM would be strengthened by appropriate actions of the Government counterpart, including: (a) Appointment of a capable International Finance Advisor to oversee overall financial management of the project and build project staff capacity;(b) establishment a proper system to record farmers' contribution; (c) closely monitoring of fund flows (including advances, payments, and settlement of advances); and (d) improving the internal control system. However, these issues remained persistent throughout the project life.

87. The in-depth fiduciary review of the project identified a total of US$1,960,358 as ineligible expenditure mainly due to procurement non-compliances, which has been refunded by the government. The limitations also extended to the Bank where (i) its supervision missed or overlooked some red flags and/or (ii) its supervision identified fiduciary issues and red flags, but it failed to take corrective action in relation thereto, and/or (iii) it did not ensure that the MAIL appropriately followed up on and remediated identified issues. In the highly risky operational environment in Afghanistan, the Bank could have done more to ensure fiduciary compliance via stronger oversight as well as implementation support.

C. BANK PERFORMANCE

Quality at Entry

88. The project was well aligned with the Bank's strategy for Afghanistan, as well as with the country priorities and development challenges. The project design could have been more realistic. The project design was built on the lessons from the HLP, but with a huge scale-up from 11 districts to 100 districts and with the change of implementation modalities involving government and community institutions with less international technical support. While it was opportunistic and had a good objective of getting the government involved, given the government department implementation capacity constraints this was perhaps too optimistic, especially to implement a farmer-centric approach of service delivery. The M&E arrangements at design were moderately adequate and the results framework could have been better structured with less than 25 indicators.

89. While the fiduciary and social risk assessment adequately foresaw the key risks and instituted mitigation mechanisms, these were not adequate, particularly those relating to fiduciary aspects. Fiduciary risks were identified as major risks to project mainly due to the weak capacity and internal control of the client. The High-risk rating for the procurement automatically reduced the value threshold for prior review in Afghanistan. However, mitigation measures such providing periodic training and inclusion of an International Procurement Advisor (IPA) was not adequate and specific enough to address future procurement challenges faced by the project. Financial management was also identified as a major risk and appropriate mitigation measures were put in place to minimize FM risks. However, the mitigation measures did not adequately reflect some select fiduciary risks that have been identified by the in-depth fiduciary review in later stage of the project and, NHLP did not follow the mitigation measures diligently.

Quality of Supervision

90. The Bank had some shortcomings during supervision, most notably the lack of oversight to M&E implementation, the weak appraisal of the AF operation in 2016, and the failure to identify some fiduciary red flags in the early years. There were considerable gaps in Bank M&E oversight, particularly in ensuring timely and quality data collection and measurement and evaluation of outcomes, indicating a slightly weaker focus on development impact. NHLP failed to carry out the Mid-term review (MTR) assessment in timely manner due to the consistent low procurement capacity of the client. Due to the lack of MTR assessment, there was limited or no scope to follow an evidence-based approach in decision making process and addressing critical issues in project implementation. The project also failed to prepare the project completion report (PCR) at the closing. The Bank failed to persistently pursue the client to carry out these key assessments and the M&E ratings, which are mostly *Satisfactory*, in successive ISMs till mid-2019, did not reflect the project's failure to timely quality data collection and weak M&E capacity.

91. However, it should be noted that the Bank team stepped up scrutinizing M&E data quality and pursued the client to carry out an external evaluation study at the year of project closing. In late 2019, the Bank took strong measures to strengthen the M&E system by: (i) holding semi-monthly and monthly implementation monitoring meetings with the Bank team, partners and the Project Management Unit (PMU), and with MAIL, respectively to identify bottlenecks and take corrective measures; (ii) focusing on activities that are key for achieving the PDO and align the project work plan and budget and procurement plan with priorities to streamline implementation and monitoring; and (iii) updating the database of the MIS and revise the data collection methodology (i.e., use of a new book of record) to improve quality of data and inform the project. However, at less than one year and half

to the project closing date in December 2020, the time was too short to achieve the expected results, especially since the Covid-19 outbreak staleld the implementation of the project from March 2020 onwards.

92. The concerns regarding fiduciary issues were raised persistently in successive ISMs, AMs, and management letters. Inadequacy in internal controls and compliance mechanisms of the procurement unit were weak through the project life and were reflected in many AMs. Bank fiduciary team put efforts to overcome shortcomings in the procurement process identified through prior review. Important measures were implemented, including: (i) recommending recruitment of an international procurement advisor; (ii) removing all packages assessed with high governance risks based on the Third-Party Monitoring Agent (TPMA) report; (iii) revision of procurement/ implementing procedures (use of voucher system); and (iv) updating the project operations manual. However, NHLP had a highly dispersed project implementation and Bank's prior review covered more than 70% of the contracts in terms of value, which was only about 25% of the contracts in terms of number. 75% of the contracts were low value and items repeatedly procured through the years. While the overall value was also low, this huge number of contracts fell under post review category and thus had the limitations on supervision. None of the 7 contracts declared misprocurement after in the depth fiduciary review belonged to this prior review category.

93. Also, the AF operation in 2016 was poorly appraised. The addition of postharvest and market linkage activities, the expansion of project coverage from 22 provinces to 34 provinces, and the scaling up of the adoption targets in the PDO indicators set the bar too high for the project, especially when there was no reliable evidence on NHLP's achievement of PDO results. Also, with only US$58 million out of the original US$100 million being disbursed at the AF juncture, the scaling-up operation appears to have been premature.

94. The Project Ratings did not adequately reflect poor performance. The PDO was rated Satisfactory (S) since the beginning of the project, and it was downgraded to Moderately Satisfactory (MS) only after the last ISM mission in November 2020. The Implementation Progress rating also maintained Satisfactory rating since the beginning of the project implementation, and it was downgraded to MS in April 2019. Despite the many fiduciary issues identified during successive missions, ratings for FM and Procurement varied between Satisfactory and Moderately Satisfactory throughout the project life till the ISM in August 2019 when the procurement rating was downgraded to MU and the FM rating was downgraded to MU in November 2020. The M&E ratings in successive ISMs did not reflect persistent delays in different important M&E milestone and persistent problem in M&E data quality The Bank team could have been more candid while assigning ratings to reflect the weak implementation progress.

Justification of Overall Rating of Bank Performance

95. Bank performance is rated as Moderately Unsatisfactory. The rating accounts for: (i) the significant shortcomings both at the entry and during implementation and supervision; and (ii) the strong efforts made by the Bank team at the later stage of the project by providing technical support to improve quality of the MIS data, and by taking other corrective measures promptly following the in-depth fiduciary review. With moderate shortcomings at the entry mainly due to change in implementation modality and the huge scale up from its predecessor project, the Bank missed some opportunities, particularly during the restructuring for the AF in 2016, to adopt some mitigation measures to overcome some of the challenges identified in early years of project implementation. Reporting by the Bank was not candid and its overly complementary rating on a range of project implementation attributes failed to reflect the weak implementation progress. Though the Bank stepped up oversight on fiduciary and M&E

data quality following the in-depth fiduciary review, it was too late to steer the project achieving its intended results.

