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Report No: PAD3371

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED LOAN

IN THE AMOUNT OF US$210 MILLION

TO THE

REPUBLIC OF INDIA

FOR A

STATE OF MAHARASHTRA'S AGRIBUSINESS AND RURAL TRANSFORMATION PROJECT

NOVEMBER 22, 2019

Agriculture Global Practice
South Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective October 31, 2019)

Currency Unit =	Indian Rupee (INR)
INR 72.05 =	US$1

FISCAL YEAR
April 1 - March 31

Regional Vice President:	Hartwig Schafer
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ABBREVIATIONS AND ACRONYMS

APEDA	Agricultural and Processed Food Products Export Development Authority
ASA	Advisory Services and Analytics
BDS	Business Development Services
CBOs	Community Based Organizations
CPF	Country Partnership Framework
CRI	Corporate Results Indicators
DLI	Disbursement Linked Indicator
DoA	Department of Agriculture
DoM	Directorate of Marketing
FAO	Food and Agriculture Organization
FPOs	Farmer Producer Organizations
GAPs	Good Agricultural Practices
GDP	Gross Domestic Product
GHG	Green House Gas
GHP	Good Hygiene Practices
GOI	Government of India
GOM	Government of Maharashtra
GRM	Grievance Redressal Mechanism
GRS	Grievance Redress Service
HVA	High Value Agriculture
IBRD	International Bank for Reconstruction and Development
IFC	International Finance Corporation
IPF	Investment Project Financing
IPP	Indigenous Peoples Plan
MACP	Maharashtra Agricultural Competitiveness Project
MAPs	Market Access Plans
MRL	Maximum Residue Level
MSAAPCC	Maharashtra State Adaptation Action Plan on Climate Change
MSP	Minimum Support Price
NAPCC	National Action Plan on Climate Change
PCMU	Project Coordination and Monitoring Unit
PMC	Pune Municipal Corporation
PP	Productive Partnerships
PPP	Purchasing Power Parity
RAP	Resettlement Action Plan
SHGs	Self Help Groups
SMART	State of Maharashtra's Agribusiness and Rural Transformation
SMEs	Small and Medium-sized Enterprises
SPS	Sanitary and Phytosanitary Standards
USD	United States Dollar

TABLE OF CONTENTS

DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
India	State of Maharashtra's Agribusiness and Rural Transformation Project	
Project ID	**Financing Instrument**	**Environmental Assessment Category**
P168310	Investment Project Financing	B-Partial Assessment

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[ ] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[✓] Disbursement-linked Indicators (DLIs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	

Expected Approval Date	Expected Closing Date
17-Dec-2019	31-Mar-2027
Bank/IFC Collaboration	**Joint Level**
Yes	Joint Project - involving co financing with IFC (loan, equity, budget, other) or staffing

Proposed Development Objective(s)

The project development objective is to support the development of inclusive and competitive agriculture value chains, focusing on smallholder farmers and agri-entrepreneurs in Maharashtra.

Components

Component Name	Cost (US$, millions)

Component A: Enhancing Institutional Capacity to Support Agricultural Transformation.	42.20
Component B: Expanding Market Access and Supporting Enterprise Growth.	204.50
Component C: Building Risk Mitigation Mechanisms.	20.20
Component D: Project Management, Monitoring and Learning.	33.10

Organizations

Borrower:	Republic of India
Implementing Agency:	Department of Agriculture, Government of Maharashtra

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	300.00
Total Financing	300.00
of which IBRD/IDA	210.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	210.00

Non-World Bank Group Financing

Counterpart Funding	80.00
Borrowing Agency	80.00
Other Sources	10.00
Foundation/s (identified)	10.00

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2020	2021	2022	2023	2024	2025	2026	2027

Annual	1.49	7.53	10.70	19.99	33.96	41.83	45.70	48.79
Cumulative	1.49	9.02	19.72	39.72	73.68	115.51	161.21	210.00

INSTITUTIONAL DATA

Practice Area (Lead)

Agriculture and Food

Contributing Practice Areas

Finance, Competitiveness and Innovation, Transport

Climate Change and Disaster Screening

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

Gender Tag

Does the project plan to undertake any of the following?	
a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF	Yes
b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment	Yes
c. Include Indicators in results framework to monitor outcomes from actions identified in (b)	Yes

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Low
2. Macroeconomic	Low
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Substantial
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Substantial
8. Stakeholders	Moderate

9. Other	
10. Overall	Substantial

COMPLIANCE

Policy

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

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	✓	
Performance Standards for Private Sector Activities OP/BP 4.03		✓
Natural Habitats OP/BP 4.04		✓
Forests OP/BP 4.36		✓
Pest Management OP 4.09	✓	
Physical Cultural Resources OP/BP 4.11		✓
Indigenous Peoples OP/BP 4.10	✓	
Involuntary Resettlement OP/BP 4.12	✓	
Safety of Dams OP/BP 4.37		✓
Projects on International Waterways OP/BP 7.50		✓
Projects in Disputed Areas OP/BP 7.60		✓

Legal Covenants

Sections and Description

Project Steering Committee (PSC)

The Project Implementing Entity shall maintain throughout the period of Project implementation, the Project Steering Committee, chaired by the Chief Secretary of Maharashtra; which committee shall have functions and responsibilities acceptable to the Bank, including providing overall advice and policy directions for Project implementation and monitoring Project implementation.

Section I.A.2(a) of the Schedule to the Project Agreement
Recurrent: Yes
Due Date: N/A
Frequency: Throughout implementation

Sections and Description
Governing Council

The Project Implementing Entity shall maintain throughout the period of Project implementation, the Governing Council, chaired by the Administrative Secretary (agriculture) of Maharashtra; which council shall have functions and responsibilities acceptable to the Bank, including ensuring coordination among different line departments and stakeholders involved in the Project.

Section I.A.2(b) of the Schedule to the PA
Recurrent: Yes
Due Date: N/A
Frequency: Throughout implementation

Sections and Description
Project Coordination and Management Unit (PCMU)

The Project Implementing Entity shall maintain throughout the period of Project implementation, the Project Coordination and Management Unit (PCMU), set up within the SMART Society, headed by the PIE's Commissioner (agriculture) as the Project Director, and comprised of experienced and qualified staff, in sufficient numbers and under terms of reference acceptable to the Bank, which unit shall be responsible for day-to-day Project implementation and monitoring, and shall have functions and responsibilities acceptable to the Bank, including calling for and screening proposals for the provision of Matching Grants; assisting the Participating Implementing Agencies in preparing annual work plans and budgets; undertaking procurement and financial management; supporting, monitoring and reporting the compliance of Project/Sub-Project activities with the provisions of ESMF; preparing progress reports; Project monitoring; and providing timely and quality resources and technical assistance to PIUs, RIUs and DIUs.

Section I.A.2(c) of the Schedule to the PA
Recurrent: Yes
Due Date: N/A
Frequency: Throughout implementation

Sections and Description
Project Implementing Units (PIUs)

The Project Implementing Entity establish within one (1) month of the Effective Date, and maintain throughout the

period of Project implementation, Project Implementation Units (PIUs) in each of the Participating Implementing Agencies, comprising of experienced and qualified staff, in sufficient numbers and under terms of reference acceptable to the Bank; which units shall be responsible for entering to Grant Agreements with CBOs and Stewardship Councils, as applicable, and for preparing, implementing and monitoring their respective annual work plans.

Section I.A.2(d) of the Schedule to the PA
Recurrent: Yes
Due Date: Yes, within one month of effectiveness
Frequency: Throughout implementation

Sections and Description
District Implementing Units (DIUs)

The Project Implementing Entity shall establish within one (1) month of the Effective Date, and maintain throughout the period of Project implementation, District Implementation Units (DIUs) in each of the districts, headed by the district superintending agriculture office and supported by ATMA and district representatives of Participating Implementing Agencies, which units shall be responsible for supervising the implementation of Sub-Projects at the district level; undertaking physical verification of documentation and assets created by CBOs for release of funding under Matching Grants; undertaking capacity building of CBOs; monitoring the progress of Project activities at district level; resolving cross-cutting implementation issues; and avoiding duplication of Project activities with other government schemes; and maximizing the convergence of complementary activities.

Section I.A.2(f) of the Schedule to the PA
Recurrent: Yes
Due Date: Within 1 month of effectiveness
Frequency: Throughout implementation

Sections and Description
Regional Implementing Units (RIUs)

The Project Implementing Entity shall establish within one (1) month of the Effective Date, and maintain throughout the period of Project implementation, Regional Implementation Units (RIUs) in each of the Regions, headed by the Divisional Joint Director of agriculture and comprising of experienced and qualified staff, in sufficient numbers and under terms of reference acceptable to the Bank; which units shall be responsible for monitoring the progress of Sub-Projects at the regional level and coordinating the DIUs within the Region.

Section I.A.2(e) of the Schedule to the PA
Recurrent: Yes
Due Date: Within one month of effectiveness
Frequency: Throughout implementation

Sections and Description

Matching Grants

1. The PIE shall, through the PCMU, invite CBOs and Stewardship Councils to submit proposals for financing Productive Partnership Sub-Projects, Market Access Plan Sub-Projects and/or Complementary Innovation Investment Sub-Projects for purposes of carrying out the activities under Part B1.1 of the Project, for financing Warehouse Sub-Projects for purposes of carrying out activities under Part C2 of the Project, and for financing Stewardship Sub-Projects under Part A3.2 of the Project, all in accordance with the procedures and requirements set forth in the Project Implementation Plan (PIP).

2. The PIE shall ensure that the Matching Grants are provided to selected CBOs and Stewardship Councils ("Grant Recipients") in accordance with the eligibility criteria and procedures set forth in the PIP.

3. Each PIU shall enter into a Grant Agreement with each respective Grant Recipient, under term and conditions as mutually agreed between the PIE and the Bank, as forth in the PIP, which agreement shall provide, inter alia:
(a) the minimum contribution required from the Grant Recipient for undertaking the Sub-Project;
(b) that the Grant Recipient shall carry out the Sub-Project with due diligence and efficiency and in accordance with sound technical, financial, environmental and social standards, including the provisions of the PIP, the Procurement Regulations, the Anti-Corruption Guidelines and the Safeguard Documents;
(c) the requirement that the Grant Recipient shall use the proceeds of Matching Grant to finance only the eligible expenditures set forth in the PIP and the approved grant proposal; and maintain adequate records that reflect the proper administration and use of the resources awarded under the Matching Grant;
(d) that the Grant Recipient shall: (i) establish and/or maintain policies and procedures that would allow the PIE and/or the Bank to carry out supervision and monitor the implementation of the Matching Grant; (ii) prepare and furnish to the PIE and/or the Bank, all such information that the PIE and/or the Bank shall reasonably request in relation to the Matching Grant; and (iii) accept random and/or unannounced physical or documentary inspections by the PIE and/or the Bank for the monitoring of, and in relation to, the carrying out of the Sub-Project;
(e) that the Grant Recipient shall: (i) maintain records and accounts adequate to reflect, in accordance with sound accounting practices, the operations, resources and expenditures incurred in the implementation of Sub-Project; and (ii) whenever required by the PIE or the Bank, have such records and accounts audited in accordance with appropriate auditing principles consistently applied by an independent auditor;
(f) that the Grant Recipient shall maintain records and documents to evidence, wherever necessary, that the Sub-Project activities comply with the provisions of the ESMF, including those of PMP, RAP and IPPF, as applicable;
(g) the right of the PIE to suspend or terminate the right of the Grant Recipient to withdraw and use the proceeds of the Matching Grant:
(i) upon any failure of the Grant Recipient to perform its obligations under the Grant Agreement; or
(ii) upon the Bank declaring the Grant Recipient ineligible under the Anti-Corruption Guidelines;
(h) the PIE's right of restitution of any amounts disbursed to the Grant Recipient under the Matching Grant with respect to which fraud and corruption has occurred, or with which an ineligible expenditure has been paid; and
(i) the closing date for the Sub-Project, which date shall fall on or before the date set forth in Section III.B.5 of Schedule 2 to the Loan Agreement.

4. The PIU shall exercise its rights under the Grant Agreement in such manner as to protect the interests of the PIU, PIE and the Bank and to accomplish the purposes of the Loan. Except as the Bank shall otherwise agree, the PIU shall not assign, amend, abrogate or waive the Grant Agreement or any of its provisions.

Section I.B to the Schedule to the PA
Recurrent: Yes
Due Date: N/A
Frequency: Throughout implementation

Sections and Description
Project implementation

The PIE shall implement the Project in accordance with the PIP, FM Manual, Procurement Manual and PPSD.

Section I.C to the Schedule to the PA
Recurrent: Yes
Due Date: N/A
Frequency: Throughout implementation

Sections and Description
Partial Credit Guarantee Facility (PCGF)

1. The PIE shall, by no later than six (6) months after the Effective Date, complete feasibility studies, under terms of reference agreed with the Bank, to assess alternative structures for the establishment of PCGF or investing in an existing one, required documentation, managerial structure, eligible investment activities, and potential pipeline therefore. The PIE shall submit to the Bank for its review and concurrence in writing its selected structure for PCGF prior to undertaking any activities with respect to PCGF under Part B3 of the Project. After the Bank's review and concurrence, the PIE shall take a decision on the in-principle establishment of the PCGF not later than nine (9) months after the Effective Date.

2. The PIE shall, prior to providing any Capital Contribution to the PCGF:

(a) by no later than twelve (12) months after the Effective Date, hire the services of a counsel with qualifications and experience, and under terms of reference, agreed with the Bank, to provide advice to the PIE in the preparation/review of the PCGF Operational Manual and legal documents involving the establishment, development and/or support, as the case may be, of the PCGF;
(b) by no later than twelve (12) months after the Effective Date, procure a PCGF Manager under terms of reference, experience and qualifications and in a manner acceptable to the Bank to act as the PCGF Manager; and shall sign a contract with said PCGF Manager with terms and conditions acceptable to the Bank;
(c) by no later than eighteen (18) months after the Effective Date, complete a Technical and Fiduciary Assessment of the new or existing PCGF to certify, inter alia, that the governance and management of the new or existing PCGF are composed of professionals who have qualifications and experience satisfactory to the Bank and have the capacity to exercise satisfactory control over the use of funds;
(d) by no later than eighteen (18) months after the Effective Date and based on the foregoing assessments, advice of counsel and advice of the PCGF Manager, and following the Bank's written concurrence with the proposed structure for PCGF required under paragraph 1 of this Section D, establish a new facility, or make adjustments to an existing facility to establish that, as the PCGF for the purposes of the Loan Agreement and this

Agreement, and issue and adopt a PCGF Operational Manual, satisfactory to the Bank, setting forth specific rules and procedures for the operation of the PCGF including, inter alia:
(i) the PCGF governance structure; (ii) the financial structure of PCGF and PCGF Manager's role; (iii) the criteria and procedure for screening FIs eligible to receive guarantee support through PCGF; (iv) the mechanisms to provide guarantees in accordance with decision making process, funding strategy, and guidelines satisfactory to the Bank;
(v) the disbursement, auditing and reporting requirements of the PCGF (including the submission of interim unaudited financial reports, audited financial statements and annual reports to the Bank regarding management performance, capital value and asset allocation with respect to PCGF operations); (vi) the criteria for eligibility for providing guarantees; and (vii) the monitoring and evaluation requirements;
(e) by no later than twenty-four (24) months after the Effective Date, contribute sufficient funds as required by the PCGF Operational Manual to PCGF, to provide partial credit guarantees to cover credits extended by selected FIs to eligible CBOs and Agri-Enterprises, all in accordance with the requirements and procedures set forth in the PCGF Operational Manual; and
(f) as part of the establishment of, and contribution to, the PCGF, enter into a legal agreement with the other shareholders/partners of said PCGF on terms and conditions acceptable to the Bank, including, inter alia: (i) the obligation of the PIE to make available to the PCGF, a portion of the Loan proceeds on terms and conditions acceptable to the Bank, as set forth in the PCGF Operational Manual, including, inter alia, compliance with the Safeguards Documents and Anti-Corruption Guidelines; and (ii) the obligation of PCGF to provide partial guarantee to a selected FI.

3. For purposes of providing the guarantee described under Section I.D.2.(f) of this Schedule, the PCGF and the respective FI shall enter into an agreement (the "PCGF Agreement") on terms and conditions acceptable to the Bank, including, inter alia, that PCGF shall obtain rights adequate to protect its interests and those of the PIE, the Borrower, and the Bank, including the right to:

(a) Suspend or terminate the right of the FI to use the partial credit guarantee upon its failure to perform any of its obligations under the PCGF Agreement; and

(b) require each PCGF Beneficiary to:

(i) carry out its operations with due diligence and efficiency and in accordance with sound technical, economic, financial and managerial standards, environmental and social safeguards requirements (including any documents required under the Safeguard Documents) and practices, all satisfactory to the Bank, including in accordance with the provisions of the Anti-Corruption Guidelines applicable to recipients of Loan proceeds other than the Borrower;
(ii) provide, promptly as needed, the resources required for the purpose of carrying out the activities for which it takes credit from the FI;
(iii) maintain policies and procedures adequate to enable it to monitor and evaluate its operations, in accordance with indicators acceptable to the Bank;
(iv) maintain a financial management system and prepare financial statements in accordance with consistently applied accounting standards acceptable to the Bank, both in a manner adequate to reflect its operations, resources and expenditures;
(v) at the Bank's, PIE's or the Borrower's request, have such financial statements audited by independent auditors acceptable to the Bank, in accordance with consistently applied auditing standards acceptable to the Bank, and promptly furnish the statements as so audited to the Borrower, PIE and the Bank;

(vi) enable the Borrower, PIE, PCGF and the Bank to inspect the PCGF Beneficiary's operation and any relevant records and documents; and
(vii) prepare and furnish to the Borrower, PIE and the Bank all such information as the Borrower, PIE or the Bank shall reasonably request relating to the foregoing.

4. The PCGF Manager shall exercise the rights and carry out the obligations of the PCGF under each PCGF Agreement in such manner as to protect the interests of the PCGF, the Borrower, PIE and the Bank and to accomplish the purposes of the Loan. Except as the Bank, the Borrower and the PIE shall otherwise agree, the PCGF Manager, shall not assign, amend, terminate, abrogate, waive or fail to enforce any PCGF Agreement or any of its provisions.

5. The PIE shall provide the funds and other resources as needed, to ensure the sustainability of the PCGF after the Closing Date until the PCGF's dissolution.

6. Subject to arrangements which the Bank has determined to be acceptable prior to the Closing Date, and based on all necessary assessments, including fiduciary, social and environmental safeguards and legal assessments, PIE may retain after the Closing Date any amounts withdrawn under Category (3) which remain unutilized or uncommitted as guarantees under Part B3 of the Project, for purposes consistent with the Project's development objective and for purposes and as per protocols set forth in the PCGF Operational Manual, all in accordance with arrangements satisfactory to the Bank.

7. In case of any conflict between the terms of this Agreement or the Loan Agreement and those of the PCGF Operational Manual, the terms of this Agreement or the Loan Agreement, as applicable, shall prevail. The PCGF Operational Manual may be amended from time to time only with the Bank's prior written consent.

Section I.D to the Schedule to the PA
Recurrent: Yes
Due Date: Within 6 months of effectiveness
Frequency:

Sections and Description
Safeguards

1. The PIE shall ensure that:

(a) the Project is carried out with due regard to appropriate health, safety, social, and environmental practices and standards, and in accordance with the Safeguard Documents;

(b) for each activity under the Project for which the ESMF (including the RPF, IPPF and PMP) provides for the preparation of an ESMP, Indigenous Peoples Plan or RAP:

(i) proceed to have such ESMP, Indigenous Peoples Plan and RAP as appropriate: (A) prepared and disclosed in accordance with the ESMF; (B) consulted upon adequately with people affected by the Project as per the ESMF, and submitted to the Bank for review and approval; and (C) thereafter adopted, prior to implementation of the activity; and

(ii) take such measures as shall be necessary or appropriate to ensure compliance with the requirements of such ESMP, Indigenous Peoples Plan or RAP in a manner satisfactory to the Bank;

(c) all measures are taken to implement the ESMP, Indigenous Peoples Plan and RAP in a manner and timeframe satisfactory to the Bank. To this end, the PIE shall ensure that:

(i) funds are made available to cover all the costs of implementing the ESMPs, Indigenous Peoples Plans or RAPs;
(ii) prior to carrying out activities which involve displacement, Affected Persons shall be compensated at full replacement cost, resettled and provided with resettlement assistance in accordance with the RAP, as applicable; and
(iii) the implementation, monitoring and evaluation of such RAP is completed and reported in a manner satisfactory to the Bank.

2. The PIE shall ensure that the Sub-Projects do not include any activities or expenditures on the negative list set forth in the ESMF.

3. Except as the Bank shall otherwise agree in writing, the PIE shall ensure, and cause to ensure, that none of the provisions of the Safeguard Documents be abrogated, amended, repealed, suspended or waived. In case of any inconsistencies between the provisions of any of the Safeguard Documents and the provisions of this Agreement and/or the Loan Agreement the provisions of the latter agreement(s) shall prevail.

Section I.E to the Schedule to the PA
Recurrent: Yes
Due Date: N/A
Frequency: Throughout implementation

Sections and Description
Private sector financing

1. The PIE shall cause the Village Social Transformation Foundation (VSTF) to mobilize private sector financing to the amount of ten million United States Dollars (US$ 10,000,000) equivalent in order to provide financing to CBOs to implement Productive Partnership Sub-Projects and/or Market Access Plan Sub-Projects and undertake other activities as agreed with the PCMU.

2. The PIE shall cause VSTF to ensure availability and contribution of funds to the Project in a separate account designated for such purpose as per the following schedule:

By end of FY2021-22: At least US$ 4,000,000 equivalent
By end of FY2022-23: At least US$ 7,000,000 equivalent
By end of FY2023-24: US$ 10,000,000 equivalent

3. In case the PIE is unable to secure financing in accordance with paragraphs 1 and 2 of this Section F, the PIE shall provide the necessary funds from its own budget in order to undertake the required activities under the Project.

4. The amount referred to in paragraph 1 of this Section F shall be secured and utilized in accordance with the procedures and criteria laid down in the PIP and in accordance with the Safeguard Documents.

Section I.F to the Schedule to the PA
Recurrent: Yes
Due Date: By end of FY 21/22, FY 22/23, FY 23/24
Frequency: Annual

Conditions

I. STRATEGIC CONTEXT

A. Country Context

1. **India continues to remain the fastest growing major economy in the world in 2018-19, despite a slight moderation in its GDP growth from 7.2% in 2017-18 to 6.8% in 2018-19.** Moderation in growth momentum is mainly on account of relatively low levels of private investment over the past several years. The latest data shows a broadening of the slowdown across all categories of aggregate demand**.** Although the current account deficit widened to 2.1 percent of GDP in FY18/19, robust capital inflows during the second half of the year allowed for a build-up of international reserves to US$ 411.9 billion at the end of the fiscal year (equivalent to 10 months of imports). Going forward, subdued import growth and benign oil prices are expected to contain the current account balance. On the fiscal side, the general government deficit is estimated to have widened to 5.9% of GDP in FY18/19. The deficit is expected to fall over time (to 5.6% by FY21/22), although it should rise to 6.0% in FY19/20 with significant downside risks (owing to tax cuts recently adopted and the impact of slower economic growth on tax proceeds).

2. **Since the 2000s, India has made remarkable progress in reducing absolute poverty**. Between FY11/12 and 2015, poverty declined from 21.6 to an estimated 13.4% at the international poverty line (2011 PPP US$ 1.90 per person per day), continuing the earlier trend of fast poverty reduction. Thanks to robust economic growth, more than 90 million people escaped extreme poverty and improved their living standards during this period. Despite this success, poverty remains widespread. In 2015, 176 million Indians were living in extreme poverty, while 659 million - half the population- were below the higher poverty line commonly used for lower middle-income countries (2011 PPP US$ 3.20 per person per day). Implementation challenges of indirect tax reforms, stress in the rural economy and a high youth unemployment rate in urban areas, may have moderated the pace of poverty reduction since 2015.

B. Sectoral and Institutional Context

3. **Agriculture plays a vital role in India's economy, but the sector faces many challenges.** More than 54% of the population engages in agriculture and allied activities (census 2011), but the sector's contribution to gross value added has declined steadily from 18.6% (2013–14) to 17.4% (2016–17) and then 17.1% (2017–18) (at current prices). With a large area under cultivation, India is a significant producer of many commodities, including rice, wheat, milk, cotton, pulses, sugarcane, vegetables, fruits, fish, spices, and plantation crops. Agricultural growth has slowed from an annual rate of around 3.0–3.5% in the 1990s and 2000s to less than 2% during 2013–15. Slower growth is the result of low productivity, the growing scarcity of water and land, rising labor costs, and declining commodity prices.

4. **Agricultural output has increased steadily, even as agribusiness activity and value addition remain relatively low.** Recent growth in agricultural output, resulting from improvements in productivity and market orientation, is expected to be sustained over the next decade, led by growth in fruits, vegetables, milk, cotton, pulses, and other high-value commodities. The ratio of agribusiness to agriculture's contribution to GDP is only 0.64, however, compared to 1:2 in Brazil and China, indicating potential to expand upon the minimal value addition to primary agriculture.

5. **Developments in the Indian food market reflect global trends in changing consumer demand and have significant implications for India's food system, both in terms of the production mix and the post-harvest management of farm produce.**[1,2] Consumption patterns suggest a move away from cereals to high-value agriculture (HVA) products in both rural and urban areas as the share of cereals and staples in food expenditure declines. This shift is providing the growing demand base for higher-quality, higher-value agricultural commodities (fruits and vegetables, pulses, and maize and soybeans for animal feed). Since 2004/05, the share of foods with secondary levels of processing has grown rapidly. By 2011/12, secondary-processed foods accounted for the majority share of the consumer basket (52%), with the bulk of this demand concentrated in the lower end of the secondary processing scale. As processing increases, concern is growing over the quality of the food consumed (high-calorie and fatty foods) and the long-term implications for public health. An added consideration is that food consumption patterns in the formal urban economy differ from those of poor migrants in urban slums, where unsafe food and nutritionally deficient diets exacerbate negative health impacts.[3] Urban consumers have started shifting toward new types of safe food and healthy diets, however, and these preferences are expected to become more mainstream as the economy grows.

