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Report No: PAD2097

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 37.2 MILLION
(US$50 MILLION EQUIVALENT)

TO THE

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

FOR A

ETHIOPIA:NATIONAL QUALITY INFRASTRUCTURE DEVELOPMENT PROJECT

March 6, 2017

Trade and Competitiveness Global Practice
Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective January 31, 2017)

Currency Unit = Ethiopian Birr (ETB)

ETB 22.61 = US$1

SDR 0.744 = US$1

FISCAL YEAR

July 8 - July 7

ABBREVIATIONS AND ACRONYMS

AAEPA	Addis Ababa Environment Protection Authority
BIPM	International Bureau of Weights and Measures *(Bureau International des Poids et Mesures)*
CAGR	Compound Annual Growth Rate
CIPM	International Committee on Weights and Measures (*Commitee Internationale des Poids et Mesures*)
CMC	Calibration and Measurement Capability
CPC	Cleaner Production Center
CPS	Country Partnership Strategy
DA	Designated Account
DTIS	Diagnostic Trade Integration Study
ECAE	Ethiopian Conformity Assessment Enterprise
ENAO	Ethiopian National Accreditation Office
ERPA	Ethiopian Radiation Protection Agency
ERR	Economic Rate of Return
ESA	Ethiopian Standards Agency
ESMF	Environmental and Social Management Framework
EU	European Union
FM	Financial Management
FMM	Financial Management Manual
FPD	Finance and Procurement Directorate
GAP	Gender Action Plan
GIZ	German Corporation for International Cooperation (*Deutsche Gesellschaft für Internationale Zusammenarbeit*)
GoE	Government of Ethiopia
GRM	Grievance Redress Mechanism
GTP	Growth and Transformation Plan
GVC	Global Value Chain
IAF	International Accreditation Forum
IBEX	Integrated Budget Expenditure System
ICT	Information and Communication Technology
IEC	International Electrotechnical Commission
IFR	Interim Financial Report
ILAC	International Laboratory Accreditation Cooperation
ISO	International Standards Organization
IT	Information Technology
M&E	Monitoring and Evaluation
MoANR	Ministry of Agriculture and Natural Resources
MoFEC	Ministry of Finance and Economic Cooperation
MoI	Ministry of Industry
MoST	Ministry of Science and Technology
MoT	Ministry of Trade
MRA	Mutual Recognition Agreement
NMIE	National Metrology Institute of Ethiopia
NPV	Net Present Value
NQI	National Quality Infrastructure
NQITC	National Quality Infrastructure Technical Committee
O&M	Operation and Maintenance
OFAG	Office of the Federal Auditor General
PAD	Project Appraisal Document
PDO	Project Development Objective
PFM	Public Finance Management
PIC	Project Implementation Committee
PIM	Project Implementation Manual
PIU	Project Implementation Unit
PP	Procurement Plan
PPD	Public-Private Dialogue
PPSD	Project Procurement Strategy for Development
PTB	The National Metrology Institute of Germany (*Physikalisch-Technische Bundesanstalt*)
RASFF	Rapid Alert System for Food and Feed
SCD	Systematic Country Diagnostic
SPS	Sanitary and Phytosanitary
SME	Small and Medium Enterprise
TA	Technical Assistance

TC	Technical Committee
TBT	Technical Barriers to Trade
TTL	Task Team Leader
TOR	Terms of Reference
UNIDO	United Nations Industrial Development Organization
UNCTAD	United Nations Conference on Trade and Development
WTO	World Trade Organization

Regional Vice President: Makhtar Diop
Country Director: Carolyn Turk
Senior Global Practice Director: Anabel Gonzalez
Practice Manager: Catherine Kadennyeka Masinde
Task Team Leader(s): Senidu Fanuel, Hiroyuki Tsuzaki

BASIC INFORMATION

Is this a regionally tagged project?	Country(ies)	Lending Instrument
No		Investment Project Financing

[ ] Situations of Urgent Need of Assistance or Capacity Constraints

[ ] Financial Intermediaries

[ ] Series of Projects

Approval Date	Closing Date	Environmental Assessment Category
03-Apr-2017	07-Jul-2022	B - Partial Assessment

Bank/IFC Collaboration
No

Proposed Development Objective(s)

The Project Development Objective (PDO) is to improve the delivery of quality assurance services to enterprises in the targeted sectors.

Components

Component Name	Cost (US$, millions)
Component 1: Strengthening Institutional Capacity for National Quality Infrastructure Development	38.20
Component 2: Enhancing Private Sector Engagement	7.30
Component 3: Project Management and Monitoring and Evaluation	4.50

Organizations

Borrower : Ministry of Finance and Economic Cooperation

Implementing Agency : Ministry of Science and Technology

[ ] Counterpart Funding	[ ] IBRD	[✔] IDA Credit [ ] Crisis Response Window [ ] Regional Projects Window	[ ] IDA Grant [ ] Crisis Response Window [ ] Regional Projects Window	[ ] Trust Funds	[ ] Parallel Financing

Total Project Cost:	Total Financing:	Financing Gap:
50.00	50.00	0.00
	Of Which Bank Financing (IBRD/IDA):	
	50.00	

Financing (in US$, millions)

Financing Source	Amount
IDA-59830	50.00
Total	**50.00**

Expected Disbursements (in US$, millions)

Fiscal Year	2018	2019	2020	2021	2022	2023
Annual	0.25	5.00	12.00	18.00	14.75	0.00
Cumulative	0.25	5.25	17.25	35.25	50.00	50.00

INSTITUTIONAL DATA

Practice Area (Lead)

Trade & Competitiveness

Contributing Practice Areas

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

No

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	Substantial
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Moderate
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	✔	
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

The Recipient shall, within three (3) months from the effective date, have in place at the Project Implementation Unit (PIU), a Project Coordinator, Procurement Specialist, a Financial Management Specialist, a Safeguard Specialist, a Monitoring and Evaluation Specialist, and such other staff as may be agreed with the Association.

Sections and Description

Within six (6) months from Effective Date, the Recipient shall establish, and thereafter maintain during the Project implementation a Project Implementation Committee.

Conditions

Type	Description
Effectiveness	The Recipient will adopt the Project Implementation Manual (PIM) in form and substance satisfactory to the Association.

PROJECT TEAM

Bank Staff

Name	Role	Specialization	Unit
Senidu Fanuel	Team Leader(ADM Responsible)	Private Sector dev't and client management	GTC01
Hiroyuki Tsuzaki	Team Leader	Private Sector & NQI	GTC10
Shimelis Woldehawariat Badisso	Procurement Specialist(ADM Responsible)	Procurement	GGO01
Abiy Demissie Belay	Financial Management Specialist	Financial Management	GGO25
Andrei Mikhnev	Peer Reviewer	NQI technical advisor	GTCME
Asferachew Abate Abebe	Team Member	Environmental safeguards	GEN01
Ayalew Kebede Belew	Team Member	Senior Procurement Specialist	GGO01
Barbara Weber	Team Member	Quality Assurance	GTC07
Bharatha Manju S. Haththotuwa	Team Member	Advisor	GTC01
Chukwudi H. Okafor	Safeguards Specialist	social development	GSU07
Dereje Agonafir Habtewold	Environmental Specialist	Environement	GEN01
Elsa Araya	Team Member	Governance	GGO27
Hanna Ketselamaryam Hailu	Team Member	Program Assistant	AFCE3
Irina Niederberger	Peer Reviewer	Sr Private Sector Specialist	GTCEE
Jean-Louis Charles Racine	Peer Reviewer	NQI, I & E	GTCID
Maiada Mahmoud Abdel Fattah Kassem	Team Member	Finance Officer	WFALA
Margaret Png	Counsel	Legal	LEGAM
Messeret Marcos	Team Member	Procurement Assistant	AFCE3
Nikola Denchev Kojucharov	Team Member	Economic Analysis	GTC01
Susan Kayonde	Team Member	Private sector	GTC01
Syed Estem Dadul Islam	Team Member	Sr. Results Measurement Sp.	CEDD3
Teklu Tesfaye	Team Member	Agriculture	GFA13
Wafa Michael Elias Aranki	Team Member	Technical lead - NQI expert	GTCIC
Yalemzewud Simachew	Team Member	Social Dev't	GSU01

Tiruneh			
Yohannes Seifu Girma	Team Member	Trade	GTCAF

Extended Team

Name	Title	Organization	Location
Otto Loesner	NQI Lead	UNIDO	
Steffen Kaeser	Chief, Standards and Trade Facilitation	UNIDO	
Susanne Wendt	Project Coordinator	PTB	

Ethiopia
Ethiopia:National Quality Infrastructure Development Project

TABLE OF CONTENTS

I. STRATEGIC CONTEXT

A. Country Context

1. **Ethiopia is a large, landlocked, and diverse country.** It is located in the Horn of Africa with an area of 1.1 million km^2. Ethiopia's population is estimated at 96.95 million, with an annual population growth rate of 2.5 percent (2014).[1] At this rate, Ethiopia's population is expected to reach 130 million by 2025, and the United Nations projects that it will become the tenth most populous country in the world by 2050. According to the World Bank Group estimation in 2015, only about 20 percent of the population lives in urban centers. Ethiopia is a country of many nations, nationalities, and peoples, with about 98 nationalities and peoples with roughly 93 languages. At the time of the writing of this document, the country is in a nationwide state of emergency declared by the Government of Ethiopia (GoE) on October 9, 2016 for six months in light of growing concerns related to internal security following months of anti-government protests.

2. **The sustained economic growth for the last decade, with an average gross domestic product growth rate of 10.9 percent from 2005–15,was driven primarily by structural improvements in the economy, as resources moved from low- to high-productivity activities, supported by a conducive external environment.**[2] International trade has been very dynamic with exports increasing more than fivefold between 2000 and 2015 in nominal terms, while volumes increased by a magnitude of four, reflecting a positive commodity price effect. Imports increased by a factor of 8 over the same period. While the Government has recently laid out ambitious plans to maintain this growth performance and for Ethiopia to become a middle-income country by 2025, the global external environment has become less conducive, faltering export performance has become a key policy concern, and the country is facing the challenge of dealing with the current drought.

3. **However, higher economic growth underpinned by both manufacturing output and value added exports will be needed.** At current, most employment opportunities in the country and about 40 percent of output and exports are related to agriculture, whereas services make up close to 50 percent of output value and exports,[3] respectively. The emerging Ethiopian light manufacturing sector, dominated by the food, beverage, leather, textile, and apparel industries, has remained stagnant at around 5 percent shares of output, employment, and exports.[4] As emphasized in the 4th Ethiopia Economic Update (World Bank Group 2015), growth in the manufacturing sector is critical for sustained long-term growth of a country graduating through the early stages of industrial development. Manufacturing bears the potential to create new and better-paying jobs and related services and to reallocate workers from the low productive agriculture and the informal sectors to more productive and formal economic activities.

[1] World Development Indicators based on United Nations population projection. According to the Central Statistics Agency, the midyear population estimate is 90.1 million in 2015.
[2] Ethiopia Systematic Country Diagnostic (SCD) (World Bank Group 2016)
[3] Within services, commerce, public sector, and 'others services' were the most important contributors to output and jobs. Ethiopia's Great Run (World Bank Group 2016).
[4] Ethiopia SCD (World Bank Group 2016).

4. **Increasing manufacturing, specifically exports of manufactured goods, is among the major targets of the Government of Ethiopia (GoE),** as indicated in the Growth and Transformation Plan (GTP) second phase, which sets out an ambitious vision that seeks to turn Ethiopia into a middle-income country by 2025. Emphasis is on the development of export-oriented light manufacturing, in particular labor-intensive industries to take advantage of the country's relative abundance of labor, low wages, and raw materials. The GoE's priority industries include, among others, textiles and garments, leather, and leather products, and agro-processing products. Though relatively small in export share currently, these sectors have shown their potential over the last five years as evidenced by the increase of the compound annual growth rate (CAGR) at 10.8 percent (food products), 7.3 percent (leather and other leather products), 33.8 percent (footwear), and 19.6 percent (textiles and garments), respectively (for details, see figure 4.1 and 4.2 of annex 4 section 1).

B. Sectoral and Institutional Context

Ethiopian National Quality Infrastructure System

5. **Given the strategic emphasis on the growth of light manufacturing, fostering awareness and adherence of Ethiopian firms, specifically exporters, to international product standards and certification regimes is more crucial than ever.** It will help them meet global standards and quality practices, as they operate within integrated global value chains (GVCs), where products and services require quality assurance.[5] Many of the major export destinations of Ethiopian light manufacturing products are developed markets, such as the United States, European Union (EU), and Asia, where higher standards and quality practices are required than those applied domestically. For details see annex 4 section 2.

6. **In addition, a functioning system to assess the quality of materials inputs (imported or locally produced) is critical. So far, the lack of adequate National Quality Infrastructure (NQI)[6] has severely constrained the ability of Ethiopian firms to produce goods and services that meet the quality specifications of global markets.** Though primarily focused on agricultural commodities, Ethiopian products face rejection in the markets in developed countries mainly due to pesticide residue, mycotoxin content, insufficient hygienic condition, and inappropriate labelling.[7] For instance, during the 2010–2015 period, there were 19 notifications of rejections of products (fruits and vegetables, herbs and spices, nuts and nut products, and cereals) from destination markets in Europe.[8] To a large extent, these rejections concern agricultural products, but they are also indicative of quality problems in other sectors, in particular light manufacturing. While the reasons for rejection vary from market to market and have to be addressed primarily by reforms at the sectoral level, such reforms need to take place within the framework of a broader quality assurance system for testing, inspection, and certification of product quality. The 2016 draft Diagnostic Trade Integration Study (DTIS) points out the failure to meet

[5] Guasch, Luis J., Jean-Louis Racine, Isabel Sánchez, and Makhtar Diop. 2007. *Quality Systems and Standards for a Competitive Edge.* Washington, DC: World Bank.
[6] NQI is defined as an institutional framework that establishes and implements a number of interlinked activities among standardization, accreditation, metrology, and conformity assessment (testing, inspection, and certification).
[7] Draft- DTIS of Ethiopia, United Nations Conference on Trade and Development (UNCTAD), January 2016.
[8] European Commission's Rapid Alert System for Food and Feed (RASFF): https://webgate.ec.europa.eu/rasff-window/portal/?event=SearchForm&cleanSearch=1

the standards and quality as one of the major issues prevailing in most Ethiopian manufacturing industries.

7. **Basic elements of the NQI system have been put in place in Ethiopia.** Under the reform undertaken in 2011, the former Quality and Standards Authority of Ethiopia was divided into four legally autonomous NQI institutions, responsible for providing quality assurance services in the fields of standards, accreditation, metrology, and conformity assessment (testing, inspection, and certification) to ensure good governance, create institutions free from conflicts of interest[9] and be aligned with the international practice. The Ministry of Science and Technology (MoST) is the responsible ministry for NQI service development in the country and is responsible for the oversight of the four existing NQI service providing institutions (See Figure 1. Below):

i. Ethiopian Standards Agency (ESA) in charge of adoption and dissemination of national, international, and company specific standards;
ii. Ethiopian National Accreditation Office (ENAO), responsible for issuing accreditation of technical competency of laboratories and conformity assessment bodies;
iii. National Metrology Institute of Ethiopia (NMIE) providing calibration services for laboratories to assure measuring equipment meets standards; and
iv. Ethiopian Conformity Assessment Enterprise (ECAE) - a state owned enterprise providing testing, certification, or inspection services for products/services – to be complemented by private service providers.

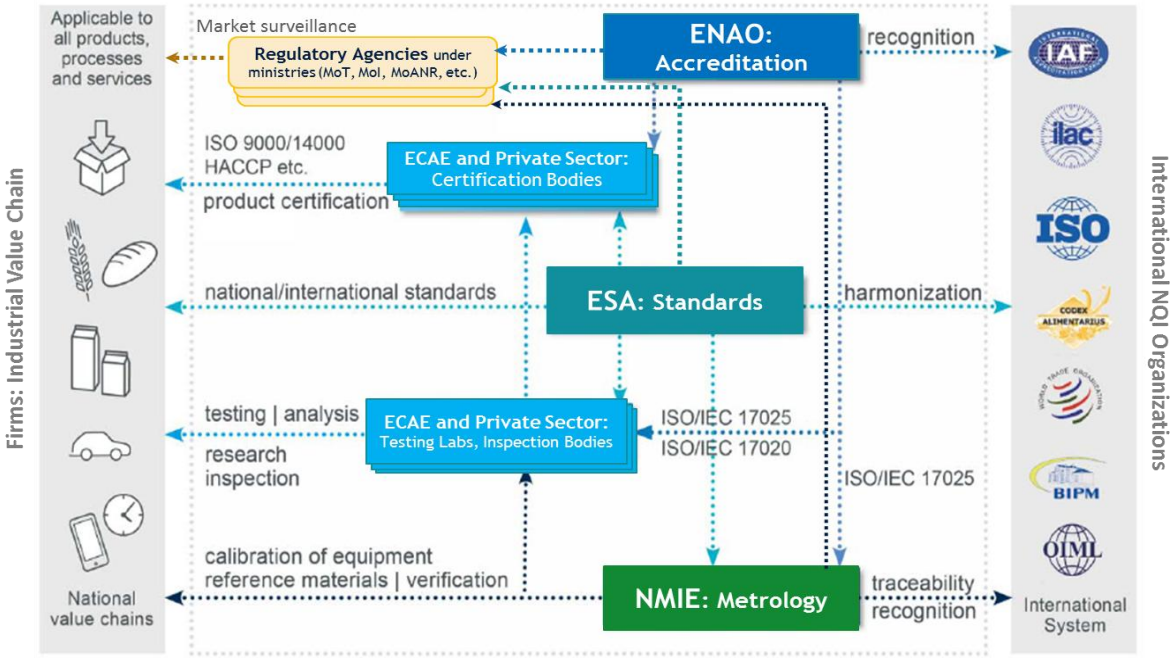
8. **In addition to these four public NQI service providers, there are regulatory functions** within various ministries, including the Ministry of Trade (MoT), Ministry of Health, Ministry of Agriculture and Natural Resource (MoANR), and Ministry of Industry (MoI) to oversee compliance with mandatory regulations particularly in areas related to public health and safety. The various institutions and functions in the NQI are formally coordinated under the National Quality Infrastructure Technical Committee (NQITC), chaired by the Minister of MoST with the Ministry of Trade (MoT) as its secretary. In addition, the Government has established the NQI Forum, as a platform for dialogue between the NQI institutions, key stakeholders, and the private sector.

9. **Recognizing the importance of the NQI, the Government's Science, Technology, and Innovation Policy underscores the importance of the NQI for the country's growth strategy and has formulated eight broad strategies to strengthen the NQI.** The GoE is currently updating its NQI development strategy (2016–2021) to meet its GTP II goals, with the support of the World Bank Group**.** The strategy will provide the implementation strategy of the Government's policy on the NQI and will enable further development of the system to respond to the needs of the manufacturing sector to become globally competitive. One critical aspect of the strategy is to clarify and ensure that there is proper division of responsibilities and mandates between service providers and ministries responsible for regulatory oversight within the NQI system. It is important that the inspection and laboratory capacity established by line ministries for the purpose of executing their oversight function should not

[9] Quality and Standards Authority of Ethiopia was responsible for the development and approval of standards, product certification, inspection of producers, market surveillance, and consumer protection. As the entire process was controlled by one organization, the overlap of commercial and regulatory functions and the discretionary powers of the organization to control the certification market create considerable risk of conflicts of interest.

cause inefficiencies because of costly duplication of investments in facilities and equipment, increased pressure on the limited pool of skilled experts available in the country, and lastly, non-optimal utilization of expensive laboratory equipment and limited resources, both finance and human resource.

Figure 1. Relationships among Elements of the NQI



Note: HACCP = Hazard Analysis and Critical Control Points

10. **Despite efforts by the GoE, the service delivery capacity of the existing Ethiopian NQI institutions is inadequate to support the competitiveness of industries.** There are key areas and parameters for which no national calibration and testing are available, and certificates that none of these institutions is accredited to provide. The NQI institutions lack capacity in human resources, the facility to ensure accurate measurement, well-equipped laboratories to meet industries' demands, as well as coordination and collaboration with regulatory bodies to implement quality assurance services because the NQITC is not yet fully operationalized (see annex 4 section 3 for inadequacies that hinder promoting and strengthening the use of NQI services among the private sector and section 4 for comparison of the NQI services capacity with benchmark countries).

11. **Limited internationally recognized services of the NQI institutions are also identified as key bottlenecks for supporting competitiveness of its exporters.** The quality assurance of goods or services confirmed by Ethiopian NQI institutions only facilitates trade if recognized by relevant foreign conformity assessment bodies. Otherwise, exports need to be certified/tested/inspected again in the destination country or are blocked at the border. Currently, NMIE's calibration and ENAO's[10]

[10] ENAO has been audited for a full membership for the International Laboratory Accreditation Cooperation (ILAC) in 2015, and a signatory to the Mutual Recognition Arrangement (MRA) of the ILAC on scope of testing International Standards Organization (ISO)/ International Electrotechnical Commission (IEC) 17025 and medical testing ISO 15189 is under way.

accreditation services, which are critical for providing globally accepted conformity assessment services in Ethiopia, are not internationally recognized.

12. **In addition, the lack of coordination and collaboration in NQI service development with industries undermines the effectiveness of the NQI.** Though the NQI Forum has been put in place, it is not yet fully operational, which hinders the active engagement of the private sector to provide input and feedback on the NQI services and the challenges to the NQI institutions and the regulatory agencies. Understanding industries' demands is critical to create demand-driven NQI institutions with sustainable services.

13. **Furthermore, it is critical to create an environment that will encourage private sector investments that create market oriented conformity assessment services sector.** There are very few private sector conformity assessment service providers active in Ethiopia. Because domestic demands for the NQI services are still underdeveloped to be significantly attractive for private investors, the GoE currently supports ECAE's basic conformity assessment services to solve a market mismatch between supply and demand in industry. The international trend however is for governments to withdraw from such basic conformity assessment service provision as the private sector develops. The strategic approach is to provide practical hands-on support to industry players and potential private NQI service providers for creating demands for NQI services and recognizing the benefit to enter the conformity assessment services.

14. **The quality assurance services in the fields of standards, accreditation, and metrology are commonly considered as a public good because it essentially helps solve market failures.** Standards developed to provide fulfillment of technical requirements (mandatory or voluntary) result in additional costs for compliance for developing countries that export to these markets. The incremental cost may be a decisive factor for an individual firm's ability to become competitive globally. In such a context, policy solutions, such as public support for the development of the NQI will help offset the cost disadvantages.[11] Leaving standards to markets alone can lead to under- or over-provision of standards. The market failures also include coordination issues and imperfect markets that are too costly to be undertaken by the private sector only and justify public sector interventions as a public good. For example, leaving the metrology system to markets alone can lead to underinvestment that cannot effectively meet accurate measurements (weight, volume, length, and so on), particularly in developing countries like Ethiopia where manufacturers are predominantly small and medium enterprises (SMEs). Investment in metrology involves high fixed costs but the outputs of the investment may have quite general applicability for a wide and diverse group of users. Furthermore, ENAO's accreditation services can be seen as a public good because it allows for the creation of a reliable market of conformity assessment. Though private entities can provide basic conformity assessment services, their success depends on public support for increasing the demands for services from industries and the upstream developments of metrology, accreditation, and standardization.

15. **The proposed project is being designed within this context to support the Government in addressing the major constraints around the NQI system in the country.** It will focus on three key value chains that are driving the Government's industrial policy for the growth of export-based

[11] Maskus, Keith E., Tsunehiro Otsuki, and John S. Wilson. 2005. The Cost of Compliance With Product Standards For Firms In Developing Countries, Policy Research Working Paper 3590, World Bank, Washington, DC.

industrialization, that is, (a) leather and leather products; (b) textile and garments; and (c) agro-processed products. A value chain approach will be effective when buyers and sellers rely on complex information that is not easily transmitted or learned. (Annex 4 section 5 highlights the relevance of quality assurance for each of these three industries in light of the sectors that the project aims to address).

16. **These three value chains have been selected as priority sectors under the project** for the following main reasons: (a) the GoE has clearly identified them in GTP II as its priory sectors for the development of export-led manufacturing industries that will support growth and job creation and is making significant investments to develop them; (b) the expected significant impact of quality assurance services, especially in the value chain (forward and backward linkages), to comply with buyers' standards and requirements; (c) the increasing trend and potential growth in investments,[12] export value, and volume as well as product sophistication and diversity projecting increasing demand for efficient and competent NQI services for the products; and (d) relative readiness (high potential) of the NQI institutions to provide quality assurance services to these sectors, building on their existing services and facilities. As NQI services have to be demand driven and sustainable, heavy investment to support brand new sectors will not result in adequate demand in the near and medium term, and it will be difficult to sustain technically competent services.

17. **Enhancing the effectiveness of the quality assurance services in the targeted sectors will also help address challenges by creating an objective and transparent system in the value chains.** For instance, lack of objective quality grading rules in the hides and skins trading system in Ethiopia causes mistrust between traders and tanneries that substantially reduces the volume of transactions in raw hides and skins, leading to supply problems.[13] Also, nonexistence of a reliable testing mechanism on use of chemicals, restricted substances, and physical analysis (weight, color, shape, contraction, display, and so on) results in inefficient production in the textile and garments and agro-processing sectors.[14]

C. Higher Level Objectives to which the Project Contributes

18. **The proposed project will contribute to the achievement of the GoE's growth strategy formulated within GTP II, which focuses on structural transformation from an agrarian to an industrialized economy.** Improving the export sector is among the major targets of the Government in its growth strategy. In this regard, high attention has been given, particularly, to increasing value-added exports from the selected priority industries to potential markets such as Europe, the United States, and the Middle East by improving product quality, grading, and standards.

19. **The project is well anchored within Country Partnership Strategy (CPS) Pillar 1 and the World Bank Group's target of shared prosperity and reduction of extreme poverty.** The current CPS FY13–FY16 framework includes two pillars. Pillar 1, 'Fostering competitiveness and employment', aims to support Ethiopia in achieving: (a) a stable macroeconomic environment; (b) increased competitiveness

[12] Investments in these sectors are growing at an increasing rate and the GoE has put in place an ambitious Industrial parks development agenda to meet the demand for land and production facilities. Ethiopia is a beneficiary of the African Growth Opportunity Act and the Everything But Arms preferential trade treaties which play a key role in investment attraction.
[13] Ethiopian Development Research Institute Working Paper 011 (December 2013).
[14] Business Opportunity Report Ethiopia - Textile and Apparel Industry (Netherlands Embassy in Ethiopia and NAS International BV, 2015).

and productivity; (c) increased and improved delivery of infrastructure; and (d) enhanced regional integration. The SCD, which will inform the new Country Partnership Framework (FY17–FY20), has identified the need for faster and more inclusive structural change to end extreme poverty and promote shared prosperity in Ethiopia. To achieve this, the SCD has identified low human development and an uncompetitive private sector among the most binding constraints that need to be addressed to succeed in the structural transformation.

20. **The project will indirectly contribute to the World Bank Group's strategic objectives of ending extreme poverty and promoting shared prosperity by supporting economic growth:** It will enhance the global competitiveness of selected sectors that will increase the demand for Ethiopian products, which will require increasing investments and expanding production, resulting in job creation. In addition, the project will contribute to the achievement of the Sustainable Development Goals on (a) promoting inclusive and sustainable economic growth, employment, and decent work for all (Goal 8); (b) building resilient infrastructure, promoting sustainable industrialization, and fostering innovation (Goal 9); (c) reducing inequality within and among countries (Goal 10); and (d) ensuring sustainable consumption and production patterns (Goal 12).

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

21. **The Project Development Objective (PDO) is to improve the delivery of quality assurance services to enterprises in targeted sectors.**

22. **The theory of change for the proposed project** is that both improved delivery of quality assurance services by NQI institutions (supply side) and increased demand by targeted enterprises in the targeted sectors, both the private and public sectors, for these services (demand-side) will strengthen the competitiveness of the selected industries in GVCs. The targeted sectors will be leather and leather products, textile and garments, and agro-processing.

B. Project Beneficiaries

23. **The direct beneficiaries of the project interventions include the private sector (particularly existing and potential exporters), private NQI service providers, regulatory authorities, and consumers.** With the goal of improving the delivery of the quality assurance services to targeted manufacturing sectors, the project beneficiaries will include enterprises/manufacturers, producers who work for enterprises/manufacturers in the same value chains, and private NQI service providers. Also, the project would contribute to the increase of market surveillance capacity of regulatory agencies, as these agencies often rely on testing of product standards/quality. In addition, the project will benefit local consumers, as the development of the NQI will protect consumers from hazardous and incompliant consumable products that may have detrimental effects on health and safety.

C. PDO-Level Results Indicators

24. **To measure the results and achievements of the project toward the PDO, the proposed outcome indicators are**

- Number of enterprises that used NQI institutions' quality assurance services (disaggregated by sector)
- Average number of days required to obtain selected calibration and testing services
- Number of accredited/internationally recognized services provided by NQI institutions
- Volume of services delivered to customers by NQI institutions

III. PROJECT DESCRIPTION

A. Project Components

25. **The main development challenges in the NQI in Ethiopia are the lack of adequate capacity to provide quality assurance services, inability to meet target market standards, prohibitive costs of compliance with international standards, and poor protection of public good elements.** As the project will not be able to address all the challenges, it aims to focus the key interventions on improving the delivery of quality assurance services for selected priority sectors to contribute to the country's growth led by export-focused manufacturing, while stimulating demands for these from industries by becoming active users of the services and potential service providers.

26. **The proposed project is structured around three components**: (a) Component 1: Strengthening Institutional Capacity for NQI Development; (b) Component 2: Enhancing Private Sector Engagement; and (c) Component 3: Project Management and Monitoring and Evaluation. By addressing the gaps in the supply side and demand side of the quality assurance services, each component will leverage the inputs and outputs of other project components to develop an integrated solution and ensure that the development objective of the project is realized in an integrated manner. See annex 1 for more detail.