D. RISK TO DEVELOPMENT OUTCOME

96. **Continuation of the extension system.** NHLP aimed at increasingly transferring financial and managerial authority and responsibilities to MAIL counterparts in the interest of ensuring the long-term sustainability and transfer of knowledge to the relevant directorates of the line ministry. However, this has not happened. The risk is ensuring sufficient resources to maintain the extension system as the government is lacking resources. The support is declining from donors which is evidenced in many reports and maintaining the extension system built by NHLP is a key challenge. Among the NHLP trained extension staff, some have started doing their own farming, some have opened agribusiness shops, and some have moved to other relevant projects. MAIL could not recruit all of them due to resource constraints. This is a real risk to the sustainability of development outcomes achieved by NHLP.

97. **Security and Fragility:** Security is a continued risk in Afghanistan and the security situation in the country is worsening. Therefore, stable prices, qualified experts, and investors' confidence will continue to be major concerns. The key risk to the development outcomes achieved is the same root issue that necessitated the Project. Conflict and insecurity had weakened the value chains for horticulture and livestock sector and weakened local community institutions which are tasked with the responsibility for continuing support to NHLP beneficiaries.

V. LESSONS AND RECOMMENDATIONS

98. *Demand-driven and participatory approach if is key to effective implementation and adoption of technologies and knowledge under extension service delivery project like NHLP*. Though NHLP did not achieve some of its set targets in the RF, the impact on the beneficiaries were shown to be significant, as reflected in the external evaluation assessment. NHLP's demand driven approach for investment packages along with the active engagement of community organizations- CDCs, VFUS and EFAs-proved to be very effective achieving intended results. The project considered the local culture and norms in the process of designing and implementation of project activities.

99. *To ensure women participation in project activities, the local social and cultural norms have to be considered in designing activities and the inclusion of women-friendly activities in projects has to be ensured.* NHLP supported a large number of women (around 40 percent of beneficiaries) in horticulture and livestock activities including kitchen gardening, micro greenhouse, and poultry. To ensure female's participation in project activities, NHLP included women-specific activities and provided training support to women beneficiaries with special attention to the selection of venue, transportation, and facilitation.

100. *A well-functioning M&E system should be in place at the very early stage of project implementation to ensure quality data collection and reliable results monitoring.* NHLP's weak M&E system is a key factor behind the project's failure to address some key challenges (e.g. ambitious project scope and targets) in early years of project implementation. Instead, poor quality data collected by the M&E system created false expectation and led to a significant scale up of the scope and targets during the AF in 2016, which was a lost opportunity to steer the project into its realistic targets. A sound M&E system could identify the issues on time and the findings could be incorporated into the project's decision-making project

101. *While a project building on a successful previous project, change in implementation modality in the follow up*

project should be gradual, particularly in a difficult operating environment. NHLP was built on HLP but with significant change in implementation modality and a huge scale up. While HLP was implemented with significant international technical assistance support, NHLP mostly relied on government and community organizations to implement its activities. The weak capacity of the client along with difficult operating environment led to the moderately unsatisfactory performance of the project. The gradual reduction of international TA support could have been an ideal strategy to build the client's capacity to implement the project efficiently.

102. *The decision of additional financing and restructuring of a project should be evidenced-based and supported by reliable data*. NHLP's achievement of the PDO results during the AF in 2016 looked promising, but the data quality was poor and not scrutinized for its reliability. This results partly motivated NHLP's significant scale-up in scope and PDO targets in the RF. These changes were setting up of the project failure at the closing. However, the AF in 2016 could have been a major opportunity to restructure the project with realistic scope and targets, should there been a credible M&E system and data collection in place.

103. **There are a number of further important lessons emanating from the in-depth fiduciary review of NHLP. Three key lessons from the review are**:
    a. *Increased consolidation of procurement packages, where feasible, should be considered as it would reduce the number of contracts under post procurement review.* A huge number of procurement packages in NHLP made procurement very challenging and left many small-value contracts below the threshold for the Bank's prior review. Limited procurement oversight for procurement packages under post review created scope for the deviations from the Bank's procurement guidelines, as demonstrated by the in-depth fiduciary review. To avoid fragmentation of procurement packages and limit interference and improve governance risk, procurement of inputs (seeds, animal feeds) and small agricultural equipment and machinery that are available in country markets, should be consolidated or transferred to farmer organizations or use of a Voucher System following the Bank and IFC global experiences.
    b. *When activities that are inherently risky from a fiduciary point of view are included, such as the distribution of consumables, the project design also needs to include an effective arrangement for activity and results monitoring, including robust third-party monitoring*. In the high-risk and low-capacity operational environment, dedicating more resources than in a business-as-usual situation is needed to design and monitor project-specific control frameworks. There is also a need to fiduciary oversight by the Bank to mitigate risks and ensure value-for-money.
    c. *In addition, enhanced and effective oversight by the Bank team on HR management, staff hiring, payroll, financial reporting, and contract management is necessary.* The fiduciary review has identified irregularities in HR management, staff hiring, payroll, financial reporting, and contract management. So, increased oversight by the Bank fiduciary team on these issues is important to mitigate those risks.

104. The World Bank should develop a very operational contingent instrument and mechanism for fast crisis response without disrupting the implementation of on-going projects. With the Covid-19 pandemic, the priorities have shifted from long-term development objective to emergency food security response and due to lack of IDA funding for Afghanistan, the World Bank adjusted the portfolio of projects to make available additional funds that can be immediately deployed as part of the COVI-19 response. The lack of flexibility of Bank-financing instruments to be adjusted to finance the Covid-19, response, led to significant disruptions and of the Bank portfolio of the projects and increased delays in the implementation of NHLP and the agriculture portfolio was largely reduced.

ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: PDO Objective

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Targeted clients satisfied with agricultural services (percentage)	Percentage	66.00 01-Jan-2013	75.00 01-Jan-2013		94.10 31-Dec-2020
Targeted clients satisfied with agricultural services - male (number)	Number	0.00	289040.00		259,685.00
Targeted clients satisfied with agricultural services - female (number)	Number	0.00	176320.00	189,347.00	147,238.00

Comments (achievements against targets):
The project has achieved and exceeded its original target as the actual value achieved at completion is 125 percent of the original target.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Target farmers adopt elements of the horticulture technology packages promoted by NHLP- Total	Percentage	0.00 01-Jan-2013	70.00 01-Jan-2013	75.00 01-Dec-2015	60.56 31-Dec-2020
Target Farmers that adopt elements of the Horticulture technology packages promoted by NHLP - Male	Percentage	0.00 01-Jan-2013	65.00 01-Jan-2013	75.00 01-Dec-2015	56.41 31-Dec-2020
Target Farmers that adopt elements of the Horticulture technology packages promoted by NHLP - Female	Percentage	0.00 01-Jan-2013	75.00 01-Jan-2013		64.72 31-Dec-2020

Comments (achievements against targets):
The project has achieved 87 percent of its original target and 81 percent of its revised target.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of producers with improved post production facilities, tools and market access-Total	Number	0.00 01-Dec-2015	181140.00 01-Dec-2015		106,066.00 31-Dec-2020

Total Client - Male	Number	0.00 01-Dec-2015	361300.00 01-Dec-2015		307,553.00 31-Dec-2020
Total client - Female	Number	0.00 01-Dec-2015	220400.00 01-Dec-2015		264,192.00 31-Dec-2020

Comments (achievements against targets):
The project has not achieved this target as the actual at completion is just 59 percent of the original target value.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Target farmers adopt elements of the livestock technology/ practices promoted by NHLP - Total	Percentage	0.00 01-Jan-2013	65.00 01-Jan-2013	70.00 01-Dec-2015	63.75 31-Dec-2020
Target farmers adopt elements of the livestock technology packages promoted by NHLP - Male	Percentage	0.00 01-Jan-2013	65.00 01-Jan-2013	70.00 01-Dec-2015	56.45 31-Dec-2020
Target farmers adopt elements of the livestock technology packages	Percentage	0.00 01-Jan-2013	65.00 01-Jan-2013	70.00 01-Dec-2015	70.70 31-Dec-2020

promoted by NHLP - Female					

Comments (achievements against targets):
The project has achieved 98 percent of its original target value and 91 percent of revised target value.

