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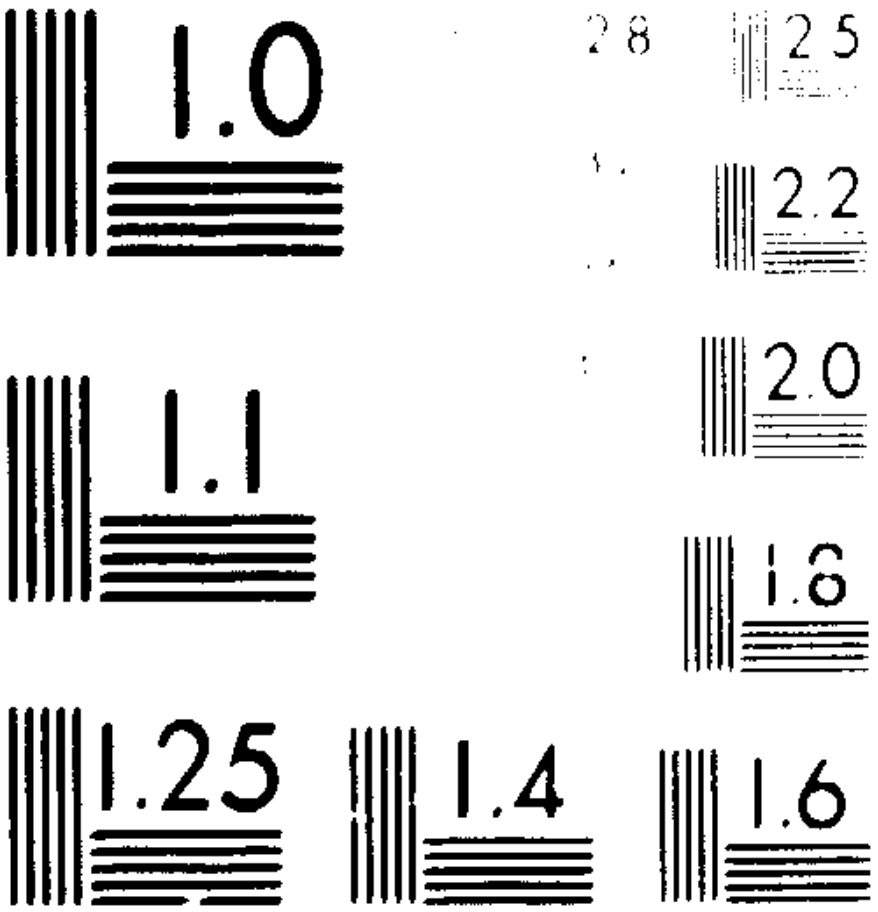
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NATIONAL QUALITY CONTROL AND TESTING CENTRE.

ETHIOPIA.

FINAL REPORT.

Prepared for the Government of
Ethiopia
by

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DP/ETH/79/003

C O N T E N T S

ABBREVIATIONS

E.S.I.	Ethiopian Standards Institution
C.T.A.	Chief Technical Adviser
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
P.A C.	Purchase and Contract service (UNIDO).
NQCT	National Quality Control and Certification Testing

ABSTRACT

The expert was assigned for two years (13 October 1980 - 13 November 1982) as Chief Technical Adviser in the Organization and Operation of Quality Control Laboratories under project number DP/ETH/79/003.

The expert organized the equipping of the testing and research laboratories including the selection of equipment, the preparation of lay-outs and installations, advised in the organizational and managerial aspects of the NQCT's activities, in the organization of a national quality certification marking scheme indicating conformity of goods and products with relevant standards. He assisted in the organization and implementation of metrology in the ESI and in fellowship training for the testing laboratory staff. He assisted in the supervision of the laboratories' construction.

The following report recommends tc speed up the laboratory construction and to finalize the delivery of equipment.

I. INTRODUCTION

This is a report on the implementation of project DP/ETH/79/003 which was approved by the Government of Ethiopia and the UNDP in 1979. The executing agency is the United Nations Industrial Development Organization.

The expert was sent on a mission of 12 months from 13 October 1980 with an extension of one year, to the ESI in Addis Ababa.

The economy of Ethiopia is basically agricultural, followed by commerce and industry. While industry accounts for less than 10% of the gross domestic product, it is one of the fastest developing sectors. Moreover, the country's foreign trade also constitutes an important activity and has a major bearing on the rate of growth of the economy.