Component 1: Strengthening Institutional Capacity for NQI Development (US$38,200,000, equivalent to SDR 28,420,800)

27. **The objective of this component is to strengthen the NQI institutions' capacity to deliver effective and efficient quality assurance services to enterprises in the targeted sectors.** This component will have two subcomponents: (a) Strengthening Institutional Capacity of NQI Institutions and (b) Strengthening MoST's NQI Oversight Function. The main areas of intervention of this component are to support technical and human capacity development and to upgrade the selected technical and physical facilities of existing NQI institutions and MoST's NQI function. This will help strengthen the quality assurance system and address the existing gaps in meeting the current demands of the industry.

Subcomponent 1.1: Strengthening Institutional Capacity of NQI Institutions

28. **This subcomponent will primarily aim at building and strengthening of technical and human capital ESA, ENAO, NMIE, and ECAE.** This will be achieved through the implementation of the following main activities, among others:

(a) Support for achieving international recognition of Ethiopian NQI
(b) Support for expansion of scope of services relevant to the targeted sectors
(c) Development of technical skills and provision of trainings to technical experts and management to enable effective and efficient services by said NQI institutions
(d) Development of strategic road maps, business plans, and guidelines to ensure sustainability of the NQI services
(e) Carrying out workshops, international conferences, and overseas study tours for active participation in international memberships and exchange of knowledge
(f) Strengthening of an information and communication technology (ICT) system that improves service delivery and monitoring and evaluation (M&E)

(g) Twinning arrangements with internationally recognized NQI agencies for longer term and sustainable quality assurance services and human capital development

29. **This subcomponent will also support the upgrading of the technical and physical facilities of NMIE and ECAE to improve the provision of quality assurance services, primarily for the targeted industries.** This intervention will support the procurement of critical specialized equipment and goods to run the key testing and calibration laboratories and refurbished and renovation of facilities to be fit for purpose. Once the facilities are renovated and become functional, each institution will allocate necessary budget from its treasury resources and/or own income annually, as is currently the practice, to cover operational and maintenance costs.

Subcomponent 1.2: Strengthening MoST's NQI Oversight Function

30. **This subcomponent will aim at strengthening the institutional capacity of MoST to carry out its mandate on NQI development and coordination**. To this end, the MoST has set up a dedicated directorate to oversee and coordinate NQI development in the country that will also ensure ownership, long-term sustainability of the project interventions, and financial and quality sustainability of services. Main project activities will include the following:

(a) Training and technical assistance to MoST staff carrying out NQI functions.
(b) Recruitment of short term and long term expert consultants to support the work of said functions.
(c) Technical assistance for the facilitation and management of NQI TC and NQI Forum, where the directorate will serve as secretariat on behalf of the MoST;
(d) Development and upgrading of the educational materials and curricula on NQI, currently being piloted at selected universities;
(e) Provision of goods and services to support the operation of the NQI function as needed and
(f) Setting up an effective monitoring and tracking system for monitoring the quality improvement of Ethiopian products, for instance, by using consumer testing organizations in main export destination countries.

Component 2: Enhancing Private Sector Engagement (US$7,300,000, equivalent to SDR 5,431,200)

31. **The objective of this component is to support more active private sector involvement for the development of NQI systems in terms of creation of the demand for NQI services and increase of the number of private sector NQI service providers, in particular conformity assessment services.** To achieve this, activities provided to the industry players and potential private NQI service providers need to be hands-on support underpinned by practical experiences in relevant industries, so that they will see the results of their investments in a relatively short amount of time, use the NQI services regularly, and decide to enter the NQI service markets. This component will have three main subcomponents:

Subcomponent 2.1: Technical Assistance and Training to Industries

32. **The objective of this subcomponent is to create industry (particularly producers within the selected sectors) awareness and knowledge on quality thereby facilitating increased demand for quality assurance services aligned with export market requirements.** Project interventions are

designed to respond to the industries' need to develop an in-depth knowledge and understanding of quality assurance systems and develop products and services that meet international standards and requirements. By doing so, the component will support compliance to quality standards, create awareness and knowledge among the business communities and consumers about the attributes of standards and quality practices and better understanding of international market and buyers requirements. This will contribute to increased competitiveness in international trade, as it will result in lower rejection rates and downgrading of Ethiopian products by international buyers and thus help enhance the reputation of the Ethiopian products and increase the trust between sellers and buyers. Project activities will include, inter alia, the following:

(a) Exeprtise will be sourced from relevant institutions, such as the chamber of commerce, sector associations, laboratory associations, NQI Institutions, for industry needs assessment;
(b) Provision of technical assistance to industries to meet compliance requirements;
(c) Development of training materials, training of trainers from relevant agencies (such as sectoral institutes, associations, etc) and training of industries on standards and compliance requirements;
(d) Development of industrial parks -pilot program to carry out feasibility studies to identify market demand and opportunities for quality assurance services.

Subcomponent 2.2: Technical Support to Private Sector NQI Service Providers

33. **As the NQI matures, the private sector will play a significant role in the provision of services such as testing and certification**; while the public sector service providers will gradually evolve to higher-end and sophisticated quality assurance services that require significant capital investment and government interventions as a public good.

34. **This Subcomponent will work to strengthen the participation of the private sector NQI service providers in the provision of quality assurance services**, particularly in their provision of conformity assessment services through, inter alia, the following:

(a) Technical assistance (including for industry needs assessment and advice on meeting international requirements) to improve the technical skills and competence of private NQI service providers to meet the growing demands from industries, as well as
(b) Development of training materials and training.

Subcomponent 2.3: Strengthening the Feed-back and Dialogue Mechanism

35. **The objective of this subcomponent is to strengthen feedback and dialogue mechanisms on quality assurance systems, policies and services and enhance the quality culture of Ethiopia**, with a specfic focus on private-public dialogue. The Government has established the NQI Forum, though not yet fully functional, that provides a platform for the exchange of ideas among all stakeholders, including representatives from the private sector and consumers on the challenges and business environment around quality assurance services and the oversee of the reform progress and monitor results achieved. The events and workshops are focused on technical issues and directly related to increasing awareness about quality assurance systems among firms. This subcomponent will, *inter alia*, focus on the following activities:

(a) Strengthening and full operationalization of the NQI Forum;

(b) Organizing public private dialogue forums on NQI topics to solicit feedback on the efficiency and effectiveness of the NQI system; and

(c) Carrying out of media outreach activities on NQI.

Component 3: Project Management and Monitoring and Evaluation (US$4,500,000, equivalent to SDR 3,348,000)

36. **This component is to support Project management and monitoring and evaluation** through, *inter alia*, financing of Operating Costs, consultants' services, goods and technical assistance.

37. **MoST will need to strengthen its capacity to effectively implement this project. The Ministry does not have prior experience implementing IDA financed project**. The institutional assessments indicate a need for enhanced technical and fiduciary capacity at MoST to build an effective and competent team that is capable of implementing an IDA financed project. This requires the Ministry to allocate sufficient funds to recruit experienced project staff, and bring in technical experts who can provide the required skills and expertise that will effectively work with the multiple stakeholders and beneficiaries of the project.

38. **The achievement of the PDO depends on effective and efficient implementation of all project interventions.** Support will be provided to the MoST and the Project Implementation Unit (PIU) to strengthen its capacity and increase human resources required for project implementation. The MoST will be the implementing agency for the project as the oversight ministry for the main NQI institutions with the mandate to coordinate the various entities involved in the NQI. This component of the project will finance (a) consultants employed as part of the PIU, including a project coordinator, a procurement specialist, a financial management (FM) specialist, safeguards specialist, an M&E specialist, and technical experts that may be needed; (b) required goods and services to support the functioning of the PIU as needed, including office equipment and furniture; (c) operating costs for the PIU incurred on account of project implementation; (d) data collection, customer satisfaction surveys, and assessment surveys; and (e) all project-related audits.

39. **The project management includes setting up of an effective M&E system to track results of the project.** A key aspect of the project management will be to establish an effective M&E system early on during project implementation that will enable regular and reliable tracking of project results, carry out necessary surveys and assessments, and regularly report on the outputs, outcomes, and impacts of the project interventions. An experienced and competent M&E specialist will be hired on a full-time basis.

B. Project Cost and Financing

Project Components	Total Project Cost (US$)
Component 1: Strengthening Institutional Capacity for NQI Development 1.1: Strengthening Institutional Capacity of NQI Institutions 1.2: Strengthening MoST's NQI Oversight Function	**38,200,000**
Component 2: Enhancing Private Sector Engagement 2.1: Providing Training and Technical Assistance (TA) to Industries 2.2: Providing Technical Support and Assistance to Private Sector NQI Service Providers 2.3: Strengthening the Feedback and Dialogue Mechanism	**7,300,000**
Component 3: Project Management and Monitoring and Evaluation	**4,500,000**
Total IDA Financing	**50,000,000**
Total Project Costs[15] Front End Fees **Total Financing Required**	50,000,000 0 **50,000,000**

C. Lessons Learned and Reflected in the Project design

40. **The project design builds on the one hand on the lessons learned from NQI investment projects implemented globally by the World Bank Group, as well as development partners.** Similar to all new projects, NQI-focused projects require strong and sustained political commitment, a supportive policy and institutional environment, solid preparatory work and appropriate design, and close implementation follow-up. In addition, the main lessons learned from NQI-focused projects are the following:

(a) **Addressing the gaps in demand and supply of quality assurance services in parallel.** NQI service delivery needs to meet a demonstrated demand from industries, as the involvement of industries is a prerequisite for the development of the demanded NQI services. The project design should take this into account, and support the development of both supply and demand of NQI services in parallel.

(b) **Importance of institutional development.** Institution building and skills improvement of NQI institutions are as important as the availability of modern equipment. Setting up twinning arrangements with internationally recognized NQI agencies in other countries could be a highly effective tool to accelerate institutional development for sustainable engagement and to speed up the learning curve.

(c) **Creation of awareness of the NQI.** Information and services related to quality assurance need to be actively disseminated to create awareness of such requirements and facilitate the implementation and adoption of necessary standards and quality practices by firms.

[15] MoST will provide counterpart contribution, mostly in kind, to cover administrative costs and strengthen institutional safeguard measures over the project period.

For this purpose, it is important to establish a constructive dialogue with stakeholders, particularly the private sector, in the policies and provision of the NQI services that respond to customers' needs.

(d) **Introducing a value chain approach.** In countries where the NQI is at an early stage of development, the sector-specific value chain approach will be particularly beneficial. A value chain approach will help identify the real needs of customers of quality assurance services for key industries at the core of the project, increasing the chance that key challenges are addressed and smart investments made that will increase the competitiveness of the industries and enable firms to market their products successfully in international markets.

41. **On the other hand, the project design also addresses particular lessons from project implementation in Ethiopia**. These include ensuring the sustainability of project interventions and results after the project closeout; ensuring the institutionalization of the project within the implementing agency/ministry; and ensuring ownership and institutional capacity by incorporating ministry staff as part of the project management team. The NQI Development Project will assist the Government in the implementation of its NQI strategy, and will invest significantly in institutional development. One important aspect of the support is the strengthening and empowerment of the NQI development and coordination function within the MoST. This is to ensure that the project builds the institutions around NQI development and ensure ownership and sustainability of the program after the project closes. The project will be implemented by the beneficiary institutions to strengthen their own institutions and technical capacities, while the fiduciary responsibility to meet World Bank Group's requirements and policies will be supported by project-specific staff.

42. **The project design has considered alternatives for the provision of quality assurance services that support export competitiveness.** The project considered two alternative options: (a) allow the market to attract private sector investment in the NQI and (b) encourage/support the GoE to use regional NQI service providers to serve its industries. As noted earlier, the NQI requires significant capital investment and technical competency, which does not make it an attractive investment for private sector players at the early stage of industrial development. It is usually the case that the Government intervenes to set up the system to support early stage development of industries and gradually moves to higher-end services and regulatory roles once there is sufficient demand from industries and the basic infrastructure has been put in place. The other alternative to explore is for Ethiopia to use regional NQIs services. While it will be wise to leverage existing infrastructure in the region, particularly for sophisticated and capital intensive investments, such kind of arrangements will compromise export competitiveness (with regard to both cost and time) for frequently used services and where traceability of products matters for export. In the current global market, traceability of products from end to end is mandatory for exports and it is not practical and effective to outsource the quality and standards services for the whole value chain, if Ethiopia is to be competitive in the global markets.

43. **Another alternative for the project design considered was to address the need for fostering the private sector's demand for quality assurance services through financial instruments; such as subsidized loans or matching grants scheme.** The main reason for not introducing financial instruments for the project is due to complementarity with other projects (Ethiopia Competitiveness and Job

Creation Project and Ethiopia SME Finance Project), which have financial interventions to support domestic industries for improvement of their products and production systems. In addition, there are other donor programs (EU and the U.K. Department for International Development) who are engaged in strengthening the domestic private sector and have some kind of financial support mechanism in their projects. It is therefore the team's assessment that financial resources are available to support SMEs, particularly, but what is lacking is the awareness, knowledge, and understanding of the role of quality assurance in competitiveness and growth.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

44. **The MoST will be responsible for the implementation of the project.** The PIU will be set up within the MoST. The responsibility of MoST is to implement its mandate as the oversight body for NQI development, overseeing the activities of the four NQI institutions and serving as a main coordination body for all key players in the NQI system. To achieve this, the MoST has established an NQI directorate, which is led by a Director and is a dedicated department to implement the MoST's mandates related to NQI development. The project will support the full operationalization of this NQI directorate. In addition to the establishment of the PIU, the project will recruit the necessary experts for this directorate to ensure sustainability of the project interventions and effective development of the NQI agenda in the country. This arrangement is expected to ensure sustainability of the project results and its interventions after the project closure. While the PIU will be hosted within this directorate, the PIU's project coordinator will directly report to the State Minister, who is responsible for this NQI directorate.

45. **To ensure smooth implementation and coordination, a Project Implementation Committee (PIC) will be established**, which is composed of representatives from the implementing agencies, including ESA, ENAO, NMIE, ECAE, and MoST, with the PIU serving as the chair. The PIC will meet regularly (at least monthly) to review progress on the implementation of the agreed work plan, address any challenges, and take up to the ministry any issues that may need high-level support or intervention. The PIU's project coordinator will also actively participate and serve within the NQITC and the NQI Forum, which covers broader stakeholders including the MoANR, Ministry of Health, Ministry of Livestock and Fisheries, and MoI, to ensure alignment and coordination of the project interventions with the national NQI development agenda.

46. **The implementation arrangements under the proposed project will be governed by the guidelines and procedures set out in the Project Implementation Manual (PIM).** The PIM includes operational procedures, FM, procurement methods and procedures, safeguards, and M&E of the project and procedures for overall project management. The PIU will be responsible for the implementation of all project components by working with the NQI institutions, private sector players, and regulatory agencies.

B. Results Monitoring and Evaluation

47. **The project includes a robust M&E framework to enable decision makers to track performance, adjust implementation as needed, and demonstrate the impact of the interventions implemented.** The PDO-level and intermediate results indicators and targets for the project are

specified in the results framework, which will serve as the basis for M&E of progress throughout implementation.

48. **The PIU will be responsible for providing—after receiving requisite information from project beneficiaries—quarterly progress reports to the World Bank**, which will include a section on progress in the achievement of project results. The M&E specialist within the PIU will have primary responsibility for establishing and managing the M&E system including data collection, compilation, and reporting. The M&E specialist will coordinate closely with the project coordinator on the monitoring and reporting of the PDO and other project indicators. The PIU, with the World Bank's support, will also be responsible for analyzing results data, as part of the project's communication strategy with key stakeholders on a periodic basis. Other staff of the PIU, MoST, and direct beneficiary entities will be trained in the project's results framework as needed. The M&E system will be enhanced by supporting ICT solutions and infrastructure at the NQI institutions, which will strengthen the ministry's and the beneficiary institutions' monitoring mechanism that will help capture data and provide information on the overall performance of the NQI.

C. Sustainability

49. **The potential sustainability of the project activities beyond its implementation is high given the strong level of the Government's commitment.** The GoE has established the basic framework for the NQI and allocates an annual budget for the NQI institutions as public service providers, except for ECAE, which is a publicly owned, revenue-generating enterprise. The GoE has identified the NQI as an important contributor for the achievement of its industrialization agenda. It has set up a dedicated oversight function responsible for the NQI development nationwide and has already set up the NQITC and the NQI Forum as the coordinating platforms to bring together all key stakeholders for the NQI. The Government has committed itself to a significant array of programs aimed at making the export sector more competitive in international markets. The impact of the project support provided to government agencies is expected to continue well beyond the life of the project, as it focuses on institutional and system building. In addition, the proposed project will also provide incentives for greater participation of the private sector and other relevant stakeholders during project implementation and after its closure through their continued involvement in the quality management process.

50. **NQI development is one of the key targets for the MoST, which is the implementing agency.** The MoST has set ambitious targets in GTP II for NQI development due to the Government's realization of the need to strengthen the quality system to reach its industrialization goal. The project will directly contribute to the achievement of the GTP II targets by supporting the implementation of the NQI policy and strategy and will strengthen the system to cope up with emerging and future demands from industries. As such, it is expected that the project will build on the existing foundation blocks for the NQI and that the Government will continue to expand and build on the results from the projects as the economy moves toward an industrialized economy.

51. **Furthermore, the project is anchored within the framework of the World Bank Group's current engagements on the industrialization agenda to help the Government achieve its strategic objective of becoming 'the light manufacturing hub of Africa' by 2025.** Together with a number of other ongoing and pipeline projects, the project will contribute to the GoE's expected outcome of improved quality systems that contributes to the achievement of accelerated and sustained growth in a long term, notably:

- The *Competitiveness and Job Creation Project* (US$250 million), which became effective in August 2014, supports the Industrial Parks Development Program. The GoE is developing industrial parks as a catalytic tool to generate investment, improve the business environment, facilitate linkages between foreign direct investment and SMEs, and advance the development of light manufacturing industries.
- The *SME Finance Project* (US$200 million), approved on May 17, 2016, aims to address the access to finance and business management skills constraints, particularly faced by SMEs that are hindering the growth and competitiveness of this specific target segment.
- The *Investment Climate Advisory Program* (US$10 million) is supporting the GoE to address key binding business constraints and is currently focusing on the streamlining and simplification of business licensing and registration, trade logistics, investment policy and promotion, and simplification of the tax administration system.
- As a follow-up of the work done on improving the trade logistics system, the World Bank Group is currently preparing the *Trade Logistic Project* (US$150 million) to support the improvement of the trade infrastructure with the aim of reducing trade logistics cost and transit time along the Ethio-Djibouti corridor.
- Furthermore, the World Bank Group currently provides *TA on NQI Development*, which supports the development of the NQI development strategy for the mid- and long-term in Ethiopia (2016–2021).
- In addition, this project will complement the planned interventions under the *Agricultural Growth Project II* which supports agricultural commercialization in selected value chains, and will specifically aim to coordinate the requirements of the MoANR as a regulatory agency for agro-processed exports, with the services provided by the NQI institutions supported by the project. It has been discussed and agreed that the MoANR will leverage on the testing laboratory services to be supported under this project and will primarily focus on the needs to perform its regulatory and monitoring role in the agriculture sector. All the regulatory ministries are expected to actively engage in the NQITC and benefit from the training and TA program financed under this project.
- The project will also contribute to the activities under the *Ethiopia - Livestock Micro Reforms for Agribusiness*, which seeks to increase the access of livestock smallholder producers and processors to improved services and inputs, thereby increasing production and reducing regulatory compliance costs in targeted subsectors.

D. Role of Partners

52. **The project will liaise with development partners for coordination and collaboration to provide more comprehensive support to the Government.** The collaboration partners include the EU Delegation, German Corporation for International Cooperation (*Deutsche Gesellschaft für Internationale Zusammenarbeit*, GIZ), the National Metrology Institute of Germany (*Physikalisch-Technische Bundesanstalt*, PTB), and the United Nations Industrial Development Organization (UNIDO), given their past and current engagement in supporting the NQI in Ethiopia. GIZ, together with the PTB has been the

implementing partner for donor projects[16] supporting the NQI development until March 2016. UNIDO, through its contribution to the DTIS and its program for country partnerships, is currently planning to provide TA to the Government, in particular the MoT, to support trade facilitation in quality regulatory management in Ethiopia, including compliance with international quality standards as laid down in the agreements of the Sanitary and Phytosanitary (SPS) Measures and Technical Barriers to Trade (TBT) of the World Trade Organization (WTO). Furthermore, the supporting activities for NMIE have been consulted with the PTB. The development partners coordinate through the Private Sector Development and Trade Sector Working Group.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

53. **The overall risk for the project is rated to be Substantial**, as the project is a complex operation to implement given the involvement of multiple institutions and MoST's lack of experience in implementing WBG financed projects, as well as other key risks indicated below.

54. **Political and governance risk (Substantial).** The key issues are lack of an effective political settlement mechanism to peacefully moderate political tension. This has recently led to internal unrest and uncertainty in the political environment. The Government has recently indicated its intention to open the political space and also declared a state of emergency to manage the internal insecurity. No specific mitigation measure is defined for political governance and security risks as these are beyond the control of the project. This issue could potentially distract attention of the implementing agencies and key government officials, thus adversely affecting the speed of project preparation and implementation. The team will closely monitor the potential impact on the project during implementation to ensure that the necessary adjustments are made as and when needed. Protest and unrest risks can be mitigated by (a) carefully planning missions to take security concerns into account to ensure that field mission planning continues to be sensitive to the situation on the ground; (b) implementing sound and thorough monitoring of all environmental and social safeguards; and (c) ensuring upfront communications and outreach through citizen engagement mechanisms.

55. **Fiduciary risk (substantial).** Domestic corruption assessments[17]show that although corruption remains a problem in the country, with a growing trend, corruption is not among the topmost problems faced by citizens and it is not deep rooted and systemic. On the other hand, perceptions of corruption in international indexes remain relatively high. For example, Transparency International ranks Ethiopia 103 out of 175 with a score of 33 in 2015; 110 out of 175 with a score of 33 in 2014; and 111 out of 175 with a score of 33 in 2013, which is below the average. Irrespective of what the measures of corruption say, the Government recognizes that corruption is becoming a binding constraint to achieving the country's development. Therefore, potential corruption risk is substantial. The large amount of funds that are expected to be channeled through the project coupled with lack of experience in World Bank-

[16] Engineering Capacity Building Program funded by Germany's Federal Ministry for Economic Cooperation and Development between 2008 and 2016 and the NQI support programs funded by the EU and Germany's Federal Ministry for Economic Cooperation and Development (2012–2015)

[17] Woreda and City Benchmarking Survey (2012) commissioned by multi-donors supporting PSCAP, and Diagnosing Corruption in Ethiopia (2012) commissioned by the World Bank and the Second Corruption Survey commissioned by the GoE.

financed projects by the implementing agencies and low public service wages cause the risk of leakage and corruption. To address the fiduciary risks, project management staff will be dedicated and capacities in procurement, internal controls, internal, and external audit with be enhanced to ensure compliance with fiduciary requirements and support other participating agencies with regard to FM and disbursements.

56. **Institutional capacity risk for implementation and sustainability (Substantial).** The project's implementing agency, the MoST, does not have much experience implementing a World Bank Group-financed project. However, until March 2016, the MoST was implementing a project with GIZ and the PTB that helped establish the basic foundation of the NQI. In addition, the World Bank Group also supports the ministry with ongoing TA on the NQI. The MoST has a dedicated team, led by a competent and experienced director, to oversee the NQI development.

57. **To mitigate potential capacity risks and given the project's main focus on institutional development, the project will support recruitment of specialists to build the MoST's capacity around fiduciary, safeguards mitigation, and project management under Component 3 of the project.** During project preparation, the World Bank has provided support through short-term consultants and advisory to work closely with the MoST and provide hand-holding support for project preparation and advance planning for implementation. Annex 6 provides a mitigation action plan for the key risks identified above.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

58. **The project's interventions are designed to address a variety of key market failures in both the provision and uptake of quality assurance services by Ethiopia's private sector.** These are discussed in detail in annex 5, and range from (a) coordination failures among the public NQI institutions in setting and implementing standards relevant to private sector needs; (b) information gaps among firms who do not know where to access standards or are not aware of the processes or investments needed to adopt advanced standards and quality practices and undertake international certification of their products/services; and (c) local market services and investment gaps that force the NQI users (for example, manufacturers, laboratories, and so on) to seek various testing, calibration, certification, inspection, and accreditation services abroad, at higher costs than they would otherwise pay if these services could be offered in Ethiopia.

59. **The cost-benefit analysis of the project's interventions (detailed in annex 5) suggests a positive economic return based on direct impact channels**. The net present value (NPV) of the project as a whole is estimated to be US$61.7 million over the 20-year projection horizon and the economic rate of return (ERR) 23.1 percent, significantly above the 9 percent real social discount rate used in the analysis. For the three priority light manufacturing sectors targeted by the project, the key expected economic benefits arise primarily through the export channel, from:

(a) the increased export value resulting from improvements in firms' foreign market access (due to harmonization of local product/service standards with those of target markets) and their enhanced ability to command a higher export price for their products by upgrading/certifying them to conform to higher-quality international standards; and

(b) the savings from the reduced domestic cost of certifying and exporting products that come with improved local NQI service capacity.

60. **Beyond exports, an additional category of benefits relates to the cost savings from the project's improvements to the local availability and quality of metrology and accreditation services**, which many NQI users and NQI providers (laboratories and other quality assurance facilities) currently have to obtain abroad at a significantly higher cost, either because they are not available locally or are provided by agencies which are not accredited by internationally recognized bodies.

61. **The economic return estimates are robust to large variations in underlying assumptions.** A sensitivity analysis was performed for key parameters in the economic model, which showed that the sensitivity of the Project NPV and ERR to variations in these parameters is generally low (see table 5.3 in annex 5), except with respect to the export elasticity to quality certification, where small changes can have outsized impacts on the incremental export value added expected from the project's interventions. Consequently, the project's estimated NPV would remain positive (and the ERR above the break-even discount rate) under many combinations of downside shocks to various parameters, and would turn negative only in a 'combined shock' scenario where the assumed changes to all model parameters are cut in half (relative to the baseline scenario). Since this combined negative shock represents a fairly extreme outcome, the assertion that the project's proposed interventions will, under most circumstances, deliver a positive economic return for Ethiopia can be made with a fairly high degree of confidence.

62. **These estimates should also be viewed as a lower bound on the magnitude of potential project benefits, and significant additional indirect benefits not captured in the analysis can also be expected from positive spillovers of the project's interventions**. The export benefits estimated in the analysis pertain only to firms in the three targeted sectors, but the improved NQI services will clearly have similar positive impacts on a broader range of goods and services exports. Furthermore, positive externalities not easily quantifiable through the economic cost-benefit analysis will likely include enhanced public health and safety due to protection from low-quality goods entering the domestic market.

B. Technical

63. **The World Bank Group is seen as a long-term strategic and trusted partner of the GoE in supporting the industrialized agenda to develop a manufacturing sector for the country's long-term growth.** The World Bank Group has broad experience in the activities and components included in the project, which will ultimately help improve the country's competitiveness and job creation. While the project design has been largely informed by past and ongoing engagements in the country and best international practices, throughout its implementation the World Bank Group will bring to bear its technical rigor, resources, and knowledge of its staff and experts.

64. **The technical design of the proposed project is based on Ethiopia's growth strategy, detailed in GTP I and GTP II, as well as on the World Bank Group's technical experience and international best practices.** The project design stems from extensive consultations with stakeholders, including government authorities, the private sector, and donor agencies. The project design conforms to lessons learned and best practices from national and international practices on improving competitiveness in the manufacturing sector through the NQI development.

65. **Both Component 1 and 2 will complement each other and create synergies by addressing the gap of supply and demand of quality assurance services in parallel.** Component 1 incorporates good international practices to address market failures and improve the effectiveness and efficiency of the NQI services provided by public entities. Upgrading the NQI systems will help address market failures such as information asymmetry, building on the lessons learned from various analytical reports by donors, the Government, and the World Bank Group. Component 2 will enhance the private sector actors in industries' value chains for implementing improved standards and quality practices. The project will provide hands-on support to address technical capacity development changes. Several consultations were conducted with private sector representatives.

C. Financial Management

66. **An FM assessment was conducted in accordance with the Financial Management Practices Manual for World Bank-financed investment operations** issued by the Financial Management Sector Board on March 1, 2010 and retrofitted on February 4, 2015 and the supporting guidelines. In conducting the assessment, the World Bank team visited the MoST as the main implementing entity.

67. **The project benefits from the strengths of the country's public finance management (PFM) system** such as the budget process, classification system, and compliance with financial regulations. Significant ongoing work is directed at improving the country's PFM systems. The program also benefits from the country's internal control system, which provides sufficiently for the separation of responsibilities, powers, and duties, and it benefits from the effort being made to improve the internal audit function. However, the implementing entity, the MoST, does not have experience in managing World Bank-financed operations, which could be a weakness for this project in addition to the high staff turnover and understaffed internal audit function within the entity.

68. **The FM arrangements for the project (see annex 2 for details) follow the Government's channel 2 fund flow mechanism**, where funds from donors flow directly to the MoST. Staffing arrangements have been outlined to supplement the existing system. The program will use report-based disbursement, with submission of quarterly interim financial reports (IFRs) 45 days from the end of the quarter with two quarters' expenditure forecast to the World Bank and replenishment of project accounts accordingly. All disbursement methods are available to the project. The project will have its own financial management manual (FMM) outlining in detail the internal control procedures and reporting requirements. The project will have an independent auditor's report every year, to be submitted to the World Bank within six months of the year-end.

69. **The conclusion of the FM assessment was that the FM arrangements met IDA requirements according to OP/BP 10.00.** An action plan has been developed to mitigate the risks identified.