A.2 Intermediate Results Indicators

Component: Intermediate Results

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 1.1: Producers reached with technical assistance on improved production practices - Total	Number	0.00 01-Jan-2013	254000.00 01-Jan-2013		408,263.00 31-Dec-2020
Component 1.1: Producers reached with technical assistance on improved production practices (including kitchen garden beneficiaries)-Female	Number	0.00 01-Jan-2013	90000.00 01-Jan-2013		134,620.00 31-Dec-2020
Component 1.1: Producers reached with technical assistance on improved	Number	0.00 01-Jan-2013	164000.00 01-Jan-2013		273,643.00 31-Dec-2020

production practices (male)					

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 1.2 Horticulture Investment Packages extended to famers and beneficiaries	Number	0.00 01-Dec-2015	600.00 01-Jan-2013		500.00 31-Dec-2020
Component 1.2 Horticulture investment packages extended to farmers and beneficiaries - Female	Number	0.00 01-Dec-2015	200.00 01-Jan-2013		0.00 31-Dec-2020
Component 1.2 Horticulture investment packages extended to farmers and beneficiaries - Male	Number	0.00 01-Dec-2015	400.00 01-Jan-2013		500.00 31-Dec-2020

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised	Actual Achieved at

				Target	Completion
Component 1.1: Extension: Farmer Learning and Resource Centers Established	Number	0.00 01-Dec-2015	250.00 01-Dec-2015		36.00 31-Dec-2020
Comments (achievements against targets):					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Sub-Component 1.2 Productive investment Support: Orchards Rehabilitated directly and indirectly - Ha	Number	0.00 01-Jan-2013	106442.00 01-Jan-2013		32,143.00 31-Dec-2020
Orchards rehabilitated (ha) directly and indirectly, and number of beneficiaries	Number	0.00	200000.00		99,963.00
Comments (achievements against targets):					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 1.2 New	Number	0.00	19000.00		32,524.00

Plantings: New Orchards (including vineyards) ,pistachio groves established with at least 65% survival rate - Ha		01-Jan-2013	01-Jan-2013		31-Dec-2020
New Orchards (including vineyards) , pistachio groves established - Number of benificiraies	Number	0.00	70200.00		99,963.00
Comments (achievements against targets):					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Grape trellising and high and medium density orchard production system supported- Ha	Hectare(Ha)	0.00 01-Jan-2013	1030.00 01-Jan-2013		800.90 31-Dec-2020
Component 1.2 Grape Trellising and high and medium density orchard production system supported- Number of beneficiaries	Number	0.00	3600.00		3,928.00
Comments (achievements against targets):					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Annual Horticulture: New Kitchen gardening schemes	Number	5,000.00 31-Dec-2012	90000.00 01-Jan-2013		143,657.00 31-Dec-2020

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 1.2 New area brought under high value horticulture under the results of improved irrigation technologies - Ha	Number	0.00 01-Jan-2013	2500.00 01-Jan-2013		2,804.80 31-Dec-2020
New area brought under high value horticulture under the results of improved irrigation technologies- Number of Benificiaries	Number	0.00	10000.00		11,372.00

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of commercial, off-season vegetables and high value aromatic crops production units/plots supported-Total	Number	0.00 01-Jan-2013	5700.00 01-Jan-2013		4,600.00 31-Dec-2020
Number of farmers supported with commercial, off-season vegetables and high value aromatic crops-Female	Number	0.00	5000.00		4,297.00
Number of farmers supported with commercial, off-season vegetables and high value aromatic crops-Male	Number	0.00 01-Jan-2013	700.00 01-Jan-2013		303.00 31-Dec-2020

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 1.3 Improved Market Access and Post-harvest Handling Systems:	Number	0.00 01-Jan-2013	35000.00 01-Jan-2013		15,615.00 31-Dec-2020

Farmers supported with improved post-harvest knowledge and tools- Total					
Component 1.3: Farmers supported with improved post-harvest knowledge and tools-Female	Number	0.00 01-Jan-2013	5000.00 01-Jan-2013		1,142.00 31-Dec-2020
Component 1.3 Farmers supported with improved post-harvest knowledge and tools- Male	Number	0.00 01-Jan-2013	30000.00 01-Jan-2013		14,473.00 31-Dec-2020

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 1.3 Farmers Groups/Associations linked with traders/merchants and processors- Groups	Number	0.00 01-Jan-2013	200.00 01-Jan-2013		28.00 31-Dec-2020
Component 1.3 Farmers Groups/Associations linked with traders/merchants and processors Number of benificiraies	Number	0.00	8000.00		1,167.00

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 2: Livestock - Subcomponent 2.1 Extension: Target farmers exposed to a practice and understand it and its benefits - Total	Number	0.00 01-Jan-2013	180000.00 01-Jan-2013		180,390.00 31-Dec-2020
Component 2: Livestock - Subcomponent 2.1 Extension: Target farmers exposed to a practice and understand it and its benefits - Female	Number	0.00 01-Jan-2013	120000.00 01-Jan-2013		112,645.00 31-Dec-2020
Component 2: Livestock - Subcomponent 2.1 Extension: Target farmers exposed to a practice and understand it and its benefits - male	Number	0.00 01-Jan-2013	60000.00 01-Jan-2013		67,745.00 31-Dec-2020

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 2.1 Animals annually vaccinated against TADs, Zoonoses and production diseases by target farmers - Ruminants	Number	0.00 01-Jan-2013	15000000.00 01-Jan-2013		15,186,109.00 31-Dec-2020
Component 2.1 Animals annually vaccinated against TADs, Zoonoses and production diseases by target farmers - Poultry	Number	0.00	1000000.00		620,000.00

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 2.1 Government policy, strategic planning supported and approved	Number	0.00 01-Jan-2013	5.00 01-Jan-2013		5.00 31-Dec-2020

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 2.2 Livestock investment packages extended to famers and beneficiaries - Total	Number	0.00 01-Jan-2013	400.00 01-Jan-2013		244.00 31-Dec-2020
Component 2.2 Livestock investment packages extended to famers and beneficiaries - Female	Number	0.00	200.00		189.00
Component 2.2 Livestock investment packages extended to famers and beneficiaries - Male	Number	0.00	200.00		55.00

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 2.2 Poor women with semi-commercial 100 bird model supported	Number	0.00 01-Jan-2013	5000.00 01-Jan-2013		3,000.00 31-Dec-2020

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 2.2 Ultra-poor women provided with the 30 bird improved backyard layer	Number	0.00 01-Jan-2013	35000.00 01-Jan-2013		25,000.00 31-Dec-2020
Comments (achievements against targets):					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 2.2 Warm-water aquaculture production system supported	Number	0.00 01-Jan-2013	6.00 01-Jan-2013		20.00 31-Dec-2020
Comments (achievements against targets):					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 2.2 Beekeeping enterprises supported	Number	0.00 01-Jan-2013	500.00 01-Jan-2013		500.00 31-Dec-2020