At this stage of development, there is a need to organize activities aimed at rationalizing and improving productivity and quality of products, at the reduction of wastage and achievement of other objectives which may be attained through the introduction of standardization and quality control in the national economy. The Ethiopian Standards Institution (ESI) was established in September 1970, and was, among other things, empowered to:

- prepare compulsory as well as optional national standards relating to practices, processes, materials, products and commodities in the field of commerce and industry and enforce the same;
- authorize the use of the Standards Mark to be affixed to materials, products and commodities which conform to the national standards;
- certify import and export materials, products and commodities which conform to national standards;
- examine and test materials, products, commodities, practices and processes, and conduct any investigation or research that may be necessary;
- ensure by inspection and checking whether materials, products, commodities, practices and processes conform to national standards;
- fix, impose and collect fees for services rendered by the institution.

A previous consultancy mission specifically recommended the establishment of the Centre and advice to the ESI on its construction and organization. The implementation of the standards is conducted through quality control and the ESI standards mark certification scheme. The legislative measures necessary for the creation of the certification scheme have been confirmed in the Standards Mark and Fees Regulation of May 1973. In order to secure the implementation of the relevant provisions of the Regulations, the ESI is instrumental in the introduction of proper internal quality control schemes in factories and industries.

The National Quality Control and Testing Centre (NQCT) will also be instrumental in providing pertinent research and test results necessary for the elaboration of certain national standards where basic local data and information are required for their finalization. This will make possible the integration of the national standardization procedure with quality control efforts in the light of prevailing national economic needs and physical requirements, thereby enabling the standardization process to grow roots in indigenous soil.

The ESI has also been given responsibility for certifying quality requirements in relation to foreign imports and will thus function as a national surveyance and control agency.

II. GENERAL ACCOUNT

II.1 Objectives and logic of the project

The establishment of the Quality Control Testing Centre is a basic prerequisite for the achievement of the objectives of the Ethiopian Standards Institution in introducing standardization and quality control in the Ethiopian economy. The principal objective of the ESI is to meet the national interest by the stimulus which standardization and quality control impact to industrial development through the application of Ethiopian Standards in a number of industrial fields, and the gradual establishment of a guide to nationally-agreed industrial practice in order to render production units economical, enhance outputs of reliable quality levels and foster import substitution.

The establishment of the Centre shall furthermore achieve an important objective of the national standardization efforts regarding the promotion of the export capability of the country by defining, certifying and upgrading the quality levels of export items. Hence, the Quality Control Testing Centre would provide the capability of improving the quality of export-oriented production in the light of international market requirements as well as help introduce a possible shift from the export of raw materials to that of semi-finished or finished products.

The Quality Control Testing Centre shall also be employed to strengthen the national standardization practice by gradually introducing modern quality control practices in manufacturing plants and integrating quality control and industrial research for quality control with the national standardization procedure. The Centre shall furthermore be theplace where research and developmental testing for projects directed towards continuous improvement, adoption and development of indigenous and imported technology shall be undertaken.

Testing laboratories and ancillary facilities being an indispensable element in the application of a national quality control programme, the Ethiopian Government has requested UNDP support to strengthen the ESI through a three-year project, in organizing, developing, managing and promoting within its organizational structure, a Quality Control Testing Centre, by establishing national quality control testing facilities. On the basis of this request the Project Document was signed in 1979 by the Ethiopian Government and the UNDP.

II.2 Activities carried out and outputs produced

A meeting was organized by the UNDP and ESI with sub-contract representative.

Fellowships for three fellows were organized. Duty tours to Ethiopian plants and visits in the University and other laboratories were organized.

The delivery of equipment was watched and relevant items checked after arrival into a provisional store at the building site. Some auxiliary equipment was required with the P.A.C.

The new metrology project proposal was studied and discussed. Equipment order placements were revised with some items in connexion with the equipment reduction.

A second version of the proposal of Legal Notice on Quality Control and Evaluation Regulations of Material, Products or Commodities and Principles of Uniform Managing of Products Quality Attendance in the Field of Products State Tests was submitted and discussed with the expert on quality control and certification marking schemes.

The equipment reduction possibility was studied and discussed in the light of funds falling short caused by the price increase of equipment in the world market. A priority list of laboratory equipment was issued and savings achieved by a reduction in equipment.

Auxiliary equipment was required for some equipment items. The quality control expert was assigned.