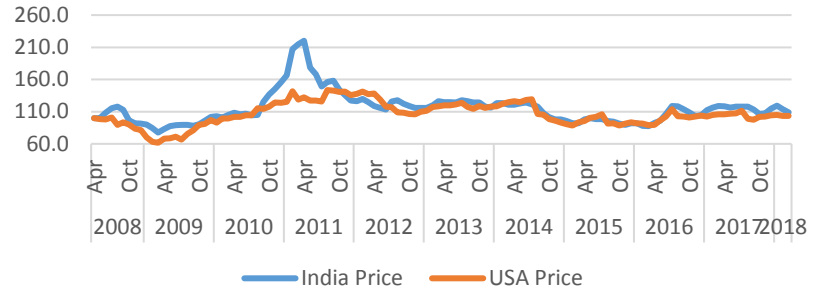
6. **Agricultural transformation is underway in Maharashtra, but the state faces many challenges in managing this transformation.** The area under cultivation for cereals has declined since 2000, reflecting a shift from food grains toward cash crops. Food grains (rice, wheat, and millets, excluding maize) account for about 25% of the gross cropped area while contributing only 7.7% of agricultural GDP.[4] Since 2000, with the upsurge in the production of high-value crops, Maharashtra has emerged as one of India's largest producers and exporters of fruits, vegetables, pulses, cotton, and soybeans. These changes have largely been positive, as production of cash crops is labor intensive (horticulture and floriculture are two examples), climate-resilient (for instance, pulse-based cropping systems increase resilience, and pigeon pea intercropping sequesters more carbon in soils than monocropping systems), and responds to domestic and global market demand. Value addition is increasing in Maharashtra's dynamic food processing industry, which employs approximately 240,000 workers, about 15% of formal sector employment. Agricultural growth and structural transformation are spread unevenly across the state, however, and some areas, notably in northern and eastern Maharashtra, continue to lag.

7. **Because Maharashtra's diversified agricultural sector is relatively integrated into global value chains, downturns in commodity prices significantly affect small and marginal farmers[5] who dominate agriculture across the state.** The combination of increasing production and falling commodity prices has serious implications for producer profitability. The influence of global price movements on commodities like cotton, soybeans, and sugar, which cover 44% of the cropped area in Maharashtra,[6] is particularly strong (Figure 1). On the other hand, commodities with little footprint outside India are affected mainly by trade policies. For example, prices of pulses (which cover about 20% of cropped area in Maharashtra), while influenced by domestic consumption, have been heavily affected by inconsistent Indian trade policies over the past few years. These relationships are reflected in periodic farm distress in sectors linked to domestic and global markets, as broad shifts in the global prices of

[1] Seema Bathla and Madhur Gautam (July 2018), "Changing Contours of Post-Harvest Food Management and Agribusiness Sectors in India."
[2] "Food Systems for An Urbanizing World" (November 2017), World Bank and FAO, Washington, DC.
[3] Prabhu Pingali and Yasmeen Khwaja (2004), "Globalisation of Indian Diets and the Transformation of Food Supply Systems," ESA Working Paper 04-05, FAO, Rome.
[4] Directorate of Economics and Statistics, Planning Department, Government of Maharashtra (2018), "Economic Survey of Maharashtra, 2017-18," Mumbai.
[5] With an average farm of 1.44 ha.
[6] Market Co-integration Study conducted in September 2018 for the Maharashtra Agricultural Competitiveness Project (MACP).

commodities such as pulses, soybeans, sugar, and milk in many cases have prevented farmers from even covering their production costs.

Figure 1: Price integration between US and Indian cotton markets



8. **Compared to men, women face higher barriers in transitioning to HVA and agribusiness, and women remain concentrated in the lower end of agricultural value chains.** Rural women engage in agriculture and allied activities at a rate of 79%, compared to rural men at 63% (NSSO 2009-10). Men engage not only in production but participate in the upper levels of value chains, acting as intermediaries or village-level traders and processors, wholesalers, retailers, or exporters. Throughout India, an estimated 42.6% of women (144.3 million) work as agricultural laborers, but women own only 12.8% of operational landholdings. Some of the key barriers that women encounter in moving up the agricultural value chains are: (i) low access to extension services and technical know-how related to HVA practices and technology; (ii) lack of access to productive assets; and (iii) lack of access and exposure to markets and market intelligence. The absence of women service providers in extension, credit, input supply, and marketing compounds this problem.

9. **Policy and programmatic interventions that mobilize small farmers and women into federated organizations to enhance their access to markets and credit have yet to produce the intended results.** Maharashtra has a large pool of federated organizations of farmers and women's self-help groups (SHGs), with more than 21,000 Primary Agriculture Credit Cooperative Societies, 1,700 Farmer Producer Organizations (FPOs), and 800 women's Community Level Federations (CLFs) and Community Managed Resource Centres (CMRCs). Government departments and institutions promoted federated organizations to achieve economies of scale by aggregating produce, to reduce the cost of providing technical services, and to facilitate links with formal financial institutions that offered credit. These organizations have been unable to provide the technical services needed by their members, have failed to develop linkages to organized markets, and remain dependent on public support. Formal financial institutions are not lending to these organizations because they lack a credit history and generate variable sales revenue, so the cost of assessing the risks of lending to them is high.

10. **The institutional framework for managing agricultural transformation in the state is fragmented and focuses on the implementation of schemes.** Multiple entities manage different aspects of agriculture in the state, including the Department of Agriculture (DoA), Department of Animal Husbandry (DAH), Directorate of Marketing (DoM), Maharashtra State Agriculture Marketing Board (MSAMB), Maharashtra State Warehousing Corporation (MSWC), Maharashtra Cooperative Development Corporation (MCDC), and Maharashtra State Cooperative Cotton Growers Marketing Federation (MahaCot). Nodal departments are focused on the implementation of more than 100 national and state schemes, implemented in silos and primarily focused on subsidies to different aspects of agricultural production.

11. **The state faces significant adverse risks from climate change.** Climate projections for 2030, 2050, and 2070 presented in the Maharashtra State Adaptation Action Plan on Climate Change (MSAAPCC) indicate that

temperatures and rainfall will increase across the state, with important regional variations, resulting in potentially significant adverse impacts on agricultural performance. Those impacts will be aggravated by a greater frequency of extreme climatic events (droughts, hailstorms, floods, delays in the onset of monsoons, higher rainfall intensity). The state already experiences such events, including three severe droughts within the past five years. These uncertain shifts in weather and extreme climatic events expose small and marginal farmers disproportionately to risks and farm distress.

12. **To encourage growth in agriculture and allied sectors, and to respond to emerging production and market-related challenges, Maharashtra has launched a transformative agricultural development strategy.**[7] This strategy, embedded within Maharashtra's Vision 2030, promotes sustainable agricultural development in line with the Sustainable Development Goals, thus making this project the nucleus of a much larger government agribusiness and rural transformation program. Furthermore, the Government of Maharashtra (GoM) is likely to take advantage of recent changes in national policy that allow 100% foreign direct investment in agribusiness and food processing to leverage the new agricultural export policy, which has the target of doubling agricultural exports to 4% (US$60 billion) by 2022.

C. Relevance to Higher Level Objectives

13. The proposed State of Maharashtra's Agribusiness and Rural Transformation (SMART) Project advances two focus areas of the India Country Partnership Framework (CPF)—promoting more resource-efficient growth and enhancing competitiveness and creating jobs—by supporting CPF objectives 1.1 and 2.1.

14. **Objective 1.1: Promote more resource-efficient, inclusive, and diversified growth in the rural sector.** The project closely aligns to the CPF sectoral goal of supporting the Government of India's (GoI's) priorities of agricultural transformation and doubling farmer incomes by 2022. The project encompasses a range of interventions to enhance market access, competitiveness, and resilience to market shocks for farmers and value chain actors in the state of Maharashtra. The project will seek to generate agribusiness jobs in areas related to input supply, provision of technical services, and food processing. The project will also explicitly target and develop mechanisms for the inclusion of women at all levels of agricultural transformation, from diversifying into higher-value crops to accessing higher-level technical services and reaching a broader range of markets. By strategically aligning its support with complementary investments under other projects and schemes, the SMART Project will also advance resource-efficient growth and help farmers to build climate resilience.

15. **Objective 2.1: Improve the business environment and select firm capabilities.** The SMART Project will contribute to a more favorable regulatory environment that promotes private sector investment and enhances the competitiveness of the agricultural sector and agribusiness. It will support reforms that are already underway, set up institutional structures for consultative planning and capacity building in important value chains, and provide technical services to agribusiness. The project will closely integrate staff of the International Finance Corporation (IFC) in project design and implementation. They will participate in building capacity in the selected agribusiness/private sector value chains, especially in value chains linked to IFC investments.

[7] Planning Department, Government of Maharashtra (2017), "Vision 2030," Mumbai.

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

16. The project development objective is to support the development of inclusive and competitive agriculture value chains, focusing on small holder farmers and agri-entrepreneurs in Maharashtra.

17. This will be achieved by expanding access to new and organized markets for producers and enterprises with complementary investments in technical services and risk management capabilities.

PDO Level Indicators

a) Increase in net price realization at producer level; (measured in real terms by increase over baseline in value of marketed output less costs);
b) Full time equivalent (FTE) jobs generated in beneficiary firms (disaggregated by gender and social category, with a target for women and SC/ST populations); (measured by number of incremental FTE jobs, where beneficiary firms refer to project supported CBOs and enterprises)
c) Farmers reached with agricultural assets or services (CRI) (disaggregated by gender and social category); and,
d) Private sector finance mobilized by the project (measured by amount of equity and debt raised through subprojects and project beneficiaries, including private sector contribution through VSTF).

B. Project Components

18. **The project will strengthen and speed up the ongoing transformation of agricultural systems in the state of Maharashtra,** enhancing institutional capacity to manage that transformation and expanding the role of the private sector in the production, processing, value addition, and commercialization of crops and livestock products.

19. **In speeding up the pace of agricultural transformation, the project will include actions to promote both enabling and mobilizing private sector investments for Maximizing Finance for Development (MFD)**. For enabling MFD, the project will (i) improve the policy and regulatory environment for private sector investments in the agricultural sector including better tracking and implementation of regulatory reforms, licensing and service provision to private sector investors; (ii) use public financing to enhance private sector incentives and reduce transaction costs and risks by supporting partnerships between agribusiness and producers, enterprises and lead firms; and working with innovative agri-services start-ups and producers to expand service provision; (iii) forge partnerships for leveraging funding through the Village Social Transformation Foundation (VSTF), a foundation promoted by the GoM with private sector participation, through which the private sector has already committed US$ 10M toward the project cost; and (iv) leverage private sector capabilities through VSTF financed secondments of competent and professional staff for project management and agribusiness activities.

20. **The project will mobilise private sector investments as part of market access support.** Based on the initial investment (subproject) plans developed as part of project preparation, the project expects to mobilize US$65 million in private sector investments as part of 300 investment plans to be developed and implemented

over the life of the project. Aside from the inclusion of counterpart cofinancing in all types of subprojects, the project will promote access to credit for smallholder producers and enterprises by providing technical assistance and capacity building to community-based enterprises and agri-enterprises.

21. **The IFC is actively engaged in project design and implementation.** The project intends to leverage existing IFC clients for productive partnerships (such as Big Basket, Agrostar) and to improve access to finance (Ratnakar Bank, L&T Finance, Mahindra Finance). Staff of IFC's Financial Institutions Group as well as the World Bank Group's Finance, Competitiveness, and Innovation Global Practice (FCI) jointly developed the project agenda for broadening access to finance. IFC staff will also support the design of the Partner Financial Institutions (PFI) platform, which will include IFC investee clients. The IFC Manufacturing, Agribusiness, and Services Upstream unit and the FCI-Advisory team will work with the project to crowd-in private sector players, particularly agri-tech startups, to develop a pipeline of investment clients for IFC over the next 18–24 months.

22. **The project will leverage existing World Bank investments in the state.** More than 2 million poor women mobilized into Self Help Groups (SHGs) and federated organizations are being supported for higher-level enterprise activities through the ongoing NRETP. The project is partnering with the State Rural Livelihoods Mission (SRLM) to leverage these federated organizations for provision of technical services, credit and market-linkage support to women farmers. The project will leverage climate resilience investments made through Maharashtra Project on Climate Resilient Agriculture (PoCRA) by prioritizing selection of geographic areas where such investments have been made for market access and value chain investments. The proposed Agriculture Risk Resilience and Insurance Access (ARRIA) program focuses on strengthening climate resilience and facilitating increased formal credit flows to the agricultural sector. The project will leverage ARRIA investment in setting-up of a technical support unit (TSU) within DoA to converge provision of insurance and credit access services to farmers supported through this project.

23. **The project also prioritizes investments that enhance climate resilience in focus value chains.** The selection of business plans for funding will give priority to plans that include climate-smart approaches, including the adoption of climate-resilient practices and technologies and diversification into crops that are climate-resilient and reduce greenhouse gas (GHG) emissions. Resilience will be achieved through several interventions, including interventions to improve producers' access to knowledge, technologies, and markets; to expand the adoption of energy-efficient technologies by enterprises supported through the project; and to support environmentally optimized and climate-resilient design of infrastructure developed under the project.

24. **The project will capture and disseminate the knowledge gained through implementation.** Maharashtra is at the forefront of agricultural transformation. The experience gained through the SMART Project in tackling key challenges related to agricultural transformation in this context can inform the agricultural transformation agenda nationally and in other states. Key areas in which the project is expected to generate significant learning include institutional realignment and reform of the DoA, partnerships with the private sector to access new markets, scaling up warehouse receipt financing, and inclusion of women in HVA. The project will support partnerships with technical and research institutions to capture learning from implementation and to develop learning notes and materials for dissemination to other states and Bank-supported operations.

25. **The project is supported by an IBRD Loan in the amount of US$210 million, using an Investment Project Financing (IPF) with Disbursement-Linked Indicators (DLIs) lending instrument.** The DLI instrument, which

focuses on Component A, is well suited to support a results-oriented approach by the GoM to achieve institutional reform in DoA and build its capacity to promote more effective agricultural transformation across the state.

26. **Component A: Enhancing Institutional Capacity to Support Agricultural Transformation (component cost of US$42.20M, of which IBRD US$29.70M, GoM US$12.50M).** The objective of this component is to strengthen institutional capabilities of the nodal government departments and agencies of the GoM to more effectively support agricultural transformation in the state.

27. ***Subcomponent A1: Enhancing institutional capacity of the Department of Agriculture (DoA).*** This subcomponent will support the DoA –using agreed DLIs (Annex 1)—to shift from a scheme-based approach to an outcome-based, market-driven approach. The DoA has approximately 30,000 staff members, ranging from village-level agricultural extension workers to supervisory staff at the block, district, and state levels. The department implements more than 100 state and national agricultural support schemes on an annual budget that averaged US$850 million over the past three years. As Maharashtra increasingly diversifies into higher-value agricultural production and integrates into global value chains, the DoA recognizes the need for a longer-term, market-driven approach focused on delivering technical support and capacity building support to farmers and agribusinesses to sustainably enhance incomes and private investment in agriculture.

28. To that end, the DoA will develop overall outcome goals for the state by identifying focus commodities and corresponding outcomes (with targets) for a five-year period. To support the achievement of those outcomes, DoA will build capacity in the following technical areas: market intelligence and crop advisory services; quality control, phytosanitary standards, and food safety; food processing; planning, research, and development; soil and water conservation; climate change mitigation and adaptation measures; and market promotion. Additional cross-cutting areas identified for strengthening include scheme implementation and monitoring; financial and administrative management; institutional coordination across departments; human resource management; and monitoring and evaluation systems.

29. Through DLIs, this subcomponent will support the following measures to build institutional capacity: developing outcome goals for the agricultural sector in the state and goals for each of the technical areas identified above; conducting a functional review of the DoA and DoM to assess enhancements needed in those technical areas and to achieve outcome goals; building capacity of nodal staff training institutions, namely Vasantrao Naik State Agricultural Extension Management Training Institute and the Regional Agricultural Extension Management Training Institute; developing a training calendar and training management plan for all staff; strengthening technical capacity in technical areas identified above by hiring additional technical staff and partnering with technical institutions; strengthening coordination mechanisms with partner departments and agencies; and aligning performance appraisals of staff with their functional areas and outcome goals. In addition, the subcomponent will support the implementation of existing schemes and budgets to shift toward implementation through cluster and commodity plans developed to achieve overall outcome goals. The subcomponent will also build capacity within the DoA to strengthen climate resilience across all agricultural programs implemented; the first step will be to assess current technical capacity as part of the functional review and assist the DoA in setting clear outcome goals in this regard.

30. Institutional capacity building will focus on enhancing the orientation and capacity of the DoA to target the increasing proportion of women farmers in the state and expand their participation in HVA by embedding a gender focus in the development of training modules and in staff training and capacity building; meeting state-

mandated targets to employ women as last-mile agricultural extension workers; targeting outreach of extension services toward women farmers and farm workers; training and capacity building for Boards of Directors of FPOs supported by the DoA on the topics of regulatory requirements and best practices for gender inclusion; and tracking and reporting gender-disaggregated data in the DoA management information system (MIS).

31. ***Subcomponent A2: Enhancing institutional capacity of the Directorate of Marketing (DoM).*** This subcomponent will improve the capacity of the DoM to support healthy functioning of markets through the following sets of interventions:

a. **Enhance regulatory effectiveness** through: (i) compiling and disseminating information on market regulations through booklets, websites, a call center, advertisements, and workshops; (ii) training employees of Agricultural Produce Marketing Committee markets on roles and responsibilities, including relevant laws, reforms, technical functions, training of assayers, facilitating access to market services for women farmers, and dispute resolution; and (iii) enhance Ease of Doing Business parameters for private markets, buyers and sellers by reviewing and improving service delivery standards in licensing and compliance requirements.
b. **Monitor and report on market functioning** by developing and instituting a system to track and report on key market health indicators and using the resulting information to publish an annual ranking of markets across the state. Market health parameters identified so far include the number of licensed buyers, traded volume, waste management facilities, market turnover, employee ratio, quality of storage and holding facilities, and time taken for farmers to complete a transaction.
c. **Enhance dispute resolution functions** through: (i) conducting outreach activities to increase the awareness of rights and responsibilities under the state Agricultural Produce Marketing Committee Act; (ii) developing an online and call-center system for reporting disputes; (iii) decentralizing powers for dispute resolution to field officers and training them in effective dispute resolution strategies; and (iv) periodically tracking and reporting on dispute resolution cases across markets.

32. ***Subcomponent A3: Strengthening capacity for reform measures and joint actions.*** The objectives of this subcomponent are to strengthen systemic capacity for generating a knowledge base for reform measures, and to institutionalize coordination and joint actions across private and public actors to enhance market-driven growth in focus commodities. The subcomponent will support:

a. **Establishing a technical cell within the GoM** supporting partnerships with leading academic and technical support institutions to evaluate reform efforts already being implemented, provide targeted research and recommendations for the ongoing program of reforms, and provide support for piloting reform efforts. The cell will focus on research into reforms needed to enhance climate adaption and resilience in state agricultural systems. At midterm, the technical cell will be evaluated; the outcome will determine the continuation and financing of this cell for the remainder of the project. Based on successful performance and to ensure greater ownership of such entities by the state, a financing plan for GoM budgetary support for the cell will be developed by mid-term.
b. **Establishing Agricultural Commodity Stewardship Councils (ASCs) for selected commodities**, identified based on market growth potential. The project will support the identification and mobilization of major stakeholders (representatives of farmer groups, trader groups, distributors, institutional buyers, and other value chain participants) into the ASCs; provision of technical and handholding support to members to identify gaps and develop a vision plan listing interventions; and implement joint actions such as market identification, promotional activities, and workforce skills training. ASCs will also be assisted in planning and implementing interventions to enhance resilience in focus commodities (such as specifying more resilient

cropping patterns, packages of practices, and climate-resilient technologies) and enhancing the adoption of such packages of practices and technologies through extension services and training. Activities to be funded include: (i) preparation of detailed action plans and feasibility studies for sustainable growth of identified value chains, (ii) providing technical assistance to develop a market-based vision and strategic action plan for each value chain, and (iii) providing need-based matching grants on the basis of business plans prepared by them.

33. **Component B: Expanding Market Access and Supporting Enterprise Growth (component cost of US$204.50M, of which IBRD US$143.10M, GoM US$51.40M, and VSFT US$10.00M).** The objective of this component is to (i) integrate producers in priority value chains, to operate competitively with strengthened and reliable linkages with buyers and markets, and (ii) enhance the provision of relevant technical and Business Development Services (BDS) to support enterprise growth in the agribusiness sector.

34. ***Subcomponent B1: Support for enhancing market access.*** This subcomponent seeks to increase the integration of smallholder producers in value chains and enhance their access to markets by developing and implementing investment subprojects—chosen for project support through a competitive process—that promote partnerships between community-based organizations (CBOs) and the private sector (buyers or new markets). Investments will promote collective action between producers, buyers, and other value chain stakeholders to gain economies of scale, enhance bargaining power, facilitate knowledge sharing, and reduce production costs. The project will screen and give preference to subproject proposals that enhance climate-smart approaches, including the adoption of climate-smart technologies and cropping practices and increased diversification into crops that reduce GHG emissions. The project will also give preference to proposals that enhance the inclusion of lagging regions, smallholder farmers, women, and scheduled caste (SC) and scheduled tribe (ST) populations. Activities supported through these subprojects may comprise eligible works, goods, and services required by the different subproject partners to achieve measurable targets in the form of improved product/service specifications (such as quality, quantity, and delivery conditions) and enhanced market access within the framework of a joint business plan. Further details are presented in Annex 2, including information on subproject cycle, eligibility criteria, and the main subproject parameters.

35. **Three types of subprojects supporting better market access will be developed and partially financed through the project:**

a. **Productive Partnership (PP) subprojects** between CBOs and buyers aim to develop a long-term voluntary commercial relationship that helps participating CBOs to improve their competitiveness in terms of price, cost, productivity, quality standards, climate resilience, and sales volume. By fostering close collaboration between CBOs and buyers, PPs can successfully enhance market linkages for specific types of commodities, including perishable commodities, commodities that require processing soon after harvest, and commodity products that are differentiated based on variety, quality, or some other trait (such as food safety). Selected PPs will include a defined private partner investment contribution as part of the agreements signed.
b. **Market Access Plan (MAP) subprojects** aim to assist CBOs (and their federations) to access new and more organized markets. MAPs are an appropriate market-linkage tool for generic and storable commodities, such as soybeans and pulses. MAP subprojects will support a range of activities to access new and more organized markets, including market research, the adoption of improved varieties, the development of supporting infrastructure (collection centers, common facilities), the adoption of improved post-harvest storage and processing technologies, the acquisition of customers through trade fairs and pitches to buyers, joint marketing and branding efforts, and better provision of technical services through linkages to

specialized technical and business development service providers. MAP subprojects will also include investments to enhance climate resilience across the focus value chains supported through the project. During project preparation, a GHG analysis of six value chains identified interventions to reduce emissions intensity with project support.

c. **Complementary Innovation Investment (CII) subprojects** support the piloting, dissemination, and adoption of innovative technologies with one or more of the following characteristics: (i) adding value to produce; (ii) enhancing information sharing and networking across value chain actors; and (iii) introducing new products, concepts, and activities that can translate into better access to lucrative markets and higher economic benefits in the medium term.

36. **Priority investments in public infrastructure.** Subcomponent B1 will finance civil works, goods, and consulting services for investments in public infrastructure (new or rehabilitated) that complements subprojects supported through the project. Infrastructure investments will aim to improve the efficiency and climate resilience of prioritized value chains, including: (i) complexes for handling perishable exports; (ii) hiring technical service providers for standardization and adoption of food safety standards and shipment protocols across storage and logistics sites so as to access target markets; and (iii) catalytic investments to spur provision of needed services in food testing, logistics, cold storage, and plant nurseries. The project will collaborate with the Standard and Trade Development Facility, which offers an evidence-based framework to prioritize sanitary and phytosanitary (SPS) investments based on outcome goals.

37. **Priority investments that enhance the production and processing of nutritious foods.** Nutritional outcomes will be enhanced by giving priority to subprojects that promote diversification into more nutritious crops (such as legumes, pulses, fruits, and vegetables), giving preferential support to processing enterprises that produce relatively more nutritious products; and supporting investments in an enhanced testing regime, extension services, and training to promote improved food quality and safety.

38. **Support for capacity building.** Subcomponent B1 will also strengthen the organizational, financial, marketing, implementation, and monitoring capabilities of CBOs to support successful implementation of investment subprojects through ongoing mentoring. Activities to be supported include training in technical and operational know-how related to the priority value chains; financial education counselling and training; developing business proposals; conducting market assessments and feasibility analyses; and training on adopting climate adaptation and mitigation approaches. Given that the project aims to enhance the participation of women's CBOs in HVA value chains, at least 30% of the CBOs supported by the project will be led by women and have a majority of female members. The project will provide additional "bridge" technical support to such CBOs, including: (i) additional training and mentoring; (ii) assistance to register as formal organizations and meet regulatory requirements; (iii) capacity building to support production and post-production activities for focus commodities; and (iv) engagement in demonstrations of agricultural technology and farmer field schools to enable these CBOs to transition to HVA, connect to organized markets, and strengthen their capacity to participate in market transactions.