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 2.3 Farmers supported with improved value addition, knowledge, tools and facilities - Total	Number	0.00 01-Jan-2013	94400.00 01-Jan-2013		64,933.00 31-Dec-2020
Component 2.3 Farmers supported with improved value addition, knowledge, tools and facilities - Female	Number	0.00	78450.00		48,423.00
Component 2.3 Farmers supported with improved value addition, knowledge, tools and facilities - Male	Number	0.00	15950.00		16,644.00

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 2.3 Private	Number	0.00	4.00		0.00

sector driven dairy development in pre-urban areas supported - Province		01-Dec-2015	01-Dec-2015		31-Dec-2020
Component 2.3 Private sector driven dairy development in pre-urban areas supported - Groups	Number	0.00	50.00		0.00

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 2.3 Farmers Groups/Associations linked with traders/merchants and processors - Groups	Number	0.00 01-Jan-2013	1050.00 01-Jan-2013		302.00 31-Dec-2020
Component 2.3 Farmers Groups/Associations linked with traders/merchants and processors - Farmers	Number	0.00	40000.00		6,005.00

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion

Compnent 3.1 DAIL staff visit to farmers	Number	0.00 01-Jan-2013	8000.00 01-Jan-2013		5,240.00 31-Dec-2020
Comments (achievements against targets):					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 3, Implementaiton Management & Technical Assistant Support: Periodic surveys/assessments conducted to the satisfactory level	Text	0.00 01-Jan-2013	3 01-Jan-2013		2.00 31-Dec-2020
Comments (achievements against targets):					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 3.1 A Gender mainstreaming strategy and training modules for gender awareness are developed under NHLP	Number	0.00 01-Jan-2013	4.00 01-Jan-2013		4.00 31-Dec-2020

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Component 3.1 MAIL/DAIL staff trained and exchange program within NHLP to provide practical training - Total	Number	0.00 01-Jan-2013	5000.00 01-Jan-2013		9,329.00 31-Dec-2020
Component 3.1 MAIL/DAIL staff trained and exchange program within NHLP to provide practical training - Female	Number	0.00	2000.00		2,212.00
Component 3.1 MAIL/DAIL staff trained and exchange program within NHLP to provide practical training - Male	Number	0.00	3000.00		7,117.00

Comments (achievements against targets):

B. KEY OUTPUTS BY COMPONENT

Objective/Outcome 1: gradual rollout of farmer-centric agricultural service systems and investment support	
Outcome Indicators	1. Target farmers satisfied with agricultural services (125% achieved) 2. Number of producers with improved postproduction facilities, tools, and market access-Total (58.5% achieved)
Intermediate Results Indicators	1. Horticulture Investment Packages extended to famers and beneficiaries (83% achieved) 2. Number of commercial, off-season vegetables and high value aromatic crops production units/plots supported-Total (81% achieved) 3. Improved Market Access and Post-harvest Handling Systems: Farmers supported with improved post-harvest knowledge and tools- Total (39% achieved). 4. Farmers Groups/Associations linked with traders/merchants and processors- Groups (14% achieved) 5. Animals annually vaccinated against TADs, Zoonoses and production diseases by target farmers – Ruminants (101% achieved). 6. Livestock investment packages extended to famers and beneficiaries – Total (31% achieved) 7. Poor women with semi-commercial 100 bird model supported (60% achieved). 8. Ultra-poor women provided with the 30-bird improved backyard layer (71% achieved). 9. Warm-water aquaculture production system supported (333% achieved). 10. Beekeeping enterprises supported (100% achieved) 11. Farmers supported with improved value addition, knowledge, tools, and facilities – Total (69% achieved).

	12. A Gender mainstreaming strategy and training modules for gender awareness are developed under NHLP (100% achieved).
Key Outputs by Component (linked to the achievement of the Objective/Outcome 2)	1. Number of commercial, off-season vegetables and high value aromatic crops production units/plots supported-4600 2. Poor women with semi-commercial 100-bird model supported-3,000 3. Ultra-poor women provided with the 30-bird improved backyard layer-25,000 4. Warm-water aquaculture production system supported-20 5. A Gender mainstreaming strategy and training modules for gender awareness are developed under NHLP
Objective/Outcome 2: adoption of improved production practices by target farmers	
Outcome Indicators	1. Target farmers adopt elements of the horticulture technology packages promoted by NHLP (80.7% achieved) 2. Target farmers adopt elements of the livestock technology packages promoted by NHLP (91% achieved)
Intermediate Results Indicators	1. Producers reached with technical assistance on improved production practices – Total (161% achieved) 2. Farmer Learning and Resource Centers Established (14.4% achieved). 3. Orchards Rehabilitated directly and indirectly – Ha (31% achieved). 4. New Orchards (including vineyards), pistachio groves established with at least 65% survival rate (171% achieved). 5. Grape trellising and high and medium density orchard production system supported- (78% achieved) 6. New Kitchen gardening schemes supported-(160% achieved). 7. New area brought under high value horticulture under the results of improved irrigation technologies – Ha (112% achieved)

	8. Livestock -Subcomponent 2.1 Extension: Target farmers exposed to a practice and understand it and its benefits – Total (100% achieved). 9. DAIL staff visit to farmers (66% achieved). 10. MAIL/DAIL staff trained and exchange program within NHLP to provide practical training – Total (187% achieved)
Key Outputs by Component (linked to the achievement of the Objective/Outcome 1)	1. 36 Farmer Learning and Resource Centers Established 2. Orchards Rehabilitated directly and indirectly – 32,143 Ha 3. New Orchards (including vineyards), pistachio groves established with at least 65% survival rate – 32,524 Ha 4. New Kitchen gardening schemes supported-143657 5. New area brought under high value horticulture under the results of improved irrigation technologies – 2804 Ha
Intermediate Results Indicators that are not linked with either of the PDO outcomes	
Intermediate Results Indicators	1. Government policy, strategic planning supported and approved (100% achieved). 2. Private sector driven dairy development in pre-urban areas supported – Province (0% achieved). 3. Private sector driven dairy development in pre-urban areas supported – Groups (0% achieved). 4. Farmers Groups/Associations linked with traders/merchants and processors – Groups (29% achieved). 5. Implementaiton Management & Technical Assistant Support: Periodic surveys/assessments conducted to the satisfactory level (67% achieved)

ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION

A. TASK TEAM MEMBERS

Name	Role
Preparation	
Alvaro Juan Soler Bavosi	Task Team Leader(s)
Rahimullah Wardak	Procurement Specialist(s)
Zohra Farooq Nooryar	Financial Management Specialist
Zabiullah Ahrary	Team Member
M Haroon Chakhansuri	Team Member
Amanullah Alamzai	Team Member
Supervision/ICR	
Manievel Sene, Amanullah Alamzai	Task Team Leader(s)
Aimal Sherzad, Rahimullah Wardak	Procurement Specialist(s)
Zakir Hussain Gulzari	Financial Management Specialist
Abimbola Adubi	Team Member
Mohammad Arif Rasuli	Environmental Specialist
Najla Sabri	Team Member
Muhammad Abbass Rahimi	Procurement Team
Md Mansur Ahmed	Team Member
Nilofar Amini	Procurement Team
Qais Agah	Social Specialist
Altaf Iqbal	Economic and Financial Analyst