Overall status of project outputs

The newly established target dates in the revised work plan could not be held to due to the fact that the quality control testing laboratories construction was not completed and all the laboratory equipment was not delivered to the ESI until now. It was assumed that the laboratories would be ready by early September 1982. In that case there would not be a problem carrying out the subcontract on consultancy service according to the contract agreement.

According to a message received in October, it is officially estimated that the completion of the laboratories would take at least a minimum of six months and therefore it is to be expected that the subcontractor will request an increase in the contract price.

During the reported period laboratory equipment was ordered with a total of US$797,173. The equipment delivered to the project so far has a total value of US$345,671, representing approximately 43% of the budget line value. Since the laboratories are not yet complete, the equipment is kept in a provisional store until the laboratories are ready to be fitted. This of course involves the danger of damage by bad conditions and also the condition of the equipment could not be checked before the expiry of the warranty.

Meetings were held with leading officials and experts of the Pasteur Biological Institution on several occasions. The possibility of a transfer of some chemical equipment was discussed on the basis of the original and revised list of equipment issued by the Industrial Chemistry Department of the Pasteur Institute. Based on these discussions, a new version of the equipment list was promised by the Director, and subsequently received. The University testing laboratory was visited and contract arranged for textile tests of cotton cloth and information gathered on the pipe testing machine.

A copy of the revised metrology project proposal was received through the UNDP office in Addis Ababa. It was discussed at the UNDP office and based on that discussion a new text will be prepared by the UNDP staff, particularly the amendment to budget line 40 - Equipment.

Equipment purchase orders received at the ESI were checked in view of the equipment budget shortcomings and the expected reduction. Some purchase orders placed with firms with high prices and expensive items of equipment were cancelled and proposals made to place new purchase orders with other firms. In this connexion proposals were made on placing orders for some auxiliary equipment. Specifications and prices of these items were quoted based on the catalogues of the firms involved.

In this connexion the reduction in laboratory equipment was studied and discussed. It was discussed with ESI and external laboratory experts. As a result an equipment priority list was issued and sent to UNIDO. After cancellations and new orders were placed, a reserve of US$41,239 - against the budgeted equipment total of US$798,000 - arose. With this the only valid budget proposal (11-82) signed by the UNDP became fully operational with all lines.

Laboratory construction progress

The construction of the quality testing laboratories progressed during the period, but it is still not yet finished. Since it represents a milestone in activity implementation, detailed information is given.

The deadlines for the relevant activities were the following:

Materials Testing Laboratory	Deadline
Paving and Flooring	15-12-1981 29-02-1981
Metal Work	01-08-1981 30-10-1981
Carpentry and joinery	01-12-1981 31-01-1982
Glazing	01-02-1982 31-03-1982
Painting	01-02-1982 31-03-1982
Sanitation	07-11-1981 07-01-1982
Electrical	07-11-1982 31-01-1982
Roofing	30-10-1981 15-02-1982
Site works	31-12-1981 31-03-1982

Biochemical Laboratory	Deadline
Paving and flooring	01-12-1981 29-02-1982
Metal Work	01-09-1981 21-11-1981
Carpentry and joinery	01-10-1981 31-12-1981
Glazing	31-12-1981 31-03-1982
Painting	31-12-1981 31-03-1982
Sanitation	15-08-1981 30-10-1981
Electrical	01-10-1981 31-12-1981
Roofing	01-11-1981 31-01-1982
Site works	31-03-1982

The progress of the laboratories' construction was periodically checked. The expert was unhappy to see that little was done. The situation was discussed with AGM Akberom who promised to arrange for its acceleration through the office of the Minister of Internal Trade. The acceleration of the construction was urged on several occasions and the constructor promised to have the laboratories completed by early September 1982. Nevertheless, the construction was not completed by that time. The glazing, flooring, fittings and equipment are not completed. It is now officially estimated that the completion will take at least a minimum of five months.

Mr. K.S. Stephens was assigned to the post of quality control and certification marking schemes expert. He started his work at the ESI on 21 August 1982.

II.3 Achievement of immediate objectives

- The laboratory construction is still not completed.
- Laboratory equipment for US$797,573 was ordered.
- Laboratory equipment for US$345,671 was received at the ESI (net price partly calculated from other currencies on invoices and inventory record sheet)
- Fellowship training for three fellows arranged by UNIDO
- New metrology project proposal with revised budget prepared
- Quality control and certification schemes expert assigned.