D. Procurement

Applicable Procurement Procedures

70. **Procurable items under the project include** laboratory equipment and standards, upgrading of laboratory information technology (IT) infrastructure, IT equipment such as computers, laptops, and computer peripherals, air conditioning systems, standby generators and heavy-duty UPS, utilities and assessment artifacts, office and laboratory furniture, and calibration vehicles. Works contracts under the

project include laboratory and office upgrades, while there are various types of consulting assignments, which include TAs, studies, standards development, and so on.

71. **Procurement under the project will be carried out in accordance with the World Bank's Procurement Regulations for IPF Borrowers** - 'Procurement in Investment Project Financing, Goods, Works, Non-Consulting, and Consulting Services', dated July 2016 and 'Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants', revised as of July 1, 2016; and the provisions stipulated in the Legal Agreement.

Procurement Capacity Assessment

72. **The PIU in the MoST, which shall be staffed with professional personnel including procurement proficient staff, shall coordinate all procurement activities of the project.** Responsibilities of the PIU shall also include procurement of all strategic goods and equipment for all beneficiary organizations and consolidating procurement plans (PPs) for all contracts which are identified by beneficiary organizations of the project. The beneficiary organizations shall have an important role in the procurement process, particularly in developing the specifications and terms of references (TORs) and participating in the evaluations of bids/proposals.

73. **A procurement capacity assessment of the implementing agency that is the MoST was carried out using Procurement Risk Assessment Management System questionnaires.** The assessment reviewed the organizational structure for implementing the proposed project and the staff responsible for procurement in the implementing agency. The assessment also looked into the legal aspects and procurement practices, procurement cycle management, organization and functions, record keeping, planning, and the procurement environment. The assessment in general was conducted to assess the institutional capacity and governance structure of the MoST to implement the National Quality Infrastructure Development Project.

74. **The MoST is a new client to work with the World Bank and has no prior experience in implementing procurement activities under World Bank-financed projects.** The MoST's Procurement and Property Administration Directorate has procurement officers who have limited experience in public procurement. They have no experience in procurement under Word Bank-financed projects. Thus, the MoST has limited previous experience and no track record in undertaking the management of procurement activities similar to those under the proposed project. However, it has some limited skills and experiences in preparing different procurement documents, evaluating reports, drafting contract agreements, and managing contracts. From a technical aspect, it has some experience in preparing specifications and inspecting and testing the procured items on delivery.

75. **The procurement capacity assessment has revealed a number of challenges in the overall procurement capacity of the implementing agency.** The lack of qualified and procurement proficient procurement staff shall be a major challenge in the implementation of the project. The available procurement staff in the ministry's Procurement and Property Administration Directorate are not proficient in the procurement procedures of the World Bank. The staff use Standard Bidding Documents for procurement under National Competitive Bidding procedures. However, the current practice of the Finance and Procurement Directorate (FPD) does not appear to be adequate in the preparation of

quality bidding documents. Moreover, shortcomings in technical evaluations, which are being done mechanically without applying professional judgment, might be another area of challenge. Other key issues and risks for implementation of procurement under the proposed project include lack of adequate capacity for procurement record keeping; lack of skill development schemes for procurement personnel; the level of pay scale for procurement personnel, which is too low to attract qualified procurement staff; lack of systematic procurement planning and follow-up in procurement; lack of experience in contract administration and management; and the inadequacy of the procurement environment for implementation of projects.

76. **In general, there is a gap in the availability of resources and track records to undertake successful procurement planning, processes, bids/proposal evaluations, supplier selections, and contract awards.** It is evident, from the outset, that additional and better skilled key staff will be required in the National Quality Infrastructure Development Project's PIU, which is yet to be established. The unit needs to have consultants' support for the procurement and contract management activities of the project. The selected staff, as well as staff related with the procurement function, including procurement decision makers need to be provided with basic procurement training and clinics on the World Bank's procurement procedures, procurement planning, procurement record keeping, contract management, and so on. The MoST needs to prepare a procurement manual, which provides step-by-step procedures for the execution of procurement activities under the project. Details on the proposed mitigation measures are provided in annex 2.

Oversight and Monitoring Arrangements

77. **The WBG will provide oversight over procurement activities through prior and post reviews**. The prior reviews will be based on the risk level assessed by the World Bank during appraisal and updated annually. Post reviews will be carried out by Bank staff or consultants. Based on the initial risk rating, the borrower shall seek the Bank's prior review for equivalent value of contracts as detailed in table 1.

Table 1. Prior Review and Procurement Approaches and Methods Thresholds

Category	Prior Review Thresholds (US$, millions)	Thresholds for Procurement Approaches and Methods (US$, millions)				
		Open International	Open National	RFQ	Short List of National Consultants	
					Consulting Services	Engineering and Construction Supervision
Works	≥ 5.0	≥ 7	< 7.0	≤ 0.2	n.a	n.a
Goods, IT, and non-consulting services	≥ 1.5	≥ 1	< 1.0	≤ 0.1	n.a	n.a
Consultants (Firms)	≥ 0.5	n.a.	n.a.	n.a.	< 0.2	≤ 0.3
Individual Consultants	≥ 0.2	n.a.	n.a.	n.a.	n.a.	n.a.

Procurement Plan

78. **The borrower has prepared the Project Procurement Strategy for Development (PPSD) which formed the basis for a PP for the first 18 months of the project life for project implementation and will also provide the basis for the selection methods.** This plan is agreed between the borrower and the

project team and will be available at the PIU at the MoST. It will also be available in the project's database and in the World Bank's external website. The PP will be updated in agreement with the project team annually, or as required, to reflect the actual project implementation needs.

79. **The different selection methods, the need for pre-qualification, estimated costs, prior review requirements, and time frames shall be agreed upon between the borrower and the World Bank in the PP.** The PP will be updated at least annually or as required.

E. Social (including Safeguards)

80. **The proposed project is expected to have a positive social impact.** It will enable Ethiopian consumers to buy safe and standard compliant consumable products and will improve the awareness level of consumers on the national and international standards and quality.

81. **The project is not expected to have any land acquisition or physical displacement and hence the involuntary resettlement policy is not triggered.** This is because all project activities are site specific, will occur on existing structures, and do not require land, and therefore no negative impacts on livelihoods or restriction of access and disturbances that may lead to resettlement or physical relocation are foreseen. Minor physical works to rehabilitate lab facilities, office buildings, landscaping, and fencing of the structures may be required, but these are very much contained within the institution compounds and will not lead to physical displacement or any form of resettlement and livelihood disturbances. However, due to the specialized nature of the equipment and their potential environmental impact in terms of waste, radiation, and so on, the project triggers the safeguard policy on environmental assessments (OP/BP 4.01) and is classified as Category B. To preclude such environmental impacts and any social impacts that might occur during the rehabilitation of lab facilities and office buildings, the Government has prepared the Environmental and Social Management Framework (ESMF) consulted upon and disclosed in-country and internationally in the Bank's Info Shop. As part of the ESMF preparation, stakeholder consultations have been conducted and key issues raised during the discussions are included in the framework. The social team has reviewed the ESMF to ensure that all potential social risks including occupational health and safety issues and avoidance of child labor are adequately covered. If any activities included in any annual work plan require the preparation of an environmental and social assessment or environmental management plan, according to Ethiopia's Environmental Impact Assessment Proclamation No. 299/2002, the Addis Ababa Environment Protection Authority (AAEPA) is responsible for approving site-specific safeguards instruments for project activities. The World Bank safeguards team will review and provide comments on draft site-specific instruments and monitor safeguards compliance, among others. The Government shall ensure that no such activities will commence unless the prepared plan is approved by the relevant agency.

82. **Gender and Citizen Engagement.** The GoE has a strong commitment to gender equality, which is rooted in national policies, as well as in the signing of international and regional treaties and protocols on women's rights. The Ministry of Women and Children Affairs, contributes to policy development and supports gender mainstreaming in all government ministries and bureaus. To date, gender units have been established in all line ministries including the MoST. However, active participation of women is a challenge, due to existing social and economic barriers and women's limited roles in the decision-making processes in their communities. To provide equitable benefits and opportunities, the client has developed a draft gender action plan (GAP) that identifies gender mainstreaming issues and gender mainstreaming checklists for the project interventions. While the detailed gender-specific interventions

will be based on the action plan, the project intends to support gender impact analysis of existing and upcoming policies and strategies and gender responsiveness of the infrastructure and facilities of the NQI institutions; include gender balance criteria when selecting candidates for capacity-building activities as much as possible; and ensure that media and awareness creation campaigns are designed in a more inclusive manner. In particular, given the general indication that women in Ethiopia are not active participants in the quality and standards ecosystem, the project will introduce beneficiary interventions that will specifically target women to increase their participation and engagement. This will be tracked as part of the citizen engagement indicator with specific sub targets focusing on women.

83. **The project will ensure active participation of women in the PIU and in various PICs**; there will be TA for the MoST and other project implementers to enable the ministry and the institutions to (a) monitor the implementation of the GAP; (b) conduct an impact analysis study on the existing and upcoming policy and strategies and gender responsiveness of the infrastructure and facilities of the NQI institutions; (c) ensure active participation of women in consumer education and awareness; (d) provide gender training for the enterprises and implementing institutions, including the MoST staff to ensure understanding of women's issues; and (e) collect gender-disaggregated information as part of the project's results tracking and monitoring system.

84. **The project will further facilitate citizen's empowerment** by conducting citizen engagement surveys, as part of the client satisfaction surveys of the private sector, by the midterm review and post implementation (after all subprojects are carried out) to evaluate the impact on the ground for the project beneficiaries.

85. **Grievance Redress Mechanism (GRM).** The project will set up a GRM for people to report concerns or complaints, if they feel that have been unfairly treated or are affected by any of the project activities. The grievance committee, at the various levels, will address all complaints of the project and resolve grievances promptly during and after the implementation of the project. A citizen engagement survey will be conducted to evaluate the impact on vulnerable groups among women. The surveys will use gender-disaggregated data to determine and verify citizen's perceptions of the project's activities and will serve as a tool to define gender or social issues.

F. Environment (including Safeguards)

86. **The project is classified as Category B.** The project will have positive impacts through the implementation of most of its activities except the 'Infrastructure Investments for NQI Institutions' stated under Component 1, which could have limited adverse environmental and social risks. As part of the upgrading of the infrastructure of the NQI institutions, the project will support renovation/refurbishment of existing facilities such as laboratories, as well as procurement of specialized laboratory and testing equipment. Due to the specialized nature of the equipment and their potential environmental impact with regard to waste, chemicals, radiation, and so on, the project triggers the safeguard policy on environmental assessment (OP/BP 4.01). It should be noted that the Project will not finance procurement of laboratory chemicals and reagents. The types of radiation mostly used by the NQI laboratories are alpha, beta, gamma and x-rays. These rays are used only to test product specimens. The existing radiation laboratory facility was built by the Ethiopian Radiation Protection Authority (ERPA) according to the standards of the International Atomic Energy Agency (IAEA). Testing operations are strictly monitored and ECAE has secured a competency certificate from ERPA for such operations according to Ethiopia's 'Radiation Protection Proclamation No, 571/2008.' For

accreditation services (to test whether a product is radiation free), ECAE uses laboratory equipment accessed from ERPA itself. Appropriate protective devices are (required to be) used during laboratory tests to protect personnel handling the operation from harmful/unnecessary exposure of rays.

87. **Therefore, safeguards risks from the infrastructure investments and procurement of specialized laboratory and testing equipment can be avoided or mitigated if proper mitigation measures are developed and implemented.** Accordingly, the MoST prepared and consulted upon an environmental and social management framework (ESMF), as the project's specific sites, renovation/refurbishment design, and laboratory and testing equipment are not yet known/decided. The ESMF will be used to develop site-specific Environmental and Social Management Plans or environmental and social impact assessment reports before the commencement of activities under Component 1. The ESMF includes standard methods and procedures along with appropriate institutional arrangements for screening and reviewing project activities and monitoring the implementation of mitigation measures to prevent/mitigate adverse and cumulative impacts. The effective use of the ESMF will be regularly reviewed and audited.

88. **The ESMF was disclosed in-country (at the MoST's web page) and in the InfoShop in accordance with World Bank's requirements on December 16, 2016.**

G. Other Safeguard Policies triggered by the Project

Safeguard Policies Triggered by the Program	Yes	No
Environmental Assessment (OP/BP 4.01)	√	
Natural Habitats (OP/BP 4.04)		√
Pest Management (OP/BP 4.09)		√
Physical Cultural Resources (OP/BP 4.11)		√
Involuntary Resettlement (OP/BP 4.12)		√
Indigenous Peoples/Underserved and Vulnerable peoples (OP/BP 4.10)		√
Forests (OP/BP 4.36)		√
Safety of Dams (OP/BP 4.37)		√
Projects in Disputed Areas (OP/BP 7.60)		√
Projects on International Waterways (OP/BP 7.50)		√

H. World Bank Grievance Redress

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

redress-service. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework
COUNTRY : Ethiopia
Ethiopia: National Quality Infrastructure Development Project

Project Development Objectives

The Project Development Objective (PDO) is to improve the delivery of quality assurance services to enterprises in the targeted sectors.

Project Development Objective Indicators

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Number of enterprises that used NQI institutions' quality assurance services (disaggregated by sector)		Number	1650.00	2850.00	Bi-annually	Records of ESA, ENAO, NMIE, and ECAE	PIU and MoST
Description: This indicator tracks total number of enterprises which used quality assurance services provided by ESA, ENAO, NMIE and ECAE during a reporting period. Type of the monitored numbers include: the number of enterprises implemented national and international standards with the support of ESA; the number of enterprises received ENAO's accreditation services; the number of enterprises used NMIE's calibration services; and the number of enterprises used ECAE's conformity assessment services (testing, inspection, and certification). It is expected that accredited and internationally recognized quality assurance services would increase demand of their services to industries operating in the selected sectors.							
Name: Average number of days required to obtain		Text	Average service	Average service	Bi-annually	Records of NMIE and ECAE	PIU and MoST

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
selected calibration and testing services			time of NMIE calibration services: - In-house: 30 days - On-site: 90 days Average service time of ECAE's testing service: 6 days	time of NMIE calibration services: - In-house: 15 days - On-site: 45 days Average service time of ECAE's testing service: 3 days			
Description: This indicator tracks the average time to deliver calibration services by NMIE and selected testing services by ECAE to enterprises operating in the targeted sectors. The figures used by NMIE are dominated by calibrations in the fields of mass, balances, volume, temperature and pressure, broken down further into calibrations performed at NMIE and at the customers' premises. The selected services of ECAE are testing services on pesticide residues, contaminants, and toxic components.							
Name: Number of accredited/internationally recognized services provided by NQI institutions		Number	6.00	36.00	Bi-annually	Records of ENAO, NMIE, and ECAE	PIU and MoST
Description: This indicator tracks newly accredited or internationally recognized services of ENAO, NMIE and ECAE. These include: new scope of ENAO's accreditation							

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
services; new scope of NMIE's calibration service; and new scope of ECAE's testing, inspection, and certification services. Increased capacity and know-how of NQI institutions would lead to accreditation of services and international recognition.							
Name: Volume of services delivered to customers by NQI institutions		Number	20076.00	62719.00	Bi-annually	Records of ESA, ENAO, NMIE, and ECAE	PIU and MoST
Description: This indicator tracks total number of quality assurance services delivered by ESA, ENAO, NMIE and ECAE to their customers (accumulated). Types of the monitored services include: the number of national and international standards implemented with the support of ESA; the number of accreditation services provided by ENAO; the number of calibration services provided by NMIE; and the number of conformity assessment services (testing, inspection, and certification) provided by ECAE. Increased capacity of NQI institutions would enable delivery of more services to the customers, including industries.							

Intermediate Results Indicators

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Percentage of enterprises in targeted sectors satisfied with quality assurance services provided by NQI institutions		Percentage	0.00	80.00	Annually	Client feedback survey of ESA, ENAO, NMIE, and ECAE	PIU and MoST
Description: This indicator tracks level of satisfaction of industries operating in the selected sector with the services of ESA, ENAO, NMIE and ECAE. The satisfaction will be assessed by the annual survey.							

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Number of personnel trained at NQI institutions on technical and soft skills (Disaggregated by Gender)		Number	108.00	373.00	Bi-annually	Records of ESA, ENAO, NMIE, and ECAE	PIU and MoST
Sub Indicator on Gender: Number of female out of total personnel trained at NQI institutions on technical and soft skills		Number	17.00	138.00			
Description: This indicator tracks number of staff of NQI institutions and the ministry trained with technical and soft skills to improve quality assurance services.							
Name: Number of qualified assessors as a result of training provided by ENAO (Disaggregated by Gender)		Percentage	90.00	140.00	Bi-annually	Enrollment register of ENAO	PIU and MoST
Description: This indicator tracks number of assessors accredited by ENAO. With increased capacity, ENAO is expected to offer quality accreditation to more professions.							
Name: Number of Public-Private Dialogue Sessions/meetings (including NQI Forum) held on quality assurance topics		Number	1.00	15.00	Bi-annually	The Secretariat of NQI Forum/ PPD Forum	PIU and MoST
Description: This indicator tracks recommendations of public-private dialogue/NQI forum that are implemented by the government and other relevant stakeholders.							

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Number of participants from industries attended quality assurance trainings offered by intermediaries (Disaggregated by Gender)		Number	0.00	60.00	Bi-annually	Records of Intermediaries supported by the project	PIU and MoST
Description: This indicator tracks number of participants of industries operating in the selected sectors trained on quality assurance by intermediaries such as NQI Institutions, Chambers of commerce, sector's associations, laboratory association, cooperatives, sector development institutes, consulting firms, etc.							
Name: Number of media appearances		Number	0.00	10.00	Bi-annually	Local print and electronic media	PIU and MoST
Description: This indicator tracks number of local print and electronic media covered under the project supported communication campaign and media outreach events, including the improvement of the quality of Ethiopian products/services achieved with the support of the project.							

Target Values

Project Development Objective Indicators

Indicator Name	Baseline	End Target
Number of enterprises that used NQI institutions' quality assurance services (disaggregated by sector)	1650.00	2850.00
Average number of days required to obtain selected calibration and testing services	Average service time of NMIE calibration services: - In-house: 30 days - On-site: 90 days Average service time of ECAE's testing service: 6 days	Average service time of NMIE calibration services: - In-house: 15 days - On-site: 45 days Average service time of ECAE's testing service: 3 days
Number of accredited/internationally recognized services provided by NQI institutions	6.00	36.00
Volume of services delivered to customers by NQI institutions	20076.00	62719.00

Intermediate Results Indicators

Indicator Name	Baseline	End Target
Percentage of enterprises in targeted sectors satisfied with quality assurance services provided by NQI institutions	0.00	80.00

Indicator Name	Baseline	End Target
Number of personnel trained at NQI institutions on technical and soft skills (Disaggregated by Gender)	108.00	373.00
Number of qualified assessors as a result of training provided by ENAO (Disaggregated by Gender)	90.00	140.00
Number of Public-Private Dialogue Sessions/meetings (including NQI Forum) held on quality assurance topics	1.00	15.00
Number of participants from industries attended quality assurance trainings offered by intermediaries (Disaggregated by Gender)	0.00	60.00
Number of media appearances	0.00	10.00
Sub Indicator on Gender: Number of female out of total personnel trained at NQI institutions on technical and soft skills	17.00	138.00

ANNEX 1: DETAILED PROJECT DESCRIPTION

Ethiopia: National Quality Infrastructure Development Project

1. **The main development challenges in the NQI in Ethiopia are the lack of capacity to provide quality and standards services required by industries, poor product differentiations, inability to meet target market standards, poor protection of public good elements, and prohibitive costs of compliance with international standards.** While the project will not be able to address all the challenges, it aims to focus on the key interventions to improve the delivery of NQI services to be more responsive and adequate to serve the country's growing light manufacturing sector.

2. **The proposed project intervention will be structured around the following three manufacturing industries: textile and garment; leather and leather products, including footwear; and agro-processing.** These industries have been identified as priority sectors for the following reasons: (a) the GoE clearly identified them in GTP II as its priority sectors for the development of export-led manufacturing industries that will support growth and job creation; (b) relative readiness (high potential) of the NQI institutions to provide quality assurance services to these sectors; (c) large impact of quality assurance services, especially in the value chain (forward and backward linkages), to comply with buyers' standards and requirements; and (d) potential growth in investments, export value and volume as well as product sophistication and diversity.

3. **The interventions will include,** among others, supporting the NQI institutions to provide internationally accepted services, increasing the competitiveness of the products produced by Ethiopian firms, and creating awareness about the NQI services. The main expected outcomes of these interventions are improved NQI services provided to the private sector, product and market diversification, reduced transaction costs incurred by companies subject to re-testing in foreign markets, and improved awareness about quality and standards and safety and health issues. One of the key ultimate outcomes of the project will be the increased export of quality products.

4. **To address the main development challenges, the project is designed to strengthen the NQI in Ethiopia in line with international standards and best practice.** The project is structured around three interconnected components: (a) Component 1: Strengthening Institutional Capacity for NQI Development; (b) Component 2: Enhancing Private Sector Engagement; and (c) Component 3: Project Management and Monitoring and Evaluation. Addressing different gaps in the supply and demand side of the NQI services, each component will leverage the inputs and outputs of other project components. Through the project interventions, Ethiopia will develop the whole NQI system in the country, where the NQI institutions collectively provide services to enterprises.

Component 1: Strengthening Institutional Capacity for NQI Development (US$38,200,000, equivalent to SDR 28,420,800)

5. **The objective of this component is to strengthen the NQI institutions' capacity to deliver the demanded services to enterprises, particular in target industries.** Main areas of interventions to be supported by this component are the development of human and technical capacity of the existing NQI

institutions and the MoST and much needed upgrading of selected metrology and testing laboratories and service facilities. By doing so, the component will provide support for ESA to act as the national standards inquiry point for standards and technical regulations, strengthen the capacity of ENAO to provide accreditation services, improve NMIE's calibration services to support businesses, and strengthen ECAE for providing inspection, testing, and certification services. It is important that the NQI institutions collectively establish and implement standardization, metrology, accreditation, and conformity assessment services—which are necessary to provide acceptable evidence that products and services meet demanded requirements.

Subcomponent 1.1: Strengthening Institutional Capacity of NQI institutions

6. **This subcomponent will provide support to ESA, ENAO, NMIE, and ECAE**. This intervention aims to build and strengthen the technical and human capital of the existing NQI institutions. Specific interventions for existing NQI institutions are as follows.

7. **Support to ESA.** ESA has the primary responsibility to oversee the development of national standards and to publish the same. To strengthen the capacity of ESA to perform its functions, the focus of the interventions is on the following:

(a) **Standards development and implementation.** Standards development takes place in technical committees (TCs) which are representative of all stakeholders. There are currently more than 100 TCs managed by ESA. In TCs, the private sector should play the leading role, as they will implement the standards in the first place. There is a need to develop additional standards, in particular for indigenous agro-processing products, which have great export potential. However, standards development is an expensive and time-consuming process, as it requires surveys, interviews, and consultations with various stakeholders to reach the overall consensus. In addition, technical support ESA staff are required to support the implementation of standards.

(b) **International representation.** Active members of international standards organizations are critical. Where it matters, ESA needs to represent the country in regional and international standards development such as for sectors, products, and issues relevant to the local industry. While ESA is a member of ISO, IEC, the African Regional Organization for Standardization, and African Electrotechnical Standardization Commission, and so on, its participation in conferences, technical committees, and general assembly meetings is critical for industries.

(c) **Improved access to standards.** An efficient and online standards information center, where customers can obtain and purchase up-to-date information on international, regional, and national standards, is a major requirement of the industry. Currently, about 11,000 standards are developed and adopted by ESA, and these are provided as hard copies. Customers have to obtain them in person or through a postal service. To be the national enquiry point for standards, it is essential to make standards available in an electronic format.

8. **The planned supporting activities for ESA include**

- development and implementation of national standards, including surveys, assessments, technical meetings, and training and capacity building for ESA staff;

- participation in activities of international and regional standards organizations events (international conferences, technical committees, and general assembly meetings abroad) of ISO, IEC, African Regional Organization for Standardization, African Electrotechnical Standardization Commission, and so on; and
- procurement of ICT software for standards database and other related ICT infrastructure.

9. **Support to ENAO.** The primary responsibility of ENAO is to give a formal accreditation to the competence of laboratories and conformity assessment bodies, which carry out specific activities, such as calibration, testing, certifications, or inspections. To be accepted by trading partners, testing and product certification must be carried out by accredited competent laboratories and certifying bodies. The accreditation process is based on international standards, including ISO/IEC 17020, ISO/IEC 17021, ISO/IEC 17025, and others. Such accreditation can help ensure that laboratories and conformity assessment bodies are capable of delivering reliable measurements and services needed to ensure standards and quality of goods. To strengthen ENAO's capacity to provide accreditation services, the focus of the interventions is on the following areas:

(a) **International recognition.** It is critical for ENAO to gain international recognition, as the availability of competent internationally recognized accreditation services to local laboratories, certification, or inspection bodies will contribute to a reduction of the requirement for re-testing, re-inspection, and re-certification of Ethiopian products in importing countries. The ILAC and the International Accreditation Forum (IAF) are the international bodies for recognition of international accreditation bodies. The ILAC manages recognition in the fields of laboratory and inspection accreditation, and the IAF manages the fields of management systems, products, services, and personnel of conformity assessment. ENAO is currently taking a right path to gain the international recognition through a signatory to the ILAC MRA in the field of laboratory testing by the second quarter of 2017. Further expansion of accreditation scopes from ILAC and IAF are critical steps for ENAO to support the NQI system and increase the competitiveness of the industry.

(b) **Expansion of accreditation scope and capacity building.** Maintaining and expanding the accreditation scope requires TA to enhance the capacity of ENAO. These include the training on quality management systems, testing, inspection, and certification accreditation services, as well as the development of training materials for assessors who will be trained by ENAO. Qualified assessors will be contracted by ENAO for assessments of competence of laboratories and conformity assessment bodies, when needed, so that ENAO will be able to respond to the growing demands from industries. The TA will be provided through the recruitment of external experts and the arrangement of twinning programs with an accreditation body in other countries. In addition, ENAO is required to participate in the regional and international conferences organized by ILAC and IAF to be familiar with changes and updates on the international requirements.

(c) **ICT software and infrastructure.** Currently, the accreditation information, including a database of the accredited entities, assessment process, and results of assessment, is handled manually. Although the current accredited laboratories (47 testing laboratories) can still be managed on a paper basis, it is necessary to put in place an IT system (accreditation software) for data interoperability and exchange, as the number of customers is expected to increase by obtaining international recognition. The software should enable ENAO to manage the

accreditation process from the beginning (application phase) to the final decision taken by the respective committees. All documents related to these procedures have to either be retrieved or stored within a document management system. In addition, ENAO's quality management system documents, including the forms and standardized documents, shall be saved within the document management system and linked to the entity resource management system. The software shall be an integrated system consisting of a document management system, interlinked with the entity resource management system and a database for the dates of the assessment and accreditation.

10. **The planned supporting activities for ENAO include**

- supporting ENAO to expand its accreditation scopes by obtaining international recognition from ILAC and IAF;
- supporting ENAO to actively participate in activities of international and regional accreditation bodies such as ILAC, IAF, and African Accreditation Cooperation (international conferences, technical committees and general assembly meetings abroad);
- training and capacity-building programs locally, including twinning arrangements, for accredited assessors by ENAO and ENAO staff; and
- procuring accreditation software and ICT equipment and infrastructure.

11. **Support to NMIE.** NMIE has the primary responsibility of ensuring that any measurements made in Ethiopia can be traced to the international system of units through national standards, thereby helping to facilitate acceptance of products, processes, measurements, and testing in the local and international markets. These national measurement standards are then used to calibrate the working standards of calibration laboratories, legal metrology departments, and in-house laboratories of industries to track the traceability of measuring equipment. Currently, NMIE provides calibration services in eight areas: mass, temperature, pressure, balance, dimension, volume, electric, and density. NMIE's laboratories are accredited by the German National Accreditation Body, which is a member of ILAC, so that services provided by NMIE are internationally recognized. To improve NMIE's calibration services to further support businesses, in particular targeted sectors, the emphasis is on the following areas:

(a) **Increase of calibration and measurement scope and accuracy.** There are a number of scopes, which industries require, but NMIE has no calibration and measurement capability. For example, the field of chemical, humidity, and moisture are often required by the targeted sectors. In addition, manufacturers dealing with clients in developed countries often require a higher level of accuracy of measurement, whereas NMIE currently provides the basic level of calibration and measurement services. To support NMIE to increase the service scope and accuracy, modernizing selected measurement equipment (such as mass, temperature, pressure, humidity, moisture, dimension, chemistry, hardness, time, frequency, and so on) for both existing and new laboratories is critical.

(b) **Capacity building for NMIE staff.** It is important to provide NMIE staff with training to operate and maintain the upgraded equipment. To obtain proper knowledge and experience of using the equipment, the creation of capacity-building programs for NMIE staff will be considered with the support of external professionals, including the arrangement of twinning programs with a national metrology institute in other countries.

(c) **Renovation/refurbishment of the existing laboratory facility.** Increasing calibration and measurement scope and accuracy also require the improvement of laboratory environments, including temperature and humidity control, clean air supply, constant voltage suppliers, and uninterrupted power suppliers. NMIE's existing laboratory facility needs to be renovated/refurbished to improve the laboratory environments.

(d) **International recognition.** Although NMIE currently provides internationally accepted services through accreditation from the German National Accreditation Body, it is important for NMIE to gain international recognition by signing the International Committee on Weights and Measures (*Commitee Internationale des Poids et Mesures,* CIPM) MRA. By doing so, its calibration and measurement capabilities (CMCs) will be listed in the key comparison database managed by the International Bureau of Weights and Measures *(Bureau International des Poids et Mesures,* BIPM). Without such CMC entries, the country's industry will find it difficult in the long run to gain acceptance of measurement results in international markets.

(e) **ICT software and infrastructure.** While NMIE provides about 18,000 calibration services on an annual basis, all the transactions (certificates, invoices, instrument details, and so on) are handled manually. To increase its efficiency, upgrading NMIE's ICT infrastructure is necessary.