B. STAFF TIME AND COST

Stage of Project Cycle	Staff Time and Cost	
	No. of staff weeks	US$ (including travel and consultant costs)
Preparation		
FY13	.675	1,898.64
Total	**0.68**	**1,898.64**
Supervision/ICR		
FY13	8.919	53,937.73
FY14	38.325	116,305.81
FY15	50.765	181,612.90
FY16	80.232	284,451.65
FY17	46.582	128,399.05
FY18	44.238	181,034.20
FY19	40.783	191,218.65
FY20	33.576	140,745.96
Total	**343.42**	**1,277,705.95**

ANNEX 3. PROJECT COST BY COMPONENT

Components	Amount at Approval (US$M)	Actual at Project Closing (US$M)	Percentage of Approval (US$M)
Horticultural Production	100.75	102.2	101
Animal Production and Health	49.80	37.7	76
Implementation Management and Technical Assistance Support	39.45	36.4	92
Total	**190.00**	**176.3**	**93**

ANNEX 4. EFFICIENCY ANALYSIS

Analysis at Appraisal and Additional Financing

1. The activities of NHLP started in January 2013 and were completed in December 2020, as a follow-on project to the Bank supported Emergency HLP (closed on 31st December 2012), extending its coverage to new regions. The Project Development Objective (PDO) was to promote adoption of improved production practices by target farmers, with gradual rollout of farmer-centric agricultural services systems and investment support. At appraisal, the Project Paper included a sound cost-benefit analysis (CBA) estimating the returns on 8,000 ha of new orchards and rehabilitating 6,000 ha of existing groves including grapes, almonds, apricots, apples and pomegranates, together with about 61,500 farmers improving livestock production and 6,000 women benefiting from the poultry component. Economic and financial returns were estimated separately for the main sources of benefits. The project level analysis was done by aggregating the impact of components and accounted for entire project costs.

2. By additional financing (AF) in 2015, the project had already exceeded targets in both establishing new orchards and rehabilitating existing ones, while continuing to develop farm advisory services and technology transfer in collaboration with MAIL in both the horticulture and livestock subsectors. By then, NHLP had distributed 22 different types of vegetable seed to female farmers and established 58116 kitchen gardening plots (against the target of 34,000 schemes) in 22 provinces. The project had also distributed a package of 30-layer chicks, along with required inputs to 5,020 poultry beneficiaries against a target of 5,000 in 6 provinces. The AF of US dollars 90 million (plus US dollars 13.6 million as farmers' contribution) was budgeted with increasing targets of project interventions. Following the approach and methodology adopted at appraisal, the CBA was updated with the revised targets and budgeted costs. The CBA for the 2015 AF was based on the data of project interventions which were completed by then.

3. The appraisal's and AF stages, economic and financial analyses assessed the soundness of the project based on the IRR and NPV, both of which had been calculated from projected incremental costs and benefits in terms of financial returns (financial analysis) as well as returns to society as a whole (economic analysis), using the "with- and without-project" approach. The analysis at AF uses the discount rate of 6 percent, while the appraisal did not disclose the discount rate used for the analysis. The analysis at appraisal estimated economic rates of return (ERR) of 27.1 percent on the investments for horticulture production; 17.6 percent for the Livestock (Health & Extension); and 18.1 percent for Poultry. The overall project ERR was estimated at 24.9 percent and the expected values of NPV was estimated at US$115 million in 2012 prices over a project cycle period of 20 years. At AF, the value of ERR for the high value horticulture crops was estimated at 37 percent with NPV at US dollar 500.4 million; ERR for livestock at 22 percent with NPV at US dollar 5.8 million; and ERR for poultry was estimated at 10 and 16 percent for different package. AF analysis used 2015 prices and 20-year period for developing the cash flow. The analysis at AF did not estimated the value of ERR at project level.

Analysis at Completion (ex post)

A. Methodology

4. An ex-post (ICRR) efficiency analysis was undertaken to assess the financial and economic feasibility of the project investments. The project development objective set at appraisal remained unchanged through project completion. However, the project underwent additional financing that

cumulatively extended the closing date by 24 months from December 31, 2018 to December 31, 2020. The analysis at completion considered actual period of completion and followed the methodology as adopted at appraisal.

5. The present analysis compared the ex-post internal rate of returns of the investment with the appraisal internal rate of returns estimates. The efficiency analysis was carried out by components for which enough reliable data were available to measure the project impact in terms of benefits. Returns to investments in horticulture production were estimated through production models for nine representative crops[6]. Returns to investments in horticulture (planted-hectares) were estimated using production budgets for old and new trees/plants under improved irrigation system. Returns to livestock farmers were estimated through the incremental production models for livestock holders considering stock of cows (calves 100-150 kg), sheep and goats (15-20 kg), the impact was measured based upon animal health interventions starting with the surveillance and control of main diseases. Increased milk and lamb production have been estimated based upon the data relevant to the activity under this intervention. Likewise, appraisal, impact of poultry has been estimated by developing model of 30 birds (layer) as an average package. Conservatively, it is further assumed that only 15 percent of the households benefitted under the project for "kitchen gardening for women" maintained the poultry and marketed eggs.

6. This economic analysis at ICRR is a post-factum exercise and considered the performances of the project components/sub-components, based on benefit monitoring and evaluation reports. The sensitivity analysis was also conducted to assess the robustness of the results in relation to the key variables that may be subject to some level of uncertainty over useful economic life of the project's interventions. No any socioeconomic survey or visit to the project area could be carried out by the project completion review mission due to travel restrictions under COVID19 situation. The analysis used the data provided by the PMO and represented the evaluation results applicable to entire project area.

B. Data Collection

7. The efficiency analysis relied mostly on the information collected from the project's documents, monitoring and evaluation (M&E) database, the end-line survey, and other secondary data sources. Much of the information fed into the crop budgets and investments models were drawn from the descriptive statistics presented in the Mid-Term Evaluation report and data available in Result Framework of the project. The investment models is based upon the latest data available for the project costs by components.

C. Project Costs

8. The ex post EFA considered actual project costs over the period from 2013 to December 2020. Additional investments costs supported by farmers (orchard establishment) have also been taken into account. Summary of latest cost estimates is show in the Table below.

Table-1: Summary of Project Completion Costs (US$ M)

Component Name	Budgeted		Actual/ Latest Estimates[7]
	Original	Revised at AF	
A. Horticultural Production	56.0	125.4	102.2
B. Animal Production and Health	29.7	53.4	37.7

[6] Representative crops include (new and rehabilitations) apricots, almonds, pomegranate, grapes and apples.
[7] Includes farmers' contribution of US$ 26.405 million against the budgeted amount of US$ 28.2 million.

C. Implementation Management and Technical Assistance Support	39.5	39.5	37.8
Total	125.2	218.2	177.7

D. Key Assumptions

9. **Administrative costs incurred for implementation of the project has been distributed to each component of the project on prorate basis. Recurrent project costs include mainly the incremental operational costs of agricultural/orchards developed under the project, estimated on an average annual basis, separately for each type of orchard and for each intervention under the component of animal production and health. All such costs will be supported entirely by the farmers and are considered in the calculation of net project benefits while developing model budgets.**The economic cost of the project was estimated by removing all taxes and duties from the financial values and applying conversion factors as appropriate. Financial prices of locally traded outputs and inputs were converted into economic prices by deducting direct agricultural subsidies and taxes.