II.4 Utilization of project results

Ethiopia is pursuing a successive production development. The main objective is to increase productivity, improve the quality of products, reduce wastage and foster import substitution. These could be attained through the introduction of standardization and quality control in the national economy. Quality control as one of the legal powers and tasks of the ESI may be introduced in the national economy only by implementing relevant standards concerning quality and other requirements and methods of sampling and testing through relevant Quality Control and Certification Marking Schemes. For the accomplishment of this task the provision of adequately equipped testing laboratories and other facilities is an indispensable prerequisite.

The most pressing need now is to ensure that the laboratories' construction is completed very soon since it is newly delayed by six months, and that all required equipment is delivered before the end of January 1983. Any delay of the project will have implications in the shortage of testing equipment because of price inflations in the market and in increased construction delivery prices.

II.5 Findings

The laboratories' construction and equipment was carefully designed. Once completed, equipped and staffed to conduct testing they will contribute to quality, increase of materials, products and commodities thus having far-reaching implications in meeting foreign exchange requirements and in the rate of growth of the Ethiopian economy.

There were 108 Ethiopian Standards published and 529 are approved by the Standards Board but they have not been approved by the Council of Ministers, printed and published. There are also over 900 Ethiopian Standards in the pipeline.

In the event of not approving the standards within a short time, there is a fear that some laboratory equipment which will arrive soon will be kept idle and the standards will not be more up-to-date.

At present, testings of products are carried out by research institutes and testing laboratories that exist in Ethiopia, in order to enforce the ESI legal powers concerning the implementation of Ethiopian Standards related to materials, products and commodities through quality control certification marking schemes. This will be indispensable also during sometime in the future. However, certain testing laboratories and research institutes which provide testing facilities to ESI due to their tasks, terms of reference, staff and equipment are not suitable to undertake the envisaged routine quality control and testing activities relevant

to the ESI requirements. The National Metrology Laboratory is indispensable for quality measurements and testing. Through the weights and measures section of ESI it should be involved in the inspection, verification and calibration of relevant instruments within ESI and in the country. The laboratory building will be set up and equipped for length, mass volume, electrical units, frequency and temperature measurements.

The metrology project should be realized in close connexion with the DP/ETH/79/003 project.

New staff assignments might be expected in the Department of Technical Services because of the creation of Quality Control and Certification Centre. The work of this Centre should be started under the Laboratory and Testing Division, but later on it must be separated. Because of its importance within the whole work of the ESI it should be installed on a department level. The reason for it is not only the overall importance, but also the volume of work to be done. If for example, with 108 standards published, 6824 testings were needed to check the products against standard characteristics only a many times larger volume of testings will be needed to check the enlarged production against increased number of standardized and other product characteristics in the future.

National Quality Control and Certification Marking Schemes indicating conformity of goods and products with relevant standards must be based on governmental legal documents to be issued. In this connexion, a second version of Legal Notice on Quality Control and Certification Marking Schemes as well as the first draft of Explanatory Material was prepared.

II.6 Recommendations

1. The laboratories' construction should be speeded up. According to the actual situation the completion could be expected before three months.

2. The delivery of the remaining equipment must be finished before the completion of the laboratories.

3. In order to make the laboratories operational, it is highly imperative that the Minister of Domestic Trade sees that the Council of Ministers approve the 529 Ethiopian Standards already submitted as soon as possible.

4. It is essential to organize, develop and manage quality control laboratories which are an indispensable element in the application of Ethiopian Standards through the National Quality Control Programme.

5. It is highly recommended that the project document for the establishment of a National Metrology Laboratory submitted to UNIDO for further assistance is approved for realization in 1983.

6. It is recommended to create the Quality Control and Certification Centre under the Laboratory and Testing Division. Later on it should be separated. New staff assignments might be expected in this connexion.

7. A second version of the Legal Notice on Quality Control and Certification Marking Schemes as well as the draft of Explanatory Material is to be legalized before the quality control and certification is started.

8. A laboratory work plan should be established each six months according to testing and standardization procedures.

9. Routine analysis in the framework of the certification scheme should be undertaken when sufficient staff and material are available.

10. The job performed by technicians should be well-planned and closely checked by the quality control expert.

11. The work programme for the immediate future and project activities schedule contained in the progress report of 12 October 1982 should be observed.