39. ***Subcomponent B2: Enterprise development support.*** The objective of this subcomponent is to enhance the competitiveness of agri-enterprises in focus commodities and value chains through the provision of technical and business development services to identified enterprises. The subcomponent will finance the contracting of specialized technical service providers (TSPs) and the provision of last-mile services to enterprises in the areas of product development and quality, food safety and traceability, assistance for developing business plans and

commercial loan applications, and adoption of more efficient production and processing technologies, including climate-smart technologies that reduce energy use and GHG emissions. In providing support to enterprises, the project will drive convergence with existing government schemes, including loan financing through the Prime Ministers Employment Guarantee Program, grant support through the Chief Ministers Agriculture and Food Processing Support Scheme, and skills training for entrepreneurs and workers through the Prime Minister's Kaushal Vikas Yojana. This subcomponent will enhance outcomes for women-owned enterprises by identifying commodities, clusters, and processing activities in which women predominate; training and deploying female providers of last-mile technical services; and sustaining intensive mentoring and technical support for longer periods to enable women-owned enterprises to grow.

40. ***Subcomponent B3: Access to finance.*** This subcomponent aims to facilitate access of CBOs and agri-enterprises to a broad set of financial services and support their effective use. It will achieve this objective by: (i) testing and scaling up a standardized assessment and rating system for CBOs to link them to formal financial institutions; (ii) conducting outreach to financial institutions (FIs) for enhanced recognition and use of the standardized ratings in their lending decisions; (iii) providing technical assistance to CBOs and agri-enterprises for financial education and counselling of members; and (iv) establishing a Partial Credit Guarantee Facility (PCGF) to support increased formal lending to CBOs and agri-enterprises.

41. **Key activities financed under this subcomponent include:** (i) hiring a credit rating agency to rate the CBOs; (ii) contracting TSPs for financial education and counselling targeting project CBOs and agri-enterprises; (iii) supporting proposals from financial service providers on innovative approaches to delivering financial services to project CBOs and agri-enterprises; and (iv) technical studies, including a feasibility assessment for setting up a PCGF. Based on the feasibility study, the project is expected to contribute to an existing or new PCGF, which will in turn provide third-party credit risk mitigation to lenders with the objective of increasing access to credit for CBOs and agri-enterprises. The criteria for evaluating the loans that will receive coverage under the PCGF will include climate adaptation and resilience measures being supported.

42. **Five key steps must be completed before the project makes a capital contribution to the PCGF.** They are: (i) completion of the feasibility study; (ii) issuance of an expression of interest that reflects the feasibility study findings and policy requirements of the World Bank; (iii) evaluation and contracting of the PCGF managing institution, following a competitive process and based on the advice of an expert panel and legal counsel; (iv) the GoM (on advice of legal counsel) reviews PCGF documents that detail, to the World Bank's satisfaction, PCGF terms and conditions, governance and operational arrangements, adherence to World Bank fiduciary and safeguard standards, and reporting, among other things; and (v) retention of expertise and legal counsel required by the GoM to advise on monitoring PCGF performance. Since the project is likely to close earlier than the life of the PCGF, the GoM is expected to fulfil its residual financial obligations to the PCGF (such as management fees) after the project closes.

43. ***Subcomponent B4: Pilot program on urban food systems.*** Cities are growing rapidly, and urban food consumption is increasing and diversifying. Urban food systems suffer from minimal attention to food safety, increasing food insecurity among the poor, and the involvement of a multiplicity of authorities in food systems oversight. The SMART Project will pilot a program in the city of Pune, which is slated to become India's seventh most populous city by 2025, with the specific objective of developing more safe, nutritious, and climate-resilient food systems for the city. The Urban Food System Pilot Program will upgrade critical urban food system functions and address institutional and governance issues, including the systematic integration of food in urban

development plans. The Pune Municipal Corporation (PMC) will implement the pilot program in close collaboration with the DoA, DAH, MSAMB, and the private sector (see Annex 3 for details). The subcomponent will support the following activities:

a. A behavior change communication campaign targeting consumers, institutional buyers, and food system actors to promote food safety, nutrition, and healthy foods. This activity will be implemented by PMC with qualified service providers.
b. Upgrading and strengthening of farmers markets in about 70 locations in Pune. These markets, managed by CBOs, will be upgraded to address food safety, congestion, sanitation, energy efficiency, and improved traceability.
c. Supply of fresh, safe, and nutritious foods by CBOs to the midday meal program of municipal schools and Integrated Child Development Services scheme.
d. Implementing Maximum Residue Limit (MRL) standards for product differentiation and sales by CBOs to organized retailers. The DoA will work with private sector partners to implement the field-based activities required to connect rural producers in surrounding areas directly to food markets in Pune.
e. Modernizing the goat meat trade in the city through: (i) upgrading the PMC slaughterhouse to meet APEDA[8] standards; (ii) developing a clean meat program through training, upgrading facilities, and certifying butchers; and (iii) conducting consumer awareness campaigns on food safety and the nutritional benefits of goat milk. This activity will be implemented jointly by PMC and DAH.
f. Conducting a climate resilience review of the city's food systems and undertaking interventions to reduce food waste and enhance energy efficiency across the food distribution and consumption ecosystem.

44. **Component C: Building Risk Mitigation Mechanisms (component cost of US$20.20M, of which IBRD US$14.10M and GoM US$6.10M).** The objective of this component is to strengthen risk mitigation measures, including building the capacity of the state to respond to commodity-price fluctuations; developing access and ability of farmers to take considered decisions based on timely market intelligence reports; enhancing access of producers to collateral-based financing at locations close to their farms; and facilitating farmers' use of hedging instruments through their CBOs.

45. ***Subcomponent C1: Enhanced market information and intelligence services.*** This subcomponent focuses on supporting CBOs, farmers, and the GoM to plan and implement cropping, sales, and procurement decisions based on enhanced market information and intelligence. Building on the pilot market intelligence activity of the recently closed Maharashtra Agricultural Competitiveness Project (MACP), this subcomponent will finance the state's capacity to: (i) undertake frequent and systematic monitoring of crop production and yields; (ii) strengthen mechanisms for improved short- to medium-term production and price forecasts across a range of commodities; and (iii) disseminate market information and intelligence widely to project beneficiaries and to other value chain participants. A technical cell will be set up within the DoA to handle these market information and intelligence services. The project will support the adoption of information technology (IT) solutions to disseminate information online and via mobile phone, coupled with support offered through CBOs for members to understand and use the information for cropping, harvesting, and sales decisions. This subcomponent specifically seeks to enhance access to and use of market intelligence services by women farmers and CBOs through focused outreach and workshops targeting these groups. By supporting research and development of intervention plans, this subcomponent will also facilitate better ex-ante management of state food procurement interventions as a price support mechanism in the event of adverse commodity price shocks. The project will finance staffing and capacity building of the

[8] APEDA—the Agricultural and Processed Food Products Export Development Authority—is an apex body under the Ministry of Commerce and Industry, Government of India, responsible for promoting exports of agricultural products.

Market Information and Intelligence Cell until the project midterm. At midterm, this cell will be evaluated, and the outcome will determine the continuation and financing of this cell for the remainder of the implementation period. Based on successful performance and to ensure greater ownership of such entities by the state, the GoM will finance this cell beyond the midterm of the project.

46. ***Subcomponent C2: Strengthening warehouse receipt systems.*** This subcomponent focuses on enhancing the ability of smallholder farmers to store their produce in quality facilities and to monetize stored produce through warehouse receipt financing and sales through virtual platforms and other channels ex-storage. The project will finance: (i) the rehabilitation and upgrading of existing warehouse facilities; (ii) construction of new warehouse facilities; (iii) the provision of support infrastructure that complements these facilities, such as internet connectivity, grading equipment, and computers; (iv) partnerships with collateral management agencies (CMAs); (v) capacity-building support for participating CBOs to enhance food quality standards and access new markets; and (vi) certification of storage facilities with the Warehousing Development and Regulatory Authority. The warehouse facilities supported through this subcomponent will be integrated with the state warehousing grid, including through support to set up the necessary data collection systems. Partnerships with CMAs will be implemented as competitively chosen subprojects, based on business plans developed jointly by CBOs and the CMA. The type and scale of investments will be guided by needs assessments aligning storage capacity to production volumes and market demand.

47. To further enable farmers to find buyers at a time of their choosing, it is proposed to notify the storage locations as delivery centers connected as authorized virtual markets. The GoM is amending the legal framework to recognize warehouses as dual-purpose market and delivery centers. Buyers with Direct Buying Licenses will be able to bid for stocks held in notified warehouses, and farmers will have the new option of selling produce in online marketplaces in addition to physical market yards.

48. ***Subcomponent C3: Risk management support.*** To enhance price and climate risk management by the state, this subcomponent will support the establishment of a Risk Mitigation Cell within the DoA to develop crisis management plans for the major commodities grown in the state, and it will provide a market-based risk management tool to farmers through CBOs. The crisis management plans will outline both ex-ante and ex-post interventions, including early warning systems based on forecasts for production and market demand; farmer advisories to store produce in designated facilities during drastic market downturns; and use of public procurement systems to mitigate price crashes. The subcomponent will support use of a climate risk screening tool to identify climate risks and develop mitigation and adaptation plans for specific value chains and crop clusters. The project will finance staffing and capacity building of the Risk Mitigation Cell until the midterm of the project, when the cell will be evaluated. The evaluation will determine whether the cell will be continued and financed for the remainder of the project implementation period and possibly strengthened into a more substantial independent entity. Based on successful performance and to ensure greater ownership of such entities by the state, the GoM will finance the Risk Mitigation Cell beyond the project midterm.

49. Commodity exchanges in India offer futures contracts on a range of commodities for risk management, but farmers have yet to adopt this risk management strategy on a wide scale. This subcomponent will finance a study to identify constraints to the adoption of futures contracts and support pilot interventions, including technical assistance and mentoring, to scale up participation by farmers and CBOs in futures markets. A particular effort will be made to widen the use of futures contracts by women-led CBOs through pilots featuring targeted technical support.

50. **Component D: Project Management, Monitoring, and Learning (component cost of US$33.10M, of which IBRD US$23.10M and GoM US$ 10.00M).** Component D is designed to ensure that project activities are effectively implemented, and that progress, outputs, and outcomes are monitored and evaluated, building on experience with previous projects funded by the World Bank in this sector. Component D will support: (i) strengthening and operations of a Project Coordination and Monitoring Unit (PCMU), which will oversee and coordinate activities of the project Implementing Agencies (IAs); (ii) establishment and operations of Project Implementation Units (PIUs) in the respective IAs; and (iii) establishing a monitoring and evaluation (M&E) system for the project, including an IT-based project MIS, and contracting an external M&E agency to monitor project activities and impact. The external agency will also assess and report on GHG emissions for the six value chains evaluated for GHG emissions intensity during project preparation (Annex 8). The PCMU will serve as the management and coordination unit for the project and will be responsible for preparing and implementing the overall project budget and providing implementation progress reports. The PCMU will also provide M&E, social and environmental safeguards, procurement, and fiduciary oversight to the project. This component will finance incremental staffing for project activities as well as consultancies and training, along with related material, office equipment, and incremental operational costs. Apart from the staff/consultants hired under the project, substantial human resources of the participating line departments of the GoM will be engaged under the project, under the proviso that the project will support salaries only of full-time government staff deputed exclusively for project implementation and oversight.

51. **Greenhouse Gas Accounting and Climate Co-Benefits.** The potential of the project to mitigate climate change was quantified by using the FAO Ex-ACT tool to derive a carbon-balance estimate based on the difference between GHG gross fluxes in scenarios for six commodity value chains with interventions supported by the project (bananas, cotton, goat meat, okra, soybeans, and turmeric) and the current business-as-usual scenarios for those value chains (Annex 8). The scenarios with project interventions envision an improvement of 10% in the efficiency of energy consumption and reductions in the use of chemical fertilizers and other resources.

C. Project Beneficiaries

52. The project will be implemented in all districts of Maharashtra. The direct beneficiaries are small and medium semi-commercial and commercial agricultural producers who are capable of generating a marketable surplus and are organized into eligible CBOs. CBOs include FPOs, farmer groups, women-led Cluster Level Federations and Community Managed Resource Centres, and Primary Agriculture Credit Cooperative Societies. Additional project beneficiaries include agri-enterprises, value chain participants, farm workers, and commodity associations. Although all CBOs in the state that are eligible can participate in project activities, the project will specifically target eligible CBOs, agri-enterprises, and villages/clusters promoted and supported by the participating PIUs.

53. As indicated under each project component, all interventions will specifically target and enhance participation by women. At least 30% of the CBOs supported through the project will be led by women, and at least 50% of the final beneficiaries of project interventions will be women. Women's participation in the decision-making structure of FPOs and in PPs, MAPs, and warehouse receipt financing interventions is emphasized as well.

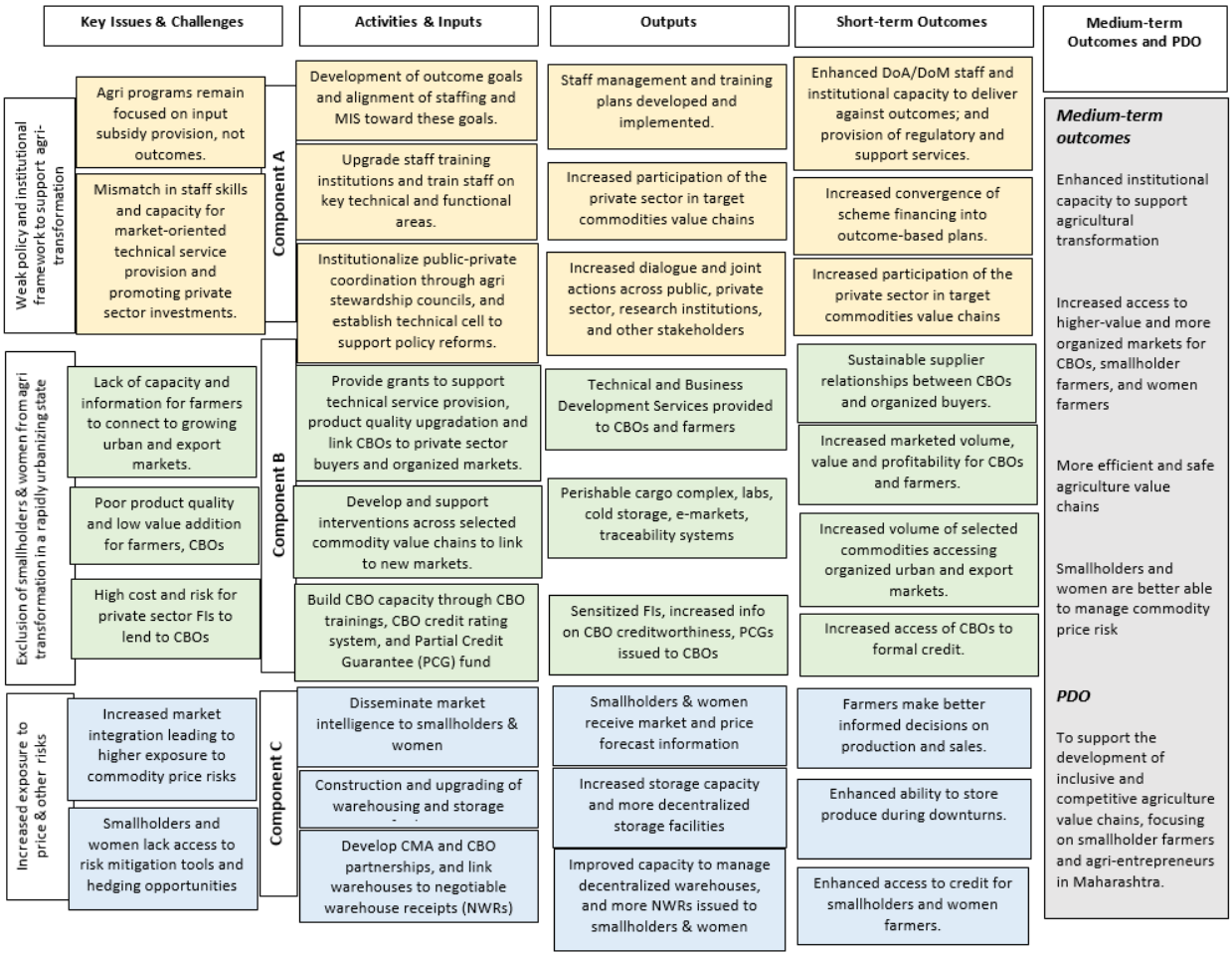
54. Project interventions also specifically target the inclusion of other marginalized groups, including SC and ST populations. Their inclusion will be achieved by: (i) choosing geographic clusters and commodities with higher

proportions of these populations, (ii) preferential selection of subprojects designed to benefit a higher proportion of these populations, and (iii) providing proportionally greater support to such subprojects. Staff of participating line departments and autonomous institutions will be the beneficiaries of technical training and institutional capacity building, particularly under Component A.

D. Results Chain

55. **The project addresses three broad sets of challenges that both arise from and constrain the broader process of agricultural transformation in the state** (Figure 2). First, despite the initiation of programs, policies, and reforms, the regulatory environment to support agricultural transformation remains weak owing to the lack of market-driven programs, mismatched and inefficiently mapped staff skills, and limited interaction between the public and private sectors and other value chain stakeholders. Public agricultural programs still focus heavily on providing input subsidies and not on outcomes. Second, despite efforts to organize smallholder and women farmers into CBOs, they remain excluded from the broader process of agricultural transformation and higher-value market opportunities, especially in this context of rapid urbanization and complex emerging food systems. Third, because the state agricultural sector is well integrated with global value chains, it is exposed to global commodity price fluctuations in addition to climate and weather-related production risks. Smallholder and women farmers who have no access to risk mitigation tools are more vulnerable to these risks.

Figure 2: Results chain for the proposed SMART Project



56. **The activities, inputs, and outputs under the various project components are expected to lead to a range of short-term outcomes to address these broad challenges**. Interventions under *Component A* are expected to lead to improved staff and institutional capacity; enhanced coordination and alignment within the public sector, specifically between DoA and DoM; policy reform and program design informed by better research, evidence, and inputs from various stakeholders; and increased private sector participation in target commodity value chains. The enhanced capacity of DoA and DoM is expected to lead to outcome-based programs and enhanced support for commercial agriculture in the state. Interventions under *Component B* are expected to lead to sustained partnerships between CBOs and buyers; integration of CBOs into supply chains for higher-value agriculture; increased private sector financing flowing to CBOs; more efficient value chains for focus commodities; improvements in sanitary and phytosanitary (SPS) standards; and enhanced food safety. Interventions under *Component C* are expected to lead to overall better management and mitigation of commodity price and climate risks by smallholder and women farmers through a combination of better-informed decision making on cropping and sales choices; improved access to storage; improved access to short-term credit to enable storage; and the development and implementation of climate adaptation and resilience measures.

57. **The broader outcome of the project is a set of more inclusive and competitive agricultural value chains in Maharashtra.** The theory of change identifies the following medium-term outcomes that will contribute to this outcome: enhanced institutional capacity to support agricultural transformation; increased access to higher-value and more organized markets for CBOs, smallholder farmers, and women farmers; more efficient and safe agricultural value chains; and better ability to manage commodity price and climate risks among smallholder and women farmers.

E. Rationale for Bank Involvement and Role of Partners

58. **Maharashtra's agriculture is at a crossroads, and there is growing recognition and concern that with increased integration with national and global markets, commodity volatility is the "new normal."** The GoM will need to shift its approach from short-term responses to agricultural distress to longer-term interventions (reforms, investments, capacity development) to build market resilience in value chains. The World Bank is well placed to support the state in undertaking this shift for several reasons. The Bank has global experience in supporting agricultural commercialization programs. It has the capacity to work across multiple sectors and bring cutting-edge knowledge on policies and strategies to expand market access, mitigate market risks, and enhance private sector participation. With its global commitment and matching investments in mitigating the impacts of climate change, the Bank is also well placed to support the state's efforts to build climate resilience and enhance resource efficiency in agricultural value chains.

59. **Various market failures and constraints exclude poorer segments of the population from economic growth and opportunity**. Small producers and firms that lack economies of scale are excluded from markets because high transaction costs discourage buyers and processors from dealing with smaller entities. Publicly supported interventions are needed to correct these market failures that inhibit broad-based growth. By leveraging the aggregation of producers and firms and facilitating their linkage to higher-value markets, the public investments supported through the SMART Project can foster greater equity. Other project activities also warrant public sector provisioning, such as the development of mechanisms to provide better market information to farmers, or improvements in market regulation that lead to better and more effective provision of services to farmers and buyers.

60. **The project will further its objectives by partnering with a variety of technical support institutions.** For example, the project may support the implementation of activities by entering into agreements that include but are not limited to the following institutions: (i) the Standard and Trade Development Facility for building the state's capacity to implement global SPS standards; (ii) Food and Agriculture Organization (FAO) to develop food safety protocols, particularly for livestock, and build capacity to implement those protocols; (iii) commercial banks for partially financing infrastructure and lending to CBOs and enterprises; (iv) APEDA and the Jawaharlal Nehru Port Trust, both GoI entities, for promoting exports and trade; (v) University of California, Davis and Michigan State University for the development of post-harvest and food safety protocols; (vi) Gokhale Institute of Politics and Economics (GIPE) as an M&E knowledge partner for the project; (vii) Tata Trusts for use of their open-source DELTA data platform;[9] (viii) the Mumbai Centre for International Arbitration; and (ix) the Agribusiness Leadership Program of IFC.

[9] Data through Evaluation, Learning, Technology, and Analysis.

F. Lessons Learned and Reflected in the Project Design

61. The project design draws on valuable lessons from previous agricultural projects in Maharashtra and other recent operations in the country, subcontinent, and other regions. It also draws on the results of analytical work by the World Bank and independent research studies. The main lessons that guided the design of the proposed operation are:

a. **Crop diversification that is market-led and developed in collaboration with the private sector is more likely to be sustained beyond the project (MACP Implementation Completion and Results Report—ICR).** Successful partnerships between the private sector and CBOs are more likely to endure after the project ends if those partnerships involve mature participating organizations and are based on mutual trust and financial incentives.

b. **Implementing project activities through government agencies can advance significant policy reforms and mainstream innovations within and through public sector institutions (Assam Agricultural Competitiveness Project ICR).** By effectively embedding project activities within the operations of line departments, the SMART Project aims to promote sector-wide policy improvements and reforms and consolidate these arrangements with strong cross-cutting thematic support for agribusiness investment, food quality and safety, and improved market access.

c. **Promoting complex relationships between CBOs and established agribusiness companies is better done in stages (Vietnam Agricultural Competitiveness Project ICR).** Newly formed groups without any history of collective action will be regarded as unattractive partners by companies. For new or weak CBOs, the initial focus should be on developing core management skills and effective governance arrangements and undertaking a few essential functions. Incremental steps in collective action ("partnerships among farmers") should precede efforts to link producers directly with specific downstream buyers, and even then, several steps toward collective action may be needed to build trust and confidence before any significant commitments are made.

d. **The quality of subprojects and business plans is critically important (World Bank 2016).**[10] Adequate capacity for preparation of business plans and for ex-ante evaluation of business proposals is critical for the success of the subproject. Governmental agencies and related public institutions, as well as qualified service providers, need to be brought on board to provide an independent assessment of each business plan proposal before approving financing.

e. **In Burkina Faso, a recent randomized controlled trial on a sample of 528 households across 328 villages documented the positive impacts of a warehouse receipt system that combined storage with access to credit.**[11] Households with access to the warehouse receipt system primarily stored sorghum and maize. The study documented an increase in commercialization of 23%; a change in timing of sales, resulting in higher sale prices; and increased revenues from a 33% increase in the value of crop production, which led to an increase in nonfood expenditure.

III. IMPLEMENTATION ARRANGEMENTS

[10] World Bank Group (2016), "Linking Farmers to Markets through Productive Alliances: An Assessment of the World Bank Experience in Latin America," Washington, DC. https://openknowledge.worldbank.org/handle/10986/25752

[11] Delavallade and Godlonton 2019. "Locking Crops to Unlock Investment: An Experiment on Warrantage in Burkina Faso". Conference on Financial Inclusion and Agriculture (Ouagadougou, Burkina Faso, 2016).

A. Institutional and Implementation Arrangements

62. **The project will be fully integrated into the GoM administration, and implementation is designed to promote the use of existing GoM structures at the state, regional, and district level.** Where institutional capacity is limited and specialized skills are required, the project will acquire outside expertise, including international technical assistance and consulting service providers. The project will emphasize institutional coordination across participating line departments.

63. **Overall management and coordination will be the responsibility of the SMART Society.** The newly formed SMART Society (anchored within the DoA, GoM) was recently established to serve as a coordinating agency for agribusiness transformation in the state. The society is overseen by a Project Steering Committee chaired by the Chief Secretary, GoM, and a Project Governing Council chaired by the Secretary–Agriculture, GoM. Day-to-day executive control is with the Commissioner Agriculture cum Project Director, who heads the PCMU. The Project Steering Committee meets at least once a year to offer overall advice and policy direction for smooth implementation and to monitor implementation. The key role of the Governing Council is to ensure a coordinated approach across different line departments and stakeholders in the project. The Governing Council meets every quarter and has the power to approve need-based changes in the implementation design, budget, annual action plan, and administrative issues involved in implementing the project. Representatives of project partners, including banking institutions, are special invitees to Project Steering Committee and Governing Council meetings.

64. **The SMART Society PCMU will coordinate day-to-day implementation, planning and scheduling, procurement management, financial control, as well as reporting and monitoring for the proposed project**. The PCMU will be responsible for: (i) the call for subproject proposals and their evaluation (to be funded under the project); (ii) assisting the implementing entities in preparing Annual Work Plans and budgets; (iii) actions for approval of Annual Work Plans by the Project Steering Committee and Governing Council, authorization of expenditures by implementing entities, financial control, procurement management, monitoring progress of project components, preparing quarterly and other progress reports, evaluating performance, and providing feedback to the IAs; (iv) ensuring that project financial statements are available, audited, and submitted to the World Bank within the stipulated time; (v) undertaking procurement of high-value and complex goods, works, and non-consulting services and hiring technical experts and key consultants as needed for project implementation, monitoring, and technical evaluation; and (vi) providing quality resources and technical assistance in a timely manner to the state-level PIUs of the IAs, Regional Implementation Units (RIUs), and District Implementation Units (DIUs).