10. Since the analysis at appraisal and AF used the currency in US dollar for developing the cash flows and not the local currency, the ICR followed the same way. The analysis considered the costs over the period starting from year 2013 till the project completion at December 2020, as per actually incurred. To reflect the investment costs at December 2020 price level, GDP deflators for Afghanistan[8] have been used, and afterwards, benefits and costs have been kept at constant level over the period of analysis. Like appraisal, 20-year period is considered as the useful economic life of the project interventions for the analysis.

11. Benefits were also estimated at December 2020 constant values by updating all market prices and costs used for the crop and activity models with those prevailing at closing date. Farm-gate financial prices of inputs and outputs are estimated in 2020 prices, and their economic values are estimated by applying SCF at 0.9. Following the latest guidelines of the World Bank, a social discount rate of 6 percent has been used in the analysis.

E. Benefits

12. The project benefits were expected to be derived from multiple and independent sources and were thus divided into two major benefit groups: (a) Horticulture Production and (b) Animal Production and Health.

13. *Horticultural Production.* This component provided technical assistance supported development of new orchards, rehabilitation of old orchards, off –season vegetables and high value aromatic crops. A conservative approach has been adopted to assess the financial impact on farmers' income and the economic impact on the Afghan economy at project completion with the help of detailed crop models, showing typical farming situations. Models were developed using per hectare inputs and yield level and multiplied with the respective areas developed under the project. In the ICR exercise, the analysis was based on the evolution of the actual area planted under new orchards and rehabilitated area under the old orchards. The data was provided by the PMO for the period 2013–2020. In supplement, cconsultation with the project team facilitated for estimating the costs and returns at maturity of orchards under the component of "Horticultural Production". Conservatively, only the benefits of new and old orchards developed under NHLP have been

[8] *https://data.worldbank.org/indicator/NY.GDP.DEFL.KD.ZG?locations=AF*; seen on Feb 15, 2021.

quantified and no other benefits are included in the evaluation. Production at new orchards is considered[9] from 3rd and 4th year after plantation and would mature (full development) at 8th year, whereas for the orchards rehabilitated started improving yield within next two years and reached at full maturity in five years. As such, full development level of the project is considered at eight years after completion of the project.[10]

14. Animal Production and Health. This component supported dairy/ meat production, poultry, and relatively small other livestock interventions (fish and bee keeping). The livestock component benefitted, more than 17.89 million animals and improved their health-including 2.89 million calves (100-150 Kg each) and 15.0 million sheep and goats (15-20 Kg each). It added capacity of producing incremental milk more than 154 million litters annually, at completion of the project. The poultry subcomponent supported 31,214 domestic and semi commercial production units and developed incremental capacity of producing more than 245 million eggs annually. Likewise, approach adopted at appraisal, this component has been evaluated by developing two streams of costs and benefits separately; (i) Livestock (Health & Extension); and (ii) Poultry. For the livestock, traditional budgets for cow and for sheep/goats have been developed estimating the investment and operational costs. The value of returns included earnings from milk, meat, and manure. The operational cost estimation included the costs of fodders, wheat straw, medicines minerals and labor. For the subcomponent of poultry, the typical budget is developed for 30 birds each and multiplied with the units supported under the NHLP. The budget considered revenue from sale of eggs and culled birds. Operational costs cover feed, medicines, and labor.

15. Table below shows the pace of incorporation of farms and cropped areas improved following the actual completion of areas improved. It shows the summary based recorded evolution of NHLP over the years2013-20. The data summarized in the Table provided the basis for the evaluation of impact of the project in financial as well as in economic terms.

Table-2: Achievements versus Targets at Completion of Project

Sr.	Component	Unit	Target at Appraisal	Revised Target at AF	Actual at Completion	
					Value	% Achieved
A.	**Horticultural Production**					
A.1	**New Orchards**	**Ha**	**8,000**	**19,000**	**40,511**	**213.2**
A.1.1	- Apricot				3,050	
A.1.2	- Almond				5,870	
A.1.3	- Apple				13,890	
A.1.4	- Pomegranate				2,066	
A.1.5	- Grapes without Trellises				2,711	
A.1.6	- High and medium density orchards			1,030	463	45.0
A.1.7	- Other/ Misc. type of New Orchard			2,500	12,461	498.5
A.2	**Rehabilitation of Existing Orchards[11]**	**Ha**	**6,800**	**106,442**	**100,935**	**94.8**
A2.1	- Apricot				7,146	
A2.2	- Almonds				9,703	
A2.3	- Rehabilitated All other orchards				84,086	
A.3	**New Kitchen gardening**	Plots		90,000	159,955	177.7

[9] Production of grapes started within 3-years while the other started in 4-years after plantation.
[10] The new orchards planted in last year (2020) of the project will attain full maturity in 8 years.
[11] Target fixed at appraisal for rehabilitation of 6,000 ha of orchards and 800 ha of grapes with trellising

B.	**Animal Production and Health**[12]					
B.1	Benefitted Households	Number	61,500	180,000	240,176	133.4
B.2	Poultry Production Units Supported	Number	5,500	40,000	31,214	78.0

16. Incremental benefits have been estimated by comparison of benefits under without project (WoP) and with project (WP) scenarios for investment models. The project impact was estimated by aggregating benefits to, and costs of, those selected investments for which benefits streams were estimated

F. Financial Analysis

17. **Benefits were mainly derived from the availability of more timely and adequate irrigation water for the previously distressed areas, better management at farm level and due to significant changes in cropping patterns towards higher value crops-mainly evolution of new orchards as well as rehabilitation of old ones. Since, an average farmer at Afghanistan likes to have one jarib (1/5th of ha) of orchards as part of farming, hence the financial analysis estimated the incremental income of one jarib of different orchards and computed the additional income, the benefitted household would have.**

18. The households benefitted under livestock and extension; the incremental average income of the household has been estimated by developing typical model budgets of a cow sheep/goat. The incremental income has been estimated considering that the household keeps one cow and 5 sheep/goats on average[13]. For the households benefitted with the subcomponent of poultry, the income of a household has been estimated considering poultry unit supported under the project.

19. The increase in income is resulting from a combination of vertical and horizontal expansion of the farming activities, due to water improved availability in time and more frequency, which has improved productivity and induced farmers to invest in higher value crops. Table below summarizes the expected financial impact at the farm level with the new techniques which includes new orchards expected to reach maturity after 6 or 7 years of planted. The financial analysis estimated the net incremental income of the household/farm family benefitted under the NHLP. The summary of results is shown in the Table below.

Table-3: Incremental Income of Benefitted Households under NHLP – (US$/household)

Type of Project Intervention	Baseline	Incremental Net Income of Household			
		Year 3	Year 5	Year 8	Year 9 & Onwards
A. Horticultural Production (1-jarib Farm Model Budget)					
A.1 New Orchards					
- Apricot	0	283	404	857	1,002
- Almond	0	203	882	1,921	1,921
- Apple	0	158	1,515	2,492	2,477
- Pomegranate	0	(55)	621	1,566	1,566
- Grapes without Trellises	0	300	386	546	546
- High and medium density orchards	0	(60)	1,566	3,646	3,646
- Other/ Misc. type of New Orchard	0	(107)	796	1,836	1,836
A.2. Rehabilitation of Existing Orchards					
- Apricot	480	373	771	771	771

[12] Animals with improved Health (Nos.)
[13] Refer to Project Concept Paper NHLP-2013.