12. **The planned supporting activities for NMIE include the following:**

- Increasing NMIE's measurement capability (scope and parameters) through
  - upgrading measurement equipment for selected laboratories at NMIE
  - training NMIE staff to use and maintain the procured equipment;
  - establishing traceability through the support of international calibration and comparison processes for the metrology system; and
  - refurbishing the existing lab facility to upgrade selected industrial and scientific labs.
- Supporting the international recognition of Ethiopian measurement standards by the country becoming an associate of the General Conference of Weights and Measures, a form of associate membership of the Meter Convention. Once Ethiopia is an associate of the General Conference of Weights and Measures, NMIE will be supported to sign the CIPM MRA.
- Supporting NMIE's laboratories to be accredited by an internationally recognized accreditation organization (depending on the progress of CIPM MRA).
- Upgrading NMIE's ICT infrastructure for efficient service delivery.

13. **Support to ECAE.** ECAE is a state-owned enterprise with responsibility to provide inspection, testing, and certification services. Evidence that a product, process, or service meets stated requirements, can be provided to manufacturers, purchasers, or independent third parties. ECAE has six testing laboratories with testing capability of 65 parameters. These are chemical, microbiology, mechanical, leather and textile, electrical, and radiation. Its chemical laboratory is the major one, which tests food, agricultural products, chemicals, and soils. The leather and textile laboratory tests packaging material and stationery and has been accredited by ENAO for testing cotton yarn. Those testing laboratories are currently accredited by ENAO. However, because ENAO is not yet internationally recognized on the scope

of testing, ECAE's testing results may not be sufficient for manufacturers, if their trading partners or importers request results from internationally accredited, conformity assessment bodies. The support for ECAE is as follows.

(a) **Increase of testing capability (scope and parameters).** ECAE lacks adequate modern testing instruments to provide demanded services for the targeted sectors. Selected testing equipment for food and agriculture, as well as leather and textile products will be upgraded. At the same time, the supported scopes need to be carefully selected not to overlap or destroy the similar services provided by the private sector testing service, although there are only a few private providers in the food and agriculture sector.

(b) **Capacity building for ECAE staff (testing, inspection, and certification).** It is important to provide ECAE staff with training to operate and maintain the upgraded testing equipment. In addition, to obtain proper knowledge and experiences of testing, inspection, and certification services, various training programs (that is, competency training, product certification, management certification, personnel certification, and so on) will be provided to ECAE staff. Furthermore, as the conformity assessment is in areas that the private sector providers are encouraged to enter, it is important to support the assessment of the role and responsibility of ECAE by developing its long-term business plans.

(c) **ICT software and infrastructure.** All the information related to conformity assessment is currently managed on a paper basis, and upgrading ECAE's ICT infrastructure will help increase its efficiency and effectiveness to provide industries the necessary services.

14. **The planned supporting activities for ECAE include**

- increasing testing capability (scope and parameters) through
  - upgrading equipment for selected testing labs at ECAE, focusing on the scopes that are not currently available in the country, yet pertaining to the priority sectors; and
  - training ECAE staff to use and maintain procured equipment.
- increasing capacity for inspection services through
  - procuring inspection equipment for selected industries including portable equipment; and
  - training ECAE staff to use and maintain procured equipment
- Increasing capacity for certification services through competency training for ECAE staff
- Development of a long-term business plan
- Construction design (layout and specifications) for the agro-laboratory
- Upgrading ICT infrastructure for service delivery

15. **Where it is applicable, it is important that the NQI institutions develop a service charter**, which includes type of available services, steps to obtain services, and time and fee to obtain services. This will not only increase the transparency and accountability, but also improve the predictability to manage the users' expectations. To reach out to a wider audience, it is recommended that the charter be publicized in their websites and on-site (in front of the office).

Subcomponent 1.2: Strengthening MoST's NQI Oversight Function

16. **This subcomponent will support the MoST to strengthen its institutional capacity to carry out its mandate on NQI development and coordination**. It is important that special attention is given to the NQI development agenda to contribute to the Government's ambitious industrialization plans by establishing a strategic approach to NQI development in line with international good practices and closely coordinating with the different stakeholders in NQI. To this end, MoST has set up a dedicated directorate within the ministry to oversee NQI development in the country that will also ensure ownership and long-term sustainability of project interventions. This MoST's directorate will also help strengthen the regulatory functions of the NQI system, mainly through support of the NQITC, which is currently the high-level coordinating mechanism for all NQI stakeholders. In addition, the project will provide support to upgrade the educational materials and curriculum on the NQI, currently being piloted at selected universities. Furthermore, a systematic tracking mechanism for monitoring the quality improvement of Ethiopian products will be put in place to track the improvement of NQI in Ethiopia. In order to measure the quality improvement of Ethiopian products, the perception of the Ethiopian products, and its impact on accessing to new markets, quality of the selected products of the targeted sectors will be monitored and evaluated on a regular basis by utilizing consumer testing organizations in main export destination countries.

17. **The expected funded activities under this intervention may include:**

(a) Training and capacity building for MoST staff;

(b) Strengthening of the NQI agenda, among others, through engaging short term and long term technical expertise to support the work of said functions, etc;

(c) TA for the facilitation and management of the NQITC and the NQI Forum;

(d) Development and upgrading of curricula on the NQI to be provided at universities;

(e) Required goods and services to support the operation of the NQI function as needed;

(f) Setting up effective monitoring and tracking system to monitor improvement of NQI; and so on.

Component 2: Enhancing Private Sector Engagement (US$7,300,000, equivalent to SDR 5,431,200)

18. **The objective of this component is to support the development of the demand for NQI services.** This component will have three main subcomponents.

(a) Providing Training and TA to Industries Through Appropriate Intermediaries to Create Awareness and Knowledge Quality, thereby Increasing the Demand for Quality Assurance Services that is Aligned with Export Market Requirements

(b) Providing Technical Support to Private Sector NQI Service Providers to Strengthen the Role of the Private Sector in the Provision of Quality Assurance Services

(c) Strengthening the Feedback and Dialogue Mechanism through Active Engagement with the Private Sector through Supporting the NQI Public-Private Dialogue (PPD) platforms and Outreach Campaigns.

19. **By doing so, the component will create awareness among selected business communities about the attributes of standards and quality, support enterprises to conform to the standards and adopt quality management systems, and ensure quality and consistency in produced goods and services primarily targeted to export markets.** Providing knowledge, expertise, and resources to learn about and adopt better standards and quality will support industries to meet the requirements of global buyers and lead firms, which in turn will increase product competitiveness. In parallel, this component will provide support to strengthen private sector quality assurance service providers to upgrade their technical skills and knowledge so that they will be able to meet the demand from industries and expand their services to broader service parameters.

Subcomponent 2.1: Technical Assistance and Training to industries

20. **The objective of this subcomponent is to create industry (particularly producers within the selected sectors) awareness and knowledge on quality thereby facilitating increased demand for quality assurance services aligned with export market requirements.** The aim of this subcomponent is to provide industry actors with hands on technical support and training programs to support industries comply with international requirements and develop a skilled workforce to improve the competitiveness of the entire value chain of the selected industries. This contributes to facilitation of international trade and increase of competitive export industries by helping firms produce quality products and ensuring that the production processes comply with international buyers' requirements that result in less rejection rate and downgrading of products. Such activities would enhance the reputation of the Ethiopian products and increase the trust between sellers and buyers. In collaboration with the NQI institutions, the training and TA will be provided through appropriate business support organizations, which represent the respective targeted sectors, including the chamber of commerce, sector associations, laboratory associations, producer organizations, cooperatives, and so on. To show tangible impact of the NQI interventions from the project, this subcomponent would also include a feasibility study to identify NQI market demand for industries by linking with industrial parks.

21. **This subcomponent will provide support to strengthen existing business support organizations in the targeted sectors and facilitate the improvement of quality of goods along the value chains**, so that together they efficiently increase the competitiveness of final products in the international market.

(a) The first action in this subcomponent encompasses the institutional capacity assessment of business support organizations in the targeted sectors. Together with the PIU, the MoST's function in charge of NQI development within the MoST will conduct the assessment of identified organizations, based on predefined criteria, such as the number of members, readiness of the members, the activity status of organizations, impact of NQI interventions, and so on (an example of NQI interventions that use the leather products value chain can be found in figure 1.2 and Table 1.1).

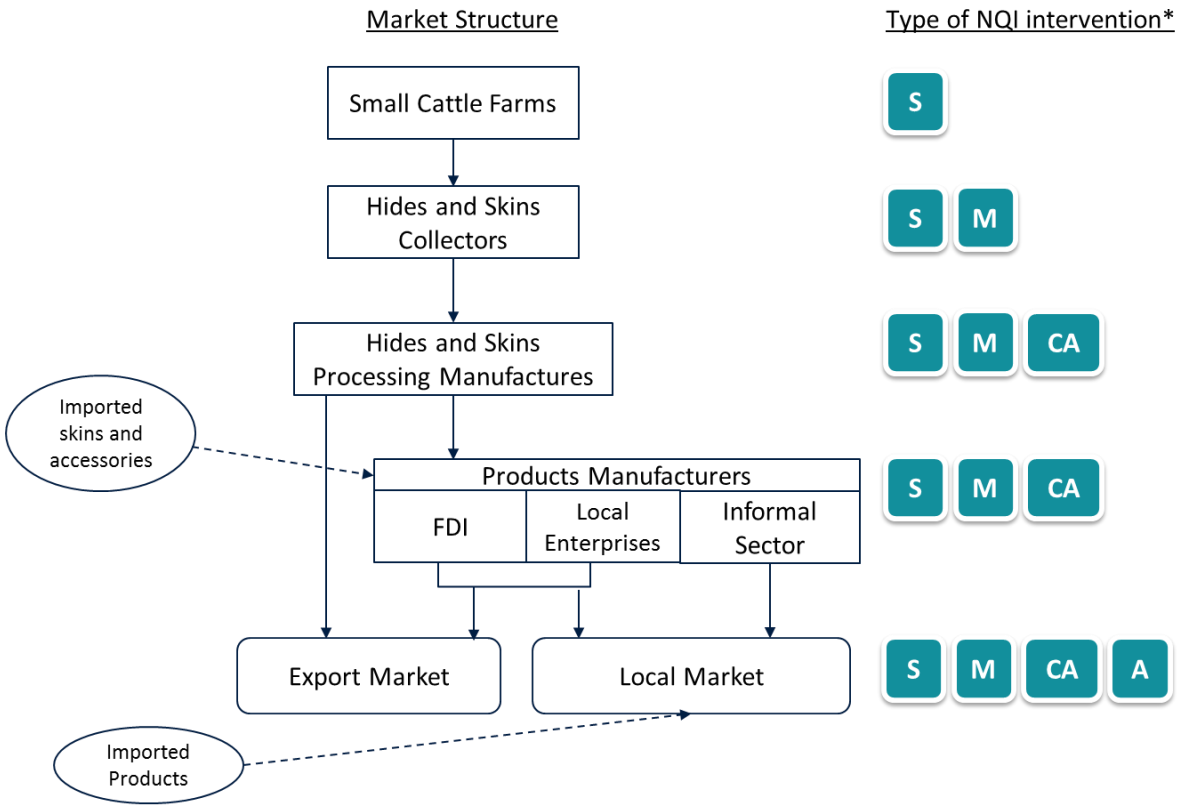
(b) Based on the assessment, initial business support organizations will be selected, and business support organizations will develop the initial training and TA proposals together with the NQI institutions.

(c) Once the proposals are reviewed and approved by the PIC, the PIU will sign a Memorandum of Understanding with the MoST and business support organizations for the implementation of activities. These activities are mostly targeted towards members of the associations to help

them upgrade their production processes, implement quality management systems and obtain international certification. In addition, results-based performance contracts will be executed with the aim that business support organizations will be able to contribute substantially to the cost of such capacity-building activities and that business support organizations themselves become service providers to their members in the future.

22. **The funding activities will be structured around practical hands-on support for industries such as** (a) recruitment of consultants for industry needs assessment; (b) development of training materials and training of trainers (selected three value chains); (c) technical assistance to industries to meet compliance requirements; (d) trainings on standards and compliance requirements - through ESA and intermediary agencies; (e) industrial parks -pilot program to carry out feasibility study, and so on.

Figure 1.2. Example - Leather Products Value Chain and NQI Intervention



Note: * S = Standardization; M = Metrology; CA = Conformity Assessment; A= Accreditation.

Table 1.1. Example - Major NQI intervention on Leather Products Value Chain

Market Structure	Major NQI Interventions			
	Standardization	**Metrology**	**Conformity Assessment**	**Accreditation**

Small cattle farms	Veterinary standards and standards for breeding and farming applied	—	—	—
Hides and skins collectors	Standards for hides and skin preservation applied, standards for storage and facilities applied	Verification of key measurement standards and instruments (for example, weights, scales, rulers, tapes, and so on)	—	—
Hides and skins processing manufacturers	Tannery and garment standards and environmental standards applied	Verification of key measurement standards and instruments (for example, weights, scales, rulers, tapes, and so on)	Certification of tanneries' quality and environmental management systems, inspection of laboratories	—
Leather products manufacturers	Standards for fabric construction and standards for pattern models applied	Calibration of key measurement standards and instruments (for example, weights, scales, rulers, tapes, and so on)	Certification of management and environmental management systems	—
Exporters	Trade-related standards applied	Verification of weighbridges and balances (transport in trade, gross net weights)	Certification of exporter quality and environmental management systems, evidence of whether importer country's regulations are met, accreditation of laboratories	Evidence of credibility of certification bodies and laboratories

Subcomponent 2.2: Technical Support to Private Sector NQI Service Providers

23. **As the NQI develops, more and more of the conformity assessment services can be taken up by the private sector.** Currently, there are very few private sector quality assurance service providers in Ethiopia. The main objective of this subcomponent is to provide support to NQI service providers from the private sector and sector development institutes, such as testing labs and calibration labs, to upgrade their management systems and technical capabilities in order to carry out tests according to international good practices that are internationally recognized by international markets. It will also help in identifying potential service providers and additional conformity assessment services through conducting feasibilities studies. Furthermore, since laboratory works nowadays heavily rely on equipment maintenance, the subcomponent would also provide support to enhance training capacity of NMIE's national equipment maintenance training center for industries. While some of the support provided for these stakeholders will

be done jointly with the public NQI institutions, some specific interventions will be supported focused mainly on private sector providers through their representative associations.

24. **This subcomponent will also provide benefit to the Government**, as it will eventually reduce substantial investments that are required to maintain the NQI services, in particular conformity assessment services. In many developed countries, as the demand for NQI services grows, governments no longer take a critical role to provide for such investments over a broad spectrum of testing, inspection, and certification bodies. This also helps change the prevailing mind-set among the public and private sector in Ethiopia that only government type laboratories should be allowed to provide conformity assessment services.

(a) Similar to Subcomponent 2.1, the first action in this subcomponent is to conduct the institutional capacity assessment of existing private service providers, potential providers which already have well-equipped laboratories, and firms which are willing to enter this business. Together with the PIU, the MoST's function in charge of NQI development within the MoST will conduct the assessment of identified candidates, based on screening and readiness assessment.

(b) Based on the assessment, initial candidates will be selected, and the selected candidates will develop the initial training and TA proposals, together with the NQI institutions.

(c) Once the proposals are reviewed and approved by the PIC, the PIU will sign a Memorandum of Understanding with the MoST and selected candidates for the implementation of activities. In addition, results-based performance contracts will be executed with the aim that the selected candidates will be able to contribute substantially to the cost of such capacity-building activities and that the selected candidates themselves become service providers to their members in the future.

25. **The funding activities will be structured around practical hands-on support** such as (a) recruitment of consultants for industry needs assessment; (b) technical assistance to private labs and sector development institutions to meet international requirements; (c) trainings on laboratory management system; (d) development of training materials and training of trainers on service provision; (e) trainings on laboratory management system; and (f) enhancement of training capacity of national equipment maintenance training center (NMIE), etc.

Subcomponent 2.3: Strengthening the Feedback and Dialogue Mechanism

26. **The objective of this subcomponent is to strengthen the feedback and dialogue mechanism** on quality assurance systems, policies, and services, as well as enhance the quality culture in Ethiopia through PPD and outreach programs.

27. **The project will support the operationalization of the NQI Forum** that will support the development of the coordination mechanism resulting in better planning of NQI development. The Government launched the NQI Forum in January 2015 as a platform for an open exchange of ideas on standards and quality-related issues to support the competitiveness of the industry. The participants of the NQI Forum are ministries, regulatory agencies, NQI institutions under the MoST, sectoral institutions, private sector representatives, business associations, academic institutions, financial institutions, civil society, cooperatives, and so on. The NQI Forum is the only platform, where the private sector has a direct opportunity to present its view and opinions on quality assurance development to policy makers. However,

it is not yet fully functional, mainly due to a lack of coordination among stakeholders. The subcomponent will support (a) the strengthening and full operationalization of the NQI Forum, including needed cost to organize PPD and regular NQI Forums that provide not only a dialogue platform on strategic and operational issues but also the feedback mechanism to measure the efficiency and effectiveness of the NQI system and any adjustments needed to meet industry demands; and (b) recruitment of consultancy service to carry out client (private sector) engagement and satisfaction survey, and so on.

28. **The project will also support media outreach activities on the NQI** that will help increase the awareness of the importance of the standards and quality issues among industries and the public. The outreach activities include NQI events, workshops, and promotion activities conducted through mass media (TV, radio, newspaper, and so on). The topics of media activities range from general information about the NQI to dissemination of the agreed actions at the NQI Forum.

Component 3: Project Management and Monitoring and Evaluation (US$4,500,000, equivalent to SDR 3,348,000)

29. **MoST will need to strengthen its capacity to effectively implement this project. The Ministry does not have prior experience implementing IDA financed project**. The institutional assessments indicate a need for enhanced technical and fiduciary capacity at MoST to build an effective and competent team that is capable of implementing an IDA financed project. This requires the Ministry to allocate sufficient funds to recruit experienced project staff, and bring in technical experts who can provide the required skills and expertise that will effectively work with the multiple stakeholders and beneficiaries of the project.

30. **This component will aim to ensure efficient and effective implementation of all project components.** Support will be provided to the MoST and the PIU to strengthen its capacity and increase the human resources required for project implementation. Given the various entities involved in this project, the MoST is expected to oversee the implementation of the project with the PIU to be set up within the MoST. Given the importance of NQI coordination and to ensure project sustainability, it is expected that the PIU will directly report to the state minister responsible for NQI development. This component will finance (a) consultants employed as part of the PIU, including a procurement specialist, an FM specialist, a safeguards specialist, an M&E specialist, and technical experts who may be needed; (b) required goods and services to support the functioning of the PIU as needed, including office equipment; (c) the incremental operating costs for the PIU incurred on account of project implementation; (d) data collection, customer satisfaction surveys, and assessment surveys; and (e) all project related audits.

31. As part of this component's steps, an environmental safeguards specialist will be recruited and safeguards monitoring, reporting and documentation system will be established and sustained beyond the Project period. The GoE plans to allocate around US$1.7 million, through in kind contributions, to build the capacity of the NQI institutions and address environmental and social safeguards issues and impacts related to the project.

ANNEX 2: IMPLEMENTATION ARRANGEMENTS

Ethiopia: National Quality Infrastructure Development Project

Project Institutional and Implementation Arrangements

1. **The MoST will be responsible for the implementation of the project.** The MoST has established a dedicated NQI directorate with skilled staff for NQI development. This directorate is responsible for implementing the mandate of the MoST as the oversight body for the NQI, overseeing the activities of the four NQI institutions, and serving as a main coordination body for all key players in the NQI system. The work of the PIU and project implementation will be well coordinated with this directorate. In addition to the establishment of the PIU, the project will recruit the necessary experts required for this function to ensure effective and timely implementation of the project, in line with the World Bank Group policies and procedures. This arrangement will also ensure sustainability of the project results and its interventions after the project closes. While the PIU will be hosted within this directorate, the PIU's project coordinator will report to the State Minister, who is responsible for this NQI directorate.

2. **To ensure smooth implementation and coordination, a PIC will be established**, which is composed of representatives from the implementing agencies including ESA, ENAO, NMIE, ECAE, and MoST. The PIU will serve as a chair for the PIC which will have the responsibility to meet regularly (at least monthly) to review progress on the implementation of the agreed work plan, address any challenges, and take up with the ministry any issues that may need high-level support or intervention. The PIU's project coordinator will also actively participate and serve within the NQITC and the NQI Forum to ensure coordination and alignment of the NQI development agenda with the project interventions.

3. **The implementation arrangements under the proposed project will be governed by the guidelines and procedures set out in a PIM.** The PIM includes operational procedures, financial and administrative management, procurement methods and procedures, safeguards, and M&E of the project. The components of the project will be implemented as follows:

(a) **Component 1.** The PIU will be responsible for the implementation of this component. The PIU will work with the representatives of ESA, ENAO, NMIE, ECAE, and the MoST's directorate responsible for NQI development where necessary to develop the TORs and other technical inputs required for the implementation of the component.

(b) **Component 2.** The PIU will be responsible for the implementation of this component. The PIU will work with private sector representatives' institutions, associations, chambers of commerce, and so on to implement and coordinate the project activities and report on progress of the project implementation.

(c) **Component 3.** The PIU will be responsible for the implementation of this component.

Financial Management

4. **An FM assessment was conducted in accordance with the Financial Management Practices Manual for World Bank-financed investment operations** issued by the Financial Management Sector

Board on March 1, 2010 and retrofitted on February 4, 2015 and the supporting guidelines. In conducting the assessment, the World Bank team visited the MoST. An FM assessment is not yet carried out by the World Bank for the agencies that are under the MoST, namely ECAE, NMIE, ENAO, and ESA. At the current stage, it is understood that these agencies will not be receiving resources directly from the project, but rather they will be benefiting from the implementation of the project. Should this arrangement change, an assessment will have to be carried out.

5. **The FM assessment considers** the degree to which (a) the budgeted expenditures are realistic, prepared with due regard to relevant policies, and executed in an orderly and predictable manner; (b) reasonable records are maintained and financial reports produced and disseminated for decision making, management, and reporting; (c) adequate funds are available to finance the project; (d) there are reasonable controls over project funds; and (e) independent and competent audit arrangements are in place. The assessment also included the identification of key perceived FM risks that may affect program implementation and proceeded to develop mitigation measures against such risks.

Country Context

6. **The 2014 Public Expenditure and Financial Accountability assessment has been completed for the federal government as well as for Tigray, Amhara, Southern Nations, Nationalities, and Peoples' Region, Oromia, and Somali Regions and Addis Ababa city administration.** Good improvements were noted in most of the federal government ratings although the rating differs among regions. Generally, the budget credibility of the country remained well supported with the continuing robust budget execution and internal control systems. Since the 2010 assessment, budget transparency and comprehensiveness and arrears management has also strengthened. The tax audit function is gradually increasing focus on risk assessment but capacity constraints still remain. Budget execution systems appear to continue to work well. Robust internal control systems remain. Procurement systems are strengthened since the 2010 assessment although the publication of procurement information has not progressed as much. Furthermore, the effectiveness of scrutiny has strengthened to an extent given that the Macro Economic and Fiscal Framework is being reviewed by the relevant legislation unit and a strengthened procedure for review of the draft budget is in place. The legislative scrutiny of audit reports improved the performance in the depth of hearing recommendations and monitoring their implementation.

7. **Although improvements are noted, the strengthening of the internal audit function has proceeded at a slower pace than expected.** The assessment revealed that high staff turnover and capacity constraints remain in procurement and internal audit capacity. In addition, timeliness of the preparation of statements and coverage has progressed although regional reports are submitted to the federal level with delay. The assessment also indicated that external audit has progressed overall but capacity constraints still remain.

Budgeting

8. **Budget preparation and approval.** The project will follow the Government's budget system, recorded in the Government's budget manual.[18] By following the Government's budget procedure, the PIU to be placed in the MoST will prepare an annual work plan and budget for the project, taking into account the project's objectives and resources. The work plan and budgets will identify the activities to be undertaken by the ministry and the four implementing NQI institutions. The project budget preparation should be prudent, realistic, and made with professional estimates to avoid unrealistic budgets. Then the annual work plan and budget will be forwarded to the State Minister responsible for NQI development for approval. The World Bank's 'no objection' is also required. Finally, the budget will be submitted to the Ministry of Finance and Economic Cooperation (MoFEC) for final endorsement and proclamation. The project budget will be proclaimed under the MoST.

9. **Budget control.** Currently, the MoST has the practice of verifying the availability of budget before every payment. Every month the Integrated Budget Expenditure System (IBEX) produces a comparison of the adjusted budget with actual expenditures. However, a written explanation is not prepared for the variances. Therefore, there is a need to prepare a written explanation for major variances to the management for necessary corrective actions. For the project, the budget should be regularly monitored at all levels, at least quarterly against actual expenditure. The budget variances will be adequately explained and justified through the quarterly IFRs.

Accounting

10. **The Government's accounting policies and procedures[19] will be largely used for the accounting of the project.** The program will develop a detailed FMM, which will reflect the FM arrangements, internal control procedures, fund flows, and reporting aspects of the program and is derived from the Government's finance manual. The manual will be submitted to the World Bank for 'no objection' before it is used as a guide for the project.

11. **Accounting system.** At the MoST, IBEX is used to record transactions and produce the monthly reports. Given that the accountants are familiar with this system, it is recommended that the project uses IBEX to record transactions although some modification will be required to produce the reports as required under the project. For this, the ministry should work together with the MoFEC's IBEX department to develop a chart of accounts and a stand-alone IBEX to capture project information as required. However, a ministry decision to use other computer software will also be acceptable. During the assessment, it was noted that although transactions are captured in the system, they are not posted to the ledger until the

[18] The Ethiopian budget system is complex, reflecting the fiscal decentralization structure. The budget is processed at federal, regional, zonal (in some regions), woreda, and municipality levels. The budget preparation procedure and steps are recorded in the Government's budget manual. The budgets are first reviewed by the Ministry of Finance and Economic Cooperation (MoFEC) and then by the council of ministers. The final recommended draft budget is sent to parliament around early June and is expected to be cleared, at the latest, by the end of the fiscal year.

[19] The Ethiopian Government follows a double entry bookkeeping system and modified cash basis of accounting. This is documented in the Government's accounting manual. This has been implemented at the federal level and in many regions. The Government's accounting manual provides detailed information on the major accounting procedures.

end of the month. As a result, up-to-date ledger balances could not be obtained from the system before the end of the month. In addition, transaction recording was not up-to-date due to inadequate manpower.

12. **Chart of accounts.** The chart of accounts for the program will be developed using the Government's chart of accounts to properly capture the components, subcomponents, and categories. The chart of accounts should enable the budget codes to be identified and IBEX to be used easily. The developed chart of accounts shall form part of the FMM that will be prepared for the project.

13. **Staffing.** The finance directorate of the ministry currently has eight accountants and two cashiers. According to the structure, the number of accountants should be 12 but currently only 67 percent of the positions are filled. There is high staff turnover because of staff seeking a better salary in other places. As the current number and experience of staff are not adequate even for treasury work, the project is expected to recruit an FM specialist and accountant who will be assigned to the PIU. Furthermore, the ministry should fill the currently vacant positions.

14. **Accounting center.** The accounting center for the project will be the MoST. Currently, no fund is expected to flow to other agencies. The MoST will maintain accounting books and records and prepare financial reports in line with the system outlined in the FMM. It will be responsible for maintaining the project's records and documents of the project transactions, which will be made available to the World Bank's regular supervision missions and to external auditors. Detailed procedures for maintaining and retaining documents will be discussed in the FMM.

15. **Capacity building/training.** Focused and continued FM training is essential for the success of the project given the high staff turnover that is seen in the authority. The project should allocate adequate budget for the capacity building requirement of the project.

Internal Control and Internal Auditing

16. **Internal control comprises the whole system of control, financial or otherwise, established by management to** (a) carry out the project activities in an orderly and efficient manner; (b) ensure adherence to policies and procedures; (c) ensure maintenance of complete and accurate accounting records; and (d) safeguard the assets of the project. Regular government systems and procedures will be followed, including those relating to authorization, recording, and custody controls. The project's internal controls, including processes for recording and safeguarding of assets, are also documented in the FMM to be developed for the project.

17. **The internal control in the ministry is found to be adequate.** Monthly bank reconciliation is prepared and up-to-date. Cash count is conducted once a month and reconciled with the ledger balance. The control on the payroll process is good. Furthermore, there was proper segregation of duties on the payment approval cycle. Documents are being stamped as 'PAID" to avoid double payments. A fixed asset register is maintained for each asset but it does not contain information like date of purchase and cost. An identification number is affixed on assets. Although the fixed asset count is conducted annually, the count result is not compared with the register. Furthermore, the Management Letter issued on the external audit report for the ministry indicated internal control inadequacies such as making excess per diem payments, lack of attendance sheets for trainees, unutilized budget, not reconciling the fixed asset count result against the fixed asset register, and understaffing of the internal audit section. The ministry is taking action

to rectify the findings. The control over soft expenditures should be further strengthened. The FMM to be developed for the project will include clear procedures for the internal control aspects.

18. **Internal audit.** There is an internal audit directorate at the MoST. The directorate reports to one of the state ministers. The directorate prepared an annual audit plan for EFY2008. The auditors prepare a quarterly audit report and the report is sent to the state minister and a copy to the inspection directorate at the MoFEC. A quarterly meeting is conducted to discuss the auditors' findings. The meeting is chaired by the state minister and rectification action is taken after each meeting. The internal audit directorate uses the Internal Audit Manual issued by the MoFEC. However, the directorate is currently understaffed with only two auditors in office though the structure requires five auditors. The allocated salary does not attract new applicants, though the vacant positions are repeatedly advertised. Currently negotiation is ongoing to transfer willing auditors from other public bodies. Unless the directorate is adequately staffed, the chance of the proposed project to be covered by the internal auditor is minimal. Although these capacity limitations still exist, efforts should be exerted for internal audit (post audit reviews) to be carried out by the Internal Audit Departments of the respective entities.