65. **Eleven Project Implementing Units (PIUs) have been set up within the project Implementing Agencies**. These PIUs are housed in the DoA, DAH, DoM, MSAMB, MSWC, MCDC, MahaCot, MSRLM, VSTF, Mahila Arthik Vikas Mahamandal (MAVIM), and PMC. These PIUs will be responsible for signing Grant Agreements (GAs) with the CBOs in their respective areas and preparing, implementing, and monitoring their respective Annual Work Plans. Each PIU is headed by the head of the organization concerned, who will be responsible for the project activities. A nodal officer has been appointed by each PIU to liaise with the PCMU effectively. PIUs will be supported by PCMU procurement, finance, safeguards, and other technical specialists.

66. **For greater coordination and review of project implementation at the district level, 8 RIUs and 34 DIUs will be established.** Each RIU will be headed by the Divisional Joint Director of Agriculture and will be supported by safeguards experts, agribusiness management experts, civil engineers, and TSPs. The primary role of the RIU is to

monitor the performance of subprojects and coordination of DIUs in the region. Each DIU will be headed by the District Superintending Agriculture Office, supported by the local Agriculture Technology Management Agency (ATMA) staff and district representatives of all participating departments. The DIU shall supervise the implementation of subprojects, physical verification of the assets created by CBOs, and documentation for release of grants. Capacity building for CBOs shall also be done primarily by the DIU with the help of participating departments and TSPs. The DIU will monitor the progress of project activities at the district level, resolve cross-cutting implementation issues, and maximize the convergence of complementary activities.

67. **Implementation capacity will be strengthened by effective collaboration and technical assistance.** The project will collaborate with national and international institutions for technical backstopping in training and new technologies wherever necessary. The Project Implementation Plan (PIP) lays out the roles and responsibilities of the PIUs, RIUs, and DIUs and details arrangements for the flow of funds down to implementing units/project participants in the field. Criteria for selecting participating groups have been agreed and are included in the PIP. The PIP will be subject to periodic joint reviews by the GoM and World Bank, with stakeholder participation, to address any constraints to the successful implementation of the project.

68. **The GoM is well versed in World Bank fiduciary and safeguard policies, having successfully implemented earlier Bank-funded projects.** Notwithstanding the strong commitment underpinning the project and experience in implementing other Bank-funded projects, key participating institutions will receive further capacity building to strengthen the oversight functions required by the project. The PCMU is already staffed with technical, fiduciary, and safeguard specialists. The nodal officers and coordinators of the participating line departments have been identified and deputed to the project. The project will be fully integrated into the GoM administration, and implementation is designed to promote the use of existing GoM structures at the state, regional, and district level.

B. Results Monitoring and Evaluation Arrangements

69. The M&E system for the project will track activities and carry out assessments to inform the PCMU about corrective courses of action, if any, and to document project effectiveness. The project M&E will consist of a baseline survey, a midterm evaluation, thematic studies as needed, an end-term evaluation, and six-monthly monitoring studies. The baseline survey will be conducted prior to the intervention in the same or comparable areas to the project areas and collect data for relevant variables both to track progress on indicators and to feed into the analysis for the midterm and end-term evaluations. The midterm survey and evaluation will be conducted in the third year of the project and will include an overall outcome assessment, an outcome assessment for every component and subcomponent, and suggestions for modifications in the project design or implementation. The end-term evaluation will be conducted in the final year of the project and will include an overall impact and sustainability assessment of the project, impact assessment reports for every component and subcomponent, suggestions of relevant or emerging research themes for further study, and identification of policy gaps that need to be addressed to sustain the project's impact after the intervention is completed. The six-monthly monitoring will focus on measuring inputs, activities, and progress in relation to output indicators. Field visits will be undertaken to carry out random verification of the information generated under the project MIS. Beneficiary feedback will be integrated into the project monitoring activities.

70. The M&E system will be complemented by a web-based MIS and Financial Management System, which will be established to track and manage all project monitoring data (such as physical and financial information) captured across all interventions supported under the project. The MIS platform will be developed and customized

for the specific needs of project monitoring, tested in the field, and rolled out under technical supervision of the M&E implementing partner. The MIS and Financial Management System will ensure accurate and on-time project monitoring and provide easy access to information on funds flow, implementation progress, processes, quality, and performance of community institutions. This information will be made available through a user-friendly project website, accessible to all key stakeholders.

71. The PCMU will be responsible for planning and coordinating M&E activities for the entire project. The M&E Cell in the PCMU will coordinate with the PIUs, RIUs, and DIUs engaged in the M&E system. The implementing departments and agencies will regularly monitor and report on the project's physical and financial inputs and outputs, and the DIUs will be key entry points for collecting data on other project indicators. GIPE has been onboarded as a knowledge partner for the project and shall provide M&E support to the PCMU. Another external agency will be onboarded as an M&E implementing partner to design and manage the MIS platform through the life of the project. The implementing partner will also be responsible for implementing data collection activities involved in the baseline, midterm, and end-term surveys with knowledge support from GIPE.

C. Sustainability

72. The project seeks to develop a culture of partnerships between the private sector and CBOs. These partnerships entail both horizontal cooperation between farmers and farmer groups and vertical collaboration between partners in a value chain. Beyond the individual value chain, the project also seeks to improve the agricultural investment climate by establishing stewardship councils (ASCs) for focus commodities and supporting evidence-based agricultural market reforms to improve the overall competitiveness of the selected value chains. These efforts should attract additional investments into the agricultural sector.

73. The project also seeks to partner with the private sector in scaling up the focus value chains. Thus far, the private sector has committed US$10 million to project financing, and the project will continue efforts to mobilize funding from other partners to strengthen the program and expand investments in value chains.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic, and Financial Analysis

74. **An economic and financial analysis (EFA) of the proposed project, based on a cost-benefit analysis, indicates that it is economically viable.** The main quantifiable benefits that relate directly to the implementation of the project include: (i) increased profits for agricultural producers via increased productivity, increased prices for produce, and reduction in cost of production and (ii) increased business activity and profitability for CBOs via business development and buyer and market linkages. The financial analysis is based on models developed at the farm and CBO level for nine key commodities—bananas, chickpeas, cotton, goat meat, maize, okra, pigeon peas, soybeans, and turmeric—representing a variety of value chains. The models included financial performance for scenarios with the project (WP) and without the project (WOP).

75. The economic internal rate of return (EIRR) of the project over a 20-year period for the base case, excluding benefits from reduced GHG emissions, is 31%, with a net present value (NPV) of US$716 million (INR50,124 million). When the monetary value of potential GHG emissions is included—estimated at 2 million

tons of CO_2 equivalent (tCO_2eq) over the life of the project—the EIRR increases to 49% when using the lower bound of the social value of carbon and to 67% when using the higher bound.

76. **A sensitivity analysis finds that the project remains economically viable for a range of changes in project costs and benefits.** The analysis assessed the impact of three types of changes in the main parameters of the project on economic outcomes: (i) changes in project costs; (ii) changes in expected benefits; and (iii) delays in the realization of project benefits. A 20% increase in costs reduces the EIRR to 24% (excluding GHG benefits), and a 20% decrease in benefits reduces the EIRR to 22% (excluding GHG benefits). A one-year delay in the realization of benefits reduces the EIRR to 22%. Annex 7 provides additional details.

B. Fiduciary

77. **Financial Management.** The financial management (FM) arrangements are adequate to account for and report on project expenditures. The FM risk for the project is rated Substantial, given the innovative design of the project, which features the provision of grants to communities to implement activities and involves a large number of IAs, including district agencies. This risk will be mitigated by designing sustainable fiduciary arrangements, providing continuous support for training, and offering handholding support at the initial stage of implementation. Annex 4 supplies details on the FM assessment and the FM systems that will be established to ensure proper utilization of project funds.

78. **The FM and accountability arrangements for the project may be summarized as follows.** *(i) The Financial Management Manual* for the SMART Project will provide the overarching framework of FM systems governing the proposed project. *(ii) Budgeting* for the project will occur under a separate budget line earmarking externally aided/SMART Project funding. The GoM will provide 100% funding (IBRD and state share) for the project in the yearly state budget at the beginning of each financial year based on the budget estimates—namely, the Annual Work Plan—provided by the PCMU. *(iii) Fund flow arrangements* under the project will be through a dedicated bank account (Central Pool Account) under the PCMU, using the Public Financial Management System for fund transfer and payments. Private sector contributions through VSTF during the project period will be deposited in a separate bank account to be operated by VSTF for undertaking activities agreed with the PCMU. For CBOs, project funds and beneficiary contributions under each GA will be deposited in a dedicated bank account to safeguard the use of project funds. Funds will be released in tranches, based on compliance with the stipulations in the GAs, including submission of Utilization Certificates. *(iv) Accounting* under the project will be managed through a cash basis double-entry system in accounting software. All IAs will be accounting centers under the project and will be responsible for maintaining relevant financial records, and project accounts will be consolidated at the PCMU level. *(v) Disbursement arrangements* under Subcomponent A1 will be results-based, and project funds will be disbursed against an Eligible Expenditure Project (EEP). The EEPs include good, works, consulting services, and non-consultancy expenditures related to DLIs accounted by DoA, and salaries[12] of technical staff of DoA accounted in the state's treasury systems. *(vi) External Audits*. In the eventuality that the audit assignment of SMART society is not accepted by the State AG, a private firm of Chartered Accountants (CA) appointed in a manner acceptable to the Bank will carry out the external audit of the project financial statements. Audit reports will be submitted to the Bank within nine months of the close of the financial year (that is, by December 31). For independent audit assurance on budgetary support forming part of EEPs, certified State Finance Accounts issued by the State Accountant General will be used. The audit reports will be submitted to the Bank within 12 months of the close of

[12] EEP will be limited to 50% of actual expenditure under this head up to the total amount allocated to the DLIs.

the financial year (that is, by March 31). *(vii) Retroactive financing:* Payments made by the GoM in the one-year period before the signing of Legal Agreements for contracts awarded following World Bank procurement procedures will be eligible for retroactive financing expenditures and achieved DLIs, up to a limit of US$42 million. The GoM will submit a separate Interim Unaudited Financial Report (IUFR) to claim such expenditures.

79. **Procurement.** The procurement entities under the project are the PCMU under the DoA, GoM and the PIUs housed in the DoA, DAH, DoM, MSAM, MSWC, MCDC, MahaCot, MSRLM, VSTF, MAVIM, and PMC. The PIUs are headed by the head of the organization concerned, who will be responsible for the project activities. A nodal officer has also been appointed by each PIU to liaise with the PCMU effectively. Procurement for the proposed project will be carried out in accordance with the World Bank Procurement Regulations for Borrowers for Goods, Works, Non-Consulting and Consulting Services, dated July 1, 2016, Revised November 2017 and August 2018 and applicable to IPF, hereinafter referred to as "Regulations." The project will also be subject to World Bank Anticorruption Guidelines, dated October 15, 2006, and revised in January 2011 and as of July 1, 2016.

80. The assessments of procurement capacity and risk note that procurement staff in the PCMU and PIUs have no prior experience in handling procurement under the recently issued World Bank Procurement Regulations. Agreed mitigation measures consist of improving the skills of procurement staff skills, monitoring procurement performance through the Procurement Plan and quarterly reports, training and ongoing support provided by the Bank, prior and post reviews by the Bank, and strengthening the complaint management process.

81. Most of the civil works and purchase of goods under the SMART Project will follow National Competitive Procurement (NCP) and Request for Quotations (RFQ), but a few packages may also involve the use of International Competitive Procurement. The project will use the e-procurement platform of the National Informatics Centre (NIC) for procurement at the PCMU and PIU level.

82. Eligible CBOs will undertake procurement at the community level. It is proposed that under the World Bank Procurement Framework Regulations, the "Community Driven Development" model will be followed for all procurement carried out by eligible CBOs. The detailed Community Operations Manual and standard document of RFQ will be provided to these CBOs to ensure that they have common procurement documents. The Community Operations Manual will include detailed instructions for procurement by CBOs, specify the responsibilities of CBOs with respect to community procurement, and detail the supervisory controls at the district, PIU, and PCMU level.

83. **Project Procurement Strategy for Development (PPSD).** The Borrower has prepared a PPSD as required. Extensive market analysis for different packages of procurement has informed decisions on packages to ensure adequate participation of bidders and has helped to frame consultancy contracts. Based on the PPSD, the Procurement Plan has been prepared. The Procurement Plan sets out the selection methods to be followed in the procurement of goods, works, and non-consulting and consulting services financed under the project for first 18 months (including contracts to be procured under advance contracting and retroactive financing). The Procurement Plan will be updated annually or as required and will be reviewed and approved by the World Bank. Annex 5 provides more details on procurement under the project.

C. Safeguards

84. **Environmental Safeguards.** The overarching goal of environmental safeguards is to promote safe production of crops and commodities by complying with MRLs as applicable. The proposed project triggers two

environmental safeguard policies, Environmental Assessment (OP4.01) and Pest Management (OP4.09). Accordingly, the Borrower undertook a detailed Environmental and Social Assessment (ESA), encompassing an Environmental Assessment (EA) and Social Assessment (SA). The EA includes an environmental baseline on critical parameters such as the use of agrochemicals within the state. The EA was based on a review of the literature and secondary data, combined with stakeholder consultations and field visits covering different agro-ecological zones in the state. The EA analyzed provisions of various national and state acts, policies, and schemes relevant to the proposed project. The key environmental impacts and risks identified are the continued use of agrochemicals, a possible increase in energy use for processing and value addition, and issues related to the construction of warehouses and other infrastructure. Food safety was identified as a primary challenge for the proposed project, including the Urban Food System Pilot Program that the project will support.

85. Using the FAO Ex-ACT tool, the EA also estimated GHG emissions for six selected value chains (bananas, cotton, goat meat, okra, soybeans, and turmeric) to be covered under the project (Annex 8). The proposed interventions and proactive project support are expected to help reduce or mitigate the intensity of GHG emissions in all of these value chains.

86. Given that the exact locations of specific investments cannot be known before the project is implemented, an Environmental Management Framework was prepared. The framework includes a negative list of activities that the project will not finance, GHG emission estimates for selected value chains, guidance on India Good Agricultural Practices (GAP) certification, a Training and Capacity Building Plan, guidelines on Construction Management, and a Pest Management Plan. It also includes Good Industrial Practices (particularly for slaughterhouses), a Food Safety Strategy, and indicators to monitor environmental parameters during project implementation.

87. While the state administration is familiar with World Bank safeguard policies and has good experience in implementing mitigation measures, a large part of the proposed project will involve private sector partners and FPOs that may not have such experience, in addition to multiple participating government departments. Accordingly, qualified environmental specialists will be deployed at the state and PIU level. Given that the DoA will have a central role in project implementation, an environmental expert will be placed at the level of the Joint Director. Provisions have been made to screen joint proposals by FPOs and private sector partners for integration of mitigation measures. The project will also invest in building the capacity of FPOs for meeting MRLs.

88. **Social Assessment and Safeguards**. The SA assesses and addresses the key social risks, impacts, and issues associated with SMART Project components and interventions, especially in the context of World Bank Social Safeguard Policies on Involuntary Resettlement and Indigenous Peoples and corporate policies on gender, citizen engagement, grievance redress, and vulnerable groups. To better understand the interests and perspectives of potential beneficiaries, consultations were held with primary stakeholders across multiple locations representing different socio-economic and farmer groups, commodities, and agro-climatic zones within the state, focusing on small, marginal, and women farmers and workers, tribal communities, women's groups and federations, FPOs, and agribusiness enterprises. Meetings and consultations were also held with participating IAs.

89. **The SA exercise highlighted key social safeguard/development issues.** They are: (i) the need to target and include small and marginal farmers—and specifically STs, SCs, and women producers—among the project beneficiaries; (ii) the need to ensure that project outreach and socially and culturally compatible benefits reach STs, especially in tribal areas; (iii) the mitigation and management of adverse social impacts arising from post-harvest, storage, and marketing infrastructure; (iv) ensuring sustained stakeholder engagement and beneficiary

feedback; and (v) enhancing women's participation in agricultural technology, post-harvest activities, farmer collectives, agri-enterprises, and commodity markets.

90. The proposed project triggers OP 4.10 on Indigenous Peoples, as many project districts such as Gadchiroli, Yavatmal, Palghar, Nandurbar, and Nashik have a higher presence of STs. Although the acquisition of private land or physical displacement is not anticipated, OP 4.12 on Involuntary Resettlement is applicable due to the potential for localized, adverse impacts to arise from upgrading or construction of post-harvest facilities such as warehouses, slaughterhouses, processing units, cold storage, market improvements, and other infrastructure proposed for SMART financing.

91. **A Social Management Framework (SMF) was prepared to address key social development issues and safeguard risks identified for the project, in line with the World Bank safeguard policies and corporate policies and directives mentioned earlier.** The central elements of the SMF are: (i) a targeting and inclusion strategy to ensure participation of small, marginal, SC, ST, and women farmers, agricultural workers, and entrepreneurs from all regions of the state; (ii) an Indigenous Peoples Planning Framework to ensure meaningful consultations and broad community support among the tribal communities, promote their access to project benefits in socially and culturally compatible ways, and develop specific strategies to enhance project outreach and impact in tribal areas and communities; (iii) a Resettlement Policy Framework to screen, assess, and mitigate any potential adverse impacts from subprojects and other interventions financed under the project; (iv) a Stakeholder Engagement Strategy enabling citizen engagement, stakeholder consultations, and beneficiary feedback during project implementation through regular meetings, information dissemination, and mechanisms for beneficiary feedback (including online platforms to enhance citizen engagement and outreach); (v) a Labor Management Plan that promotes occupational health and safe working conditions for community and contract labor involved in project activities, and that contains provisions to manage risks from the influx of labor arising from project activities; (vi) and a Gender Action Plan to improve women's participation as direct beneficiaries in HVA value chains.

92. **These SMF interventions and mechanisms will be integrated with the SMART project implementation cycle to ensure that social safeguard/development aspects are systematically identified and addressed during all phases of project implementation.** The SMF also includes dedicated staffing and institutional arrangements at the state, regional, and district level, a training and capacity building plan, implementation monitoring and reporting arrangements, and a dedicated budget to finance SMF costs.

93. **The draft ESA/Environmental and Social Management Framework (ESMF) report was disclosed on August 9, 2019 on the project website for stakeholder feedback and in-country disclosure.** The project also organized four ESMF disclosure workshops in Pune (August 9, 2019), Nagpur (August 14, 2019), Aurangabad (September 4, 2019), and Nashik (September 9, 2019), which were attended by representatives of women's federations, FPOs, Primary Agriculture Credit Cooperative Societies, private companies, as well as officials from the IAs. The ESA/ESMF report was disclosed through the World Bank public portal on October 4, 2019.

94. **Gender.** As discussed, women's participation in agriculture throughout the country is mostly limited to labor-intensive production activities at the lower end of agricultural value chains; women's presence and involvement in post-harvest, value addition, or agricultural marketing activities is minimal. Maharashtra has the highest proportion of rural women employed in agriculture (88%), compared to the national average of 73.2%, and women own 17% of the operational land-holdings in Maharashtra, compared to the national average of 12.8% (Agriculture Census 2015–2016). Defining a farmer as an individual with a title to operational land creates barriers

for women to access government schemes and subsidies related to crop insurance, crop loans, agricultural assets, agricultural technology, and other inputs. Women face additional barriers in transitioning to HVA and agribusiness. Key barriers include low access to extension services and technical knowledge related to HVA practices and technology, low access to productive assets, and lack of access and exposure to markets and market intelligence. The absence of women service providers in extension, credit, input supply, and marketing compounds this problem.

95. **The project will undertake specific gender actions to improve women's participation in agricultural value chains.** Those actions will focus on gaining better access for women to improved agricultural practices and technology, entrepreneurship and employment opportunities in post-harvest processing segments, and agricultural markets. The specific gender actions pursued by the project are: (i) linking 300 women-led CBOs with new and more organized markets through the provision of technical, business, and financial assistance, including training and mentoring, support for compliance with legal requirements, and the adoption of technology and practices in the production and post-production of high-value commodities; (ii) employing women as last-mile agricultural extension workers; (iii) institutional capacity building and training of agricultural extension workers to improve delivery of services to women farmers; (iii) linking women farmers with market intelligence services; (iv) building the competitiveness of women entrepreneurs through skills training, technical support, and enterprise development services; and (v) training and capacity building of women leaders and members of boards of directors of CBOs, specifically of Farmer Producer Companies.

96. **Grievance Redress Mechanism (GRM).** The project is in the process of developing a GRM that integrates the existing GRMs currently used by the GoM with the project-related GRM requirements of the World Bank. The proposed GRM outlines protocols and timelines for receipt, acknowledgement, verification, resolution, feedback (to and from complainant) of grievances, as well as monitoring, control, and reporting of grievances to the PCMU and the World Bank. In addition, communities and individuals who believe that they are adversely affected by a World Bank–supported project may submit complaints to existing project-level GRMs or the World Bank Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed to address project-related concerns. Project-affected communities and individuals may submit a complaint to the World Bank independent Inspection Panel, which determines whether harm occurred, or could occur, as a result of World Bank noncompliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank corporate GRS, visit: http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the World Bank Inspection Panel, visit www.inspectionpanel.org.

V. KEY RISKS

97. The overall risk rating for the proposed project is Substantial for several reasons. First, in the SMART Project, as in all projects with a policy and institutional reform program, the pace of crucial changes in policies and institutions is likely to lag behind the physical investments. Such delays may negatively impact the timely creation of an enabling environment for private sector participation and investment. This risk is addressed by the strong commitment shown thus far by the GoM and by earlier experience with Bank-financed projects in this sector, including the MACP, which facilitated several state-level policy changes and capacity building initiatives. Second,

timely credit may not be available from the banking system to fund business plans of the CBOs and agri-enterprises. The project will take several steps to mitigate this risk. It will establish an advocacy platform to work with the State Level Bankers Committee and District Consultative Committee and implement a credit guarantee (PCGF) to provide third-party credit risk mitigation to lenders. It will also provide extensive BDS to help beneficiaries prepare business plans that meet formal bank lending requirements. Third, the challenge of coordinating multiple IAs poses an institutional and capacity risk. To mitigate this risk, the recently formed SMART Society, anchored within DoA, will coordinate the SMART Project. Additionally, the head of DoA has been designated as the Project Director to ensure that the project is integrated within the department and to improve coordination with the participating IAs. This arrangement will aid DoA in providing strong leadership and coordination to achieve project objectives.

VI. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: India

State of Maharashtra's Agribusiness and Rural Transformation Project

Project Development Objectives(s)

The project development objective is to support the development of inclusive and competitive agriculture value chains, focusing on smallholder farmers and agri-entrepreneurs in Maharashtra.