- Almonds	440	432	762	902	902
- Rehabilitated All other orchards	379	700	1,028	1,028	1,028
B. Livestock & Extension (per Household)					
B.1 Animal Production and Health a/	1,121	1,223	1,223	1,223	1,223
B.2 Household with Poultry Unit Supported	0	486	486	486	486

20. The farm modelling results, as shown in the above Table confirm that the NHLP is having a positive impact on beneficiaries' net income per household.

G. The Economic and Financial Analysis (EFA) after FIMP Closing

21. In order to re-estimate the project impact at project closing, a new EFA was prepared adjusting the main determinant parameters including area improved, project support interventions, and the overall actual project costs. Also, all original assumptions used for estimating the expected benefits were revised and updated based on mission observations and estimations on what is being attained at closing, including what could be expected in the project area, the farmers' involvement, and the production technologies changes being adopted (on average) in the field. The aggregation of benefits being obtained by beneficiaries through their production activities within the NHLP areas confronted with all investment costs allows for the valuation of the project results.

H. Results

22. The ERR for the NHLP investments has been estimated at 28.1 percent and the NPV with 6 percent discount rate at US$ 1461 million. The results are highly positive and higher than the ones originally estimated at appraisal (ERR 24.9 percent). The difference in the values comparing with the appraisal estimates is due to the fact that the NHLP implemented some activities at lesser costs estimated at appraisal (especially due to the exchange rate gain).

23. The Table below summarizes the results comparing the indicators with the ones estimated at appraisal.

Table-4: Summary of Results – Economic and Financial Analysis

Project Component	Economic Indicators				Financial Indicators			
	At Appraisal		At ICRR		At Appraisal		At ICRR	
	ERR %	ENPV US$ million	ERR %	ENPV US$ million	FRR %	FNPV US$ million	FRR %	FNPV US$ million
Horticultural Production	27.1	105.2	31.1	1,139.4	79.5	183.3	83.0	4,589
Livestock (Health & Extension)	17.6	9.0	22.9	283.3	140.5	47.3	155.5	2,039
Poultry	18.1	1.3	23.5	38.5	36.2	4.4	42.2	73
Overall NHLP	24.9	115.5	28.1	1,461.2	86.7	235	104.6	6,701

I. Sensitivity Analysis with GHG Accounting and COVID-19 Impact

24. *Greenhouse Gas Accounting*. The World Bank uses the Ex-Ante Carbon-Balance Tool (EX-ACT) to estimate the impact of agricultural investment lending on GHG emissions and carbon sequestration. The analysis reveals a carbon sink of 2,175,410tCO2-e over 20 years resulting in 87,016 tCO2e per year as a result of establishing new orchards over 40,511 ha; rehabilitation of existing orchards at 100,935 ha.; and benefiting about 17.89 million animals, including 2.89 million calves and about 15 million sheep and goats under the component of animal production and health.

25. *Impact of COVID-19.* No doubt, Afghanistan has been hit by a spike in prices of essential goods including food and medicines, as shortages and panic buying increase in the face of a rising coronavirus threat, it is evident in some official reports. Economic viability of NHLP, as part of the sensitivity analysis has tested only against the operational cost for the remaining part of useful life of the project, as the investment for the project has already been done.

26. Summary results of economic analysis after including the values of GHG accounting have been and testing the impact of hike in prices due to COVID-19 illustrated as under.

Table 8: Summary Results of Economic and Sensitivity Analysis

Description	Change	Without Benefits of GHG Accounting		With Benefits of GHG Accounting			
				Lower Bound		Upper Bound	
		ENPV at 6% US$ (Million)	EIRR %	ENPV at 6% US$ (Million)	EIRR	ENPV at 6% US$ (Million)	EIRR
Base Case		1,461.2	28.1	1,497.3	28.7	1,533.3	29.2
Sensitivity Scenarios							
Case 1 - Increase in Capital Costs	+20%	1,435.6	27.1	1,471.7	27.1	1,507.7	28.1
Case 2 - Increase in O&M Costs	+20%	1,456.3	27.9	1,492.4	28.4	1,528.4	29.0
Case 3 - Combined Case 1 and 2	as above	1,430.8	26.9	1,466.8	27.4	1,502.8	27.9
Case 4 - Decrease in Overall Benefit	-20%	1,138.5	26.6	1,167.4	27.1	1,196.2	27.6
Case 5 - Benefit Delay by 2 years	-2 yrs	1,128.3	22.6	1,157.3	23.1	1,186.3	24.4
Case 6 - Combination of Cases 3 and 4	as above	1,108.1	25.2	1,136.9	25.7	1,165.8	26.1
Case 7 - COVID-19 Impact (2-times operational costs)		509.9	15.6	546.0	16.3	582.0	16.9

J. Conclusion.

27. This sensitivity analysis tested the robustness of the ERR considering if it takes 10 years instead of the assumed eight years in attaining the full development after completing the implementation. It is estimated that the ERR would drop to 22.6 percent. Even under the COVID-19 scenario, if the spike of operational costs amount to double, the EIRR does not fall below 15.6 percent. It allows concluding that the project impact is both, positive and robust against the most likely risks.

28. The estimated results, even are outstanding (particularly the FIRRs), these are still considered to be a conservative estimate given that the improvements achieved in 2020 are much higher than the set targets at lesser costs which was estimated for implementation the project (refer to Table 1 above). The increased capacity of the improved farms for horticulture production and income generation after the NHLP interventions is clearly perceived by farmers and by the other stakeholders, which is ultimate success of the project.

ANNEX 5. BORROWER, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS

It was not possible to gather borrower's comments on the ICRR due to the current Country circumstances following the takeover of the government by the Taliban in August 2021.

ANNEX 6. SUMMARY OF THE FEATURES AND BLOGS PUBLISHED BASED ON BENEFICIARY INTERVIEWS AND RESULTS FROM NHLP

PDO Results Areas	Story Title and Links	Story Highlights	Date Published
Adoption of improved practices	*High-density Farming Diversifies Crops and Boosts Farmers' Incomes*	• High-density farming boosts crop yields without increasing the space required for planting. The technique is highly effective in Bamyan Province, where farmers grow vegetables between their fruit trees. • Introduced by the National Horticulture and Livestock Project, the strategy and modern technique means greater crop diversification and better incomes for farmers.	FEATURE STORY DECEMBER 30, 2019
Rollout of investment support; Gender	*Kitchen Gardening Activities Empower Thousands of Unskilled Women in Eastern Afghanistan*	• Thousands of women in Nangarhar Province have learned new horticultural skills that can help them support themselves and their families. • The women's training is part of a kitchen gardening scheme supported by the National Horticulture and Livestock Project to enable poor families to earn a sustainable income. • The project, which aims to increase horticultural output and productivity, is implemented in 291 districts in across Afghanistan.	FEATURE STORY MAY 7, 2019
Rollout of investment support; Gender	*Afghan Women Grow their Income through Kitchen Gardening*	• A kitchen gardening program in Panjshir Province is helping Afghan women with no income to support themselves and their families. • The National Horticulture and Livestock Project supports the initiative, which has trained and provided gardening tools for more than 670 Afghan women in Panjshir. • The project aims to increase the overall production and productivity of horticultural products across Afghanistan.	FEATURE STORY JANUARY 9, 2019
Rollout of investment support	*Livestock and Fish Farming Bring Self-Sufficiency to Rural Afghans*	• Thousands of people in rural communities in Nangarhar Province have become self-sufficient farmers and business owners. • By supporting poultry and fish farming, the National Horticulture and Livestock Project helps poor families make a living. • The project helps farmers improve their production practices and reaches beyond Nangarhar province. The Ministry of Agriculture, Irrigation and Livestock currently implements the project in 291 districts spread across 33 of Afghanistan's 34 provinces.	FEATURE STORY OCTOBER 28, 2018
Adoption of improved practices	*Farmers Double their Income with Project Support in Kabul Province*	• "Pioneer" farmers in 300 villages in Kabul province are helping fellow farmers improve their horticultural practices and increase their income. • The National Horticulture and Livestock Project (NHLP) provides guidance and equipment to help farmers employ better technologies and practices. • With the help of pioneer farmers, extend NHLP's reach by teaching other farmers, the project has	FEATURE STORY OCTOBER 25, 2020