Financial Reporting

19. **Reporting requirements.** The project will prepare quarterly Consolidated IFRs. These will be submitted to the World Bank within 45 days of the end of the quarter. The format and the content, consistent with the World Bank's standards, were agreed with the MoST during project negotiation. At a minimum, the report will include a statement of sources and uses of funds and opening and closing balances for the quarter and cumulative figures; a statement of uses of fund that shows actual expenditures, appropriately classified by main project activities (categories, components, and subcomponents); actual versus budget comparisons for the quarter and cumulative totals will also be included; a statement on movements (inflows and outflows) of the project's designated account (DA), including opening and closing balances; expenditure forecast for the next two quarters together with the cash requirement; notes and explanations; other supporting schedules; and documents. For this project, given that it will use an IFR-based disbursement method, the timeliness and quality of the financial reports should be given utmost attention. In addition, the MoST sends monthly reports to the MoFEC, both in soft and hard copies, within 15 days after the end of the month.

20. **In compliance with the Government's financial rules and regulations, as well as IDA requirements, the MoST will produce annual financial statements similar to the contents of the quarterly IFRs.** The annual financial statement will be similar to the IFRs with some modifications as will be indicated in the audit TOR. These financial statements will be submitted for audit at the end of each year.

External Auditing

21. **Annual audited financial statements and audit reports (including Management Letters) will be submitted to IDA within six months from the end of the Government's fiscal year (July 8 to July 7).** The annual financial statements will be prepared in accordance with the standards indicated in the audit TOR agreed during negotiation. The audit will be carried out by the Office of the Federal Auditor General (OFAG) or a qualified auditor nominated by OFAG and acceptable to IDA.

22. **The audit will be carried out in accordance with the International Standards of Auditing issued by the International Federation of Accountants.** The auditor will prepare a work plan to ensure adequate coverage of the various institutions that receive project funds and cover all the major risk areas. Once the audit report is issued, the audit report findings should be rectified within a maximum of two months from the receipt of the audit report.

23. **In accordance with the World Bank's policies, the World Bank requires that the borrower discloses the audited financial statements in a manner acceptable to the World Bank.** Following the World Bank's formal receipt of these statements from the borrower, the World Bank makes them available to the public in accordance with the World Bank's Policy on Access to Information.

FM-related Costs

24. **The program work plans and budget includes the costs of** (a) accountants noted above; (b) audit costs; (c) related logistics and supervision costs (for example, transportation, per diem, and accommodation while travelling); (d) providing FM-related trainings, and so on.

FM Risk Assessment, Strengths, Weaknesses, Lessons Learned, Action Plan

25. **Risk assessment.** The FM risk of the project is Substantial. The mitigating measures proposed in the action plan will help reduce the risk of the project once implemented and applied during project implementation.

26. **Strengths and weaknesses.** The program will inherit the various strengths of the country's PFM system. As discussed earlier, several aspects of the PFM system function well, such as the budget process, classification system, and compliance with financial regulations. Significant ongoing work is directed at improving country PFM systems through the Government's Expenditure Management and Control subprogram. The Government's existing arrangements are already being used in a number of projects, including Enhancing Shared Prosperity through Equitable Services Project, which are under implementation. The program also benefits from the country's internal control system, which provides sufficiently for the separation of responsibilities, powers, and duties, and it benefits from the effort being made to improve the internal audit function.

27. **The main inadequacies in FM arrangements continue to be high turnover and a shortage of qualified accountants and auditors, inadequacies noted in the external auditor report, and the limited focus of internal audit due to shortage of staff.**

Financial Management Action Plan

28. Factoring in the above strengths and weaknesses, the inherent and control risk of the project is rated as substantial. The actions in table 2.1 are agreed to be performed to mitigate the identified risks in the project.

Table 2.1. FM Action Plan

	Action	Due	Responsible

	Action	Due	Responsible
1	Prepare FMM, which will largely follow the government accounting manual and will incorporate budgeting, accounting policies, procedures, chart of accounts internal control issues, financial reporting, fund flow arrangements, and external audit.	Within three months of project effectiveness	MoST
2	Internal audit. Fill the vacant positions of the section and provide training on FM of the project	Immediate	MoST
3	Recruit FM specialist and accountants for the project	Within two months after project effectiveness	MoST
4	Adopt a standalone IBEX for the project and provide training on the system	Within three months after effectiveness	MoST, in consultation with MoFEC
5	External audit for the project • Recruitment of external auditors at early stages of the project • Closing annual financial statement • Ensure that the external auditor has complied with the audit TOR provided to it • Submission of the annual financial audit report • Prepare audit action plan for all findings reported • Prepare status report on action taken on audit report findings • Disclosure of the audit report according to the World Bank's Access to Information policy	a) Within three months of effectiveness b) Three months after the end of the GoE's fiscal year c) Ongoing on yearly basis d) January 7 of every year e) One month after receipt of the audit report f) Two months after the receipt of the audit report g) Annually	MoST
6	Capacity building. Ongoing FM training will be conducted (budget analysis, basic FM, IFR preparation, IBEX, and other themes to be covered)	Ongoing	MoST
7	Budget: • Annual budget for the project will be submitted to the World Bank for 'no objection'. The annual budget will also be proclaimed at the MoST. • Follow the budget calendar to prepare budgets • Prepare detailed budget variance along with IFRs	Every year following the government budget calendar	MoST
8	Submit quarterly IFRs	Quarterly	MoST

FM Covenants and Other Agreements

29. **FM-related covenants include**

(a) maintenance of a satisfactory FM system for the program;

(b) submission of IFRs for the program for each fiscal quarter within 45 days of the end of the quarter by the MoST; and

(c) submission of annual audited financial statements and audit reports within six months of the end of each GoE's fiscal year.

Supervision Plan

30. **The FM risk for the project is rated substantial.** The project will be supervised twice per year. After each supervision, the risks will be measured and recalibrated accordingly. Supervision will be carried out in coordination with other development partners and will include on-site visits, review of IFRs, audit reports, and follow-up on actions during FM meetings.

Disbursements

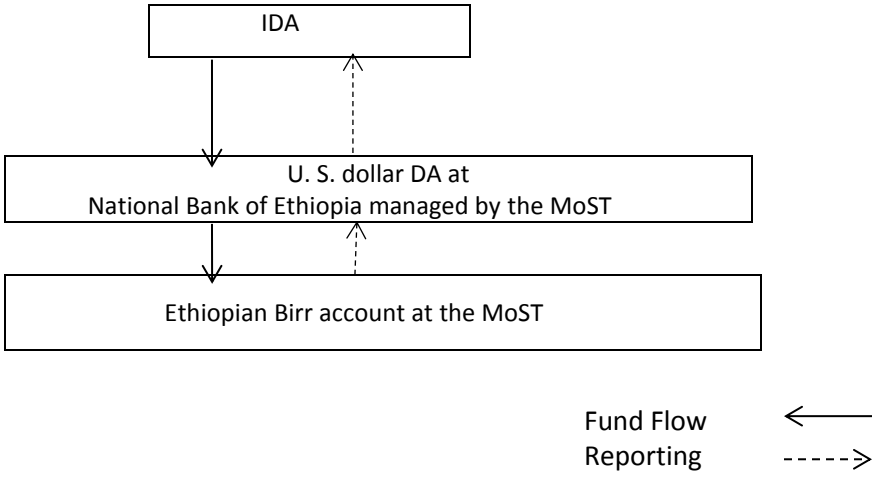
Funds Flow and Disbursement Arrangements

31. **DA and Disbursement Method.** Funds flow into the project and within the project among various institutions is depicted in figure 2.1. IDA funds will be deposited into a separate DA to be opened at the National Bank of Ethiopia by the MoST. The authorized ceiling of the DA would be two quarters forecasted expenditure based on the approved annual work plan and budget. The MoST will also open a local currency account in the name of the project.

32. **Report-based disbursements will be made quarterly and will cover cash requirements for the next six months**, based on the forecasts in the IFRs. Provision will also be made in the Disbursement Letter for the other disbursement methods such as direct payments, special commitments, and reimbursements.

33. The fund flow and report chart is depicted in figure 2.1.

Figure 2.1. Funds Flow



34. **The project may follow one or a combination of the following disbursement methods**: DA, direct payment, reimbursement, and special commitment. The program will continue to use report-based disbursement method with two quarters forecast.

35. **Counterpart contribution.** The Government has been providing funding for NQI development since 2015/2016 to complement the proposed support under this project, with an average annual budget of US$1 million. The ministry plans to continue allocating a similar envelop of resources annually, mostly in kind, until the end of the project (estimated total of US$5,000,000).

Procurement

Applicable Procurement Regulations

36. Procurable items under the project include laboratory equipment and standards, upgrading of laboratory IT infrastructure, IT equipment such as computers, laptops, and computer peripherals, air conditioning systems, standby generators and heavy-duty UPS, utilities and assessment artifacts, office and laboratory furniture, and calibration vehicles. Works contracts under the project include laboratory and office upgrades. There are also various types of consulting assignments, which include TAs, studies, standards development, and so on.

37. **Procurement under the project will be carried out in accordance with the World Bank's Procurement Regulations for IPF Borrowers** - Procurement in Investment Project Financing, Goods, Works, Non-Consulting, and Consulting Services', dated July 1, 2016; 'Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants', revised as of July 1, 2016; and the provisions stipulated in the Legal Agreement.

38. **The regulations are designed to support a modern, fit for purpose procurement framework.** The regulations detail many options to tailor individual procurement processes to meet the operational needs under the project and to deliver the right result. The procurement activities under this project include critical standards and comparator equipment, high-tech IT infrastructure and software, and simple routine goods and services including laboratory equipment, vehicles, IT equipment and software, and consultancy assignments. The regulations are therefore practical under all circumstances to ensure that the correct procurement approach is used to deliver the right results. By designing the right procurement approach, there is far more likelihood of the right bidders participating, better bids being received, and an overall increased chance of achieving value for money.

39. **The regulations are guided by the core procurement principles of value for money, economy, integrity, fit for purpose, efficiency, transparency, and fairness.** The regulations support these core procurement principles by providing many choices for the borrower to design the right approach to market.

40. **Standard Procurement Documents issued by the World Bank to be used by borrowers for IPF-financed projects** which include the General Procurement Notice, Specific Procurement Notice, Request for Expression Of Interest, Request for Proposals, and Request for Bids documents, will be used for works, goods, consulting, and non-consulting services to be procured through international open competitive bids and the Request for Proposals documents will be used for consultants' contracts. In addition, the implementing agency will use Standard Bid Evaluation Forms for procurement of goods and works for goods, works, and non-consulting contracts, and the Sample Form of Evaluation Report for Selection of Consultants.

National Competition

41. **When approaching the national market, as shall be agreed in the PP, the country's own procurement procedures may be used.** The World Bank has reviewed the Standard Procurement Documents issued by the Federal Public Procurement and Property Administration Agency for procurement of goods and works and has found them acceptable with some modifications. National open competitive

bids shall follow the procedure set forth in the Ethiopian Federal Government and Procurement and Property Administration Proclamation No. 649/2009 and Federal Public Procurement Directive issued by the Ministry of Finance and Economic Development dated June 10, 2010, provided that such procedure shall be subject to the following requirements as provided in section 5 paragraph 5.4 of the Procurement Regulations for IPF Borrowers (July 1, 2016):

(a) open advertising of the procurement opportunity at the national level;

(b) the procurement is open to eligible firms from any country;

(c) the request for bids/request for proposals document shall require that bidders/proposers submitting bids/proposals present a signed acceptance at the time of bidding, to be incorporated in any resulting contracts, confirming application of, and compliance with, the World Bank's Anticorruption Guidelines, including without limitation the World Bank's right to sanction and the World Bank's inspection and audit rights;

(d) contracts with an appropriate allocation of responsibilities, risks, and liabilities;

(e) publication of contract award information;

(f) rights for the World Bank to review procurement documentation and activities;

(g) an effective complaints handling mechanism; and

(h) maintenance of records of the procurement process.

42. **Other national procurement arrangements (other than national open competitive procurement) that may be applied by the borrower** (such as limited/restricted competitive bidding, request for quotation/shopping, direct contracting), shall be consistent with the World Bank's core procurement principles and ensure that the World Bank's Anticorruption Guidelines and Sanctions Framework and contractual remedies set out in its Legal Agreement apply.

Procurement Oversight and Monitoring Arrangements

43. **The World Bank exercises its procurement oversight through a risk-based approach comprising prior and post reviews, as appropriate.** The World Bank sets mandatory thresholds for prior review for the proposed project based on procurement risk levels of the project as provided in table 2.2. Based on the risk level of the project the World Bank shall agree with the Borrower that procurement above the applicable thresholds as provided in the table shall be subject to prior review and shall be included in the PP. Such procurement shall use the World Bank's Standard Procurement Documents. For contracts to be awarded using Direct Selection, the borrower shall submit to the World Bank, for its review and 'no objection', a sufficiently detailed justification, before inviting the firm to negotiations. The World Bank shall carry out post reviews of procurement processes undertaken by the borrower to determine whether they comply with the requirements of the Legal Agreement.

44. **Based on the initial risk rating, the borrower shall seek the World Bank's prior review for equivalent value of contracts as detailed in table 2.2.**

Table 2.2. Thresholds for Procurement Approaches and Methods (US$, millions)

Category	Prior Review US$, millions)				
		Open	Open	RFQ	Short List of National Consultants

		International	National		Consulting Services	Engineering and Construction Supervision
Works	≥ 5.0	≥ 7.0	< 7.0	≤ 0.2	n.a.	n.a.
Goods, IT, and non-consulting services	≥ 1.5	≥ 1.0	< 1.0	≤ 0.1	n.a.	n.a.
Consultants (Firms)	≥ 0.5	n.a.	n.a.	n.a.	0.2	0.3
Individual Consultants	≥ 0.2	n.a.	n.a.	n.a.	n.a.	n.a.

Assessment of the Agency's Capacity to Implement Procurement

45. **A procurement capacity assessment of the implementing agency that is the MoST was carried out using Procurement Risk Assessment Management System questionnaires.** The assessment reviewed the organizational structure for implementing the proposed National Quality Infrastructure Development Project, and the staff responsible for procurement in the implementing agency. The assessment also looked into the legal aspects and procurement practices, procurement cycle management, organization and functions, record keeping, planning, and the procurement environment.

46. **The MoST is a new World Bank client.** It has no prior experience of implementing World Bank-financed projects. The ministry has limited experience in implementing projects financed by other development partners. The MoST's Procurement and Property Administration Directorate has two procurement officers who have limited experience in public procurement. They have no experience in procurement under World Bank-financed projects. Thus, the MoST has limited previous experience and track record in undertaking procurement management of activities similar to the proposed project. However, it has limited skills and experiences in preparing different procurement documents, evaluation reports, drafting contract agreements, and managing contracts. From a technical aspect, it has some experience in the inspection and testing of procured items on delivery.

47. **The procurement capacity assessment has revealed a number of challenges in the overall procurement capacity of the implementing agency.** The lack of qualified and procurement proficient procurement staff shall be a major challenge in the implementing agency. The available procurement staff in the MoST's Procurement and Property Administration Directorate are not proficient in the procurement procedures of the World Bank. Other key issues and risks for implementation of procurement under the proposed project include lack of adequate capacity for procurement record keeping; lack of skill development schemes for procurement personnel; the level of pay scale for procurement personnel, which is too low to attract qualified procurement personnel; lack of systematic procurement planning and follow-up in procurement; lack of experience in contract administration and management; and the inadequacy of the procurement environment for implementation of projects.

48. **In general, there is a gap in the availability of resources and track records to undertake successful procurement planning, processes, bids/proposal evaluations, supplier selections, and contract awards.** It is evident, from the outset, that additional and better skilled key staff will be required in the MoST's function responsible for NQI development. The function needs to have technical support during early stages of project implementation. The MoST has some experience and technical capability in designing and preparing specifications for some supplies like laboratory equipment for quality tests, chemicals, and standardization equipment, which would be financed under the proposed project.

49. **Key issues and associated mitigation measures have been discussed and agreed as follows**:

A. Action Plan to Mitigate Procurement Capacity Risks

Table 2.3. Summary of Findings and Actions (Risk Mitigation Matrix)

I/No	Issue/Risk	Severity and Impact on Project	Mitigation Measures	Responsible and Time Frame (all actions to be taken within the first three months of the loan approval)
1	FPD staff has no prior experience in working on World Bank-financed projects procurement	High	Induction of familiarization training on World Bank procurement procedures and documents; TA consultant (Independent Consultant) to be assigned during early implementation stage	World Bank team; FPD/client
2	Low quality of PP and inadequate implementation monitoring and tracking	High	Provision of training on PP preparation and its implementation monitoring; hands-on support through use of TA to support the client	World Bank team; FPD/client
3	Inadequate record management system	Substantial	Keep records in safe and secured place without exposure to unauthorized personnel; Establish record retrieving system	FPD/client
4	Delay in TORs, specifications, and inadequately prepared bidding documents/Request for Proposals	Substantial	Develop accountability framework with defined business standard, and engage beneficiary technical departments as early as possible; Involve qualified technical experts (consultants) to support preparation of technical specifications and functional requirements of bidding documents, and	FPD/client

			TORs	
5	Staff of FPD have no experience in selection of consultants	High	Procurement consultant to be recruited; training to be provided	FPD/client; World Bank team
6	Inadequate contract management practice	Moderate	Training to be provided on basics of contracts administration to the user departments or institutions to be involved in the full cycle of procurement, including contracts management	World Bank team; FPD/client
7	Supply/market risk of strategic security items	Moderate	Preferred arrangement for lower value but higher risk contracts (strategic security) will be agreed in the PP	Client with World Bank team

50. **Procurement Plan.** The borrower has prepared the PPSD which formed the basis for a PP for the first 18 months of the project life and which also provides the basis for the procurement methods. This plan is agreed between the borrower and the project team and will be available at the PIU at the MoST. It will also be available in the project's database and in the World Bank's external website. The PP will be updated in agreement with the project team annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

Procurement Arrangement and Value for Money

51. **The project intervention is aimed at strengthening the technical and physical facilities of the NQI institutions which include Ethiopian Standards Agency (ESA), Ethiopian Conformity Assessment Enterprise (ECAE), Ethiopian National Accreditation Office (ENAO), and National Metrology Institute of Ethiopia (NMIE).** NQI institutions are members of Regional and International Standards organizations. In order to be recognized by such regulatory bodies internationally and for their assessment and accreditation to be recognized worldwide they are expected to maintain high quality specialized laboratory equipment and use high quality industrial chemicals and supplies. Acquisition of such quality equipment, chemicals and supplies shall support the NQIs to improve the delivery of quality assurances services to enterprises in targeted sectors which shall strengthen the competitiveness of the selected industries in global value chains.

52. **The procurement objective of the project is to procure the best quality commercially available instruments for the top calibration and testing laboratories in Ethiopia** to enable them render improved delivery of quality assurance services and have adequate capacity and competent expertise that is internationally recognized and accepted. In trying to attain these objectives the overall procurement objective of attaining value for money through integrity and sustainable development shall also be upheld.

53. **The procurement arrangements provided under the PPSD for this project are aimed at meeting this objective of attaining value for money in the procurement of goods, works and services under the project.** Although the investment intervention under the project provides for goods, works and services the most critical input to be provided under the project is the procurement of standards, comparators and specialized equipment required for the top calibration and testing laboratories of NMIE and ECAE and also

the procurement of networking equipment for the laboratories of the NQI institutions. In order to attain value for money in the procurement of these instruments the procurement arrangements are made in such a way that the NQI institutions achieve the best commercially available instruments at reasonable prices. The procurement arrangements include open international bid through RFB selection method. In order to ensure that the institutions shall acquire quality equipment a selection method of rated criteria is agreed. Thus through the procurement arrangement of Request for Bid and a market approach of international open bid and a selection method of rated criteria the NQI institutions would be able to attain value for money in the procurement of standards, comparators, specialized laboratory equipment and laboratory networking of the NQI institutions.

Procurement Risk Analysis

54. **Measures are put in place to mitigate the risks associated with the procurement of goods, works and services.** Although the packages of the contracts for the critical laboratory equipment and networking equipment are of relatively high value and instrumentation markets are generally highly competitive, there is a risk for a limited number of bidders to show up for the bids under consideration as the market for the different items are distinct. In view of this the MoST shall put in place mitigation measures such as market engagement through suppliers' workshop and through bid conference and other mechanisms of risk mitigation measures.

55. **The MoST and the NQI institutions have limited experience in the procurement of standards, comparators, specialized laboratory equipment and networking equipment for their calibration and testing laboratories.** However, the volume and scope of procurement carried out in the past has also been very limited. In view of this the writing of good specifications and the risk of failed bids because of inadequate specifications is a risk. The MoST and the NQI institutions shall assess existing capacity and as necessary shall deploy a TA who can provide expert advice in the writing of specifications, rated criteria determination and in the technical evaluation of bids.

56. **The MoST, which shall serve as the focal organization for the implementation of the project, has a procurement and property management directorate which is responsible for the procurement of goods and services required by the various directorates of the Ministry.** However, the procurement staff in the Directorate and the Ministry itself do not have previous experience in the execution of procurement activities under Bank financed projects. Experience and knowledge in the area of contract management is also limited. Thus to handle the procurement processing and contract management activities under the project which are critical for the successful attainment of the development objectives of the project the MoST through the PIU shall endeavor to recruit and deploy procurement proficient and experienced contract management staff for the project. In order to address the risk related with capacity challenges of the MoST and the NQI institutions, procurement and related staff shall also be provided with quality training on WB procurement procedures.

Procurement Arrangements:

57. **The procurement arrangements for the high or substantial risk contracts within the project are provided in the table below.** The procurement plan for the project is agreed with the client and is provided in the PPSD.

Table 2.4. Procurement Arrangements for the Substantial Risk Contracts

Contract Title, Description and Category	Estimated Cost (US$) and Risk rating	Bank Oversight	Procurement Approach / Competition	Selection Methods	Evaluation Method
Procurement of Standards, comparators and tools (Goods)	7,112,000 - Substantial	Prior	International / Open	RFB	Rated Criteria
Procurement of Laboratory Equipment for Food and Agriculture Products testing (Goods)	4,934,000 Substantial	Prior	International / Open	RFB	Rated Criteria
Procurement of Laboratory Equipment for Textile and Leather Product Testing (Goods)	3,813,000 Substantial	Prior	International / Open	RFB	Rated Criteria

Environmental and Social (including safeguards)

58. **The proposed project is expected to have a positive social impact.** It will enable Ethiopian consumers to buy safe and standard compliant consumable products, and will improve the awareness level of consumers on national and international standards and quality.

59. **The project is not expected to have any land acquisition or physical displacement and hence the involuntary resettlement policy is not triggered.** This is because all project activities are site specific, and will occur on existing structures and do not require land, and therefore no negative impacts on livelihoods or restriction of access and disturbances that may lead to resettlement or physical relocation are foreseen. Minor physical works to rehabilitate lab facilities, office buildings, landscaping, and fencing of the structures may be required but these are very much contained within the institution compounds and will not lead to physical displacement or any form of resettlement and livelihood disturbances. However, due to the specialized nature of the equipment and their potential environmental impact in terms of waste, radiation, and so on, the project triggers the safeguard policy on environmental assessments (OP/BP 4.01) and is classified as Category B. To preclude such environmental impacts and any social impacts that might occur during the rehabilitation of lab facilities and office buildings, the Government prepared and consulted upon the ESMF. The ESMF was disclosed in the country (at the MoST's web page) and at the same time at the World Bank's InfoShop on December 16, 2016. If any activities included in any annual work plan require the preparation of an environmental and social assessment or environmental management plan, the Government shall ensure that no such activities will commence unless the prepared plan is approved by the relevant agency. According to Ethiopia's Environmental Impact Assessment Proclamation No. 299/2002, AAEPA is responsible for approving safeguards instruments for the NQI project activities. The World Bank safeguards team will review and provide comments on draft site-specific instruments, and monitor safeguards compliance, among others. The ESMF will guide the implementation agency on how to address

any environmental and social impacts of project investments. The social and environment team reviewed the ESMF to ensure that all potential social and environmental risks including occupational health and safety issues and avoidance of child labor are adequately covered. Stakeholder consultations were held on the ESMF and issues that the stakeholders raise were included in the framework.

60. **Gender and citizen engagement.** The GoE has a strong commitment to gender equality, which is rooted in national policies, as well as in the signing of international and regional treaties and protocols on women's rights. The Ministry of Women and Children Affairs, contributes to policy development and supports gender mainstreaming in all government ministries and bureaus. To date, gender units have been established in all line ministries including the MoST. However, active participation of women is a challenge due to existing social and economic barriers and women's limited roles in the decision-making processes in their communities. To provide equitable benefits and opportunities, the client has developed a draft GAP that identifies gender mainstreaming issues and gender mainstreaming checklists for the project interventions. While the detailed gender-specific interventions will be based on the action plan, the project intends to support gender impact analysis of existing and upcoming policies and strategies and gender responsiveness of the infrastructure and facilities of the NQI institutions, include gender balance criteria when selecting candidates for capacity-building activities as much as possible, and ensure that media and awareness creation campaigns are designed in a more inclusive manner. In particular, given the general indication that women in Ethiopia are not active participants in the quality and standards ecosystem, the project will introduce beneficiary interventions that will specifically target women to increase their participation and engagement. This will be tracked as part of the citizen engagement indicator with specific sub targets focusing on women. Annex 7 provides further details on gender and citizen engagement.

61. **The project will ensure active participation of women in the PIU and the key stakeholders.** There will be TA for the MoST and the project stakeholders to be able to (a) monitor the implementation of the GAP; (b) conduct an impact analysis study on the existing and upcoming policy and strategies and gender responsiveness of the infrastructure and facilities of the NQI institutions; (c) active participation of women in consumer education and awareness; (d) provide gender training for the enterprises and implementing institutions including the MoST staff to ensure an understanding of women's issues; and (e) collect gender-disaggregated information as part of the project's results tracking and monitoring system. Annex 7 shows the gender considerations planned under the project. The gender directorate in the MoST and the gender units in NQIs will coordinate and monitor the implementation of GAP.

62. **Citizens' engagement**. As the Project will support interventions to engage the private sector and consumers, the project management will implement a feedback mechanism from the PPD forums and carry out surveys with users and consumers to measure the effectiveness and impacts of the project interventions toward the achievement of the PDO. A media and community awareness campaign will be carried out to develop and increase the 'quality assurance culture' in the country. A specific indicator is included as part of the results framework to track the feedback from consumers and private sector enterprises.

63. **The project will further facilitate citizen's empowerment by conducting citizen engagement survey periodically** and post implementation (after all subprojects are carried out) to evaluate the impact on the ground. The surveys will use gender-disaggregated data to measure and verify citizens' perceptions of the project's activities and will serve as a tool to define gender or social issues and recommendations for further improvements in the sector.

64. **Grievance Redress Mechanism.** The project will set up a GRM for people to report concerns or complaints, if they feel that they have been unfairly treated or are affected by any of the project activities. The grievance committee, at the various levels, will address all complaints of the project and resolve grievances promptly during and after the implementation of the project. Citizen engagement surveys will be conducted to evaluate the impact on vulnerable groups among women. The surveys will use gender-disaggregated data to determine and verify citizen's perceptions of the project's activities and will serve as a tool to define gender or social issues.

65. **The institutional arrangements for safeguards implementation** will rely and use the existing government structures and the newly proposed (a) function for NQI development; (b) PIC, comprising members from the key project stakeholders such as Cleaner Production Center (CPC), ESA, ENAO, NMIE, ECAE, Food, Medicine and Health Care Administration and Control Authority of Ethiopia, the MoT, and the MoI; and (c) the PIU. Based on their mandates and responsibilities, they will address and manage safeguards issues and risks using the project safeguards instrument (ESMF) prepared in line with the safeguards requirements of the GoE and the World Bank. Accordingly, the main roles and responsibilities of these stakeholders are described below.

66. **MoST and its function responsible for NQI development.** The MoST will be leading and coordinating the overall implementation of the project, including environmental and social safeguards due diligence, in the four NQI institutions (ESA, ENAO, ECAE, and NMIE) and those involved in the NQI system. It will also provide strategic guidance on the project management and implementation to the PIU. Further, the two safeguards focal persons of the MoST will continue to provide support to the Project until Safeguards Specialist is recruited. The Safeguards Specialist will be responsible for spearheading the implementation of the ESMF. This person will also be responsible and accountable for social safeguards due diligence of the project. Specifically, the Safeguards Specialist will be responsible for providing support and following up on site specific safeguards instruments preparation, implementation, and monitoring according to the ESMF and the safeguards requirements of both the GoE and the World Bank. Also, the Safeguards Specialist will be responsible for ensuring that the provisions of the ESMF and site specific safeguards instruments (such as ESMP/ESIA) are duly incorporated in work contracts so that contractors are held accountable for their responsibilities. In collaboration with AAEPA and the World Bank, the Safeguards Specialist will also provide technical support and training on safeguards implementation, GRM, citizens' engagement, documentation, reporting, and monitoring of safeguards performance to the NQI institutions.

67. **PIU.** A PIU will also be hosted within the NQI directorate under the MoST. The PIU will be responsible for following up on the day-to-day activities of the project, including safeguards issues, based on the joint planning and budget formulation to be prepared by the four NQI institutions. Further, the PIU will closely work with all concerned stakeholders, including the NQI institutions, private sector players, and regulatory agencies, to achieve the objectives of the project in an environmentally sound and socially acceptable manner according to the ESMF.

68. **PIC.** The PIC will ensure smooth implementation and coordination of the project, including safeguards compliance with the ESMF, among the NQI institutions. To this effect, it will review progress on, among others, implementation of the safeguards work plan and budget, safeguards compliance of project activities with the agreed ESMF, and safeguards issues which might require high-level interventions and support by the MoST and those concerned. It will document all reports and minutes of meetings and share them with the MoST.