Project Development Objective Indicators

Indicator Name	DLI	Baseline	Intermediate Targets						End Target
			1	2	3	4	5	6	
Increase in net price realization at producer level									
Increase in net price realization at producer level (Percentage)		0.00	0.00	0.00	11.00	16.50	22.00	27.50	33.00
Full Time Equivalent jobs generated in beneficiary firms									
Full Time Equivalent jobs generated in beneficiary firms (Number)		0.00	780.00	2,500.00	5,000.00	6,400.00	7,500.00	8,800.00	9,700.00
Of which, to female beneficiaries (Number)		0.00	115.00	370.00	1,600.00	2,350.00	3,200.00	4,200.00	4,700.00
Of which, to SCs and STs (Number)		0.00	150.00	500.00	1,000.00	1,280.00	1,500.00	1,750.00	1,950.00
Private sector finance mobilized by the project									

Indicator Name	DLI	Baseline	Intermediate Targets						End Target
			1	2	3	4	5	6	
Private sector finance mobilized by the project (Amount(USD))		0.00	13,900,000.00	36,000,000.00	52,150,000.00	54,000,000.00	56,000,000.00	57,000,000.00	58,500,000.00
Farmers reached with agricultural assets or services									
Farmers reached with agricultural assets or services (CRI, Number)		0.00	270,000.00	650,000.00	1,025,000.00	1,370,000.00	1,670,000.00	1,900,000.00	1,900,000.00
Farmers reached with agricultural assets or services - Female (CRI, Number)		0.00	108,000.00	230,000.00	380,000.00	500,000.00	660,000.00	820,000.00	820,000.00
Of which, SC and ST farmers (Number)		0.00	35,000.00	85,000.00	130,000.00	175,000.00	220,000.00	245,000.00	245,000.00

Intermediate Results Indicators by Components

Indicator Name	DLI	Baseline	Intermediate Targets						End Target
			1	2	3	4	5	6	
Enhanced institutional capacity to support agricultural transformation									
Progress against outcome goals tracked and reported annually by DoA (Yes/No)		No	No	No	Yes	Yes	Yes	Yes	Yes
Annual ranking of markets in Maharashtra and publication of the same (Yes/No)		No	No	Yes	Yes	Yes	Yes	Yes	Yes

Indicator Name	DLI	Baseline	Intermediate Targets						End Target
			1	2	3	4	5	6	
Functional Agriculture Stewardship Councils established (Number)		0.00	0.00	0.00	3.00	4.00	5.00	6.00	6.00
Expanding market access and supporting enterprise growth									
Productivity for select commodities (mt/ha) (Number)		0.00							0.00
Cotton - Lint (Number)		0.29	0.29	0.29	0.30	0.31	0.33	0.34	0.43
Maize (Number)		2.91	2.91	2.91	3.02	3.14	3.27	3.40	3.58
Pigeon pea (Number)		0.93	0.93	0.93	0.97	1.01	1.05	1.09	1.14
Banana (Number)		52.29	52.29	52.29	54.38	56.56	58.82	61.17	64.37
Tomato (Number)		23.39	23.39	23.39	24.33	25.30	26.31	27.36	28.79
Average goat live weight (kg) (Number)		16.00	16.00	16.00	16.64	17.31	18.00	18.72	19.70
Beneficiaries meeting quality standards set by sub-projects (Percentage)		0.00	40.00	40.00	50.00	60.00	60.00	70.00	70.00
Market linkages established with the support of the project (Number)		0.00	45.00	75.00	100.00	120.00	120.00	120.00	120.00
Project supported enterprises making incremental investments (Number)		0.00	0.00	0.00	500.00	900.00	1,300.00	1,700.00	2,000.00
Of which, female entrepreneurs (Number)		0.00	0.00	0.00	300.00	540.00	780.00	1,020.00	1,200.00
Of which, SC and ST		0.00	0.00	0.00	100.00	180.00	260.00	340.00	400.00

Indicator Name	DLI	Baseline	Intermediate Targets						End Target
			1	2	3	4	5	6	
entrepreneurs (Number)									
Volume of credit accessed from FIs by CBOs and enterprises supported by the project (Amount(USD))		0.00	9,571,000.00	28,571,000.00	42,143,000.00	43,857,000.00	45,714,000.00	47,143,000.00	48,571,000.00
Of which, by female-led CBOs and female entrepreneurs (Amount(USD))		0.00	3,571,000.00	10,714,000.00	16,286,000.00	17,143,000.00	18,286,000.00	19,286,000.00	20,000,000.00
Of which, by SC and ST entrepreneurs (Amount(USD))		0.00	0.00	0.00	428,571.00	714,286.00	1,143,000.00	1,429,000.00	1,714,000.00
Building risk mitigation mechanisms									
Beneficiaries who are aware of market intelligence given by the project (Number (Thousand))		0.00	0.00	0.00	240.00	240.00	360.00	660.00	660.00
Of which, female beneficiaries (Number (Thousand))		0.00	0.00	0.00	48.00	48.00	90.00	198.00	198.00
Of which, SC and ST beneficiaries (Number (Thousand))		0.00	0.00	0.00	31.20	31.20	46.80	85.80	85.80
Warehouse receipts issued to project beneficiaries (Number (Thousand))		0.00	22.52	79.37	142.29	268.81	353.08	437.55	518.99
Of which, to female beneficiaries (Number		0.00	2.25	7.94	14.23	26.88	35.31	43.75	51.90

Indicator Name	DLI	Baseline	Intermediate Targets						End Target
			1	2	3	4	5	6	
(Thousand))									
Of which, to SC and ST beneficiaries (Number (Thousand))		0.00	2.93	10.32	18.50	34.95	45.90	56.88	67.47
Project management, monitoring, and learning									
Grievances registered related to delivery of project benefits that are actually addressed (Percentage)		0.00	70.00	80.00	80.00	80.00	80.00	80.00	85.00

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Increase in net price realization at producer level	Measured in real terms by increase in the gross value of marketed output less costs at producer level over Baseline value. Gross value is defined as the product of selling price and output sold to the sub-project. Costs will include costs of cultivation and marketing to the sub-project. The indicator will be	Measured in year 3 onwards.	Field survey and Project MIS	Field survey and Project MIS	PIUs aggregated by the PCMU

	a composite indicator measuring the profitability accruing to project beneficiaries from sub-projects relating to 6 commodities viz. cotton, maize, pigeon pea, banana, tomato and goat.				
Full Time Equivalent jobs generated in beneficiary firms	Measured by number of incremental full time equivalent (FTE) jobs in beneficiary firms, disaggregated by gender and social category. Beneficiary firms refer to the project supported CBOs and project supported enterprises.	Annual	Project MIS	Project MIS	PIUs aggregated by PCMU
Of which, to female beneficiaries	Disaggregated by gender	Annual	Project MIS	Project MIS	PIUs aggregated by PCMU
Of which, to SCs and STs	Disaggregated by SCs and STs	Annual	Project MIS	Project MIS	PIUs aggregated by PCMU
Private sector finance mobilized by the project	This indicator measures the amount of private sector finance mobilized by the project. Private sector finance refers to the amount of debt raised by project beneficiaries as a part of beneficiary	Annual	Project MIS	Project MIS	PIUs aggregated by PCMU

	contribution towards the sub-projects. The contribution from VSTF has also been included.				
Farmers reached with agricultural assets or services	This indicator measures the number of farmers who were provided with agricultural assets or services as a result of World Bank project support. "Agriculture" or "Agricultural" includes: crops, livestock, capture fisheries, aquaculture, agroforestry, timber, and non-timber forest products. Assets include property, biological assets, and farm and processing equipment. Biological assets may include animal agriculture breeds (e.g., livestock, fisheries) and genetic material of livestock, crops, trees, and shrubs (including fiber and fuel crops). Services include research, extension, training, education, ICTs, inputs (e.g., fertilizers, pesticides, labor), production-related services (e.g., soil testing, animal	Annual	Project MIS	Project MIS	PIUs aggregated by PCMU

	health/veterinary services), phyto-sanitary and food safety services, agricultural marketing support services (e.g., price monitoring, export promotion), access to farm and post-harvest machinery and storage facilities, employment, irrigation and drainage, and finance. Farmers are people engaged in agricultural activities or members of an agriculture-related business (disaggregated by men and women) targeted by the project.				
Farmers reached with agricultural assets or services - Female		Annual	Project MIS	Project MIS	PIUs aggregated by PCMU
Of which, SC and ST farmers	Disaggregated by SC and ST farmers	Annual	Project MIS	Project MIS	PIUs aggregated by PCMU

Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Progress against outcome goals tracked and reported annually by DoA	This indicator, measures whether the outcome goals defined and accepted by the	Annual, Midterm and Final	Project MIS	Project MIS	DoA

	Department of Agriculture are met by the Department and reported annually. The DLI is linked to meeting the outcome goals as well as reporting the same annually on the agreed upon platform.DoA denotes Department of Agriculture, Government of Maharashtra.	Assessment			
Annual ranking of markets in Maharashtra and publication of the same	DoM will develop ranking of market health indicators. This indicator tracks whether such rankings have been generated and reports thereof are published by DoM. DoM denotes Department of Marketing, Government of Maharashtra.	Annual, Midterm and Final Assessments	Project MIS	Project MIS	DoM
Functional Agriculture Stewardship Councils established	This indicator measures the number of functional Agriculture Stewardship Councils established. A functional Agriculture Stewardship Council is defined as one contributing to one or more policy recommendations based on a Vision Document and Institutional Development	Annual, Midterm and Final Assessment	Project MIS	Project MIS	VSTF PIU

	Plan.				
Productivity for select commodities (mt/ha)	This indicator measures increment in the productivity of select five agricultural commodities (cotton-lint, maize, pigeon pea, banana, tomato). Baseline productivity is measured across all districts. From year 1 onwards, the productivity will be measured in the project districts.	Annual, midterm and final assessment	Annual household survey	Annual household survey	Survey agency
Cotton - Lint	Productivity of cotton- lint.	Annual, Midterm and Final Assessment	Annual household survey	Annual household survey	Survey agency
Maize	Productivity of maize.	Annual, Midterm and Final Assessment	Annual household survey	Annual household survey	Survey agency
Pigeon pea	Productivity of pigeon pea.	Annual, Midterm and Final Assessment	Annual household survey	Annual household survey	Survey agency

Banana	Productivity of banana.	Annual, Midterm and Final Assessment	Annual household survey	Annual household survey	Survey agency
Tomato	Productivity of tomato.	Annual, Midterm and Final Assessment	Annual household survey	Annual household survey	Survey agency
Average goat live weight (kg)	This indicator measures the live weight of an average goat (as a commodity) at 6 months (measured in kilograms). Baseline average live weight is measured across all districts. From year 1 onwards, the average live weight of goat (at 6 months) will be measured in the project districts.	Annual, Midterm and Final assessment	Annual household survey	Annual household survey	Survey agency
Beneficiaries meeting quality standards set by sub-projects	This indicator measures the percentage of beneficiaries meeting the standards set by the sub-project. Each sub-project is expected to have a set of quality standards that will be made known to the potential beneficiaries of the project.	Annual, Midterm and Final Assessment	Annual household survey	Annual household survey	Survey agency

Market linkages established with the support of the project	This indicator measures the number of unique market linkages that will be established with the support of the project.	Annual, Midterm and Annual Assessment	Project MIS	Project MIS and Field Survey	PIUs aggregated by PCMU
Project supported enterprises making incremental investments	Individual entrepreneurs aiding the development of the project Value Chains will be supported by the project. Preference would be given to those enterprises which support the overall objectives of the sub-project. Enterprises are those which support sub project objectives in the given geography. This is further segregated by women entrepreneurs and by social category entrepreneurs.	Annual, Midterm and Final Assessment	Project MIS	Project MIS	PIUs aggregated by the PCMU
Of which, female entrepreneurs	Disaggregated by gender	Project MIS	Project MIS	Annual, Midterm and Final Assessment	PIUs aggregated by PCMU
Of which, SC and ST entrepreneurs	Disaggregated by social category	Annual, Midterm and Final Assessments	Project MIS	Project MIS	PIUs aggregated by PCMU

Volume of credit accessed from FIs by CBOs and enterprises supported by the project	This indicator measures the volume of credit accessed by project supported CBOs and Enterprises from Financial Institutions (FIs).	Annual	Project MIS	Project MIS	PIUs aggregated by the PCMU
Of which, by female-led CBOs and female entrepreneurs	Disaggregated by gender	Annual	Project MIS	Project MIS	PIUs aggregated by PCMU
Of which, by SC and ST entrepreneurs	Disaggregated by social category	Annual	Project MIS	Project MIS	PIUs aggregated by PCMU
Beneficiaries who are aware of market intelligence given by the project	Project beneficiaries will be given market information such as price forecasts which are helpful in taking decisions on storing or selling the produce. This indicator measures whether the project beneficiaries are aware about the market intelligence generated by the project.	Midterm, Year 5, Year 6, Year 7	Household survey	Household survey	Survey Agency
Of which, female beneficiaries	Disaggregated by gender	Midterm and Final Assessment	Household survey at midterm and endterm	Household survey at midterm and endterm	Survey Agency
Of which, SC and ST beneficiaries	Disaggregated by social category	Midterm and Final Assessment	Household survey at midterm and endterm	Household survey at midterm and endterm	Survey Agency
Warehouse receipts issued to project beneficiaries	This indicator measures the number of beneficiaries to	Annual, Midterm	Project MIS	Project MIS	PIUs aggregated by PCMU

	whom warehouse receipts (WRs) are issued. WRs will include the WRs issued by the CMAs and are acceptable to bankers linked to the CMAs.	and Final Assessment			
Of which, to female beneficiaries	Disaggregated by gender	Annual, Midterm and Final Assessment	Project MIS	Project MIS	PIUs aggregated by PCMU
Of which, to SC and ST beneficiaries	Disaggregated by social category	Annual, Midterm and Final Assessment	Project MIS	Project MIS	PIUs aggregated by PCMU
Grievances registered related to delivery of project benefits that are actually addressed	This indicator measures the transparency and accountability mechanisms established by the project so that the target beneficiaries have trust in the processes and are willing to participate, and feel that their grievances are attended to promptly. Thus, the project monitoring system should provide information on the number of complaints received	Annual, Midterm and Final Assessment	Project MIS	Project MIS	PCMU

	against the number actually resolved.				

Disbursement Linked Indicators Matrix

DLI 1	Institutional realignment and strengthening of Department of Agriculture and allied departments towards outcomes			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	Yes	Text	6,920,000.00	2.83
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Agri programs remain focused on input subsidy provision, not outcomes.			
Year 1 (2020-21)			0.00	
Year 2 (2021-22)	Staff management plan developed and instituted; IT based MIS system implemented.		1,200,000.00	$1 million for Staff Management Plan being notified; $200,00
Year 3 (2022-23)	Staff performance appraisals against outcome goals of department being conducted annually; IT-based MIS system implemented.		1,650,000.00	Minimum of 30% of staff being appraised against revised fram
Year 4 (2023-24)	Staff performance appraisals against outcome goals of department being conducted annually; IT based MIS system implemented.		1,650,000.00	
Year 5 (2024-25)	Staff performance appraisals against outcome goals of department being conducted annually.		1,650,000.00	

Year 6 (2025-26)	Staff performance appraisals against outcome goals of department being conducted annually.	770,000.00	
Year 7 (2026-27)		0.00	

DLI 2	Enhanced staff capacity of DoA to achieve outcomes			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	Yes	Text	5,600,000.00	2.67
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Mismatch in staff skills and capacity for market-oriented technical service provision and promoting private sector investments.			
Year 1 (2020-21)			0.00	
Year 2 (2021-22)	Staff training management plan developed; Staff trained using upgraded modules.		2,700,000.00	$700,000 for Staff Training Management Plan being developed;
Year 3 (2022-23)	Staff trained using upgraded modules.		2,000,000.00	
Year 4 (2023-24)	Staff trained using upgraded modules.		900,000.00	
Year 5 (2024-25)			0.00	
Year 6 (2025-26)			0.00	
Year 7 (2026-27)			0.00	

DLI 3	Enhanced market linkages, food quality and safety standards for focus geographies and commodities			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Intermediate Outcome	Yes	Text	7,700,000.00	3.67
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Weak policy and institutional framework to support agri- transformation			
Year 1 (2020-21)			0.00	
Year 2 (2021-22)	Scheme implementation and financing converged on the basis of cluster / commodity development plans developed.		500,000.00	USD 250,000 for each cluster plan being implemented over a o
Year 3 (2022-23)	Scheme implementation and financing converged on the basis of cluster / commodity development plans developed.		1,000,000.00	
Year 4 (2023-24)	Scheme implementation and financing converged on the basis of cluster / commodity development plans developed.		1,000,000.00	
Year 5 (2024-25)	Scheme implementation and financing converged on the basis of cluster / commodity development plans developed.		1,000,000.00	
Year 6 (2025-26)	Increase in area under GAP standards		4,200,000.00	USD $500,000 for every percentage increase in area under GAP
Year 7 (2026-27)			0.00	

Verification Protocol Table: Disbursement Linked Indicators	
DLI 1	Institutional realignment and strengthening of Department of Agriculture and allied departments towards outcomes
Description	DLR 1.1 is described as DoA has developed and instituted the staff management plan, which will be met when a staff management plan against outcomes, thematic and commodity focus areas of the department is developed [including staff mapping, revised job roles and responsibilities and alignment of performance management system to outcomes of department]. DLR 1.2 is described as IT-Based MIS System is launched and is functioning, and will be met when IT-based MIS system covering outcome goals – as defined by the DOA – is instituted and functioning. Functioning is defined as regular data collection and reporting from at least 80% of blocks covered by DOA. DLR 1.3 is described as Staff performance appraisals against outcome goals of DoA are being conducted annually for at least 30% of the staff. This would be met when annual appraisal template including outcome goals is developed, process for appraisal against outcomes is instituted and annual appraisals are being conducted.
Data source/ Agency	Department notification of staff management plan along with copy of plan. Departmental notification of annual appraisal process with appraisal template.
Verification Entity	World Bank.
Procedure	For DLR 1.1 Staff management plan notification shared with World Bank. For DLR 1.2 Review of monthly reports being generated by MIS. For DLR 1.3 Annual review of staff appraisal template and processes by HR agency.
DLI 2	Enhanced staff capacity of DoA to achieve outcomes
Description	The DLI is measured through two DLRs. DLR 2.1 is described as DoA has developed a staff training management plan, and is met when DOA develops a staff training management plan assessing training needs, developing a training schedule for different levels of staff, laying out annual training calendars and a system for tracking trainings is completed. DLR 2.2 is described as DoA staff have been trained using upgraded modules, and is met when DOA staff go through defined training modules as per the staff training management plan.
Data source/ Agency	Training management plans, training modules with updated curriculum. training completion reports, and training batch details.

Verification Entity	World Bank
Procedure	Upgraded training modules and curriculum; Training completion reports submitted with training batch details.
DLI 3	Enhanced market linkages, food quality and safety standards for focus geographies and commodities
Description	DLI 3.1 is described as Scheme financing has been converged on the basis of cluster / commodity development plans developed and the plans are implemented, and is met when DOA initiates work on outcome goals through developing cluster and commodity level plans and converging scheme financing towards defined objectives in these plans. DLR 3.2 is described as Increase in area under IndGAP or other needed standards for focus commodities, and is met when DOA sets goals for GAP standards for focus commodities, develops protocols and undertakes an extension support and testing program to enhance proportion of commodity that meets the GAP standards.
Data source/ Agency	For DLR 3.1, cluster development plan (with details of convergence), and annual report on financing converged and activities implemented in the cluster. For DLR 3.2, baseline report on area under GAP financing, randomized annual sampling plan for focus commodities and report summarizing test results for focus commodities.
Verification Entity	World Bank
Procedure	For DLR 3.1, cluster plans will be shared with World Bank. Details of scheme convergence and annual report of activities in the cluster will be shared with the World Bank. For DLR 3.2, baseline report on area under GAP financing in year 1 would be done. Randomized sample plan for commodity testing based on focus commodities / geographies will be developed and shared with the Bank. Summary of sampling results formally will be shared with the World Bank.

ANNEX 1: Subcomponent A1—Disbursement Linked Indicators

COUNTRY: India
State of Maharashtra's Agribusiness and Rural Transformation Project

Disbursement Linked Indicator (DLI)	Total financing amount allocated to DLI (US$)	As % of total financing amount	DLR no.	Disbursement Linked Result (DLR) description	Target achievement timeline (indicative)	Data / information	Definition and procedure
DLI 1: Institutional realignment and strengthening of Department of Agriculture (DoA) and allied departments toward outcomes.	$6.92 million		1.1	DoA has developed and instituted the staff management plan	Year 1 (2020-21)	Department notification of staff management plan along with copy of plan.	**Definition**: This DLR will be met when a staff management plan against outcomes, thematic and commodity focus areas of the department is developed (including staff mapping, revised job roles and responsibilities, and alignment of performance management system to outcomes of department). **Funds and scalability**: $1,000,000 **Procedure**: Staff management plan notification shared with World Bank.
			1.2	IT-Based MIS System is launched and is functioning.	Year 2 (2021-22)		**Definition**: IT-based MIS system covering outcome goals–as defined by the DoA–instituted and functioning. Functioning is defined as regular data collection and reporting from at least 80% of blocks covered by DoA. **Fund and scalability**: $200,000 for launch year. $150,000 for each subsequent year of functioning up to a total of $1,000,000. **Procedure**: Review of monthly reports being generated by MIS.
			1.3	Staff performance appraisals against outcome goals of DoA	Year 3 (2022-23)	Departmental notification of annual appraisal	**Definition**: Annual appraisal template including outcome goals developed, process for appraisal against outcomes instituted, and annual appraisals being

				are being conducted annually for at least 30% of the staff		process with appraisal template.	conducted. **Funds and Scalability**: Minimum of 30% of staff being appraised against revised frameworks. US$20,000 per percentage of staff being appraised against revised templates up to a total of $1,500,000 per year and $4.92 million over the life of the project. **Procedure**: Annual review of staff appraisal template and processes by HR agency.
DLI 2: Enhanced staff capacity of DoA to achieve outcomes.	$5.6 million.		2.1	DoA has developed a staff training management plan.	Year 2 (2021-22)		**Definition**: DoA develops a staff training management plan assessing training needs, developing a training schedule for different levels of staff, laying out annual training calendars and a system for tracking trainings completed. **Funds and scalability:** $700,000 **Procedure:** Staff training management plan shared with the World Bank.
			2.2	DoA staff have been trained using upgraded modules	Year 2 (2021-22) – Year 7 (2026-27)	Training modules with updated curriculum. Training completion reports. Training batch details.	**Definition**: DoA staff go through defined training modules as per the staff training management plan. **Funds and scalability**: US$20,000 for every percentage of staff trained using upgraded training modules up to a total of $2,000,000 annually and $4.9 million over the life of the project. Retraining and refresher trainings included from Year 3 onward. **Procedure**: Upgraded training modules and curriculum; training completion reports submitted with training batch details.
DLI 3: Enhanced market linkages, food quality and safety standards for focus geographies and commodities.	$7.7 million		3.1	Scheme financing has been converged on the basis of cluster / commodity development plans developed and the plans are implemented.	Year 2 (2021-22) – Year 7 (2026-27)	Cluster development plan with details of convergence to be achieved. Annual report	**Definition**: DoA initiates work on outcome goals through developing cluster and commodity-level plans and converging scheme financing toward defined objectives in these plans. **Funds and scalability**: US$250,000 for each cluster plan being implemented over a one-year period with

						on financing converged and activities implemented in the cluster.	convergence of scheme financing up to a total of $3.5 million. **Procedure**: Cluster plans shared with World Bank. Details of scheme convergence and annual report of activities in the cluster shared with the World Bank.
			3.2	Increase in area under IndGAP or other needed standards for focus commodities.	Year 2 (2021-22) – Year 7 (2026-27)	Baseline report on area under GAP financing. Randomized annual sampling plan for focus commodities. Report summarizing test results for focus commodities.	**Definition**: DoA sets goals for GAP standards for focus commodities, develops protocols, and undertakes an extension support and testing program to enhance proportion of commodity that meets the GAP standards. **Funds and scalability**: US$500,000 for every percentage increase in area under GAP standards for focus commodities up to a total of $4.2 million. **Procedure**: Baseline report on area under GAP financing in year 1. Randomized sample plan for commodity testing based on focus commodities / geographies developed and shared with the Bank. Summary of sampling results formally shared with the World Bank.

ANNEX 2: Subcomponent B1—Market Access Support

COUNTRY: India
State of Maharashtra's Agribusiness and Rural Transformation Project

1. The project will support investment subprojects based on joint business plans developed by buyers and CBOs, as well as business plans developed by CBOs to access new markets. Overall, Component B is expected to provide support to 300 subprojects over the life of the project. In addition, Component C will support an estimated 225 additional subprojects promoting partnerships between CBOs and CMAs.

2. Financial support from the project to the subprojects will take the form of partial support for business plans, including support in the form of matching grants to CBOs. Matching grants are justified by the positive externalities that are generated by the subproject and the lack of access to commercial finance by small-scale farmers. The levels of grant support and arrangements for co-financing will vary according to the financial viability of the subproject. The size of the average business plan under Component B is estimated to be approximately $700,000, of which the size of the matching grant provided to CBOs (with an estimated four CBOs under each business plan) totals approximately $400,000. Under Component C, the average size of business plans is expected to be approximately $100,000, of which matching grants to CBOs will comprise approximately $60,000.

3. Experience from similar projects suggest that satisfactory outcomes are far more likely when a minimum cash co-financing of the total subproject costs is required from beneficiary partners, encouraging greater ownership, enhancing risk-sharing, and showing significant commitment on the part of producers. Hence the matching grant is treated as viability gap financing of proposals that are economically justified. The extent of the funding is up to 60% of total investment subproject costs, with the remainder being raised through beneficiary contributions and commercial credit.

Selection of Subprojects

4. The project will support three types of subprojects to spur the development of inclusive and competitive agricultural value chains, focusing on smallholder farmers in Maharashtra: (i) PPs; (ii) MAPs; and (iii) CIIs. Subprojects will be selected for funding in a two-stage process, starting with the submission and screening of a Project Concept Note (PCN) and moving on to the development of a Full Project Proposal (FPP) for approved PCNs. The SMART Project will hire four TSPs—one for each region of the state—to provide technical assistance for proposal development.

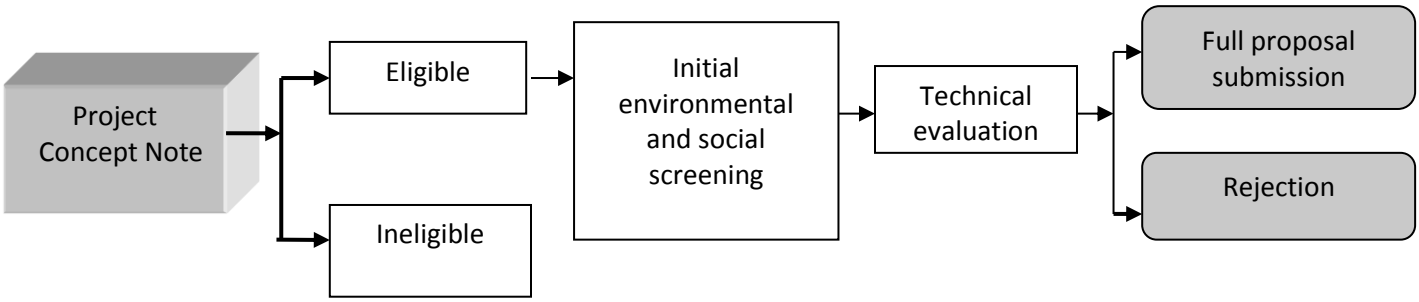
5. The selection of PCNs and full proposals will be based on a combination of criteria, including technical feasibility, economic viability, and adherence to project safeguards. The evaluation will also take the state's regional priorities into consideration. A scoring system will prioritize proposals that address specific areas emphasized by the project, such as the inclusion of women, promotion of climate resilience, and positive nutritional outcomes. The selection process will ensure an equitable distribution of project funds across regions.

6. **Call for PCNs.** As the first step, the PCMU will issue a call for PCNs. These calls will be widely advertised and disseminated in the leading newspapers, electronic media, print media, project website, seminars,

workshops, and through direct contact. Reputable organizations (including international organizations), industries, cooperatives, and extension organizations with a proven record of improving market–farmer extension linkages may be specially targeted. The advertisement for PCNs will include the application procedure and eligibility criteria. The project will allow a month for potential beneficiaries to submit PCNs. A helpdesk (reachable online and via telephone) will be set up at the PCMU to help potential beneficiaries develop PCNs and to assist them to identify potential buyers.