		reached a significant number of farmers across the country.	
Adoption of improved practices	*Farming innovations improve livelihoods and incomes in Afghanistan's Balkh Province*	• The project is transforming the traditional system of horticulture and livestock to a more productive and modern one. The new orchards are designed and laid out well, and planted with fruit saplings that are marketable and adapted to the weather and geography of the province. • In Balkh Province, NHLP has more than 60 different horticulture and livestock activities. The project has, for example, established about 2,000 hectares of new orchards and more than 150 water harvesting and catchment structures. Further, over 2,000 women have received kitchen gardening support, while 1,100 women have received poultry support. • NHLP interventions have changed the lives of many farmers, women and men, by encouraging and supporting them to cultivate marketable products. The farmers supply local and national markets, and in some areas, they produce enough to export.	A BLOG by AHMAD FAHIM JABARI|DECEMBER 05, 2017
Adoption of improved practices	*Farmers Double their Income with Project Support in Kabul Province*	• Pioneer" farmers in 300 villages in Kabul province are helping fellow farmers improve their horticultural practices and increase their income. • The National Horticulture and Livestock Project (NHLP) provides guidance and equipment to help farmers employ better technologies and practices. • With the help of pioneer farmers, extend NHLP's reach by teaching other farmers, the project has reached a significant number of farmers across the country.	FEATURE STORY OCTOBER 25, 2020
Adoption of improved practices	*New Horticultural Methods Improve Rural Livelihoods in Difficult Terrains*	• Farmers in the mountainous Nili district of Daykundi Province are replacing traditional varieties of almond trees with new varieties, which are disease resistant, higher yielding, and command better prices in the market. • The improvement in productivity and livelihood of the farmers is a result of a project under the National Horticulture and Livestock Project (NHLP), which has been met with enthusiasm from the local villagers.	FEATURE STORY JULY 9, 2017
Adoption of improved practices	*Horticulture Provides Alternative Livelihood to Farmers in Bamyan Province*	• Horticulture is providing a better source of income for farmers in Bamyan Province and helping them to improve their livelihood. • The National Horticulture and Livestock Project, under the Ministry of Agriculture, Irrigation and Livestock, is assisting farmers establish new orchards and manage existing ones with improved technologies and practices in 23 target provinces.	FEATURE STORY May 17, 2016
Adoption of improved practices	*Horticulture and Livestock Project Bears Fruit in Nangarhar, Afghanistan*	• Farmers with arable land in Nangarhar province are seeing a revitalization of their land and a prospect of better income when their orchards bear fruit.	FEATURE STORY MARCH 19, 2014

Adoption of improved practices	*Agriculture: An opportunity for better jobs for Afghanistan's youth*	• A beneficiary of the National Horticulture and Livestock Project, Pashtuna decided to attend the Farmers Field School. Upon completion of her training, she received 100 laying hens and access to equipment, feed, and animal vaccines. • Pashtuna was able to maintain 80 laying hens and generated a AFN 560 income, half of which she kept to buy poultry food. "Thanks to the poultry farm and the grace of God, I can afford my life and I have a bright vision for my family future," she says.	A BLOG BY IZABELA LEAO and ABDUL QADEER JAWAD|MAY 18, 2017
Adoption of improved practices	*Modern Horticultural Practices Improve Rural Livelihoods in Northern Afghanistan*	• Planting drought-resilient crops using modern horticultural practices has given drylands in northern Afghanistan a new lease on life. • Supported by the National Horticulture and Livestock Project, farmers are turning their previously uncultivable land into a source of income by growing crops, such as pistachio, that thrive in arid conditions. • The project, supported by a grant from the Afghanistan Reconstruction Trust Fund, has helped set up some 370 hectares of pistachio groves in northern Afghanistan.	FEATURE STORY FEBRUARY 21, 2019
Adoption of improved practices	*Modern Agriculture is Changing the Lives of Afghan Farmers*	• Traditional farming is giving way to modern alternatives, improving the crops and livelihoods of Afghan farmers in Panjshir Province. • Farmers learn more efficient planting techniques to increase their horticultural yields. • Over 400 hectares of orchards have been planted in the province paving the way for modern gardening.	FEATURE STORY APRIL 24, 2018
Adoption of improved practices	*In Afghanistan, Farmer Trades Old Horticultural Practices for New to See Income Rise*	• A farmer in a rural community is showing the way by adopting modern horticultural technologies and practices, which is resulting in higher crop yields and increased income. • The farmer's success is encouraging fellow villagers to participate in the National Horticulture and Livestock Project, which will provide technical support and needed production inputs and technologies. • The project aims to promote adoption of improved production practices by target farmers across the country. Its activities are currently implemented in 31 target provinces.	FEATURE STORY JANUARY 4, 2017
Adoption of improved practices	*Modern Farming Boosts Production in Afghanistan's Khost Province*	• Farmers in the southeastern Khost Province are adopting modern farming methods to increase crop yields and raise their earnings. • They are benefiting from the National Horticultural and Livestock Project which has spurred the production of vegetables, nuts, and fruits across Afghanistan. • Better Irrigation, generated in part through solar water pumps, has increased the amount of land farmers can cultivate.	FEATURE STORY FEBRUARY 26, 2018
Rollout of investment support	*Animal vaccinations help Afghan*	• In 2015 and 2016, about six million vaccines were administered to goats, sheep, and cattle all over the country.	A BLOG By DR. SARFERAZ WAZIRY|MAY 01,

	farmers and their livestock stay healthy	• Farmers reported a significant decrease in brucellosis incidents, especially in humans. According to a survey conducted by the Ministry of Public Health in 2015, this drop was only because of the vaccination campaign by NHLP. Clearly, public health has improved as have productivity and production of livestock.	2017
Adoption of improved practices	*Afghan Farmers Adopt Modern Agricultural Practices on Orchards*	• Farmers in a district in Kabul Province are adopting improved horticultural practices to transform their orchards from traditional to modern ones. • The results are better fruit yields and higher incomes for these farmers, who are receiving support from the National Horticulture and Livestock Project. • "Our horticulture system has been completely transformed from traditional to modern."-Akhtar Mohammad, Farmer, Paghman district	FEATURE STORY AUGUST 23, 2017