69. **NQI Institutions (ESA, ENAO, ECAE, and NMIE).** They are the main responsible bodies that will prepare and submit site-specific safeguards instruments for issuance of environmental clearance letters by AAEPA, and implement mitigation measures identified and planned in the approved safeguards instruments. They are also responsible for preparation and submission of monthly safeguards implementation status reports to the CPC and those concerned.

70. **CPC.** The CPC Directorate of ESA will oversee whether the project is implemented in compliance with the ESMF and site-specific safeguards instruments. It will also liaise with the labor unions within the NQI institutions to ensure proper management and implementation of site-specific safeguards instruments and advise the MoST on actions that need to be taken. Based on monthly safeguards implementation status reports submitted by the NQI institutions and on-site inspections, it will prepare and submit a regular report to the PIC and PIU as well.

71. **AAEPA.** AAEPA is responsible for reviewing and providing comments on site-specific safeguards instruments prepared for the NQI project activities, and issuing environmental clearance letters with or without conditions. Jointly with the PIU and the two safeguards focal persons of MoST, it will provide capacity building, including safeguards training and awareness, to the NQI institutions so as to strengthen social and environmental impact assessments for project activities and their implementation, as well as to ensure adequate monitoring. AAEPA will also assess the safeguards compliance of approved project activities according to the approved site-specific safeguards instruments and the safeguards requirements of the GoE in general and the Addis Ababa City Administration in particular.

72. **ERPA.** ERPA is mandated to oversee all issues related with radiation and regulate the procurement and utilization of radiation-emitting equipment. Accordingly, ERPA will provide technical support, including training, to the NQI institutions that use radiation to provide effective and efficient quality assurance services for selected priority sectors. It will also conduct periodic radiation compliance monitoring and submit its report to those concerned, including the MoST.

73. **Lastly, as part of Component 3, a functional safeguards system, including citizens' engagement; GRM; safeguards risks management steps; and safeguards monitoring, reporting and documentation will be established and sustained beyond the project period.** The GoE plans to allocate about US$1.7 million to build the capacity of NQI institutions and address environmental and social safeguards issues and impacts related with the Project.

M&E

74. **The project includes a robust M&E framework to enable decision makers to track performance, adjust implementation as needed, and demonstrate the impact of activities financed.** The PDO level and intermediate results indicators and targets for the project are specified in the results framework (section 7), which will serve as the basis for M&E of progress throughout implementation.

75. **The PIU will be responsible for providing—after receiving requisite information from the implementing agencies—semiannual progress reports to the World Bank**, which will include a section on progress in the performance of the results framework. An M&E specialist within the PIU will have primary responsibility for establishing and managing the M&E system including data collection, compilation, and reporting from various implementing agencies. The M&E specialist will coordinate closely with the project coordinator on the reporting for monitoring of the PDO and other project indicators. The PIU, with World

Bank support, will also be responsible for analyzing results data as part of the project's communication strategy with key stakeholders on a periodic basis. Other staff of the PIU, MoST, and implementing agencies will be trained in the project M&E program as needed.

76. **The potential sustainability of the project activities beyond its implementation is high given the strong level of the Government's commitment.** The GoE considers the project activities to be of significant importance for the achievement of its industrialization agenda in line with GTP II. The Government has committed itself to a significant array of programs aimed at making the export sector more competitive in international markets. The Ministry has established a dedicated Unit to oversee the development of NQI in Ethiopia, which will also be the oversight unit for the Project. This is expected to ensure continuity and sustainability of project interventions. As such, the impact of the support provided to government agencies is expected to continue well beyond the life of the project. In addition, the proposed project will also provide incentives for greater participation of the private sector and other relevant stakeholders during project implementation and after its closure through their prolonged involvement in the quality management process.

77. **In addition, the project is anchored within the framework of the World Bank Group's current engagements on the industrialization agenda to achieve the Government's strategic objective of becoming 'the light manufacturing hub of Africa by 2025'.** Together with other ongoing projects, the project will contribute to the GoE's expected outcome of improved quality systems that contributes to the achievement of accelerated and sustained growth in a long term. The Competitiveness and Job Creation Project (US$250 million), which became effective in August 2014, supports the Industrial Parks Development Program. The GoE is developing industrial parks as an important tool to drive investment, improve the business environment, facilitate linkages between foreign direct investment and SMEs, and advance the development of light manufacturing industries. The SME Finance project (US$200 million), approved on May 17, 2016, aims to address the access to finance constraint, particularly faced by SMEs, as well as business management skills that are hindering the growth and competitiveness of this specific target segment. The Investment Climate Advisory Program (US$10 million) is supporting the GoE to address key binding constraints and is currently focusing on the streamlining and simplification of business licensing and registration, trade logistics, investment policy and promotion, and simplification of the tax administration system. As a follow-up of the work done on improving the trade logistics system, the World Bank Group is currently preparing the Trade Logistic Project (US$130 million) to support the improvement of the trade infrastructure with the aim of reducing trade logistics cost and transit time in Ethiopia. Furthermore, the World Bank Group currently provides TA on NQI development, which supports the development of NQI development strategy for the mid- and long-term in Ethiopia.

Role of Partners (if applicable)

78. **The project will liaise with development partners for coordination and collaboration to provide comprehensive support to the Government.** The collaboration partners include the EU, GIZ, PTB, and UNIDO, given their past and current engagement in supporting the NQI in Ethiopia. GIZ, together with the PTB has been the implementing partner for donor projects supporting NQI development until March 2016. UNIDO, through its contribution to the DTIS and its program for country partnerships, is currently planning to provide TA to the Government, in particular the MoT to support trade facilitation in quality regulatory management in Ethiopia, including compliance with international quality standards as they are laid down in the agreements of the SPS and TBT of the WTO. Furthermore, the supporting activities for NMIE have been

consulted with the PTB, which has been providing training to NMIE staff and lab equipment on several upgraded parameters, including through its current project, Enhancement of Quality Infrastructure Service in the Agriculture and Food Sector. The development partners coordinate through the Private Sector Development and Trade Sector Working Group.

ANNEX 3: IMPLEMENTATION SUPPORT PLAN

Ethiopia: National Quality Infrastructure Development Project

Strategy and Approach for Implementation Support

1. The implementation support strategy for the proposed project will include regular dialogue with the Government, joint review of project implementation and regular exercise of fiduciary oversight throughout implementation.

(a) **Regular dialogue with the Government, in particular the MoST,** will facilitate early identification of problems and obstacles that could delay implementation. It will enable the timely provision of technical advice and support to remove such obstacles. This will help identify issues as they emerge and address them through advice and support in an expeditious manner, without waiting for joint reviews.

(b) **Joint reviews** will take place twice a year, aimed at examining the progress in achieving agreed targets and results. The World Bank's task team will participate in the reviews with representatives of the GoE. During each review, the type of implementation support that is needed will be identified, followed by joint decisions on necessary assistance.

(c) **Fiduciary oversight** will enable the World Bank to fulfill its fiduciary obligations and ensure compliance with its fiduciary standards through the ongoing supervision of the project's FM and procurement arrangements and results.

(i) **FM.** The World Bank will supervise the project's FM arrangements in the following ways: review the project's semiannual IFRs as well as the project's annual audited financial statements and auditor's Management Letters and remedial actions recommended in the auditor's Management Letters; and during the World Bank's on-site missions, review the following key areas:

- Project accounting and internal control systems
- Budgeting and financial planning arrangements
- Disbursement arrangements and financial flows, including counterpart funds, as applicable
- Any incidents of corrupt practices involving project resources. As required, a World Bank-accredited FM specialist will participate in the implementation support and supervision process.

(ii) **Oversight on procurement** will be provided through prior reviews in accordance with the procurement thresholds. Supervision will be carried out twice a year, both through desk and on-site reviews of procurement arrangements and results, including post review of contracts selected in a random manner. As needed, on-site training on procurement may be provided upon request to the PIU.

Implementation Support Plan and Resource Requirements

2. **Key World Bank team members** involved in implementation support will be based in Washington, DC and in the Ethiopia country office to ensure timely, efficient, and effective implementation support. The core team is expected to conduct four formal implementation support missions during the first year of implementation, including field visits. After the first year, the frequency of the implementation support missions is expected to be reduced to two to three missions a year and maintained throughout the project. Detailed inputs from the World Bank team are outlined in the following paragraphs.

(a) **Technical inputs.** (i) Technical experts and professionals to support the elaboration of TORs (consultant and non-consultant services); (ii) field visits to follow implementation of the planned operational enhancements; (iii) TA to different activities in components; and (iv) the organization of technical workshops to share best practices and support the evaluation agenda.

(b) **Fiduciary requirements**. During preparation, the World Bank team identified capacity-building needs to strengthen FM capacity and improve procurement management in the context of World Bank operations. Support will be provided from the World Bank office in Pristina. Formal implementation support of FM reports and procurement will be carried out semiannually, while prior and post review will be carried out for contracts specified in the PP as required.

(c) **Safeguards.** The World Bank team will closely monitor adherence to safeguards requirements.

3. The project will require implementation support in the first year as detailed in table 3.1. The Implementation Support Plan will be revised after the first year of implementation.

Table 3.1. Implementation Support Plan

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Senior private sector specialist (TTL)	16	0	TTL oversees entire operation and supervises technical and fiduciary aspects.
Private sector specialist (TTL)	10	3	TTL oversees entire operation and supervises technical and fiduciary aspects.
Quality infrastructure expert	16	3	Quality infrastructure expert will provide guidance for the implementation of NQI reforms.
PPD specialist	3	1	PPD specialist will provide support in Ethiopia to the implementation of Component 2 (PPD).
M&E expert	3	1	Support the design of the M&E.
Senior procurement specialist	5	0	Procurement specialist will support the PIU on related issues.
FM specialist	3	0	FM specialist will support the PIU on related issues.
Safeguards specialist	3	0	Safeguards specialist will support the PIU on related issues.

Note: TTL = Task Team Leader

ANNEX 4: ADDITIONAL SECTORAL AND INSTITUTIONAL CONTEXT

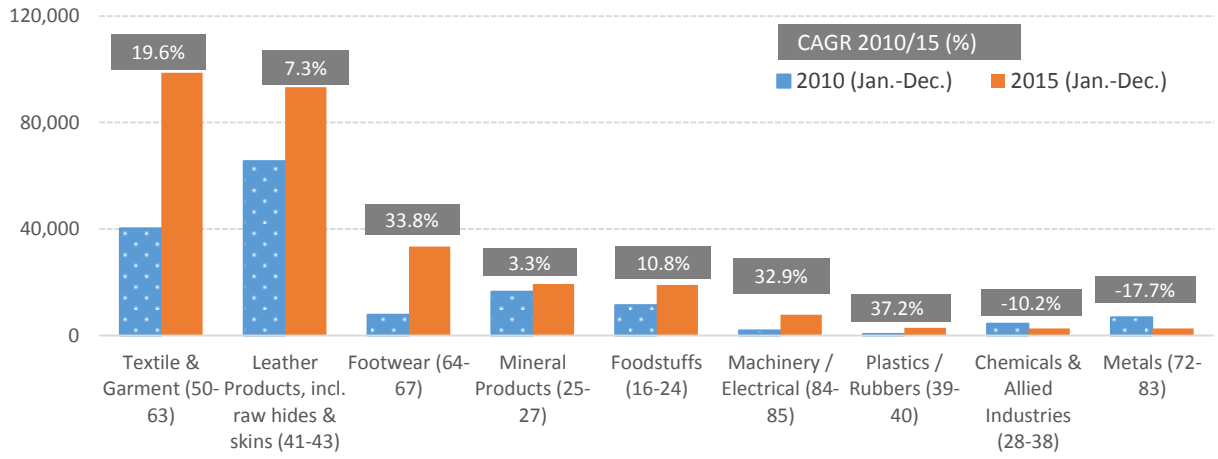
Ethiopia: National Quality Infrastructure Development Project

I. Manufacturing Exports in Ethiopia

1. **Increasing manufacturing exports is among the major targets of the GoE in its second phase of GTP II.** It sets out an ambitious vision that seeks to turn Ethiopia into a middle-income country by 2025. Emphasis is given to the development of export-oriented light manufacturing, in particular, labor-intensive industries to take advantage of the country's relative abundance of labor, low wages, and raw materials. The GoE's priority industries include textiles and garments, leather, footwear, and other leather products, agro-processing products, and others. Though it is relatively small in export share currently, over the last five years, these sectors showed potential with the increase of the CAGR at 10.8 percent (food products), 7.3 percent (leather and leather products), 19.6 percent (textiles and garments), and 33.8 percent (footwear), respectively. See figure 4.1 and Figure 4.2.

Figure 4.1. Ethiopia's Merchandise Export Share in 2015 (based on 2-digit Harmonized System code)

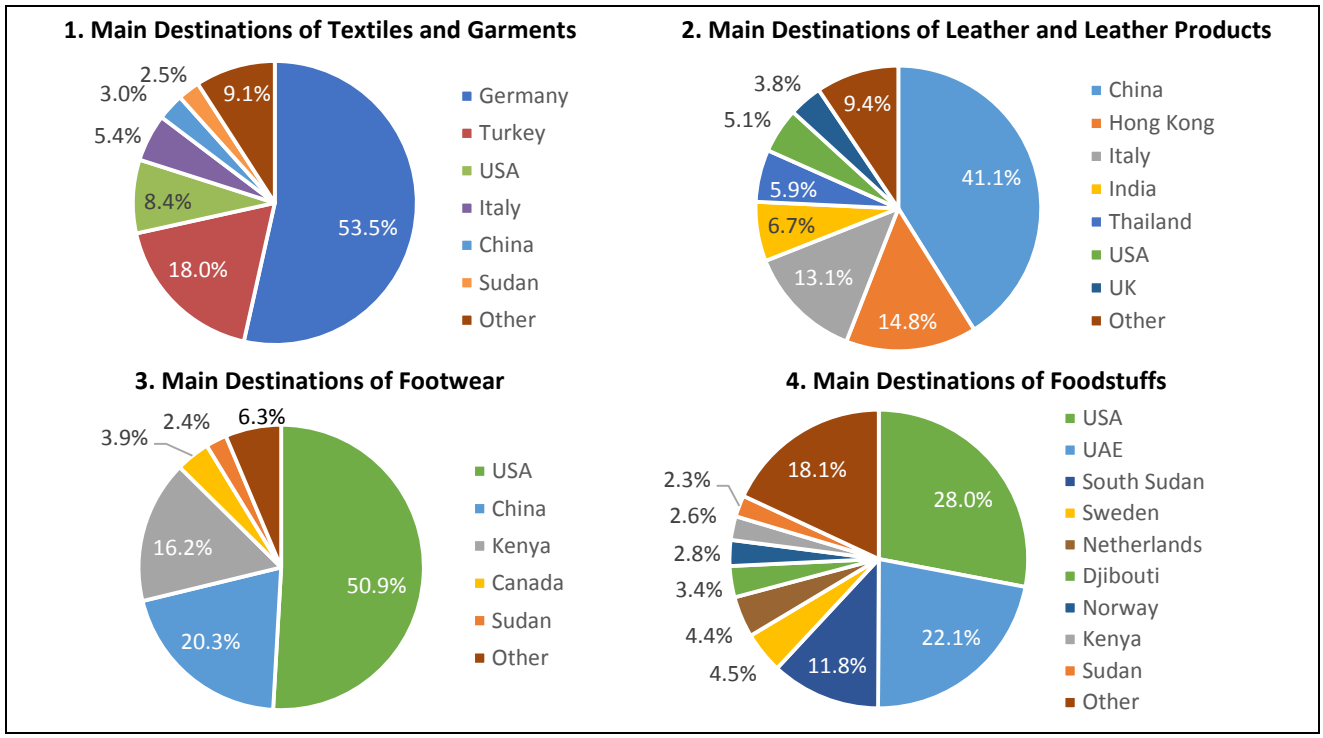
Figure 4.2. Export Value of Selected Manufacturing (US$, thousands) and CAGR 2010–2015 (based on 2-digit Harmonized System code)



II. Importance of Quality Assurance for Selected Manufacturing Industries in Ethiopia

2. **Given the emphasis on the growth of light manufacturing, the support for Ethiopian firms to meet global standards and quality practices is more crucial than ever.** The manufacturing industry depends on standards and quality practices to a much greater extent than do primary sectors such as agriculture. This is not only because manufacturing by its nature involves more technical requirements, but also because it operates within integrated GVCs. Fostering adherence to international product standards and certification regimes would help exporters ensure and maintain quality assurance of the products (World Bank Group 2014, The Third Ethiopia Economic Update). Many of the major export destinations of existing Ethiopian light manufacturing industries are developed markets, such as the United States, EU, and Asia, where higher standards and quality practices are required than those applied domestically (figure 4.3).

Figure 4.3. Export Destinations of Selected Industries in 2015



Source: Ethiopian Revenues and Customs Authority.

3. **The system to assess the quality of material inputs (imported or locally produced) is critical.** Product quality at the export stage highly relies on the quality of raw material inputs, such as cotton, raw agricultural food products, raw hides and skins, textile yarn, fabrics, and leather.[20] Though primarily focused on agricultural commodities, Ethiopian products face rejection in the markets in developed countries mainly due to pesticide residue, mycotoxin content, insufficient hygienic condition, and

[20] Light Manufacturing in Africa (World Bank Group 2012). Several constraints to competitiveness identified in the report include input industries; land; finance; entrepreneurial skills; worker skills; and trade logistics.

inappropriate labelling.[21] For instance, from 2010 to 2015, there were 19 notifications of rejections of products (fruits and vegetables, herbs and spices, nuts and nut products, and cereals) from destination markets in Europe.[22] To a large extent, these rejections concern agricultural products, but they are also indicative of quality problems in other sectors, in particular light manufacturing. While the reasons for rejection vary from market to market and have to be addressed primarily by reforms at the sectoral level, such reforms need to take place in the framework of a broader quality assurance system for testing, inspection, and certification of product quality.

4. **However, the lack of adequate NQI[23] has severely constrained the ability of Ethiopian firms to produce goods and services that meet the quality specifications of global markets.** A well-developed NQI ensures access to international standards, guarantees reliable measurements of equipment, and sets up a system that will allow accreditation of their testing, inspection, and certification facilities in such a way that the results of these facilities are internationally accepted. The current NQI system in Ethiopia is not fully functional.

5. **The draft 2016 DTIS also points out a failure to meet the standards and quality as one of the major issues prevailing in most Ethiopian manufacturing industries.** For example, Ethiopia's export revenue from hides, skins, and leather in 2015 decreased by 1.3 percent compared to that of 2014, although the export quantity increased by 8.8 percent for the same period. This shows a decreased unit price of US$2.13 per kg. According to the Leather Industry Development Institute, poor quality of raw materials coupled with the global market slump were the main causes behind the revenue reduction. In addition, a study on the national cost of quality in Ethiopia's export and import products conducted by Addis Ababa University (2015) shows that about US$272 million is lost every year due to quality compliance issues.[24] For Ethiopia's manufacturing sector, especially in the prioritized export-led manufacturing, upgrading quality standards is a major challenge in their efforts to integrate into international trade.

III. Weakness that Hinders Promoting and Strengthening the Use of NQI Services among the Private Sector

6. **Despite efforts by the Government, Ethiopia's NQI institutions have not yet developed their full potential to meet the emerging demands of the manufacturing industry.** With support from development partners,[25] the Government was able to lay the foundation for setting up the NQI system, in accordance with international good practices. Some of the core services and functions established include international certificates and products and services standards, progress toward the MRA of ILAC on the limited scopes of ENAO and NMIE's industrial laboratories which have been internationally accredited by the German accreditation body that provides calibration services to laboratories, and so on. The NQI is at the very early stages of development and falls short of meeting the increasing demand from industries and suffers from weaknesses that hinder promoting and strengthening the use of NQI services among the private sector,

[21] DRAFT-DTIS of Ethiopia, UNCTAD, January 2016.
[22] European Commission's Rapid Alert System for Food and Feed (RASFF) - *https://webgate.ec.europa.eu/rasff-window/portal/?event=SearchForm&cleanSearch=1*
[23] NQI is defined as an institutional framework that establishes and implements a number of interlinked activities among standardization, accreditation, metrology, and conformity assessment (testing, inspection, and certification).
[24] Several studies identify that significant costs incurred by each Ethiopian exporter are compensation claims by importers related to weight loss, insufficient hygienic condition, inappropriate labelling, and so on.
[25] A TA provided by GIZ and the PTB funded through the German Ministry for Economic Cooperation and Development and EU during 2006 —March 2016.

particularly exporters as tools to increase their competitiveness. The main weaknesses in the system are explained in the following paragraphs.

7. **Capacity of service delivery of existing NQI institutions.** Industries require up-to-date information on products and services as they pertain to the markets. These requirements are set by governments, market preferences, major retail organizations, or any combination of these. Also, these requirements change quite frequently and strong NQI institutions are critical to respond to the changes. Currently, there are key areas and parameters for which no calibration and testing are available and certificates that none of these institutions is accredited to provide. Technical support and investments for the NQI institutions are required to address the lack of capacity in human resources, facilities to ensure accurate measurement, well-equipped laboratories to meet demands of industries, as well as scientific and technical personnel with specialized training and research experience.

8. **Lack of consultation on NQI service development with industries.** In spite of the fact that industry involvement is a precondition for an efficient NQI, currently there is no regular and fully operational mechanism for regulatory agencies and NQI institutions to acquire industries' feedback and requests on NQI services. Understanding industries' demands is critical to create demand-driven NQI institutions with sustainable services.

9. **Low level of awareness on the NQI services among the private sector and consumers.** Due to lack of adequate information, the awareness of Ethiopian producers concerning the relevance of nationwide and international standards and quality is low. In addition, Ethiopian industries are not sufficiently aware of the need and benefits of quality assurance. There are limited knowledge and information of product certifications based on international standards and importers' requirements, especially for finished products (for example, textiles to clothing manufacturing).[26] Furthermore, the data from the World Bank Group Enterprise Survey (2015) shows that surveyed firms using an internationally-recognized quality certification (that is, ISO 9000 for quality management or 14000 for environmental management) has not changed significantly since the 2011 survey. More important, in terms of company size and company type, all the indicators have dramatically dropped (see table 4.1).

Table 4.1. Firms with an Internationally Recognized Quality Certification (Average Percent)

Company	2011	2015
Sector		
Manufacturing - All	12.3	13.0
Manufacturing - Food	n.a.	5.7
Manufacturing - Textile and garment	n.a.	36.1
Manufacturing - Leather	n.a.	21.0
Manufacturing - Other	n.a.	16.3
Size		
Small-sized firm (with 5–9 employees)	4.0	2.0
Medium-sized firm (with 20–99 employees)	20.4	3.4
Large-sized firm (with 100+ employees)	31.1	25.5
Type		
Direct exports are 10 percent or more of sales	48.1	12.2
Non-exporter	12.2	3.8

[26] DTIS for Ethiopia (UNCTAD 2016).

Domestic ownership only	12.1	3.5
10% or more foreign ownership	44.0	17.4

Source: World Bank Group Enterprise Survey.

10. **Inadequate incentives for industries to comply with quality assurance.** The cost of the compliance often hinders the adoption and maintenance of international certificates. It often requires changes in governance, management, production process, and purchase of new equipment. For example, in general, the cost of adopting and maintaining ISO 9001 (quality management system) may range from US$7,000–US$16,000 to US$25,000–US$100,000 depending on several factors such as firm size and type of certificate.[27] Adoption of quality assurance schemes is not a simple matter for many firms, particularly the SMEs in Ethiopia. Unless they see a clear return on investment, such as access to new markets, new clients, or higher profit margin, there are no incentives for many enterprises to improve.

11. **Lack of private NQI service providers.** Although the NQI services provided by the existing public institutions are not sufficient[28] to meet the emerging demands of industries and the GoE's ambitious expansion of the light manufacturing industries, currently, strong private NQI service providers do not exist in Ethiopia. The capital investment for the measurement and testing instruments is high. Though there are no obvious regulatory barriers to enter this field, the amortization period is relatively long for specific equipment and facilities, which could impose a high risk for potential investors in the NQI field. As such, there seems to be little incentive for the private sector to invest in this space unless sufficient demand is created from industries and consumers.

12. **Weak coordination and collaboration in the implementation of technical regulations (compulsory standards) among the regulatory agencies and the NQI institutions.** Although a number of line ministries and authorities regulate and implement technical regulations, there is an absence of a national technical regulatory framework among regulatory agencies and the NQI institutions due to lack of coordination and clarity of their mandates, roles, and responsibilities. According to ESA's assessment, only 36 compulsory standards have been implemented out of 138 compulsory Ethiopian standards. This also contributes to the low level of compliance with quality standards by industries as indicated earlier.

Table 4.2. Overview of the Implementation Status of Technical Regulations

No.	Sector	Total Number of Existing TRs	Number of TRs Implemented	Number of Existing Product Standards	Number of Existing Product Standards Implemented
1	Agriculture and food	67	7	465	159
2	Basic and generalities	6	1	107	20
3	Civil and construction	15	9	260	96
4	Electro mechanical	26	10	746	152
5	Chemical and chemical products	8	5	472	92
6	Textile and leather	12	3	95	64
7	Health and environment	2	1	50	38
	Total	**136**	**36**	**2,195**	**621**

Source: Standards Implementation Study Report, ESA (April 2015).
Note: TR = Technical Regulations.

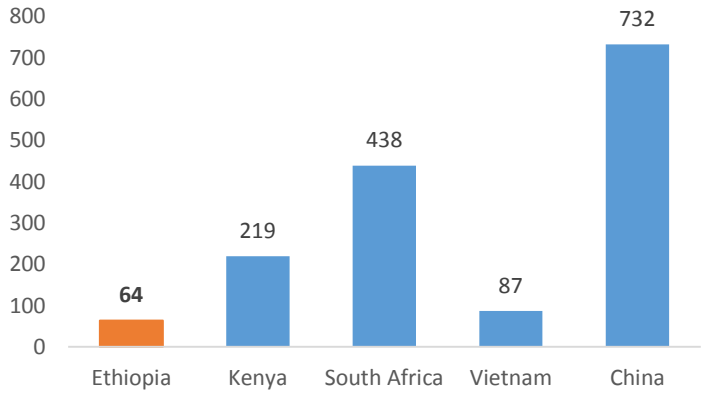
[27] Fikru, Mahelet G., 2014. "Firm Level Determinants of International Certification: Evidence from Ethiopia," World Development, Elsevier, vol. 64(C), pages 286-297.
[28] For example, comparing with the calibration needs, NMIE has 25 times less capacity to provide calibration services.

IV. Comparison of NQI Services Capacity in International Presence with Benchmark Countries

Standardization

13. **International presence denotes the capacity of a national standards agency to influence and benefit from the regional and international standardization initiatives.** Every single economy has an industry sector that is critical to the overall growth of the country. Being able to identify internationally accepted best practices or being able to bring the technical requirements of a leading national product to international standards is a clear sign of the capacity to compete. Participation of various TCs of international organizations shows the strong capacity of ESA to represent the country's key industries. As shown in figure 4.4, Ethiopia's ISO TC participation is lower than selected comparative countries.

Figure 4.4. ISO TC Participation



Source: ISO (as of October 2016).

Accreditation

14. **A critical aspect of accreditation is that it has become the recognized proof of competence in global trade.** In other words, the international accreditation system that recognizes the competence of the national accreditation bodies and, therefore, of the conformity assessment bodies accredited by them, provides enough credibility to access global markets. Therefore, ENAO's international recognition is critical. The international recognition can be achieved by becoming a full signatory of the MRA of ILAC and IAF. ENAO is taking the right path to gain it through a signatory to the ILAC MRA in testing and medical testing scopes. This is ahead of Kenya's accreditation body, but its status is behind other comparisons countries (see table 4.3).

Table 4.3. Status of MRA of ILAC and IAF

Country	Accreditation Agency	ILAC (Calibration, Testing, and Inspection)	IAF (Management system and Product certification)
Ethiopia	ENAO	Associate member; applied for MRA in testing and medical testing in 2015 (To be recognized by the second quarter of 2017)	Not yet recognized
Kenya	Kenya Accreditation Service (KENAS)	Associate member (not yet recognized)	Not yet recognized

Country	Accreditation Agency	ILAC (Calibration, Testing, and Inspection)	IAF (Management system and Product certification)
South Africa	South African National Accreditation System (SANAS)	**MRA achieved** in Calibration: 2000 Medical testing: 2000 Testing: 2000 Inspection: 2012	**MRA achieved** in 2004
Vietnam	Bureau of Accreditation	**MRA achieved** in Calibration: 2000 Medical testing: 2012 Testing: 2000 Inspection: 2012	**MRA achieved** in 2013
China	China National Accreditation Service for Conformity Assessment	**MRA achieved** in Calibration: 2000 Medical testing: 2012 Testing: 2000 Inspection: 2012	**MRA achieved** in 2008

Metrology

15. **CMCs are a key indicator of a country's metrological competence.** They are declared after a strict international peer review of the measurement competences of developed national metrology institutes or designated institutes. CMCs are published in a database maintained by the BIPM. They are publicly available on the Intranet. They can be used to settle disputes related to measurements, such as rejection of export goods and noncompliance to international requirements. For the measurement results of the country to be internationally recognized, it is important for NMIE to gain international recognition by signing the BIPM's CIPM MRA. Compared to other selected countries, NMIE's international recognition is far behind. Although NMIE's metrology laboratories are internationally accredited by the German National Accreditation Body, it is important for NMIE to gain international recognition through the CIPM MRA to increase its visibility and confidence among trading countries.