7. The applicant will prepare the PCN following a standard template developed by the project describing activities to be carried out, the business model, partnership between buyers and participating CBOs, the roles of the respective partners, innovations to be introduced, and the number of farmers and producers expected to benefit.

Figure 3: Process for evaluating Project Concept Notes under the proposed SMART Project



8. **Submission and evaluation of the PCN**. At the district and regional level, the RIU will be responsible for screening each PCN to ascertain that (i) the applicant(s) meet the eligibility criteria for participation and (ii) the proposed subproject meets the eligibility criteria for funding. Eligible concept notes will be submitted to the PCMU. The concept note stage is intended to reduce transaction costs by eliminating concept notes that fail to meet the eligibility criteria. The PCMU will evaluate each PCN under the guidance of specialists in the PCMU and a state-level technical support group. The PCMU will rank proposals based on evaluation criteria, clear qualifying PCNs, and submit them with their recommendations to a Grant Approval Committee set up within the PCMU.

9. **Clearance of PCNs.** The Project Director chairs the Grant Approval Committee, which includes the heads of all 11 participating PIUs. The PCMU will function as the secretariat of this committee. Based on the scores obtained and recommendation of the PCMU, the Grant Approval Committee will approve PCNs for the development of detailed FPPs. Rejected applicants will be informed and receive comments from PCN evaluators in case they wish to submit a revised PCN in the subsequent round.

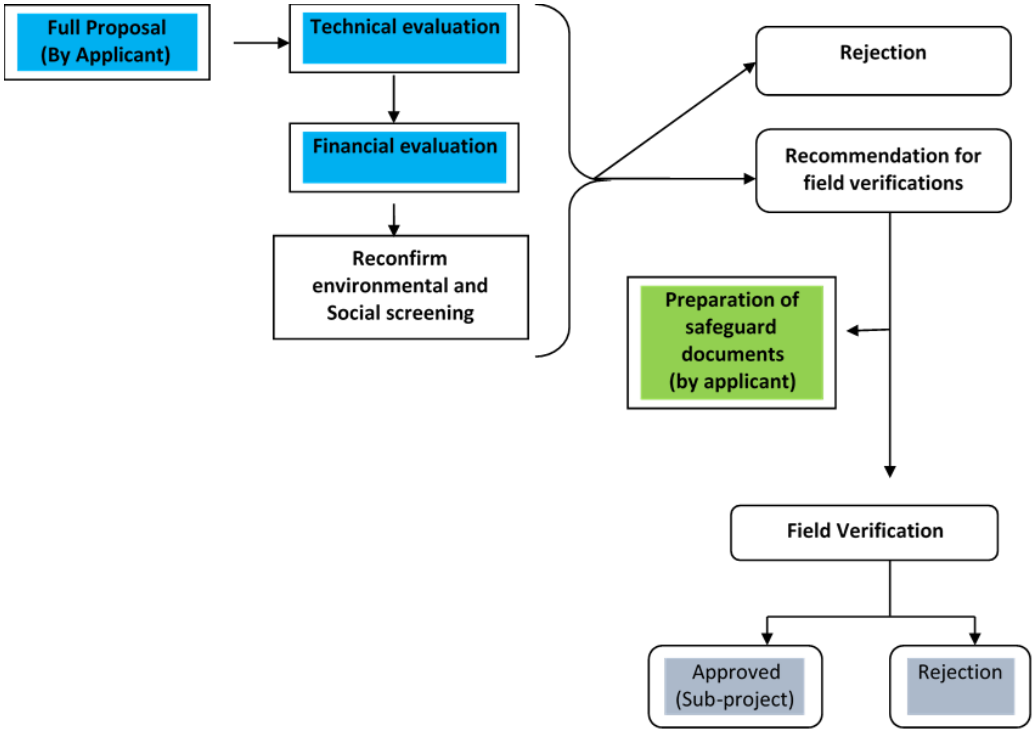
10. **Development and submission of FPPs**. The project will hire TSPs to support and facilitate the development of approved PCNs into FPPs. This effort will include a consultative process between different stakeholders.

11. **Evaluation and approval of FPPs.** The PCMU will evaluate each FPP with the help of specialized, independent external evaluators. The evaluation will be based on a number of criteria, including each FPP's economic, financial, technical, socioeconomic, and environmental impact; the extent to which stakeholders are

included; the subproject's multiplier or replication potential; and the clarity of the plans. The FPPs will also be screened for safeguard compliance. The PCMU will rank the proposals and submit them with their recommendations to the Grant Approval Committee. The Project Director will chair this committee, and heads of all 11 participating PIUs will be members. The PCMU will function as the secretariat of this committee. All stages of the screening, selection, and approval process will be conducted transparently and publicly disclosed. The PCMU will set up a registry of technical evaluators with expertise in the specific focus and thematic areas of the project, from which a panel can be drawn on periodically to evaluate PCNs and FPPs. Field verification will be undertaken for the shortlisted FPPs by the lead PIUs to corroborate the key aspects of the proposals.

12. When proposals are approved, the names of successful grant recipients will be made public, and details of the winning subprojects will be posted on the project website. After the grant is approved, the following actions will be taken: (i) an agreement will be signed between the PIU, the representatives of the CBOs, and the agribusiness partner/s; (ii) the approved grant will be disbursed; and (iii) subproject implementation will be monitored regularly, and reports will be submitted regularly, in accordance with the terms of the GA.

Figure 4: Process for evaluating Full Project Proposals under the proposed SMART Project



Administration of the Grant Facility

13. Grants will be administered by the PCMU, which as noted is also responsible for encouraging applications and reviewing proposals. Four TSPs will be hired to assist applicants that pass the PCN stage to develop full proposals. The total cost of staff and TSPs engaged with business plan financing and grant administration is approximately $7 million, approximately 4% of the financing allocated for such support. Annex 4 provides more detail on the fund flow arrangements.

Eligible Community-based Organizations

14. Although all of the eligible CBOs in the state may participate in project activities, the project will foster convergence and synergies with state schemes, programs, and staff capacity by specifically targeting eligible CBOs, agri-enterprises, and VSTF villages/clusters that are promoted by participating PIUs. Among other features, an eligible CBO will:

i. Be a legally registered entity, with books of accounts audited by a chartered accountant. A CBO that is not yet registered may submit a PCN, but the CBO must be registered to be able to sign a GA.
ii. Have a membership base that meets a certain minimum threshold, with growth in membership and minimum turnover among members.
iii. Have no significant audit observations.
iv. Have been engaged for at least two years in agriculture-based production, marketing, processing, trading, or input supply. As women face barriers to participation in HVA value chains, this criterion may be relaxed for women's CBOs, and "bridge support" will be provided to enable them to participate in the project.

Eligible Proposals for Matching Grant Funding

15. To be considered eligible for matching grant funding, proposals are expected to:

i. Be technically sound, financially viable, and satisfy environmental and social safeguards.
ii. Support market infrastructure and productive activities (collection and storage facilities, processing equipment) that add value to agricultural produce.
iii. Support market opportunities identified jointly by the producer organization, organized buyers, and other economic actors in the value chain.
iv. Ensure that partnerships emerge from participatory and local processes, from bottom to top.
v. Support market-led production both in terms of quality and market timing.
vi. Be sustainable from an environmental, social, economic, and financial perspective.
vii. Ensure that the partners share the risks both in processing and marketing.

Proposal Selection Criteria

16. Proposals will be selected based on the following criteria:

i. Number of beneficiaries (direct and indirect).
ii. Existence and type of partnership within the value chain.
iii. Expected impact on beneficiaries (incomes or other) and cost-efficiency.
iv. Contribution to value chain development.
v. Demonstrate aspects of innovation (process/product innovation, climate, nutrition).
vi. Sustainability.
vii. Social and environmental impacts.

ANNEX 3: The Urban Food System Pilot Program

COUNTRY: India
State of Maharashtra Agribusiness and Rural Transformation Project

1. As discussed in the main text, consumers in rapidly growing cities are increasing and diversifying their food consumption. With higher incomes and an appetite for more expensive foods, the urban population consumes a larger share of the total value of food than the rural population. Many urban food systems have, however, yet to evolve in response to changing consumer food demands and rapid urbanization. These systems still suffer from minimal attention to food safety, rising food insecurity among the urban poor, and a multiplicity of authorities involved in food system oversight.

2. The project will support a pilot program in Pune—projected to become India's seventh-largest city by 2025, with 7.52 million people—with a broad emphasis on food safety and nutrition in the food system. The pilot aims to upgrade critical urban food system functions and address institutional and governance issues, including the systematic integration of food in urban development plans. Illustrative activities to be financed under the pilot include a review of food system policies for the urban and peri-urban space, with recommendations for improvement; the modernization of farmers markets; streamlining transport logistics and relieving congestion; improving hygiene; sanitation and food safety; strengthening product traceability systems; and developing green food waste management systems. Addressing energy efficiency, reducing GHG emissions, reducing waste, and increasing recycling in urban food systems will be a focus area of the pilot. Several recently completed and ongoing studies by the World Bank and development partners such as FAO will inform this pilot, and as the pilot is implemented, additional analysis will identify institutional and governance mechanisms to improve critical aspects of the food system related to access to food, food quality and safety, and nutrition.

3. The Pune Municipal Corporation (PMC) will implement the Urban Food System Pilot Program in close collaboration with the DoA, DAH, MSAMB and the private sector. Specific activities envisioned under the pilot include:

- **Activities supporting better nutrition for urban populations.** A behavior change communication campaign targeting consumers, institutional buyers, and food system actors will be implemented by PMC with support from qualified service providers. The campaign will engage with local non-governmental organizations, private food companies, restaurants, and other change agents that already work with key constituencies such as urban youth. The design of the campaign will be completed within six months of project approval and implemented in years 1 and 2 of the pilot program. The campaign will be evaluated by the project at midterm to review impact and identify any changes needed for replication and scaling up.
- **Activities supporting the modernization of farmers markets.** Markets managed by FPOs currently operate in about 69 locations in Pune. To align with consumer preferences, these markets will be upgraded and strengthened to address food safety, logistics and market intelligence for producers, market operations and congestion, traceability, and sanitation facilities. The DoA will implement back-end activities related to commodity production and supply, and the PMC and MSAMB will implement the front-end activities. Governance protocols for farmers markets will be reviewed and improved to increase transparency and ensure the inclusion of local farmers, producer groups, and self-help

groups. A plan will be developed to improve each market, with a detailed analysis supporting the proposed investments and outcomes to be achieved. Financing will be allocated based on a set of criteria established by the PMC, MSAMB, and DoA. A protocol for market reviews and assessments, including procedures for monitoring food safety and improvements in producer and consumer welfare, will be established. In year 1, assessments and stakeholder consultations will guide the planning, design, financing, and implementation of priority actions in three test markets. Following a review of lessons, the pilot will implement interventions in additional markets during years 2 and 3. Given that this focus on urban food systems is new for the PMC, the project will establish a multi-stakeholder institutional structure, with participation of project PIUs, to oversee the process.

- **Activities supporting institutional food programs and buyers.** With an emphasis on facilitating access by FPOs to urban food markets, the PMC will explore options for FPOs to supply food for the midday meal program of municipal schools and for the Integrated Child Development Services scheme. The pilot will conduct an analysis of the demand and supply potential and institutional/contractual modalities for this collaboration in year 1 of implementation. Specific commodities to be supplied by FPOs (for example, vegetables or eggs) will be identified following this assessment. Support, in the form of training and technical support on food quality and safety improvements, will be provided to selected FPOs to ensure a safe, regular supply of these commodities. An evaluation of the impact of this collaboration will be carried out by the project midterm.
- **Activities supporting a safer urban food supply.** Consumers are increasingly concerned with food safety and buying products with clearly indicated information on pesticide residues. To meet this demand, food system actors (such as FPOs, food companies, and consumer groups) need to establish transparent procedures for measuring and communicating this information to consumers. Product differentiation and sales based on MRL standards will be organized in collaboration with retailers, focusing on fruits and vegetables. The DoA will collaborate with the Food Safety Standards Authority of India, private retailers, and food suppliers/producers/FPOs to develop and implement interventions, including interventions to assess and monitor pesticide residue levels; develop and apply MRL standards; and identify and implement actions at the FPO level to monitor residue levels and provide information on residue levels to food system actors, consumers, and institutional buyers.
- **Activities supporting modernization of the goat meat trade.** Efforts to modernize the goat meat trade will consist of: (i) upgrading the PMC slaughterhouse to APEDA (export) standards, focusing on both local and export market; and (ii) developing a clean meat program through training, upgrading, and certification of butchers, as well as consumer food safety awareness campaigns focused on meat and the nutritional benefits of goat milk. The PMC will undertake both of these activities in close collaboration with DAH. The clean meat program will be developed in partnership with a stakeholder group to include representatives of the PMC health and agriculture departments, PMC Butchers' Association, academics, non-governmental organizations, consumer groups, and public relations firms.

ANNEX 4: Financial Management

COUNTRY: India
State of Maharashtra's Agribusiness and Rural Transformation Project

I. Financial Management Assessment Overview

1. **The assessment of FM arrangements for the proposed project concluded that the agreed FM systems provide reasonable assurance of:** (i) adequate annual budgetary provision and effective utilization for intended purposes; (ii) sufficient and timely flow of funds for project activities, including to CBOs; (iii) maintenance of adequate FM staff; (iv) appropriate accounting of project expenditures; (v) oversight on project funds spent by the CBOs based on the GAs; (vii) control over assets created under the project; (viii) preparation and timely submission of IUFRs; and (ix) timely submission of audit reports and project financial statements to the World Bank.

2. **The FM risk for the project is Substantial**, given the innovative design of the project, which features the provision of grants to communities to implement activities and involves a large number of IAs, including district agencies. This risk will be mitigated by designing sustainable fiduciary arrangements, providing continuous support for training, and offering handholding support at the initial stage of implementation. The arrangements governing FM under the project are detailed below.

II. Project Implementation Structure

3. **At the state level, the SMART Society (a newly formed society for project implementation registered under the Society Registration Act, 1860), under the administrative control of the DoA, has been constituted as the PCMU for project implementation**. The PCMU will have overall responsibility for maintaining the FM systems of the project and ensuring that the agreed FM arrangements operate throughout the project period in accordance with the legal covenants. Aside from the PCMU, the project will be implemented by 11 agencies, which are the participating departments of the GoM and autonomous institutions operating under the administrative supervision of the DoA and/or other GoM departments. Figure A4.1 in the "Fund Flow" section lists the IAs.

4. The FM arrangements for the proposed project build on existing arrangements of the various IAs with due consideration to lessons learned through implementing other projects.[13] All of the IAs except for VSTF, MAVIM, MCDC, and MahaCot have experience in implementing bank-financed projects. In view of the varied legal and regulatory environment of the IAs and multiplicity of operating structures and FM systems, a project Financial Management Manual (FMM), establishing the project FM framework and including uniform processes and procedures, has been finalized.

[13] These projects include past and current projects under implementation in India (particularly in the State of Maharashtra) with a similarly diverse mix of IAs, such as the MACP (closed in October 2018), PoCRA (effective from June 2018), and the Assam Agribusiness and Rural Transformation Project.

III. Planning, Budgeting, and Counterpart Funding

5. **The project will be budgeted under a separate budget line earmarking externally aided/SMART Project funding.** World Bank funds will be provided to the GoI under IBRD loan terms and will be released by the GoI to the GoM according to agreed financing norms between the Center and the State. The counterpart share under the project amounts to 30% of the total project cost and includes US$10 million to be contributed by the private sector (through VSTF). The GoM will provide 100% funding (the IBRD and State of Maharashtra share) for the project in the yearly state budget at the beginning of each financial year based on budget estimates (Annual Work Plan) provided by the PCMU. Annual budget provisions will be made only for the World Bank and GoM share and will not include costs to be met with private sector funding through VSTF.

6. **Development of the Annual Work Plan will follow a bottom-up approach.** Each IA will prepare a detailed activity-based annual plan to be consolidated first by the corresponding PIU and subsequently by the PCMU for the whole project, before being submitted for approval by the Project Steering Committee. Performance against the Annual Work Plan will be assessed on a quarterly basis. In addition, budget utilization will be monitored by the GoM periodically, and any additional budget demand during the financial year will be met through a provision for supplementary demands in the month of September. The GoM has opened a separate budget head for the project in the state budget and has provided the budget to finance project activities for FY2019–20.

IV. Flow of Project Funds

7. **The project funds will flow through the Public Financial Management System (PFMS).**[14] The existing fund flow arrangements at the IAs are a mix of the state treasury systems and bank operations. While the participating government departments primarily operate through the Budget Estimation, Allocation, and Monitoring System and the state treasury system, the autonomous institutions operate through bank accounts. Considering that the autonomous institutions currently operate outside the state treasury systems and that the PCMU is a society, funding under the project will flow through a dedicated single bank account ("Central Pool Account") under the PCMU, using the PFMS for fund transfer and payments. It is mandatory that all IAs receiving and utilizing project funds be registered on the PFMS. Fund utilization will be subject to the individual fund limit for each IA, which will be approved by the PCMU based on each PIU's Annual Work Plan and projected fund requirement and adjusted periodically. This arrangement will enable the PCMU to manage resources better and offers the following benefits: no idle funds at any of the decentralized IAs; all payments to vendors, suppliers, and beneficiaries will be done electronically; and the PFMS fund tracking application can be used to observe the real-time flow of funds online to strengthen project administration and management, provide greater transparency, and enhance governance. Suitable customization of the PFMS application is being considered to support the generation of a project-specific MIS and financial reports. Detailed prescriptions, procedures, and guidance on project fund flow arrangements are incorporated in the FMM.

8. **Project funding contributions from the private sector will flow through VSTF.** During the project period, the private sector will contribute to an aggregate fund of Rs.70.00 crore (US$10 million) through VSTF. These contributions will be deposited in a separate bank account, operated by VSTF, to undertake the activities agreed with the PCMU or other IAs. Detailed modalities and timelines for contributing to and using this fund will be specified in a detailed Memorandum of Understanding/contract with VSTF. Project expenditures from this fund

[14] PFMS is an online software application developed and implemented by the Office of Controller General of Accounts (CGA).

will form part of the total project costs but will neither be budgeted in the Annual Work Plans nor eligible for reimbursement from the World Bank.

9. **Grants to CBOs for subprojects—PPs, MAPs, partnerships with CMAs, and CIIs—constitute approximately 70% of total project costs.** These subprojects will be executed by the CBOs with funds contributed by the project and the beneficiary CBOs in fund-sharing percentages agreed in the underlying GA. Project funds and beneficiary contributions under each GA will be deposited in a dedicated bank account opened for approved subproject proposals under SMART, with the deposit of the beneficiary contribution being a prerequisite for the deposit of project funds. The terms for using these funds will be also be previously agreed through the GA to monitor and safeguard their use. Funds will be released in tranches, based on compliance with the stipulations in the GA, including submission of Utilization Certificates. Release of the final tranche of project financing will be made based on 90% utilization of the previous tranche, including the beneficiary contribution, and the submission of Utilization Certificates duly audited by a firm of chartered accountants. Any savings reported after subproject completion will be refunded to the project in proportion with the percentage contributions specified in the GA.

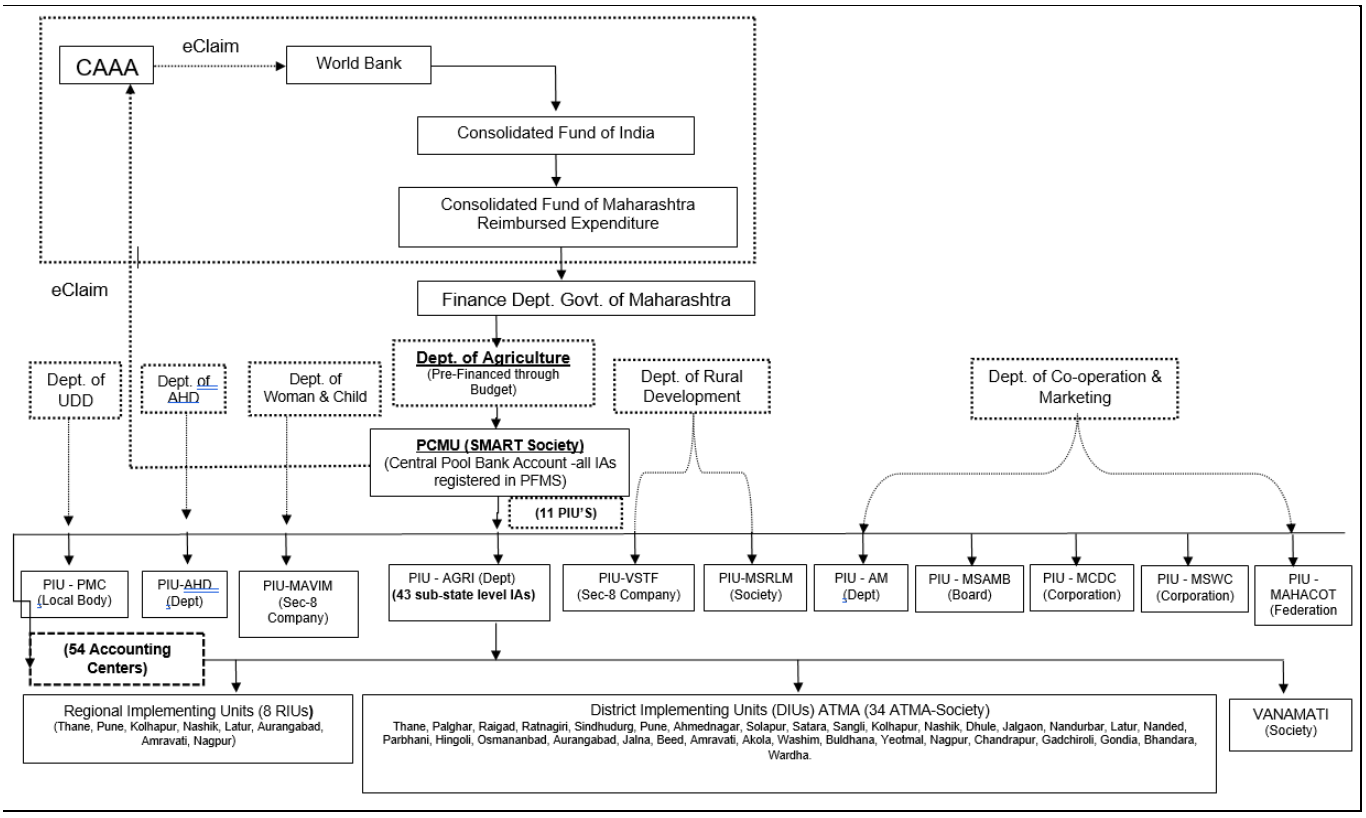
10. **The CBO subprojects will also include soft interventions that will be fully financed through project funds.** These interventions will be executed either by the PIUs, RIUs, DIUs, or district offices of the participating departments or by the CBOs, technical partner, or buyer of the CBO. The subproject proposals and GAs will include the cost of soft interventions if they are to be implemented by the CBOs, technical partner, or buyer of the CBO; fund releases will be determined by the prescriptions in the underlying GA. Implementation of the subprojects and corresponding GAs will be supervised by the DIUs (ATMAs) and PIUs, while funds will be released by the PCMU/PIUs based on the recommendations of the DIUs. The FMM provides detailed prescriptions on the arrangements for releasing funds to CBOs. The project accounts of a sample of CBOs will be subject to internal and external auditing by the project.

11. **Fiduciary arrangements for the partial credit guarantee (PCGF) will be finalized once the technical studies and feasibility assessment for this fund are concluded and the design and other arrangements are finalized.** The envisaged arrangements are: (i) the PCGF will take into consideration the World Bank Group principles on designing partial credit guarantee schemes issued in December 2014 and covering the governance, management, administration, sustainability, and monitoring of partial credit guarantees; (ii) a separate World Bank account (guarantee fund) will be opened to administer the PCGF; (iii) the initial tranche will be based on demand forecasts and recommendations from the feasibility study, and subsequent disbursements will be calculated based on PCGF utilization as claimed in the IUFR; and (iv) the PCGF will be subject to internal and external audits by the project. Further, subject to arrangements which the Bank has determined to be acceptable prior to the Closing Date, and based on all necessary assessments, including fiduciary, social and environmental safeguards and legal assessments, the PIE may retain after the Closing Date any amounts withdrawn under PCGF which remain unutilized or uncommitted as guarantees, for purposes consistent with the Project Development Objective and for purposes and as per protocols set forth in the PCGF Operational Manual, all in accordance with arrangements satisfactory to the Bank.

12. **Partnerships with agencies providing technical support in specific areas are a significant feature of the proposed project.** These technical partners will be consultants to the project, with whom the project will sign consultancy agreements. Funds will flow to technical agencies and their expenditures will be recognized on the basis of terms and milestones agreed in the consultancy contract. The expenditure paid and duly accounted for in the project books of accounts will be eligible for reimbursement from the World Bank through IUFR reporting.