Table 4.4. Status of CIPM MRA

Country	Metrology Agency	Participation in the CIPM MRA
Ethiopia	NMIE	No
Kenya	Kenya Bureau of Standards	Yes (since 2002)
South Africa	National Metrology Institute of South Africa	Yes (since 1999)
Vietnam	Vietnam Metrology Institute	Yes (since 2004)
China	National Institute of Metrology	Yes (since 1999)

V. Importance of Quality Assurance for Selected Manufacturing Industries in Ethiopia

16. **To increase the competitiveness of export-oriented light manufacturing, standards and quality practices are just as important for domestic input products.** As quality issues in input industries are crucial limiting factors for Ethiopia's ability to activate its latent competitive advantage in major areas of light manufacturing, the improvement of standards and quality practices needs to address the whole value

chain; backward linkages with suppliers; and forward linkages in the form of relationship with buyers of wholesale and retail stores. The importance of the selected manufacturing sectors (agro-processing, textile and garment, and leather and leather products) are described in the following parapraphs.

Agro-processing Industry

17. **In the agro-processing industry, quality assurance is central.** Yet, emanating from the traditional production practice, harvesting and post-harvest handling of agricultural products in Ethiopia often suffers from inadequate sanitation and hygiene. The major destination markets for agro-processed foods from Ethiopia are Europe, the Middle East, the United States, and Asia. Between 2010 and 2015, there were 19 notifications of rejections of products (fruits and vegetables, herbs and spices, nuts and nut products, and cereals) from destination markets in Europe. Out of these, there were 8 notifications for fruits and vegetables, 7 of which was due to pesticide residue in the products, and 1 was due to poor hygiene. The U.S. Food and Drug Administration reported 12 rejections of food imports from Ethiopia during the period 2011–13—9 of these were due to misbranding or labelling, with only 2 due to adulteration.

18. **The industry suffers from poor quality of cleaning, sorting, and grading.** Impurities and foreign matter as high as 15 percent by weight have been observed. A weak post-harvest infrastructure, coupled with long-handling chains between farmers and ports/markets further contribute to quality deterioration and contamination. One major challenge especially for Ethiopia's agro-industry to integrate into international markets is meeting international quality standards, in particular, such as those promoted by the Food and Agricultural Organization Commission on Phytosanitary Measures, the World Organization on Animal Health, and the WTO agreements on SPS measures and TBT. For export oriented agro-food processing companies these product quality standards are very high. With few exceptions, agro-industry firms are not certified under any of the international quality standards programs. As a result, Ethiopian exporters are forced to be decision takers from the buyers, based on the buyer's assessment and testing results, to be able to access markets. For instance, an Ethiopian exporter of fruits and vegetables that exports its produce to the European market does not have any internationally certified and accredited service he/she can use to have their produce tested and certified before shipment. The produce is exported to the destination market, a test is conducted by the buyers in the destination market, and if the produce fails to meet the required standards, the shipment is dumped, the cost of which is borne by the exporter. This means, on average, the exporter loses the airfreight cost (about US$1.80 per kg) plus the cost of produce (about US$2 per kg), and in addition, pays a minimum dumping cost of US$200 per shipment. This results in a significant sunk cost to the exporter taking into consideration the volume.

19. **The key challenge in Ethiopia is that the institutional, human resource, and technical capacities of the regulating, implementing, and supporting institutions are poor, and there is no SPS notification authority nor an SPS inquiry point.** The SPS/TBT agreements are relevant not only because they set standards for product quality and measurement, food safety, and animal and plant health, but also for labelling and packaging, shipping, and financial documentation. Implementing these rigorous quality control and food safety measures requires finance, skilled personnel, and suitable infrastructure such as laboratories, all of which are not yet sufficiently available to domestic food processing enterprises.

20. **Hence, heightened attention will need to be paid to the quality of products to ensure access and competitiveness in destination markets.** It will be important to develop and ensure product conformity with technical and market requirements. This implies that there should be a well-established food safety and quality control and standardization system, which can identify product quality issues along the value chain and implement standards, regulations, and certification schemes. The public institutions should

strengthen their outreach activities to raise awareness among private actors in the agro-processing industries of the increasing need for compliance with international quality standards. As non-tariff barriers to trade are becoming increasingly significant, it is important that hazard analysis and risk management are introduced in the food processing industry. All of this requires considerable investments in institutional infrastructure, standardization, and testing equipment as well as human capital.

Textile and Garment Industry

21. **Ethiopia's comparative advantages in the manufacturing of textiles and clothing have been largely eroded due to low productivity and technical inefficiencies at all levels of the value chain.** From 2005 to 2016, Germany, which is Ethiopia's main export market for garment and textile, reported the presence of dangerous chemicals as the most common risk type for clothing and textile imports from Ethiopia. Over 93 percent (292 of 311) of notifications by Germany was a result of chemical risk.

22. **Ethiopian exporters have considerable difficulties in meeting the product quality required to successfully compete with producers in other countries.** They also have insufficient capacity to meet large order volumes, deliver consistently on time, and diversify their products. One major reason for these constraints is the lack of integration in the domestic supply chain, which causes problems of adequate supply of raw material inputs and intermediate goods, with regard to quantity, quality, and prices. While investment has been increasing in improving the supply of inputs for the production of textiles, the subsector continues to suffer from the absence of a functioning quality standard and grading system for cotton and other inputs in the value chain. Furthermore, Ethiopian textile and apparel producers, especially those operating independently, face problems in accessing updated and reliable information on markets, price and quality requirements, and upcoming trends. An increasingly important challenge for exporters of textiles and clothing is their capability to meet official and internationally agreed regulations regarding SPS requirements and TBT. Depending on their specific products and their business strategy, they also have to meet privately defined quality standards. The first and foremost challenge in this context is to raise the sensitivity for all private and public actors in the domestic supply chain for the need to seek information about such standards and to build compliance capacity. A particular concern regarding the textiles industry is the absence of the implementation of the international standard in cotton which has an impact on cotton quality and price. A critical element in meeting the trade promotion and infrastructure challenge in the textiles and clothing sectors is the need to develop and upgrade the standardization, quality assurance, and accreditation architecture in Ethiopia. This needs to be undertaken in accordance with international guidelines and best practices.

Leather and Leather Products Industry

23. **The basic challenge for the Ethiopian leather industry is twofold:** first, to increase the quantity and quality of its output and move up the value chain in production; and second, to translate greater production and productivity into export growth. In addition to negatively affecting the competitiveness of Ethiopian manufacturers, these constraints reduce the willingness of potential domestic and foreign investors to start industrial ventures or to enlarge the production capacity of existing factories. They also make potential exporters hesitant to explore and expand to external markets and to make greater international marketing efforts for fear of being unable to meet international contracts. According to a World Bank study (2012), the average rate of product rejection at delivery among Ethiopian footwear makers is 5 percent, as compared to 1 percent in similar firms in China and even less in Vietnam. Another competition-related challenge for the leather industry results from increasing the sensitivity of consumers

of leather products, especially in developed countries, of the environmental impact of the production process and ethically responsible production of the leather raw material. Dealing with this challenge requires greater awareness of consumer preferences and evolving international product standards, but also a high degree of technical competence on the part of breeders, traders, and tanners.

24. **Awareness also needs to be raised among domestic producers for the need to meet international quality standards and conform to market requirements and regulations in cross-border trade.** The challenge here is not only to meet legal and TBT but also to meet private quality standards of potential importers with regard to ecologically and socially sound forms of production. Especially, SMEs in the Ethiopian leather industry lack sensitivity for the need to comply with such regulations and standards, as well as the expertise and capacity to do so. Larger and foreign-owned firms in Ethiopia are doing better in this regard because of their broader exposure to international markets, the experience of their managers, and their financial means.

25. **The introduction of official quality standards and conformity assessment by the relevant public agencies and private institutions will help promote better quality.** However, it should be recognized that such efforts will take time to bear fruit and become efficient in service provision.

ANNEX 5: ECONOMIC AND FINANCIAL ANALYSIS

Ethiopia: National Quality Infrastructure Development Project

1. **The project aims to enhance quality assurance services in Ethiopia to boost the competitiveness and growth of exports in key light manufacturing sectors.** This annex examines the market failures and rationale for each of the project's proposed interventions and provides a detailed cost-benefit analysis of their anticipated economic impacts.

Rationale for Public Sector Financing

2. NQI is considered as a public good because it essentially helps to solve market failures. While standards developed to provide fulfillment of technical requirements result in additional costs for compliance, leaving standards to markets alone can lead to under- or over-provision of standards. The market failures also include coordination issues and imperfect markets that are too costly to be undertaken by the private sector only that justifies public sector interventions as a public good. For example, leaving the metrology system to markets alone can lead to underinvestment that cannot effectively meet accurate measurements, particularly in developing countries. Investment in metrology involves high fixed costs but the outputs of the investment may have quite general applicability for a wide and diverse group of users. Furthermore, accreditation services can be seen as a public good because it allows for the creation of a reliable market for conformity assessment services. Though private entities can provide basic conformity assessment services, their success depends on public support for increasing the demand for services from industries and the upstream developments of metrology, accreditation, and standardization services.

3. Also, one of the role of the public sector on NQI is to address information asymmetry between buyers and sellers. That is, sellers know the properties of the goods and services they offer, whereas buyers will typically be less well informed, exposing them to lower quality products. This information asymmetry will also result in reduced price premium for genuinely higher quality products and thus creating a disincentive for allocating resources to comply with higher or improved quality standards. A reliable quality assurance system can help prevent this risk by providing buyers with relevant information on product characteristics and reliability.

Economic Rationale for Project Interventions

4. **Ethiopia's strategy identifies the need to boost the quality and availability of quality assurances services to enable the magnitude of export growth targeted for the economy**, particularly in the three priority manufacturing sectors targeted by this project. However, specific market failures exist in Ethiopia that hinder the private sector from both providing and using these quality services on the scale and standard needed to enable the desired leap in export growth and competitiveness. This suggests the need for targeted public interventions and investments to allow Ethiopia to achieve its GTP II objectives.

5. **Table 5.1 summarizes the key market failures or other economic rationales that justify public investment in each of the project's subcomponents.** It also describes the mechanisms through which the project's interventions are expected to address the identified market failures (and whether similar approaches have been attempted previously in Georgia), their expected impact, and their prospects for sustainability.

Table 5.1. Market Failures and Economic Rationale for Project Interventions

Component	Market Failure/Reason for Public Intervention	Prior Experience/Track Record in Ethiopia	Mechanism for Addressing Market Failure	Expected Impact	Sustainability Prospects
1.1 Support to ESA	• **Information access gaps:** firms and other potential users do not know where to find information on standards; standards are only available to those who can physically come to ESA offices • **Coordination failures**: limited consultation with the private sector to ensure standards development is relevant to industry needs	• ESA opened a few regional branches/enquiry points in the recent years to increase access points for standards and made standards available through post office delivery • TCs for multi-stakeholder consultation on standards exist for only a few industries	• Digitizing standards and making them available in online database • Support to increase ESA's consultation with key industry stakeholders and participation in international events on standards development	• Increased diffusion of standards to firms	• Depends on the proper maintenance of online standards database and the fees charged to users for obtaining standards
1.2 Support to NMIE	• **Coordination failure** in setting uniform measurement standards; only public metrology authority can enforce uniform standards on a national scale and ensure measurement traceability • **Local market service gaps:** firms and laboratories forced to go abroad to obtain instrument calibration for scopes that NMIE does not offer	• GIZ-supported project for the NQI in Ethiopia helped NMIE to obtain accreditation from German National Accreditation Body (Deutsche Akkreditierungsstelle GmbH (DAAKS)	• Equip NMIE to provide calibration and measurement traceability in the scopes that it currently has no capacity to offer	• Increased use of local calibration services and reduced user costs	• Because the local demand for scopes not provided by NMIE is currently going unmet, NMIE's new capacity to provide these services should enhance its income earning potential and financial sustainability
1.3 Support to ENAO	• **Local market service gaps:** NQI service providers forced to obtain internationally recognized accreditation from foreign		• Support ENAO to obtain international recognition, and build its capacity to	• Increased number of NQI service providers	• International recognition of ENAO's accreditation services will support long-term

Component	Market Failure/Reason for Public Intervention	Prior Experience/Track Record in Ethiopia	Mechanism for Addressing Market Failure	Expected Impact	Sustainability Prospects
	accreditation bodies, paying higher price (suboptimal outcome)		ensure its accreditation services remain up-to-date with changing international norms	obtaining internationally recognized accreditation • Reduced user costs for accreditation	local demand for its services, providing stable income stream to finance its operations
1.4 Support to ECAE	• **Public good:** up-front costs too high for one private company to provide full range of conformity assessment services • **Demonstration effects:** establish the national benchmark for internationally accredited conformity assessment services, setting an example for private providers who enter the market in the future	• No single conformity assessment provider exists that can provide a full range of services	• Increase ECAE's capacity to provide testing for new scopes and parameters that are currently demanded by the local market	• Increased use of local conformity assessment services and reduced user costs	• Eventually, the majority of conformity assessment services should be provided by the private sector, with ECAE retaining a limit and a strategic role in the market
2.1. Support to industries	• **Information gaps:** firms are not aware of the processes or investments needed to adopt quality systems and undertake international certification of their products/services	• NQI-related training and awareness raising program currently not offered by business associations and other industry representatives	• Trainings and TA to industries, delivered through their respective business associations	• Increased share of exports certified according to international quality standards	• Business associations are generally self-funding and should continue to provide these services, provided the users begin to see value in the services and continue to demand them over the longer term
2.2. Support to private sector NQI providers	• **Local market service gaps:** public NQI institutions are able to only partially meet the current demand from industry, which is expected to	• Very limited opportunity exists in country to upgrade NQI-related skills and	• Trainings and TA to private service providers delivered through their	• Increased and quality NQI services provided to	• Depends on the pace at which public NQI agencies phase out of key segments of the

Component	Market Failure/Reason for Public Intervention	Prior Experience/Track Record in Ethiopia	Mechanism for Addressing Market Failure	Expected Impact	Sustainability Prospects
	increase significantly, as the manufacturing sector develops. A strategic investment is needed to entice the private sector to invest more and expand its role in the provision of NQI services. • **Knowledge gaps:** private sector service providers suffer from the same challenge in accessing knowledge, technical expertise, and upgrading of skills due to lack of adequate skills development mechanism.	technical competency	representative associations	industries	market for NQI services, allowing the private sector to step in and provide the majority of these services (particularly in specialty areas), thereby making the private sector NQI business model commercially appealing and sustainable
2.3. Strengthening NQI awareness public-private dialogue	• **Agency coordination failures:** different NQI agencies and stakeholders do not coordinate effectively, leading to implementation bottlenecks (for example, setting standards that cannot be implemented with current infrastructure/capacity) • **Information gaps/failures in diffusion of standards:** producers are not aware of the benefits of adopting higher product standards, or do not know where to find information on standards	• No dialogue mechanism existed before the NQI Forum was recently established (it is not yet functional, however) • Weak coordination among NQI agencies has resulted in implementation of only 36 of 138 compulsory standards	• Operationalizing the NQI Forum • Outreach events	• Full implementation of compulsory standards • Greater adoption of voluntary standards	• Depends on the ability of the Government to eventually delegate some responsibility for coordination and stakeholder dialogue initiatives to nongovernmental organizations and other self-funding entities

Economic Cost-benefit Analysis

6. **The economic analysis here extends a step beyond the PDO outcomes measured in the results framework, aiming to quantify some of the broader economic impacts in the next stage of the results chain.** In this sense, the project's key PDO outcomes (for example, scope and quantity of quality assurance services offered) serve as intermediate inputs into this framework for valuing the magnitude and cost-effectiveness of their broader economic impact. The model underpinning this valuation is presented in the following paragraphs.

7. **Because of the cross-cutting nature of many of the project's activities and the multitude of associated impact channels, this model restricts itself to estimating only the direct benefits.** The estimates presented here should therefore be viewed as a lower bound on the scale of overall project benefits as they do not capture potential second-order effects and externalities, many of which are difficult to define in scope and magnitude. The objective is to provide a general sense of whether the likely magnitude of the direct project benefits is broadly commensurate to the project's overall costs.

8. **The benefits are estimated on an incremental basis relative to a 'no-project' counterfactual scenario.** For each component, this entails defining a counterfactual set of outcomes that would have materialized without the project's intervention. While this is difficult to predict, the general premise is that (a) in the absence of upgrading domestic NQI services, Ethiopia's export growth will continue to be stunted by the limited ability of domestic exporters to obtain internationally recognized quality certification for their products; (b) firms, laboratories, and other NQI users who require services from institutions accredited by internationally recognized bodies will continue to seek these from foreign providers, paying a significantly higher cost in the process. The specific assumptions underpinning these differences between the 'with project' baseline case and the counterfactual 'without project' scenario are detailed in the following sections.

Framework Parameters for the Analysis

9. **This analysis employs a bottom-up cost-benefit model to estimate the expected NPV and ERR of the project's various interventions.** To be economically acceptable, a World Bank-financed project must meet two conditions: (a) the expected NPV must be positive and/or the ERR should be higher than the assumed discount rate; and (b) this NPV and/or ERR must be higher than or equal to that of mutually acceptable project alternatives. Each project component should be appraised on the basis of its marginal contribution to assess the value of its inclusion in the project. In this case, however, the project's two components are appraised jointly, as the supply-side NQI support measures in Component 1 and the demand-side support in Component 2 are impractical to decouple, because they contribute collectively to the economic impacts of the enhanced NQI system that the project aims to provide.

10. **Because many of the proposed activities and reforms will not be completed until the last two years of the project, a 20-year projection horizon is used so as to capture their payoffs beyond the five-year project period.** All monetary values are expressed in real 2016 U. S. dollars. The real social discount rate used to calculate present values of cost and benefit flows is assumed to be 9 percent, derived from a Ramsey formula that uses international averages for the pure time preference and

marginal utility of consumption elasticity parameters and an Ethiopia-specific estimate of expected per consumption growth.[29]

Scope of Analysis

11. **In accordance with the export-oriented objectives of GTP II, the primary direct benefit targeted through the project's support for international recognition of Ethiopia's NQI system is an expansion of Ethiopia's exports, particularly for products and markets where the lack of internationally recognized quality certification has previously proven a binding constraint on growth.** Of course, the benefits of an internationally recognized NQI system extend beyond this export channel. Among other things, the NQI helps safeguard public health and safety by preventing low-quality imports from flooding the domestic market. It also fosters improved firm productivity by providing more accurate measurement and testing infrastructure for new product development (that is, improved research and development efficiency). However, these are second-order effects where the timing and magnitude of impact and the number of potential beneficiaries is extremely difficult to quantify. They are thus considered beyond the scope of this analysis and the limits of what is practical to estimate with a bottom-up modeling approach.

12. **Among the various goods and service exports that are expected to benefit from the project's NQI support, this analysis focuses exclusively on goods produced in the three light manufacturing sectors targeted by the project** where improved NQI services are expected to have the strongest near-term uptake and boost to export growth: textile and garment, leather and leather products, and agro-processing. As of end-2015, the gross value of Ethiopia's goods exports in these three sectors amounted to US$244 million.

13. **Beyond the export-related benefits, the other category of direct impacts considered here relate to the cost of the metrology and accreditation services for the subset of NQI users (manufacturers and utility service providers) and NQI providers (laboratories and other quality assurance facilities)** who currently have to obtain these services abroad because they are either not available locally or are provided by agencies which are not accredited by internationally recognized bodies. The project's support to improve the local availability of these services and the internationally recognized accreditation of their providers will entail significant costs savings, as the prices paid for obtaining these services abroad is significantly higher. Here, the range of beneficiaries is inevitably broader than just exporting firms in the three priority light manufacturing sectors, because the NQI providers which reap these metrology and accreditation cost savings serve many other economics sectors and users.

[29] The social discount rate reflects the opportunity cost of capital from an inter-temporal perspective for society as a whole—that is, the social view of how future benefits and costs are to be valued against present ones. According to Ramsey (1928), under constant relative risk aversion, the real social discount (r) can be expressed as $r = \beta + \varepsilon \times \sigma$, where β is the pure time preference rate, ε is the elasticity of the marginal utility of consumption, and σ is the expected growth rate of per capita consumption. Most empirical cross-country estimates suggest an average value of 1 for β, and 1.5 for ε (Lopez 2008). The expected growth rate of real per capita consumption (σ) in Ethiopia is set at 5.3 percent, the average projected gross domestic product per capita growth rate (the best available proxy for consumption growth) for the 2016–21 period according to the International Monetary Fund's latest World Economic Outlook (April 2016). Plugging these parameters into the Ramsey formula yields a social discount rate of approximately 9 percent ($1 + 1.5 \times 5.3$).

Benefit Estimation

14. **The envisioned enhancements to Ethiopia's NQI system are expected to provide both a supply-side and demand-side boost to Ethiopia's exports.** From the demand perspective, the impact can be modeled as a function of two main effects: (a) the pure quantity effect, which refers to the increased real quantity of goods that Ethiopia can now export to key trading partners who previously were not able to or willing to purchase these products because of the lack of internationally recognized certification and (b) the quality effect, which represents the rise in the unit value[30] of Ethiopian products resulting from their upgrading to conform to higher-quality international standards. On the supply-side, the NQI benefit to exports stems from transaction costs savings related to (a) the lower cost to export, because internationally recognized product certification reduces information asymmetries between buyers and encourages more streamlined testing and inspection procedures at borders and (b) the reduced cost of quality certification, because firms no longer have to travel abroad to obtain such certification. These lower transaction costs encourage more Ethiopian producers to seek certification for their products and bring them to export markets.

(a) Additional Domestic Export Value Added Generated

15. **Collectively, the quantity and quality effects of NQI upgrading contribute to a higher value of Ethiopia's exports over time as compared to the counterfactual no-project scenario.** This value difference between the two scenarios represents the incremental contribution of the NQI component to the overall project return. The estimation approach for this benefit stream involves defining the scope of export products that will be most affected by the NQI upgrading, the pace at which these various products will become certified once Ethiopia's NQI system is internationally recognized, and the magnitude of the demand response by Ethiopia's key trading partners to newly certified products. The key assumptions required are the following:

- **Number of exporting firms.** The share of firms that export in the three priority sectors is slightly higher compared to other manufacturing sectors, but still has plenty of room for increase: 14 percent in the textile sector, 33 percent in leather, and 17 percent in agro-processing.[31] In the no-project scenario, these ratios are assumed to remain constant, resulting in a slow upward drift in the number of exporters only because the total number of firms in Ethiopia grows over time. As discussed earlier, the project's NQI upgrading is expected to encourage additional firms to bring their goods to the export market: the assumption is an additional 1 percent of total firms each year for the five years after the critical mass of NQI upgrading is completed (that is Year 4 of the project).

- **Growth in international certification of firms' quality systems and products.** Around 300[32] different categories of products are exported by firms in the three priority sectors (or

[30] The unit value is defined as the price per unit of quantity and is frequently used as proxy for product quality. It is distinct from the export price, which represents nominal rather than real price movements.
[31] World Bank 2015 Ethiopia Enterprise Survey.
[32] According to customs data based on the Harmonized System 6-digit classification system.

around one product per firm). Of these exporting firms, between 50 percent and 80 percent (depending on the sector) have obtained some international quality certification according to the latest 2015 World Bank Enterprise Survey. For the purposes of this analysis, it is assumed that this international quality certification refers to an international standard quality management system (for example, ISO 9001), and that a firm must first adopt such a system before it can seek certification for specific products. In addition, it is assumed that only a fraction of products (50 percent) exported by firms with quality management systems certification are actually certified, as each distinct product generally requires a separate certification process with an additional cost. Collectively, these assumptions imply that only 25–50 percent of the 300 exported products from the three priority sectors are certified to some international quality standards. The project is expected to stimulate an increase in both (a) the share of exporting firms with an international standard quality management system—by an assumed 10 percentage points over the five-year project period and (b) the share of these firms' exported products which are individually certified—from 50 percent to 60 percent.

- **Export demand elasticity to certification.** This is the key parameter shaping the strength of the 'quantity' effect as it determines the degree to which foreign demand for a given Ethiopian product will increase after that product is certified by an internationally recognized body. The baseline assumption here is a 20 percent increase for exports to the EU and the United States (that is an elasticity of 1.2) and 5 percent (elasticity of 1.05) for other foreign markets. The rationale is based on the observation that Ethiopia's goods exports to markets outside of the EU and the United States have been growing fairly rapidly in recent years even in the absence of certification, whereas export growth to the EU and the United States (where product certification to some basic international standard is required) has been much more tepid. As new products become certified to international standards, the demand response from the EU and the United States is therefore expected to be stronger than from other markets.

- **The certification quality 'premium'.** This parameter relates to the quality effect and captures the aforementioned notion that firms will need to invest a certain amount of resources to bring their products up to the point where they can meet international quality certification standards. This quality upgrade should be reflected in the unit value of the product, conservatively assumed to be 20 percent higher for certified products than for non-certified products.[33]

16. **Taken together, these assumptions result in a substantial positive impact of the project on certified goods exports—an annual gross export value by year 10 that is 20 percent higher than the level in the 'no-project' scenario.** From the perspective of the Ethiopian economy, however, the net economic benefit of these additional exports is not their gross value but their domestic value added, which subtracts the value of imported production inputs (that is the foreign value added). Assuming the import content of Ethiopia's goods exports in the three priority light manufacturing sectors is around 30

[33] This assumption is based on discussions with several large firms in Ethiopia's agribusiness sector.

percent,[34] the incremental domestic value added of certified exports over the 20-year forecast horizon is estimated at US$211 million in present value terms.

(b) Transaction Costs Savings

17. **The cost to export in Ethiopia—at around US$2,380 per shipping container—is slightly above the average for Sub-Saharan Africa according to the latest Doing Business Report (2016).** As mentioned earlier, the upgrading of Ethiopia's NQI is expected to help reduce this cost, initially due to the mutual recognition agreements with key trading partners (helping to reduce information asymmetries between buyers and sellers) and progressively more over time by encouraging the streamlining of inspection and export procedures. This dynamic is captured as a cumulative 30 percent reduction in Ethiopia's cost to export (based on international experience of the NQI reforms in other countries), realized over a period of five years, beginning in Year 4 of the project when the first major phase of the NQI upgrading is completed. For the path of exports projected under the project baseline, this results in savings of US$23.4 million in present value terms over the 20-year forecast horizon, relative to the no-project counterfactual where Ethiopia's cost of export is assumed to remain unchanged.

18. **As far as the cost of quality certification is concerned, representatives from Ethiopia's NQI agencies and private certification providers estimate that seeking product certification abroad is, on average, around 10 times costlier on account of fees paid to foreign assessors and costs related to transportation, accommodation, and other incidentals.** Once Ethiopia's NQI agencies become internationally recognized, the savings to exporting firms from being able to obtain cheaper product certification domestically are projected to amount to roughly US$8.7 million.[35]

(c) Metrology Services Costs Savings

19. **The demand for metrology services—equipment calibration and measurement verification—in Ethiopia is large and comes from a variety of sources: manufacturers and utility service providers, testing and calibration laboratories, and legal metrology authorities.** However, there is effectively only one service provider—NMIE. According to a national assessment of Ethiopia's testing, calibration, and verification needs, conducted by GIZ in 2015, the demand for calibration and verification services from

[34] Because data for Ethiopia is not available, the assumption is based on the average import content of exports for EU-28 countries, which is around 30 percent based on the Organization for Economic Co-operation and Development's statistics on Trade in Value Added (2011).

[35] Based on interviews with several large firms in Ethiopia's textile and dairy sectors, the up-front cost of obtaining ISO 9001 quality systems certification is reported to average around US$13,500, plus an additional US$3,500 per year for ongoing inspection and surveillance (to maintain the certification). Meanwhile, for individual product certification, the cost varies greatly depending on the sector and product, but the approximation used for the estimation here is based on a range of costs for CE marking (a basic certification needed to sell products in the European Economic Area). This average CE marking cost is around €5,000 or US$5,600 (including laboratory testing, calibration, certification, and inspection) for initial certification and €1,500 (or US$1,700) for ongoing surveillance assessments. Relative to this cost of obtaining product certification abroad, the domestic cost in Ethiopia once the NQI reform is completed is assumed to be 10 times cheaper, or around US$700. For ISO 9001 certification, it is assumed that the certification fees and ongoing surveillance expenses will also be 10 times cheaper if done locally, but that the up-front investment costs to upgrade to a higher standard of quality management systems will still be incurred, albeit at only two-third the cost due to the ability to use local (rather than foreign) agencies/consultants for parts of the process.

the priority sectors in GTP II (manufacturing and others) stood at over 350,000 instruments, across a wide range of scopes. For about 25,000 (or 7 percent) of these, however, there was no local capacity for the required services. Even for the subset of instruments for which local calibration capacity existed, NMIE lacked sufficient resources to meet the full magnitude of demand, implying that over 90 percent of these instruments remained uncalibrated.

20. **For the purposes of this cost savings calculation, what is relevant is the number of instruments for which calibration and measurement verification services have to be obtained abroad (at a higher cost) because capacity does not exist locally.** The impact of the project is in helping to close this local capacity gap, enabling more users to obtain the necessary services at a much lower domestic cost. To arrive at an estimate of these costs savings, it is conservatively assumed that the project's provision of TA and new equipment to NMIE helps to close around 50 percent of the gap in calibration/measurement scopes for which NMIE currently has no capacity. Furthermore, by helping NMIE to boost its staff resources and refurbish and expand its facilities and by supporting the establishment of private calibration laboratories, the project is also assumed to help reduce the number of uncalibrated instruments (that is the unmet demand for which local capabilities exist) by around 25 percent.

21. **To estimate the relative cost savings of this scenario, the appropriate counterfactual is that this same quantity of services that can now be obtained locally due to project support would otherwise need to have been done abroad at a higher cost.** Although the cost of equipment calibration varies greatly depending on the type of equipment and measurement scope, based on discussions with NMIE, it is estimated to be, on average, around 10 times higher in foreign calibration facilities (including the cost of travel and other indirect expenses) than in Ethiopia.

22. **Under these assumptions, the cost savings for metrology are estimated at US$82 million over the 20-year projection horizon.**

(d) Accreditation Cost Savings

23. **In the area of accreditation services, a key weakness of Ethiopian laboratories and other quality assurances providers is that ENAO from which most of them receive accreditation is not internationally recognized.** This means that any tests and services performed by these providers are also not internationally recognized, a major drawback for firms seeking quality assurance services who want to sell goods abroad and require internationally recognized testing and certification reports. To overcome this limitation, many laboratories have to pay extra to obtain accreditation from a foreign accreditation body which is internationally recognized. This represents a transfer payment abroad and, thus, an economic loss for Ethiopia.

24. **In this context, the benefits of the project arise primarily from its support for ENAO to obtain international recognition.** Once this is achieved, laboratories paying a premium for accreditation from a foreign body can safely switch to accreditation from ENAO and still have their services be internationally recognized, reaping significant cost savings in the process. Because the cheaper ENAO accreditation will now become more appealing, as it carries international recognition, the project is also expected to help increase the share of Ethiopian laboratories seeking ENAO accreditation (who may have previously found it of limited value).

25. **The estimation of cost savings is based on the approximately 125 testing, calibration, and medical laboratories in Ethiopia, of which only 27 (or 22 percent) are accredited by ENAO.** The project is assumed to boost this share of accredited laboratories by 25 percentage points over a five-year period. As far as the cost of accreditation, a comparison of the fees of the DAKKS—which is frequently used by Ethiopian laboratories—with ENAO's fees reveals that this 'representative' foreign fee (consisting of the initial accreditation and periodic follow-up assessments) is around 20 times higher. As in the case of metrology services, the counterfactual in this instance assumes that, were it not for project support to help ENAO obtain international recognition, both the accredited laboratories and those that seek accreditation in the future would have to pay the higher foreign accreditation fee to have their services internationally recognized. On this basis, the present value of implied accreditation cost savings for the laboratories considered here over the 20-year projection horizon is estimated at US$3.5 million.

26. **Combining the various benefit categories above (incremental export value impact of NQI upgrading, the associated transaction cost savings, and metrology and accreditation savings), the estimated present value of the incremental direct benefits of the project amount to US$326 million.** However, this benefit stream must be adjusted to reflect the fact that a well-functioning and internationally recognized NQI system will not result singlehandedly from this project's activities, but will also rely on critical complementary NQI investments from the public and the private sector (for example, expanding domestic testing and calibration laboratory capacity, raising NQI awareness, and so on). In other words, only a portion of these projected benefits from an upgraded NQI system can be attributed to the project. The overall cost of implementing an NQI system of the scope and standard needed to accommodate the export growth and increasing demand for NQI services envisioned in GTP II is probably closer to US$100 million. Because this project is financing only US$50 million of the estimated overall cost, the implied project-specific 'benefit factor' will be 50 percent. However, because the competitiveness of Ethiopia's manufacturing exports and their demand from the EU and the U.S. target markets is shaped by a plethora of other factors beyond the project's NQI interventions, a conservative approach is taken and the benefit factor is adjusted down further to 35 percent, bringing the present value of total project benefits down to US$114 million.

Costs

27. **The project costs across the various components can be categorized into** (a) investment costs, namely the capital purchases under Component 1 in equipment and TA to help upgrade the facilities and equipment of the four key Ethiopian NQI agencies (ESA, ENAO, ECAE, and NMIE) and improve their service capacity and human resources, as well as the various TA offered to private sector entities in Component 2; (b) the recurring operating and maintenance costs of running the various NQI facilities and dialogue forums beyond the project period—assumed to be incurred beginning the last year of the project once the critical mass of investments have been put in place; and (c) the overall project implementation support costs. Collectively, these costs are estimated to amount to US$56.6 million over the five-year project period and US$52.4 million in present value terms over the full 20-year projection horizon. No conversion factor is applied, meaning these financial costs are treated as equivalent to economic costs.

Overall Return

28. **When the total present value of estimated project benefits is netted against the present value of expected costs, the result is a highly-positive NPV of US$61.7 million.** The implied ERR is 23.1 percent, well above the assumed 9 percent social discount rate (table 5.2). What is relevant here are not the precise numbers but rather the finding that the expected benefits exceed costs by a rather large margin.

Table 5.2. Summary of Estimated Project Cost and Benefit Flows (Baseline Case)

BENEFIT FLOWS (US$ million, constant 2016 prices)

		Project year						
Component	**PV***	**1**	**2**	**3**	**4**	**5**	**6-10**	**11-20**
Additional domestic export value added	$210.62	0.00	0.52	2.56	8.11	17.82	143.35	458.84
Savings in cost of quality certification	$8.67	0.58	0.69	0.76	0.73	0.77	4.56	14.00
Savings in cost of exporting	$21.30	0.00	-0.04	-0.18	0.23	1.32	18.25	42.18
Savings in cost of metrology services	$81.91	0.00	1.50	3.06	6.25	11.15	59.21	137.55
Savings in cost of accreditation services	$3.45	0.16	0.25	0.29	0.34	0.39	2.12	4.83
TOTAL BENEFITS	**$325.95**	**0.75**	**2.93**	**6.49**	**15.66**	**31.46**	**227.49**	**657.40**
ADJUSTED BENEFITS**	**$114.08**	**0.26**	**1.02**	**2.27**	**5.48**	**11.01**	**56.87**	**164.35**

COSTS (US$ million, constant 2016 prices)

	PV*	**1**	**2**	**3**	**4**	**5**	**6-10**	**11-20**
Investment costs	**$35.01**	**9.0**	**9.0**	**9.0**	**9.0**	**9.0**	**0.0**	**0.0**
Component 1: Support to NQI agencies	**$29.33**	**7.5**	**7.5**	**7.5**	**7.5**	**7.5**	**0.0**	**0.0**
ESA	$2.10	0.5	0.5	0.5	0.5	0.5	0.0	0.0
ENAO	$4.07	1.0	1.0	1.0	1.0	1.0	0.0	0.0
NMIE	$9.54	2.5	2.5	2.5	2.5	2.5	0.0	0.0
ECAE	$9.74	2.5	2.5	2.5	2.5	2.5	0.0	0.0
MoST	$3.87	1.0	1.0	1.0	1.0	1.0	0.0	0.0
Component 2: Enhancing private sector engagement	**$5.68**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	**0.0**	**0.0**
Component 2.1: Support to priority industries	$2.33	0.6	0.6	0.6	0.6	0.6	0.0	0.0
Component 2.2: Support to private NQI providers	$2.37	0.6	0.6	0.6	0.6	0.6	0.0	0.0
Component 2.3: NQI awareness and PPD	$0.97	0.3	0.3	0.3	0.3	0.3	0.0	0.0
Recurring operational & maintenance costs	**$9.61**	**0.00**	**0.00**	**0.00**	**0.00**	**1.63**	**8.2**	**16.3**
Component 1: Equipment maintenance for NQI agencies	$8.14	0	0	0	0	1.38	6.91	13.82
Component 2.3: Operation of NQI forum and PPD	$1.47	0	0	0	0	0.25	1.25	2.50
Implementation costs	**$7.78**	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**	**0.00**	**0.00**
TOTAL COSTS	**$52.39**	**11.00**	**11.00**	**11.00**	**11.00**	**12.63**	**8.16**	**16.32**
NET ADJUSTED BENEFITS	**$61.69**	**-10.74**	**-9.98**	**-8.73**	**-5.52**	**-1.62**	**48.71**	**148.04**
Economic rate of return (ERR)	23.1%							

* Calculated at a social discount rate of 9 percent.

* Adjusted for Project's partial contribution to overall NQI system upgrading and achievement of international recognition, using benefit factor of 0.35.

Sensitivity Analysis

29. **The fairly high margin of return in this baseline case implies ample scope for different benefit flows to fall short of their forecasted values and still deliver a positive overall project return, but some of the underlying sensitivities are also large.** This is particularly true of the expected additional export

value—the largest benefit category. Lowering the rate of increase in the share of firms assumed to begin exporting as a result of the NQI upgrading (from 1 percent per year in the baseline scenario to 0.5 percent) reduces the NPV of export benefits by US$16.5 million and the ERR by around 3 percentage points. A similar magnitude of sensitivity relates to the assumed increase in the share of exporting firms with an international standard quality management system—compared with the 10 percent cumulative increase assumed in the baseline, a 5 percent increase will reduce the estimated project NPV over the projection horizon by US$14 million and the ERR by roughly 3 percentage points. Halving the assumed cumulative increase in the share of firms' products which are individually certified (from 10 percent to 5 percent) also has a similar impact. The largest sensitivity relates to the assumed export demand elasticity to quality certification: if assumed demand response falls from 20 percent to 10 percent (and thus the elasticity from 1.2 to 1.1), the project NPV declines by nearly US$32 million, and the ERR by 6.2 percentage points. Meanwhile, the impact of cutting the assumed price premium for products attaining quality certification from 20 percent to 10 percent is more muted, reducing the NPV by only US$6 million and the ERR by 1.1 percentage points.

30. **Similar sensitivity tests were conducted for the other benefit categories—savings in the cost of exporting and quality certification, metrology, and accreditation—by varying the assumptions for their key underlying parameters.** Table 5.3 summarizes the results of the tests on the project NPV and ERR, based on an illustrative 'shock' where the parameter changes assumed in the baseline scenario are cut in half. To better understand which parameter variations have the greatest impact on the project return estimates, the elasticity of the project NPV to changes in each parameter is calculated in table 5.3. Elasticity values below 1 for a given parameter indicate that, for a 1 percent change in the parameter value, the project NPV changes by less than 1 percent, whereas elasticity values above 1 indicate the opposite. The calculations suggest that, except for the export elasticity to quality certification, changes in all the key parameters considered in the analysis have a less than one-for-one impact on the project NPV.

31. **Because of these fairly low NPV elasticities across the board, the project NPV would remain positive** (and the ERR above the break-even discount rate) under many combinations of downside shocks to various parameters, and would turn negative only in a 'combined shock' scenario where the assumed baseline change in *all* the parameters is cut in half. Since this combined negative shock represents a fairly extreme outcome, and one which rules out the possibility of upside shocks to individual parameters, the assertion that the Project's proposed interventions will, under most circumstances, deliver a positive economic return for Ethiopia can be made with a fairly high degree of confidence.

Table 5.3. Summary of Project Economic Return Sensitivity Analysis

Parameter	Units	Assumption		NPV	ERR	Elasticity of
		Baseline	Shock	(US$ m)	(%)	NPV**
Export value added						
Growth in exporting firms*	p.p.	5	2.5	45.2	20.2%	0.53
Increase in share of firms with quality systems certification*	p.p.	10	5	47.8	20.4%	0.45
Share of firm's products which are certified*	p.p.	10	5	44.7	19.9%	0.55
Export demand elasticity to quality certification	ratio	1.2	1.1	30.0	16.9%	1.03
Certification quality premium	percent	20	10	55.6	22.0%	0.20
Savings in cost of quality certification						
Local certification costs as percent of foreign costs	percent	10	20	61.2	23.0%	0.02
Savings in cost of exporting						
Reduction in cost to export*	p.p.	30	15	55.0	21.9%	0.22
Savings in cost of metrology services						
Reduction in local capacity gap for metrology services*	percent	50	25	47.4	20.0%	0.46
Savings in cost of accreditation services						
Increase in share of labs with accreditation*	p.p.	25	12.5	61.3	23.1%	0.01
Combined shock to all parameters	–	see above		-16.2	3.3%	–

* Refers to cumulative increase over the 20-year projection horizon.

** Calculated as the percent change in project NPV divided by the percent change in underlying parameter.

ANNEX 6: KEY RISKS AND MITIGATION ACTION PLANS

Ethiopia: National Quality Infrastructure Development Project

Risk	Mitigation Action	Means of Verification	Responsible Body
Political Environment and Insecurity The doubts in the political environment following the recent unrest could distract attention of implementing agencies and key Government officials and impact the preparation and implementation of the project. The Government has indicated its intention to open the political space and also declared state of emergency to manage the insecurity.	Closely monitor the potential impact on the project during implementation to ensure necessary adjustments are made as and when needed Broaden the ownership of the project to include both the political and technocratic staff during preparation and implementation	Progress reports	MoST MOFEC World Bank
Implementation Capacity Lack of previous experience in World Bank-financed operations by MoST and insufficient number of qualified chemists to run the laboratories in participating agencies imply that the capacity to implement the project may not yet be in place.	Support recruitment of additional personnel fully dedicated to the project to the existing team and mobilize project funds to support TA programs to ensure adequate support is provided to MoST and the NQI institutions to implement and monitor the reforms	Progress reports	MoST NQI institutions
Stakeholder Coordination and Oversight The relatively infant stage of development and maturity of both the industry and the participating public and private sector actors may lead to weak oversight and interagency coordination.	Provide dedicated TA/training support to MoST and in participating agencies to strengthen their capacity to undertake strong oversight, coordination, and technical quality assurance	Progress report	MoST
Operation and Maintenance (O&M) Requirements The project will upgrade selected technical and physical facilities to provide quality assurance services for the targeted industries. The sustainability of the benefits will depend on the Government and users having the incentives and organizational arrangements to provide the required O&M activities	The project design and implementation arrangements will support and monitor to ensure adequate O&M support is provided to each of the infrastructural investments	Progress reports	MoST MOFEC World Bank

on a regular basis. Otherwise, there is a risk that the infrastructural works will deteriorate, resulting in a loss of sustained benefits.			
Fraud and Corruption Infancy of the industry and the resultant limited experience coupled with low public sector salary could lead into lack of genuine quality certification/compliance issues.	Make the standards open and conduct audit on the process of certification	Progress report	MoST NQI institutions World Bank
Transparency, Engagement, and Complaint Handling Poor transparency and complaint and grievance-handling mechanism can keep information and meaningful engagement to limited groups thus contributing to rent-seeking and manipulative practices.	Identify all relevant stakeholders and elaborate the project's objectives and eligibility criteria for support to empower the beneficiaries Include public and private sector stakeholders in planning, implementation, and monitoring Develop grievance-redress mechanisms and create awareness so stakeholders can lodge complaints about technical, fiduciary, and environmental and social impacts.	Progress report	MoST NQI institutions World Bank
Environmental Contamination The operation of laboratories may result environmental contamination in and around.	Actions: disposal mechanisms; provide detailed procedures to be followed to mitigate impact in the ESMF.	Progress report	MoST NQI Institutions

ANNEX 7: GENDER AND CITIZEN'S ENGAGEMENT

Ethiopia: National Quality Infrastructure Development Project

Gender and Citizen Engagement

1. **In Ethiopia, compared to men, women are in a disadvantageous position in all aspects of life.** They benefit less from social services like education, health, and so on, and hold lower positions in the economic and political affairs of the society. Historically, disparities between men and women in the division of labor, share of power, resources, and benefits have been justified and maintained by patriarchal social norms and structures.

2. **Studies[36] conducted in Ethiopia have shown that women are underrepresented in formal employment sectors and are highly concentrated in the routine and low-paying jobs such as clerical or manual labor.** The number of women participating in and benefiting from industry and commerce is insignificant due to lack of access to education, productive resources, and opportunities (land, credit, advisory services, training, and information). However, for those women who do gain access to formal employment, there is a policy of equal pay for equal work that is respected in the formal sector. Women are very active in the informal sector either being employed by other people or self-employed, such as in petty trade or small businesses that require small capital, not demanding sophisticated FM skills.

3. **In Ethiopia, women who enter politics face various barriers** including lack of exposure and experience, limited access to support networks, limited inclusion in the formal decision-making process, domination by men, and limited opportunities for female political candidates. Women and girls do not have full control over their own sexual and reproductive rights and over their own bodies and do not have access to health services and information. Further, sexual, physical, psychological, and economical violence against women is prevalent in many parts of Ethiopia as a result of unequal power relations between men and women. The major barriers preventing Ethiopian women and girls from achieving their potentials include deep-rooted patriarchal social norms, religious practices, and biased attitudes. Nonetheless, in the face of these difficulties the number of women parliamentarians is increasing—between 2007 and 2010 women held 116 parliament seats out of 529 total seats.[37]

4. **The gender profile of the implementing agencies (in table 7.1) show that the majority (66 percent) of the positions in these institutions are occupied by men.** Permanent employees of the ECAE are 211 in number, of which 61 are women, which is about 29 percent. The female-male sex composition is close to equal in ENAO—at 43 percent. The total numbers of currently available permanent employees in the NQI implementing institutions are 547 of which the proportion of female workers accounts for about 34 percent. However, these figures indicate that the participation of women in the NQI sector is limited and more gender-responsive works have to be integrated throughout the project life cycle.

[36] UNICEF. 2012. *Investing in Boys and Girls in Ethiopia Past, Present and Future*.
[37] http://www.indexmundi.com/ethiopia/gender-parity-in-national-parliament.html

Table 7.1. Gender disaggregated employment profile of the NQIs

No.	Name of Organization	Sex	Education Level			Total
			Masters	B.A/B.Sc Degree	Diploma and Below	
1	ECAE	Male	7	84	59	**150**
		Female	2	21	38	**61**
Subtotal			**9**	**105**	**97**	**211**
2	ENAO	Male	3	10	6	**19**
		Female	2	5	7	**14**
Subtotal			**5**	**15**	**13**	**33**
3	ESA	Male	13	45	30	**88**
		Female	1	17	35	**53**
Subtotal			**14**	**62**	**65**	**141**
4	NMIE	Male	6	57	39	**102**
		Female	2	15	42	**59**
Subtotal			**8**	**72**	**81**	**161**
Grand Total			**36**	**255**	**256**	**547**

5. **The GoE has a strong commitment to gender equality, which is reflected in its constitution, the National Policy on Women, and the National Action Plan for Gender Equality (2006).** In addition, the country has revised many laws (the family and criminal laws) and established institutional/organizational machineries and structures at all levels of the Government to implement actions that will promote women's social, economic, and political empowerment. Gender equality is one of the central pillars of the Government economic development strategy (GTP II). A new Federal Family Code, based on the principle of gender equality, came into effect in July 2000. It raised the minimum age of marriage from 15 to 18 years and established the rights of women to share any assets the household had accumulated, if a couple has been living together for at least three years in an irregular union. The Ethiopian penal code criminalizes domestic violence and harmful traditional practices including early marriage, abduction, and female genital mutilation/cutting.

6. **The Ministry of Women and Children Affairs contributes to policy development and supports gender mainstreaming in all the Government ministries and bureaus.** To date, gender units have been established in all line ministries including the MoST. All the NQI institutions have gender units and will be used to facilitate active participation of women in the project.

7. **As part of project preparation, the client conducted stakeholder consultations and developed an ESMF, which addresses physical environment and social impacts, and a draft GAP, which identifies key gender mainstreaming issues and checklists for project interventions.** The draft GAP focuses on (a) ensuring women's participation in project-related consultations; (b) promoting gender-inclusive capacity development; (c) incorporating gender-responsive design features during NQI infrastructure development and services provisions; and (d) strengthening the implementing agencies' institutional capacities for gender mainstreaming and women empowerment.

8. **The draft GAP and ESMF have identified some practical actions that will be undertaken by the NQI institutions to mainstream gender and ensure gender equity.** For instance, women should be given special consideration and priority in training packages and job recruitment to ensure their participation.

During job recruitment when men and women have got equal value, priority should be given to women. According to this, the NQI institutions such as ECAE will develop a strategy that helps deliver services for women-owned organizations. The project will give priority to women in the training packages, and special training packages will be arranged by gender units and experts in each sector offices of the NQI institutions.

9. **While the detailed gender-specific interventions will be based on the action plan, the project intends to support gender impact analysis of existing and upcoming polices and strategies and gender responsiveness of the infrastructure and facilities of the NQI institutions**, including gender balance criteria when selecting candidates for capacity-building activities as much as possible, and ensure that media and awareness creation campaigns are designed in a more inclusive manner. In particular, given the general indication that women in Ethiopia are not active participants in quality and standards ecosystem, the project will introduce beneficiary interventions that will specifically target women to increase their participation and engagement. This will be tracked as part of the citizen engagement indicator with a specific sub target focusing on women.

10. **The project will ensure active participation of women in the PIU and in various PICs.** There will be TA for the MoST and the NQI institutions to enable the ministry and the institutions to (a) monitor the implementation of the GAP; (b) conduct an impact analysis study on the existing and upcoming policy and strategies and gender responsiveness of the infrastructure and facilities of the NQI institutions; and (c) enable active participation of women in consumer education and awareness; (d) provide gender training for the enterprises and implementing institutions including MoST staff to ensure an understanding of women's issues; and (e) collect gender-disaggregated information as part of the project's results tracking and monitoring system.

11. **The project will further facilitate citizen's empowerment by conducting social M&E surveys with beneficiaries** before the midterm review (that is, after the first year's activities are carried out) and post implementation (after all subprojects are carried out) to evaluate the impact on the ground. The surveys will use gender-disaggregated data to measure and verify citizens' perceptions of the project's activities and will serve as a tool to define gender or social issues and recommendations for further improvements in the sector.

Box 7.1. Gender Considerations for Ethiopia National Quality Infrastructure Development Project

Component 1: Strengthening Institutional Capacity for NQI Development

(a) Consider conducting a gender equality impact analysis of existing or drafted policy documents, guidelines, or manuals to ensure that they are nondiscriminatory and gender responsive.

(b) Include awareness-raising activities for policymakers on the gender equality impact of policy options and technical regulations.

(c) Recommend assignment of gender focal points within the NQI institutions and provide the relevant training to ensure gender equality is taken into consideration.

(d) Consider including gender balance criteria (40–60 percent possibly) when constituting technical working committees; NQI Forum; selecting trainees; and working on twinning arrangements. This includes considerations for leadership roles and so on at governance, executive management, and technical levels.

(e) Ensure that infrastructure is gender responsive—having separate men and women ablution points; providing crèche facilities within the NQI buildings.

(f) Ensure men and women are consulted in undertaking additional renovations options to factor gender responsiveness—special needs.

Component 2: Enhancing Private Sector Engagement

(a) Consider outreach and support to build the capacity of gender equality advocacy groups and networks to increase participation in the standardization process.

(b) Ensure access to information is nondiscriminatory—take into consideration gender equality when providing guidance. For example, location, opening hours, and staff hospitality are measures that impact women's access to standards and national regulations.

(c) NQI Forum should be gender representative at all levels—governance, management, and technical levels.

(d) Include gender balance criteria when selecting candidates for training and consider affirmative action where possible.

Component 3: Project Management and Monitoring and Evaluation

(a) Communication - Develop a communication strategy and identify channels that could possibly receive equal attention from women and men—for example, radio is one of the most widely used media of communication by women—especially those in the rural areas. It will also consider having special target for women entrepreneurs' networks.

(b) M&E - Ensure that the project collects and uses gender-disaggregated data and qualitative information to analyze and track gender issues.

Results Framework

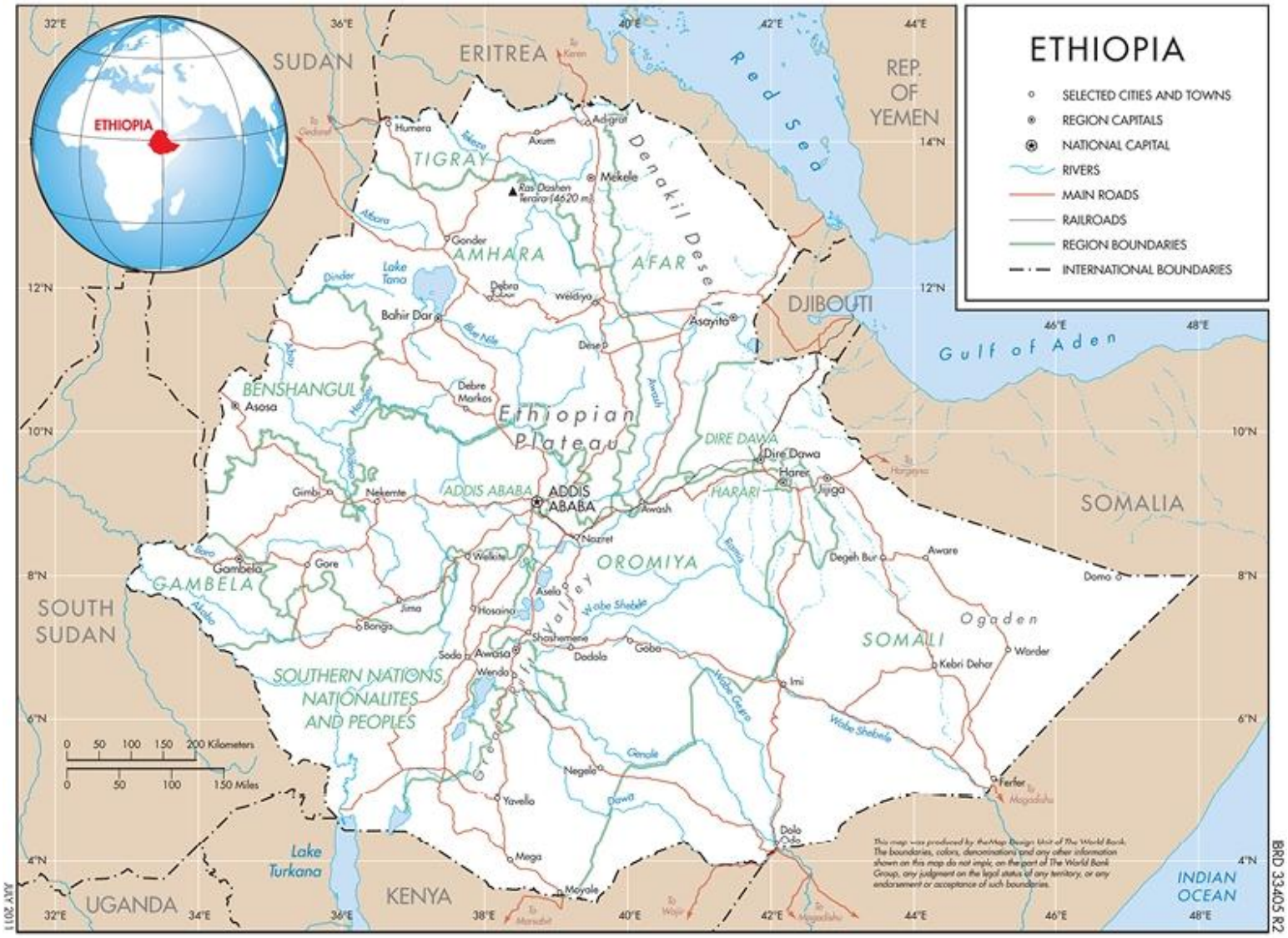
(a) Ensure that outcomes, outputs, and activities are designed to meet the different needs and priorities of women and men.

(b) Ensure that the results framework includes gender-responsive indicators, targets, and a baseline to monitor gender equality results.

Table 7.2. Project GAP

Project Components	Sub activities of the Project	Gender Related Activities to be Done	Responsible Body
Component 1: Strengthening Institutional Capacity	(a) Supporting the development of human and technical capacity of the NQI institutions	• Provide awareness-raising activities for top officials on gender equality • Strengthen the capacity (both in material and training) of gender specialists or units in the NQI institutions (if it does not exist, assign gender focal person and provide the relevant training to ensure gender equality) • Ensure that human and technical capacity-building benefits are likely to be distributed equitably between men and women (gender balance) • Develop a participation strategy for men and women during project activity implementation • Conduct women-specific consultation to take their views and suggestions about project implementation • Hire female project staffs in the PIU and assign them in the TC	PIU, TC, and MoST
	(b) Upgrading of service facilities	• Infrastructure upgrading project activities will be gender responsive and women will be consulted during the renovation • Assess the gender-specific implications of upgrading activities • Specify the minimum number or percentage of female laborers to be employed and prohibit the use of child laborers according to the labor code of Ethiopia • Provide safety materials for men and women working to address occupational health and safety issues	PIU, TC, and MoST
Component 2: Enhancing Private Sector Engagement -	(a) Support to increase the demand from the private sector for the NQI services where PPD on the NQI topics would be one medium	• Target women entrepreneurs in trainings aimed at strengthening the capacity of private sector players in standards • Organize gender-sensitive forums and maintain gender equity of participants	PIU, TC, and MoST
	(b) Support to private sector enterprises and associations involved in providing quality assurance services	• Provide priority for women-owned business certification and develop their capacity • Document gender-disaggregated beneficiary data and relevant measures taken to ensure gender equality	PIU, TC, and MoST
Component 3:		• Communication strategy and channels will	PIU, TC, and

Project Components	Sub activities of the Project	Gender Related Activities to be Done	Responsible Body
Project Management and Monitoring and Evaluation		address and capture the need and interest of both women and men • Develop a participation strategy for men and women during project M&E • Develop a feedback mechanism in which both males and females will have a say • Disaggregate all relevant indicators by gender, such as number of women having access to capacity building, working in PIU, and so on • Measure the impacts of the project components on women and men	MoST


ETHIOPIA
SELECTED CITIES AND TOWNS
REGION CAPITALS
NATIONAL CAPITAL
RIVERS
MAIN ROADS
RAILROADS
REGION BOUNDARIES
INTERNATIONAL BOUNDARIES
SUDAN
ERITREA
REP. OF YEMEN
DJIBOUTI
SOMALIA
SOUTH SUDAN
UGANDA
KENYA
INDIAN OCEAN
Red Sea
Gulf of Aden
TIGRAY
AFAR
AMHARA
BENSHANGUL
GAMBELA
OROMIYA
SOMALI
DIRE DAWA
HARARI
SOUTHERN NATIONS NATIONALITES AND PEOPLES
ADDIS ABABA
Ethiopian Plateau
Ogaden
Denakil Desert
Rift Valley
Lake Tana
Lake Turkana
Humera
Axum
Adigrat
Mekele
Gonder
Bahir Dar
Debra Tabor
Weldiya
Dese
Asayita
Debre Markos
Asosa
Gimbi
Nekemte
Addis Ababa
Awash
Nazret
Dire Dawa
Harer
Jijiga
Degeh Bur
Aware
Gambela
Gore
Jima
Bonga
Wellkite
Hosaina
Asela
Shashemene
Sodo
Awasa
Dodola
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