13. Figure A4.1 details the implementation, fund flow, and accounting arrangements under the project.

Figure A4.1: Implementation, fund flow, and accounting arrangements under the proposed SMART Project



V. Accounting, Staffing, and Financial Reporting

14. **Accounting under the project will be done through a cash basis double-entry system in accounting software.** All IAs will be accounting centers under the project. Each accounting center will be responsible for maintaining relevant vouchers and supporting documents pertaining to project-related transactions. A detailed chart of accounts will be developed to classify project expenditure based on project components and major activities. The PCMU will consolidate accounts for the project. Key agreements on FM include:

i. **Accounts will be maintained electronically,** to enable system/software-based consolidation. Presently the IAs use various platforms for maintaining accounts. The PCMU will finalize a common platform solution and roll it out to all PIUs.

ii. **Project expenditure made against contributions from the private sector through VSTF** will be separately identifiable in the project books of VSTF.

iii. **Accounting for the beneficiary contribution from CBOs** made in accordance with the GAs will not be recorded in the project books of accounts but instead will be recorded in memorandum accounts by the IAs as per the FMM, based on periodic financial reports submitted by the CBOs.

iv. **The project will provide matching grants to producer CBOs,** with project contributions up to 60% of the approved business plans. Grants will be provided in 2–3 instalments, based on the approved business plans and on whether the conditions for tranche releases are met. These grants will be treated as grant advances in the books of accounts and will be recognized as expenditure based on receipt of the utilization report. CBOs will adhere to the requirements set forth in the FM chapter of the project CBO manual for maintaining adequate FM arrangements under the subprojects.

v. **Funding under Subcomponent A1 will be results based, and project funds will be disbursed against an Eligible Expenditure Project (EEP).** The EEPs include goods, works, consulting services and non-consultancy expenditures related to DLIs accounted by DoA, Maharashtra; they also include salaries of DoA's technical staff, accounted in the state treasury system. For EEP purposes, demand number D-3, major head 2401-Crop Husbandry, under the non-plan scheme with account head – 2401013601 has been earmarked as covering major salaries for establishment of staff of Commissionerate of Agriculture. For EEP reporting on salaries, the Treasury Expenditure Report generated from the *Kosh Wahin* website, Finance Government of Maharashtra will form the underlying report.

15. **The financial reporting framework for the project will consist primarily of quarterly IUFRs, Monthly Expenditure Statements, and annual Project Financial Statements.** The financial reports will be prepared from the books of accounts and records maintained for the project. Additionally, IAs will prepare periodic budget reports as defined in the FMM. Formats of the IUFR and annual Project Financial Statement have been agreed with the World Bank, and the FMM provides formats for all of these financial reports as well as the process of consolidation by the PCMU and timelines for submission.

16. **An analysis of finance staff and training formed part of the FM assessment for the proposed project.** The FM function at the PCMU is headed by the Chief Finance Controller, supported by a team consisting of two Accounts Officers, two Assistant Accounts Officers, two Accountant Assistants, and a Finance Consultant. The FM team at the PCMU is in place and functional. Each IA has an existing, functional finance team that will support transactions under the SMART Project. In addition, each IA will have a dedicated finance staff to be deputed for managing the project FM function. The staff structure under the project at all IAs is a mix of government officials and contractual staff and has been agreed with the World Bank. The FMM details the staffing arrangements for FM under the project, along with the roles and responsibilities for each level and the minimum qualifications and experience. Staff costs are reflected in the total project costs.

17. **The FMM outlines the internal control framework (internal controls and audits) for the proposed project.** A project-specific delegation of powers will bring about uniformity in the approval process across agencies, and there will be additional checks and balances such as budgetary controls over expenditure, preparation of periodic bank reconciliation statements, dedicated bank accounts for activities to be implemented by CBOs, and a central pool bank account for the project, with authorization limits assigned to the IAs. The implementation of PFMS for fund flows will also strengthen the overall control framework. A Project Audit Committee will be established for reviewing the scope, deliverables, and performance of internal audit arrangements, including monitoring of the timely resolution of all audit observations. The Project Audit Committee will be chaired by a senior officer of the DoA and will have nodal officers of all PIUs as members.

18. **The project will undertake internal audits in accordance with terms of reference and periodicity agreed with the World Bank.** The internal audit will focus particularly on the effective implementation of the FMM,

including the adequacy and operating effectiveness of the internal control framework, a review of procurements, and a review of the project accounts of a sample of CBOs, among other undertakings.

19. **The bylaws of the SMART Society regarding external audit arrangements provide for an external audit by either the Comptroller and Auditor General (CAG) or a chartered accountant firm.** The project is approaching the CAG for the audit and is awaiting confirmation. In the event that the assignment is not accepted by the State Accountant General, a private firm of chartered accountants appointed in a manner acceptable to the World Bank will carry out the external audit of the project financial statements. The audit will be carried out under terms of reference for audit acceptable to the World Bank. The same firm will also carry out a six-monthly review of the IAs and selected grant beneficiaries. Further, for independent audit assurance on budgetary support forming part of EEPs, certified State Finance Accounts issued by the State Accountant General will be used. For FY2017–18, the certified Finance Accounts stands issued by the CAG in December 2018 will be used. Table A4.1 summarizes the auditing arrangements for the proposed project.

Table A4.1: Auditing arrangements for the proposed SMART Project

Implementing Agency	Audit	Auditor	Due date
PCMU	Audit of consolidated annual Project Financial Statements	Comptroller and Auditor General of India / Private Auditor	December 31 of each year
DoA	Certified State Finance Accounts	Comptroller and Auditor General of India	March 31 of each year

20. **Disbursement of funds from the World Bank will be made available to the GoM (through the GoI) under the standard terms of on-lending between the GoI and the States.** Funding under Subcomponent A1 will be results based, and project funds will be disbursed against an EEP. Once the DLIs are met and duly verified, the project will initiate claims with the office of the Controller of Aid Accounts and Audit. However, the claim will be restricted to the cumulative EEP.

21. **For Subcomponents A2 and A3 and Components B, C, and D, the applicable disbursement method is "Reimbursement," with the GoM pre-financing project expenditures.** The disbursements will be made based on expenditures reported in the quarterly IUFR. The funds transferred as grants per the clauses of signed GAs will be treated as eligible for disbursement. The grant advances remining unadjusted (as expenditures) at the end of the project period will be refunded to the World Bank. Monitoring the end-use of funds and compliance with the terms and conditions of the GAs will be the responsibility of the PCMU and the respective PIUs that have signed the GAs.

ANNEX 5: Procurement

COUNTRY: India
State of Maharashtra's Agribusiness and Rural Transformation Project

1. **Procurement for the project will be carried out in accordance with the World Bank "Regulations."** The project will also be subject to World Bank Anticorruption Guidelines, dated October 15, 2006, and revised in January 2011 and July 2016.

2. **A PPSD has been developed for the project.** Extensive market analysis has been carried out for different packages of procurement. Based on the findings, decisions on packages and lots were finalized for civil works to ensure adequate participation of bidders. Consultancy contracts have been framed based on market research and packaging in terms of the scope of services and period. The project will utilize the Government e-Marketplace (GeM) for goods and non-consulting services procurement below the NCP threshold. Based on the risks and market analysis, the Procurement Plan has been prepared to set out the selection methods to be used during project implementation for the procurement of goods, works, and non-consulting and consulting services financed by the loan, as shown in Table A5.1. Table A5.2 lists procurement and contract approaches that were not selected.

Table A5.1: Selection methods to be used for procurement during project implementation

Departments	Category	Description	Selection method
PCMU/PIUs	Works	Including supply and installation works	RFB-International/National; RFQ-National
	Goods	Vehicles, computers and accessories, software and related items, etc.	RFB-International/National, RFQ- National including Government e-Marketplace; a few may be DS
	Consultancy	Environmental and Social Management Framework, Pune Municipal Corporation, state and regional technical service providers for Productive Partnerships and Market Access Plans, internal audit, monitoring and evaluation, environmental assessment, etc. and research activities, capacity-building activities	QCBS, LCS, FBS, QBS, CQS, a few may be DS

Note: CQS = Selection based on Consultant's Qualifications; DS = Direct Selection; FBS = Selection under a Fixed Budget; LCS = Least-Cost Selection; QCBS = Quality- and Cost-Based Selection; RFB = Request for Bids; RFQ = Request for Quotations.

Table A5.2: Procurement and contract approaches

Attribute	Selected arrangement
Best and Final Offer	No
Negotiations	No

3. **The project will implement Systematic Tracking of Exchanges in Procurement (STEP), a planning and tracking system, for procurement activities.** Details of the procurement activities that have been prepared, including the Procurement Plan, have been entered in the STEP system. Initial training on operation of the STEP system has been provided to procurement staff of the IAs.

4. **The IAs will use the NIC e-procurement system for all International Competitive Bidding and National Competitive Bidding procurements.** The NIC e-procurement system was assessed in view of multilateral development bank requirements and accepted for use for procurement under World Bank-funded projects. Use of this system is likely to increase the efficiency and transparency of procurement. Based on the packages already identified, the majority of procurement is likely to use the NCP method. Requirements for e-procurement will be indicated in Procurement Plan.

5. **A procurement capacity assessment conducted for the IAs, DAH, DoM, and DoA established that the procurement risk for this operation is Substantial.** The assessment reviewed the IAs' organizational structures and current operating environment for implementing the types of procurement transactions expected by the project. Most of the issues/risks concerning the procurement function for implementation of the project have been identified and include: (i) unfamiliarity of IA staff with procurement procedures under the World Bank procurement policies and Regulations; (ii) lack of comprehensive internal procurement manuals and the related need to improve the set of procedures to ensure fairness and transparency in procurement processes; (iii) the need to improve record keeping; (iv) the need to strengthen the procurement review function and resolution of complaints; and (v) the need to build staff capacity for procurement and contract management.

6. **A Procurement Plan has been agreed between the GoM and World Bank.** For each contract to be financed by the loan, the different procurement methods or consultant selection methods to be used, the need for pre-qualification, estimated costs, prior review requirements, and time frame are reflected in the Procurement Plan, which will be uploaded in STEP.

7. **All contracts not covered under prior review by the Bank will be subject to post review.** Post Procurement Reviews can be conducted by a consultant hired by the World Bank or by World Bank staff.

8. **With respect to the frequency of procurement supervision,** two missions per year, each at an interval of six months, are envisaged for the proposed project.

9. **With respect to contract management,** the Borrower will follow contract management practices in accordance with the provisions of the contract agreement and Annex-XI (Contract Management) of the Regulations. Borrower staff responsible for contract management may additionally undertake the certificate program in contract management available online at www.procurementlearning.org.

10. **With respect to advance contracting and retroactive financing,** the project will carry out retroactive financing of civil works, consultancies, and other eligible costs not exceeding 20% of the loan. Payments made by the GoM during the 12 months before the loan signing date for the contracts awarded in compliance with World Bank procurement procedures will be eligible for retroactive financing.

11. **Procurement training may be provided to key staff by the Indian Institute of Management, Lucknow, or Administrative Staff College of India, Hyderabad.** The project may also take advantage of the free Massive Open Online Course on public procurement (*www.procurementlearning.org*) offered by the World Bank, as well as the paid Professional Diploma in Public Procurement delivered through the Charter of Public Procurement Studies.

12. **The procurement risk assessment for the proposed project identified significant procurement-related risks and corresponding mitigation measures** (Table A5.3). Risk ratings were decided based on the probability of

occurrence of various events, as well as their likely impact. The overall residual procurement risk rating for the project is Substantial. The residual risk rating on procurement will be reviewed and updated periodically by the World Bank.

Table A5.3: Assessed procurement risks and mitigation measures for the proposed SMART Project

Risk factor	Initial risk	Mitigation measure	Completion date	Residual risk
Limited capacity and inefficiencies resulting in delays in procurement and contract management processes	Substantial	• Use of skilled procurement staff for handling procurement activities • Monitoring through the Procurement Plan and quarterly reports • Use of e-Procurement and contract management tools • Participation in training and workshops	Continuous from year 1	Substantial
Non-compliance with agreed procurement arrangements	Substantial	• Training and handholding provided by the World Bank • Prior and post reviews by the World Bank • Internal and external audits • Community Operation Manual • Procurement Manual	Continuous from year 1	Substantial
External interference in the procurement process	Substantial	• Disclosure of procurement-related information • Appropriate handling of complaints	Continuous from year 1	Substantial
Overall risk	**Substantial**			**Substantial**

13. **Procurement methods to be used for activities financed by the loan are shown in Table A5.4.** The thresholds indicated in Table A5.4 will apply to the initial 18 months of implementation and may be modified during project implementation based on procurement performance.

Table A5.4: Procurement methods and thresholds for the proposed SMART Project

Procurement approaches and methods	Threshold (US$ equivalent)
Open international (Goods, IT, and Non-consulting services)	≥ 10 million
Open national (Goods, IT, and Non-consulting services)	Up to 10 million
National request for quotation (Goods/Works)	Up to 100,000
Open international (Works)	≥ 40 million
Open national (Works)	Up to 40 million
Direct selection	• No threshold • For Goods/Works/Non-consulting services: According to paragraphs 6.8–6.10 of the Regulations • For Consultants: According to paragraphs 7.13–7.15 of the Regulations
Shortlist of national consultants	Up to 800,000

14. **The World Bank will carry out prior review for contracts above the threshold indicated below:**

i. Works including Supply and Installation of Plant and Equipment: All contracts more than US$10 million equivalent.

ii. Goods and IT System: All contracts more than US$2 million equivalent .

iii. Non-consulting services: All contracts more than US$2 million equivalent.

iv. Consultants: All contracts (a) more than or equal to US$1 million equivalent for firms; and (b) more than or equal to US$300,000 equivalent for individuals.

v. In addition to the above, and irrespective of the contract value, the following procurement activities are subject to the World Bank's procurement prior review:

- Procurement processes involving contract negotiations, as described in Section VI, paragraphs 6.34–36, of the Regulations.
- Competitive dialogue.
- Sustainable procurement.
- Selection of probity assurance providers, as described in Section III, paragraph 3.3 of the Regulations.
- Best and final offer.

15. **With respect to national procurement procedure conditions,** national competition for the procurement of goods, works, and non-consulting services per established thresholds will be conducted in accordance with paragraphs 5.3–5.5 of Section V of the Regulations, the provisions contained in the loan agreement, and the following provisions:

i. Only the model bidding documents agreed with the World Bank (and as amended from time to time) shall be used for bidding.

ii. Invitations to bid shall be advertised on a widely used website or electronic portal with free open access at least 30 days prior to the deadline for the submission of bids, unless otherwise agreed in the approved Procurement Plan.

iii. No special preferences will be accorded to any bidder either for price or for other terms and conditions when competing with foreign bidders, state-owned enterprises, small-scale enterprises, or enterprises from any given state.

iv. Except with the prior concurrence of the World Bank, there shall be no negotiation of price with the bidders, even with the lowest evaluated bidder.

v. The GeM set up by the Ministry of Commerce, GoI, will be acceptable for procurement under the RFQ method.

vi. At the Borrower's request, the World Bank may agree to the Borrower's use, in whole or in part, of its electronic procurement system, provided that the Bank is satisfied with the adequacy of such systems.

vii. Procurement will be open to eligible firms from any country. This eligibility shall be as defined under Section III of the Regulations. Accordingly, no bidder or potential bidder shall be declared ineligible for contracts financed by the World Bank for reasons other than those provided in Section III of the Regulations.

viii. The Request for Bids/Request for Proposals document shall require that Bidders/Proposers submitting Bids/Proposals include a signed acceptance in the bid, to be incorporated in any resulting contracts, confirming application of, and compliance with, World Bank Anti-Corruption Guidelines, including without limitation the Bank's right to sanction and the Bank's inspection and audit rights.

ix. The Borrower shall use an effective complaints mechanism for handling procurement-related

complaints in a timely manner.

x. Procurement Documents will include provisions, as agreed with the World Bank, intended to adequately mitigate against environmental, social (including sexual exploitation and abuse and gender-based violence), health, and safety ("ESHS") risks and impacts.

16. **Use of GeM will be allowed in lieu of RFQ as per the following details:**

i. Up to INR50,000 in catalog mode (viz. any available item could be selected by the IA without further competition), provided selected Item/Supplier meets the requisite quality, specification, and delivery period.

ii. Up to INR3 million from the Supplier having lowest price among at least three Suppliers meeting the requisite quality, specification, and delivery period. The tools for online bidding and online reverse auction available on GeM *may be* used by the Purchaser.

iii. Up to INR equivalent of US$100,000 from the Supplier having the lowest price and meeting the requisite quality, specification, and delivery period after *mandatorily* obtaining bids from at least three Suppliers, using online bidding or reverse auction tool provided on GeM.

iv. While making use of the GeM portal, the Borrower shall make use of Special Terms and Conditions meant for World Bank–financed projects.

17. **Arrangements for the disclosure of procurement information are as follows.** These documents shall be disclosed on the project/state websites: (i) a Procurement Plan and updates; (ii) an invitation for bids for goods and works for all contracts; (iii) request for expression of interest for selection/hiring of consulting services; (iv) contract awards of goods and works procured under international and national procedures; (v) a list of contracts/purchase orders placed under shopping procedures on a quarterly basis; (vi) a list of contracts under direct contracting on a quarterly basis; (vii) a monthly financial and physical progress report of all contracts; and (viii) a report of actions taken on complaints received on a quarterly basis.

18. The following details shall be sent to the World Bank for publishing on the United Nations Development Business and the World Bank external websites: (i) an invitation for bids for procurement of goods and works using open international procedures; (ii) contract award details of all procurement of goods and works using open international procedures; and (iii) a list of contracts/purchase orders placed following direct contracting procedures on a quarterly basis.

19. Further, IAs will also publish on their websites any information required under the provisions of "suo moto" disclosure as specified by the Right to Information Act.

ANNEX 6: Implementation Support Strategy, Approach, and Plan

COUNTRY: India
State of Maharashtra's Agribusiness and Rural Transformation Project

Implementation Support Strategy and Approach

1. The implementation strategy for the proposed project aims to support the client in achieving the Project Development Objective (PDO) efficiently and flexibly. Support will be provided for technical, fiduciary, and safeguard aspects of the project, as well as for adopting the risk mitigation measures that have been identified and designed. The World Bank's approach consists of transparent, regular communication with the project and all of the stakeholders throughout the project period.

2. Implementation support will be provided to the project team periodically, with a nuanced approach toward critical aspects of the project that may need additional technical support during the initial days of the project. Due diligence over the course of the project period on technical, fiduciary, and safeguard matters will be provided through (i) regular reviews of progress and timely interventions to address bottlenecks in implementation and (ii) monitoring the timely submission of financial and progress reports.

Implementation Support Plan

3. The Bank will support project implementation primarily through: (i) bi-annual Implementation Support Missions (ISMs); (ii) short thematic technical reviews as and when needed; (iii) desk reviews; (iv) Midterm Review; and (v) if needed, missions/conferences on fiduciary and safeguard aspects. The Bank ISMs will: (i) conduct field visits to the sites selected based on the priority at the given time and as identified by the GRS; (ii) hold meetings with stakeholders, including financial institutions, policy-making institutions, private sector partners, participating line departments, and others; and (iii) review and provide feedback on the project progress and M&E reports.

4. **Technical support.** The project aims to: invest in state systems to enhance their responsiveness toward the envisaged shifts in government policy; address the problem of market linkage for smallholder farmers through effective instruments of partnership with the private sector; enhance credit linkages between CBOs and formal financial institutions; address SPS challenges; and invest in BDS for CBOs and agri-enterprises. The World Bank support team will provide the mix of technical skills and expertise required to support the diverse nature of the activities envisaged under this project, drawing on staff from other World Bank Global Practices and IFC to ensure that it can provide the needed skill sets.

5. **Fiduciary support.** Fiduciary support for the project will be provided through regular interactions, ISMs, and thematic ISMs, if required. ISMs will review the project FM systems (accounting, reporting, and internal controls) and actions taken by the project to address any issues with those systems. The project will submit the IUFRs and audit reports regularly for review by the World Bank.

6. **Safeguards.** The World Bank Environment and Social safeguard team will monitor compliance with the Bank's operational policies and procedures as mandated and applicable to the project. Support for safeguards will be provided through regular interactions, ISMs, and thematic ISMs if required.

98. The resources required for these various implementation support activities are shown in Table A6.1.

Table A6.1: Resources required to support implementation of the proposed SMART Project

Time	Focus	Skills needed	No. of staff weeks	No. of trips
First 12 months	• Completing procurement for key contracts, including review of terms of reference and designs, and initiating selected procurements and studies. • Undertaking the baseline survey. • Completing the business agreements between the CBOs and the financing institutions. • Rolling out activities in selected clusters. • Mobilizing project beneficiaries and building their capacity.	• Project management • Finance and investment • Procurement • Financial management/accounting • Environmental specialist • Social and institutional development • Agriculture specialist • Agribusiness expert • Micro and small/medium enterprises/enterprise development expert • Private sector expert • Bank business financing • Monitoring and evaluation, management information systems • Livestock expert	• 15–20 team lead weeks per year • 3–4 staff weeks per year	3–4 trips
12–84 months	Providing operational support in the first phase of investments in project locations, assisting with gathering lessons learned, and ensuring that this information is used to support broader scaling up in the latter years of the project.	In addition to the above, technical experts on post-harvest and value addition and sanitary and phytosanitary requirements will be added in the second year.	• 15–20 team lead weeks per year • 3–4 staff weeks per year	2 trips annually

ANNEX 7: Economic and Financial Analysis

COUNTRY: India
State of Maharashtra's Agribusiness and Rural Transformation Project

1. **Overview.** The proposed project supports the development of inclusive and competitive agricultural value chains in Maharashtra, focusing on smallholder farmers and agri-entrepreneurs. This EFA follows the value chain approach that the project is adopting to achieve the PDO. The three main groups of players operating in the value chains are: (i) the producers, (ii) CBOs and entrepreneurs, and (iii) agribusiness buyers and partners. A key commodity for each of the nine value chains selected for this EFA was chosen to represent the value chain and subjected to a detailed analysis, both at the farm production level and at the next value chain partner level (CBOs or agribusiness). The nine commodities are maize (representing cereal crops), soybeans (oilseed crops), pigeon peas and chickpeas (pulses), bananas (fruits), okra (vegetables), turmeric (spices), goats and goat meat (livestock), and cotton (industrial cash crops).

2. **Data.** The data used for the EFA include: (i) crop budgets; (ii) market prices; (iii) capital and working capital of the CBOs; and (iv) marketing costs, which include transport, commissions paid, commodity handling (namely sorting, grading, packaging), storage, and any quality enhancement. The CBO-level data were extracted from proposals for PPs and MAPs. The proposals presented a scenario with the project (WP) and a scenario without the project (WOP). The WOP scenario includes the current level of business transactions and prices. The specific PPs and MAPs used in the analysis were: CP Feeds (for maize), Archer Daniels Midland (soybeans), Tata Chemicals (pigeon peas and chickpeas), INI Farms (bananas), Deccan Agro (okra), Lean Agri (turmeric), Licious (goat meat), and MahaCot (cotton). Data for crop budgets were provided by the GoM, Agriculture Publications. All production budgets and value chain models are based on 2019 prices.

3. **Beneficiaries**. The direct beneficiaries of the project are small-scale producers (farming households) participating in the selected value chains, CBOs and entrepreneurs, and private sector agribusinesses engaged in collection, processing, and trading. The number of direct beneficiaries who are small-scale producers is estimated to be 1,900,000. Assuming an average family size of 4.5 (along with additional assumptions that some cotton farmers come from the same household), a total of 7.2 million people are expected to benefit from the project over the seven-year project period. It is estimated that an additional 5% of direct beneficiaries, amounting to 90,000 households, will benefit indirectly from the project through backward and forward linkages created due to increased business. Table A7.1 summarizes the distribution of project beneficiaries by each of the representative crops and commodities.

4. **Components, benefits, and evidence**. The main project benefits are increased production, increased farmer income, increased business for CBOs and partners, reduced GHG emissions, as well as increased food production in the state and incremental income to the national economy. Table A7.2 summarizes the estimated direct benefits of the project. In the intercropping systems that predominate in the project areas, the physical land extent would be larger than the reported extent. Employment generation is another benefit of the project, with 42.9 million person days of employment per year generated at full development. This figure includes the labor used in crop cultivation, processing, and marketing. Assuming each person works 200 days per year, this equals 241,698 persons working every year in the project areas. Another 9,846 professional employees would be

employed by CBOs and enterprises (as shown in Table A7.4 later in this annex). As such, total job creation would be 251,544 per year over the project period.

Table A7.1: Direct beneficiaries of the project by representative crop/commodity

Representative crops and commodities	Number of beneficiary producers					
	Field crops	Pulses	Horticulture (fruits, vegetables)	Livestock	Industrial cash crop	Total
Maize	174,556					174,556
Soybeans	165,440					165,440
Pigeon peas		180,000				180,000
Chickpeas		180,000				180,000
Bananas			62,549			62,549
Okra			24,582			24,582
Turmeric			92,870			92,870
Goats				120,002		120,002
Cotton					900,000	900,000
Total	**339,996**	**360,000**	**180,002**	**120,002**	**900,000**	**1,900,000**

Table A7.2: Direct benefits of the project: production, land, and labor

Commodity	Beneficiary farmers	Land at full development (ha)	Production WP (mt)	Production increment (mt)	Production increment (% of WOP)	Labor WP (000 person days)	Labor increment (000 person days)
Maize	174,556	367,486	1,359,699	128,620	10%	30,134	8,820
Soybeans	165,440	330,880	446,688	111,672	20%	20,515	662
Pigeon peas	180,000	288,000	321,408	32,141	12%	23,616	6,048
Chickpeas	180,000	201,600	453,600	54,432	15%	13,709	1,411
Bananas	62,549	62,549	1,626,287	100,468	8%	487	22
Okra	24,582	6,773	101,588	6,353	8%	562	102
Turmeric	92,870	1,211	5,330	310	8%	252	19
Goats (no. of animals)	120,002		7,123,627	2,502,374	54%	8232	6585
Cotton	900,000	834,248	2,085,621	104,281	6%	137,651	19,271
Total	**1,900,000**	**2,092,748**	**13,523,848**	**3,040,652**	**30%**	**235,157**	**42,940**

5. *Component A* of the project supports policy changes and institutional strengthening to facilitate commercial agricultural production, processing, value addition, and marketing. *Component B* provides direct benefits by integrating producers into value chains through the development of stronger and more reliable linkages with buyers and markets and by enhancing the provision of BDS to support agribusiness growth. A recent report synthesizes the lessons and achievements from similar productive alliance projects in Latin America. With regard to inclusion, the report notes that these projects have performed well in including women and other disadvantaged groups, such as indigenous people. With regard to socioeconomic impacts, productive alliance projects generated significant positive impacts on production, sales, income, and employment, with increases in

sales ranging from 20% to 60% and incomes of beneficiary producers that are 30% higher than incomes of non-beneficiaries. Several productive alliance projects have shown increases in smallholder production volumes, productivity, access to improved inputs, and integration into new markets. With regard to sustainability, productive alliance projects promoted long-term vertical alliances between small producers and buyers.

6. *Component C* of the project would strengthen measures to mitigate the risks related to commodity-price fluctuations by enhancing access to market intelligence, warehouse storage, and financing to smooth consumption. A growing literature emphasizes the role of information for better functioning (more efficient) markets, especially in developing economies where markets are dispersed and communication infrastructure is poor. Some of the literature also highlights distributional impacts on farmers. Broadly, improved information allows for arbitrage, to determine both whom to sell to and when to sell. For the fish market in Kerala, Jensen (2007) documents how the introduction of mobile phones from 1997 to 2001 led to a decline in the variation (cv) of prices from 60–70% to 15% or less, and reports that daily wastage decreased from 5–8% to almost none. These changes resulted in an increase in fishermen's profits of 8% (and a decline in consumer prices of 4%). For potatoes in West Bengal, Mitra et al. (2018) find that the randomized provision of price information in *mandis* (wholesale markets) to farmers did not increase farmgate prices or sales (in other words, no impact on farmer welfare), but they found increased pass-through of wholesale prices to farmgate prices. Through experimental games in Gujarat, Mitchell (2017) finds that the impact of providing information increases the price offered by the intermediary to the farmer by about 9%. For soybeans in Madhya Pradesh, Goyal (2010) documents that the introduction of internet kiosks which provided daily wholesale price information both in *mandis* and in an alternative direct marketing channel (ITC Limited, a large buyer) led to an increase in the monthly price of soybeans (by 1–3%) and consequently in the area under soybean cultivation. Other relevant studies include work in Niger (Aker 2010; Aker and Fafchamps 2014), Uganda (Svernsson and Yanazgizawa 2009), Peru (Beuermann 2015), and a broader review paper on information and communication technology for agriculture (Aker, Ghosh, and Burrell 2016).

7. Other literature documents the impacts of warehousing and storage among smallholders. A recent study in Burkina Faso used a randomized controlled trial on a sample of 528 households across 328 villages to document the impacts of access to a warehouse receipt system that combined both storage and access to credit (Delavallade and Godlonton 2019). The study finds increased commercialization (23% increase), a change in the time of sales that resulted in higher sale prices, and increased revenues (33%increase in the value of crop production). The study compares costs and benefits of the intervention, estimating a 10:1 benefit-cost ratio. Two other studies in Africa examine the impact of storage and credit. The first is a study in Kenya by Burke et al. (2018) in the context of maize, and the second is a study in Sierra Leone by Casaburi et al. (2014) in the context of palm oil. The study in Kenya finds positive impacts on profitability, whereas the study in Sierra Leone finds no positive impacts on farmers, likely attributable to mistrust between farmers and the financial institution. And finally, one other study in Kenya examines the impact of storage, but without credit (Aggarwal et al. 2018). This study finds positive impacts on storage, sales, and sales price.

8. **Financial analysis (FA)**. The FA assesses the financial viability of production and commercial activities of the producers and value chain operators. Three types of FA were undertaken: (i) financial viability of crop production for producers (farm budget analysis), which estimates incremental benefits that producers would acquire over the project period; (ii) viability of investments that CBOs would make to provide services to producers and to serve as commission agents linking producers to agribusinesses and markets; and (iii) a project-level aggregated FA. As noted, all prices used are based on 2019 market prices.

9. *Farm budgets.* Farm budgets for one hectare were analyzed for all eight crops and for the goat animal unit. The incremental net revenue, comparing WP and WOP, reflects their financial viability. The crop budgets are summarized in Table A7.3, which also shows the estimated changes in yields, prices, production costs, and marketing costs. The analyses show substantial gains in net revenues and returns to labor for producers, thus justifying the financial assistance provided to CBOs and producers.

Table A7.3: Changes in yields, prices, costs, and net revenues of nine commodities

Commodity	Yield WP (% increase)	Producer price WP (% increase)	Cost of production (Rs/mt)			Cost of marketing (Rs/mt)			Incremental net revenue (Rs/ha)
			WOP	WP	% change	WOP	WP	% change	
Maize	23%	32%	12,940	11,657	90%	1,089	1,021	94%	20,849
Soybeans	33%	17%	16,156	14,526	90%	1,296	1,200	93%	27,244
Pigeon peas	20%	31%	25,297	24,175	96%	3,306	3,020	91%	19,984
Chickpeas	25%	5%	13,308	11,504	86%	1,835	1,571	86%	21,471
Bananas	30%	25%	7,693	7,173	93%				67,362
Okra	25%	50%	5,926	4,567	77%	1,020	1,075	105%	128,606
Turmeric	29%	3%	61,544	59,305	96%	Farm-gate buying			
Goats (avg.)	61%	43%	2,237	1,825	82%	Farm-gate buying			
Cotton	25%	6%	25,370	19,758	78%	1,584			34,486
Average	**30%**	**23%**			**88%**			**94%**	

10. *Value chain operator models.* FA was conducted on PPs and MAPs. The purpose of the FA was to assess the long-term financial viability of the PPs and MAPs over a 20-year period, using indicators such as the internal rate of return (IRR) and discounted benefit-cost ratios. The financial and economic viability of the project depends on the viability of all business partners that the project supports. From the sample of nine PPs and MAPs, the analysis scaled up the number of proposals to get the projected total number of beneficiaries that are presented in Table A7.4. The same basis was used to project the number of employees that the CBOs and entrepreneurs would hire.

Table A7.4: Producers covered by PPs/MAPs and projected employees of CBOs and entrepreneurs

Commodity	Total no. of producers	No. of producers covered by sample of PPs and MAPs	Projected number of employees in PPs and MAPs	No. of entrepreneurs supported (Component B2)	No. of full-time equivalent (FTE) jobs generated in Component B2	No. of FTE jobs in beneficiary firms
Soybeans	165,440	9,150	759	174	218	977
Pigeon peas	180,000	900	1,600	189	237	1,837
Chickpeas	180,000	900	1,600	189	237	1,837
Maize	174,556	950	919	184	230	1,148
Bananas	62,549	4,429	169	66	82	252
Okra	24,582	24,046	5	26	32	37
Turmeric	92,870	2300	202	98	122	324
Goats	120,002	2,500	240	126	158	398
Cotton	900,000	900,000	1,851	947	1,184	3,035
Total	**1,900,000**	**945,176**	**7,346**	**2,000**	**2,500**	**9,846**

11. The following assumptions are used in the FA of the PPs/MAPs. First, the main cost items include material capital costs, working capital (excluding soft components such as training of producers), and capacity building, which are provided by the project. The FA also considers depreciation, payment of taxes, repayment of interest on credit, and the cost of procuring commodities. Second, it is assumed that 70% of the full capacity is used in the first year, increasing annually to 80%, 90%, and 95%, and then remaining at 95%. Third, the PPs/MAPs have cash flows for a period of 5–7 years, so cash flows for the remaining 15 years were projected using the same recurrent and capital costs. Fourth, a financial discount rate of 11% over a 20-year period is used for the analysis.

12. The results of the analysis are presented in Table A7.5. The cash flows of the PP/MAP models were net of taxes and after paying the capital and interest of the credit. The PP models for maize, soybeans, and cotton include storage facilities. All models have positive financial indicators. There are variations in the IRRs and switching values (the percentage cost increase or benefit decrease that makes the benefit-cost ratio equal to one). However, all sample models are financially viable.

Table A7.5: Financial viability of value chain partners supported by the project

Commodity	Total producers	Product volume (metric tons)	NPV (Rs 000s) (11% discount rate; 20 years)	IRR	Benefit-cost ratio	Switching value of cost	Switching value of benefits
Maize: PP	950	5,464	3,601	19%	1.06	6%	6%
Maize: PP scaled-up	173,606	998,507	502,945	16%	1.05	5%	5%
Soybeans: PP	9,150	38,935	3,099	12%	1.03	3%	3%
Soybeans: PP scaled-up	156,290	665,045	126,141	14%	1.07	7%	6%
Pulses: PP	900	12,600	8,316	28%	1.57	57%	36%
Pulses: PP scaled-up	359,100	7,900,198	3,056,116	27%	1.59	59%	37%
Bananas: MAP	4,429	115,160	45,323	23%	1.01	1%	1%
Bananas: MAP scaled-up	58,120	1,511,126	2,964,852	27%	1.01	1%	1%
Okra: PP	536	770	104	15%	1.03	3%	2%
Okra: PP scaled-up	24,046	144,276	51,746	20%	1.07	7%	6%
Turmeric: PP	2,300	7,253	26,912	16%	1.26	26%	21%
Turmeric: PP scaled-up	90,570	285,595	1,059,758	16%	1.26	26%	21%
Goats: PP	2,500	11,800	3,347	19%	1.02	2%	2%
Goats: PP scaled-up	117,502	516,249	224,298	24%	1.02	2%	2%
Cotton: PP	295,750	178,000	235,938	27%	1.10	10%	9%
Cotton: PP scaled-up	54,250	5,989	43,003	24%	1.09	9%	8%

13. **Project-level EFA**. The total project cost is Rs.26,521 million allocated over a seven-year period. Component B1 would allocate Rs.142 million of the total project cost as a Productive Partnership Fund, directly provided to CBOs, and as such was deducted from the project cost to avoid double counting. The adoption rate of improved farming practices is assumed to start at 30% and gradually increase annually to 40%, 50%, and then remain at 60%. The benefit flow for producers is discounted using this assumption on adoption rates. In addition, beneficiary coverage is staggered. Within each PP/MAP the beneficiaries are expected to grow, and the number of PPs and MAPs is also expected to increase each year. It is assumed that 30% of the total PPs and MAPs will be supported in the first year, 42% in the second year, and 28% in the third year. These assumptions were used to spread the beneficiaries over the project period.

14. *Project financial analysis*. The costs and benefits of producers and CBOs are scaled up to estimate project-level costs and benefits. The targeted number of beneficiaries is used for this scaling up. The total investment cost

of the project is added to the total cost flow of the analysis. As all project benefits have a commercial nature, the analysis used a uniform discount rate of 11%, the same rate used by the PPs and MAPs. A 20-year period is considered to reflect the operational lifespan of capital investments. The undiscounted annual incremental net financial benefits at full project development are estimated at US$611 million or Rs.42,812 million. The financial IRR of the project is 32%, with an NPV of Rs.95,448 million.

15. *Project economic analysis*. The economic analysis was carried out with the following adjustments to the financial cash flows: (i) economic parity prices were computed for fertilizers, soybeans, and maize, and used instead of market prices; (ii) Standard Conversion Factors of 0.80 (to minimize market distortions and inefficient transaction costs) were used, and all other inputs including labor and outputs were converted to their economic prices; (iii) the economic value of the project cost was obtained using the Standard Conversion Factor; and (iv) payments of taxes and credit interest in the PPs/MAPs have been netted out. The economic discount rate of 13.6% was used as the base case, which is double the historical per capita GDP growth rate in India.

16. *Greenhouse gas analysis*. The GHG balance calculation shows that the project leads to a decrease in GHG emission of 2 million tons CO_2 equivalent (tCO_2eq) over 20 years, equal to an annual decrease of about 0.1 million tCO_2eq. These reductions arise from improved methods of cropping and processing. These benefits have been valued at a social value of carbon that increases over time in real value (2017 constant prices) from US$30/$tCO_2eq$ in 2017 to US$78/$tCO_2eq$ in 2050 at the lower bound, and from US$75 to US$156 at the upper bound.

17. *Project economic viability*. The base EIRR is 31% with an economic NPV (ENPV) of Rs.50,124 million (US$716 million) over a 20-year period without counting the GHG benefits. With GHG benefits at the lower bound of the social value of carbon, the EIRR is estimated at 49% with an ENPV of Rs.95,015 million (US$1,357million), and at the higher bound of value, the EIRR is 67% with an ENPV of Rs.139,768 million (US$1,997 million).

18. *Sensitivity analyses.* Seven alternative scenarios were analyzed: project cost escalating by 10% and 20%, project benefits decreasing by 10% and 20%, costs increasing by 10% and benefits decreasing by 10%, and benefits delayed by one year and by two years. The results of the sensitivity analyses (Table A7.6) show that the economic viability of the project is resilient to cost escalations, benefit reductions, and delays in the realization of benefits, with the EIRR remaining above 14%.

Table A7.6: Sensitivity analyses

Sensitivity analyses	Without GHG benefits				With GHG benefits (at lower bound of social value of carbon)			
	EIRR	B/C ratio	NPV (Rs M)	NPV (US$ M)	EIRR	B/C ratio	NPV (Rs M)	NPV (US$ M)
Base case	31%	1.55	50,124	716	49%	2.04	95,015	1,357
All costs increase by 10%	27%	1.41	40,979	585	43%	1.85	85,870	1,227
All costs increase by 20%	24%	1.29	31,834	455	39%	1.70	76,725	1,096
All benefits decrease by 10%	27%	1.39	35,966	514	43%	1.84	76,369	1,091
All benefits decrease by 20%	22%	1.24	21,809	312	37%	1.63	57,722	825
Costs increase by 10% and benefits decrease by 10%	23%	1.27	26,821	383	38%	1.67	67,224	960
1-year delay in benefits	22%	1.51	29,737	425	33%	1.99	68,427	978
2-year delay in benefits	17%	1.46	11,816	169	25%	1.93	45,062	644

ANNEX 8: Greenhouse Gas Estimation and Climate Co-Benefits

COUNTRY: India
State of Maharashtra's Agribusiness and Rural Transformation Project

PART A: CLIMATE CO-BENEFITS

1. The proposed project presents several opportunities to generate climate co-benefits, both for adaptation and mitigation, and also has a strategy for reducing GHGs. The project would generate co-benefits at three stages: (i) agricultural production; (ii) processing; and (ii) marketing. Table A8.1 describes the climate vulnerability context, lists the project's intent and statement of purpose for addressing climate vulnerability, and outlines an explicit link with the project activities. Table A8.2 presents the key activities by project component and subcomponent that will have direct and/or indirect climate co-benefits. Part B of this annex presents results of a detailed analysis of the GHG impact of project interventions.

Table A8.1: Climate vulnerability and the proposed SMART Project (context, intent to address vulnerability, and links to project activities)

Climate vulnerability context	With its large population, socioeconomic and cultural diversity, long coastline, and multiple agro-climatic zones, Maharashtra is highly vulnerable to climate change, making agriculture and food security highly vulnerable as well. Crop productivity is already exposed to increased climate variability and more frequent droughts (3 droughts in the last 5 years). Climate modelling results show that temperature and rainfall are projected to increase all over the state, with regional variations. A report by the Maharashtra State Action Plan on Climate Change indicates that mean temperature in the state is projected to increase between 1.2–1.6°C in the 2030s. The temperature may further increase by 2.2–3.5°C in the 2070s, which may cause frequent droughts in some areas. Harvested crops and processed food are also at increased risk of spoilage due to increased temperatures. Rainfall is projected to increase from the 2030s to 2070s, but it will be highly variable spatially. Extreme rainfall events with longer dry spells are projected to increase in all districts of Maharashtra and will reduce crop yields and increase pest incidence. The state has witnessed severe floods, particularly in its major cities, causing temporary disruptions of trade. Torrential rains may also disrupt use of warehouses and markets and other agriculture-related infrastructure. Given these uncertain shifts in weather and climatic events, small and marginal farmers are disproportionately exposed to risk and farm distress, and their vulnerability is particularly compounded by their reduced access to credit and markets.
Statement of purpose / intent	The project aims to lower the current and expected risks and vulnerabilities posed by climate change and improve climate resilience of small farmers in the state, leading to increased reliability, quality, and sustainability of the supply of agricultural products to distribution channels. The project will also provide farmers, farmer cooperatives and groups, policy makers, and local and regional financial institutions with technical assistance to promote adaptive, climate-smart agricultural production systems. Finally, the project will seek to reduce, limit, or sequester GHG emissions to reduce the risk of climate change.
Link to project activities	Adaptation and mitigation approaches are an integral part of the project design for increasing resilience against climate risks. The project will address low levels of awareness, capacity, productivity, and access to credit among climate-vulnerable small farmers in the state. It will also support institutional and policy reforms within key government departments (DoA and DoM) to build institutional capacity for assessing and addressing climate risks and vulnerabilities. A range of training programs relating to climate resilience, including the adoption of climate-resilient technologies and cropping practices, are planned at several levels through project support. This training will cover farmers, agricultural technicians, rural extension services, credit cooperatives and financial institutions, and public institutions working with farmers and climate-resilient production systems. By bringing farmer groups together with the private sector, the project will substantially scale up introduction and adoption of climate-smart agricultural practices and technologies, leading to safe food production and reduced post-harvest damage.

Table A8.2: Adaptation and mitigation climate co-benefits of the proposed SMART Project

Activities	Adaptation actions	Mitigation actions
Component A: Enhancing Institutional Capacity to Support Agricultural Transformation (US$42.20 million)		
Subcomponent A1. Enhancing institutional capacity of the Department of Agriculture		
1. Functional review of DoA, DoM. 2. Capacity building of DoA on: • Market intelligence and crop advisories. • Phytosanitary standards and food safety. • Food processing. • Planning, research, and development (including identifying climate risks and planning for addressing them). • Soil and water conservation.	• The activities listed will introduce a climate resilience lens for all agricultural policies, investment schemes, and M&E processes at the state and regional levels. This lens will help to integrate and address climate and disaster vulnerabilities in planning and development decisions as well as result in increased investments in research on climate-smart agriculture. • Crop advisory services will focus on adopting climate-resilient crops such as millets, which can better withstand changing climatic patterns and provide food security to farmers.	• Alignment of subsidies to support adoption of India GAP standards, leading to reduced GHG emissions. • Resource efficiency through reduction in use of nitrogenous fertilizers and pesticides, leading to soil conversation outcomes with lowered GHG emissions and improved carbon sequestration ability in soil.
Subcomponent A2. Enhancing institutional capacity of the Department of Marketing		
1. Training and capacity building on: • Disseminating information on market regulations. • Market management and dispute resolution mechanisms. • Building market health indicators.	• The proposed activities will introduce state-wide customized training on climate-resilient agricultural practices; a new methodology for assessing market health, which include adaptation indicators; and targeted workshops on mechanisms to adapt to climate change impacts in cropping choices, production best practices, and efficient processing and market operations.	• Training and capacity building on: (i) Energy efficiency measures in food processing and warehousing units (solar, LED lighting, etc.). (ii) Scaling up tested waste management models within markets as an indicator of market health, thereby mainstreaming an element of climate mitigation (GHGs) in agricultural marketing systems.
Subcomponent A3: Strengthening capacity for reform measures and joint actions		
1. Establishing a technical cell for targeted research and recommendations to support ongoing program of reforms. 2. Establishing Stewardship Councils for selected commodities.	• The listed activities will incubate strategic research for integrating adaptation and mitigation measures in state policy and across focus value chains.	• Integrating and scaling up climate-smart agricultural practices in commodity value chains (e.g., safe production) increases resource efficiency and reduces GHG emission by reducing water and energy use.
Component B: Expanding Market Access and Supporting Enterprise Growth (US$204.50 million)		
Subcomponent B1. Market access support		
1. Financing of investment subprojects for: • Provisioning of technical services. • Procurement of goods, services, and works. • Food processing. • Improving production of nutritious crops and livestock. 2. Investments in public infrastructure. 3. Capacity building support for:	• The selection of proposals will be based on a combination of criteria, including whether the subproject lowers GHG intensity, has climate change mitigation and/or adaptation measures, and ensures food security. • The project will support skills training and extension services for adoption of GAP.	• Matching grant criteria to include climate lens for lowering GHGs. • All financing leveraged by the project will also have lower climate footprint. • Increase in the volume of sales of commodities/crops with lowered GHG intensity; six value chains analyzed and over 1 m ha to be positively influenced.

Activities	Adaptation actions	Mitigation actions
• Preparation of business proposals. • Integration of environmental and social safeguards, including gender.		• Mitigation lens integrated in the criteria to screen business proposals. • Energy, resource efficiency, and resilience of built infrastructure to extreme weather events. • Improvements in food quality and safety standards will mitigate increased risk of spoilage and food-borne illness due to temperature increases.
Subcomponent B2: Enterprise development support		
1. Providing specialized Technical Service Providers to enterprises in selected value chains for: • Adoption of more efficient production and processing technologies. • Food safety and traceability.	• Introduction and scaling up of green technologies (efficient, saving water and energy) along the processing value chains.	• Introduction and scaling up of green technologies (efficient, saving water and energy) along the processing value chains.
Subcomponent B3: Access to finance support		
1. Assessments and ratings: • Standardized assessments, and ratings of CBOs. • Establishing a Partial Credit Guarantee Facility (PCGF) for CBOs and agri-enterprises.	• Rating criteria to include performance standards on resource use (water, agro-chemicals, etc.).	• Matching grants and PCGF support to screen CBOs and enterprises on opportunities for reducing GHGs and increasing resource efficiency.
Subcomponent B4: Pilot program on urban food systems		
1. Support for the production and marketing of safe and nutritious food. 2. Upgrading of farmers markets. 3. Upgrading of Pune municipal slaughterhouse.	• Proposed activities will lead to the development of farmers markets that are more resilient to extreme weather conditions and increased awareness on food safety, benefiting over 1 million residents of Pune.	• Energy efficiency in markets and slaughterhouse. • Waste management and sanitation across farmers markets and slaughterhouse.
Component C: Building Risk Mitigation Mechanisms (US$20.20 million)		
Subcomponent C1: Enhanced market information and intelligence services		
1. Systematic monitoring of crop production and yield. 2. Mechanisms for improved short- to medium-term production and price forecasts. 3. Disseminate market information and intelligence widely to project beneficiaries and to other value chain participants.	• Monitoring of climate-related yield variability and advance guidance for adapting to potential changes. • Building climate-related risks into price forecasting. • Better access to market information reduces time from farm-gate to market, which will reduce crop losses.	• Improved information, leading to reduced input use in production systems.
Subcomponent C2: Strengthening the warehouse receipt system		
1. Rehabilitation and upgrading of existing warehouse facilities. 2. Construction of new warehouse facilities.	• Significant reduction of post-harvest losses in crops/commodities (food grains) through increased warehousing capacity.	• Increased energy efficiency through use of solar, LED, etc., resulting in reduced GHG emissions.

Activities	Adaptation actions	Mitigation actions
	• Climate and disaster-resilient warehouse infrastructure with rainwater harvesting. • Reduced food storage losses.	
Subcomponent C3: Price risk management support		
1. Setting up a Risk Mitigation Cell within the DoA to develop crisis management plans for major commodities grown in the state. 2. Ex-ante and ex-post interventions, including early warning systems based on production and market demand forecasts. 3. Advisories to farmers on storage of produce in notified facilities.	• Using climate risk screening tool to identify risks faced by the state in the agricultural sector. • Develop adaptation and crisis response plans for these risks. • Early warning systems put in place to include climate impacts/factors and guidance/alerts to farmers on crop choices and input supply.	
Component D: Project Management, Monitoring, and Learning (US$33.10 million)		
1. Setting up project management units at different implementation levels. 2. Managing project M&E.	• Project management units will contract environmental and social experts to advise on adoption of adaptation and mitigation measures for all mentioned activities throughout the project.	

PART B: GREENHOUSE GAS ESTIMATION

2. In line with the safeguard requirements for the proposed project, the ESA analyzed the potential impact of project investments on GHG emissions in six value chains: bananas, cotton, goats, okra, soybeans, and turmeric. The analysis concludes that project support for all six value chains will contribute to reduced GHG emissions. Results of this "upgrading" scenario are compared to the "current" scenario in Table A8.3.

Table A8.3: Estimated greenhouse gas emissions under the proposed SMART Project (the "upgrading" scenario) compared to emissions without the project (the "current" scenario)

Commodity value chain	Climate mitigation dimension of the value chain (GHG impact in tCO_2eq/yr)		Carbon footprint at different stages of the value chain (tCO_2eq per tonne of product)					
	Current	Upgrading	Production		Processing		Transportation	
			Current	Upgrading	Current	Upgrading	Current	Upgrading
Cotton	2,156,869	1,978,593	266.1	199.70	0.38	0.34	0.11	0.11
Turmeric	560,584,672	513,429,588	13.02	11.76	1,308,512.59	1,177,661.34	0.01	0.01
Soybean	516,958	463,941	30.21	26.62	6.64	6.04	0.01	0.01
Okra	35	32.4	3.22	2.91	0.00	0.00	1.42	1.39
Bananas	36,765	34,128	1.62	1.48	0.00	0.00	1.47	1.44
Goat rearing	1,059	1,924						

3. The turmeric value chain has the highest potential for lowering GHG emissions, followed by cotton. The result for cotton is important. A substantial area in Maharashtra is under cotton cultivation and could contribute significantly to reducing the overall carbon footprint of the agricultural sector in the state. Soybeans and bananas resulted in a moderate reduction of emissions, and okra had no significant effect.

4. While GHG emissions per unit have declined significantly in goat production, overall GHG emissions for this value chain increase owing to the growth in numbers of goats (rising from the current 3,640 to 8,176 in the upgraded value chain). Goat numbers are likely to grow because the project will provide technical and financial resources for enhancing the productivity and profitability of the goat value chain. As a result, the increase in fodder production and enteric fermentation influenced the total GHG emissions estimation. Even so, under the “current” (without project) scenario, GHG emissions would be significantly higher, as mitigation practices would not be adopted by producers.