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INDUSTRIAL DEVELOPMENT AND PRODUCTIVITY

DP/ETH/68/027

ETHIOPIA

TERMINAL REPORT

Prepared for the Government of Ethiopia by the
United Nations Industrial Development Organization,
executing agency for the
United Nations Development Programme



United Nations Industrial Development Organization

United Nations Development Programme

INDUSTRIAL DEVELOPMENT AND PRODUCTIVITY

DP/ETH/68/027

ETHIOPIA

Project findings and recommendations

Prepared for the Government of Ethiopia
by the United Nations Industrial Development Organization,
executing agency for the United Nations Development Programme

Based of the work of Vladimir Korenić, expert in standardization

United Nations Industrial Development Organization
Vienna, 1977

Explanatory notes

Reference to dollars (\$) are to United States dollars.

A slash (/) between dates (e.g., 1970/71) indicates a financial year.

A full stop (.) is used to indicate decimals.

A comma (,) is used to distinguish thousands and millions.

References to "tons" are to metric tons.

The following abbreviations of organizations are used in this publication:

ARSO	African Regional Standards Organization
CPA	Central Personnel Agency
ECA	Economic Commission for Africa
ESI	Ethiopian Standards Institution
ISO	International Organization for Standardization

Besides the common abbreviations, symbols and terms, the following have been used in this report:

ES	Ethiopian Standards
PRO	Public Relations Officer
QC	quality control
QCTC	Quality Control Testing Centre
SC	Technical Subcommittee
TC	Technical Committee
WG	Working Group

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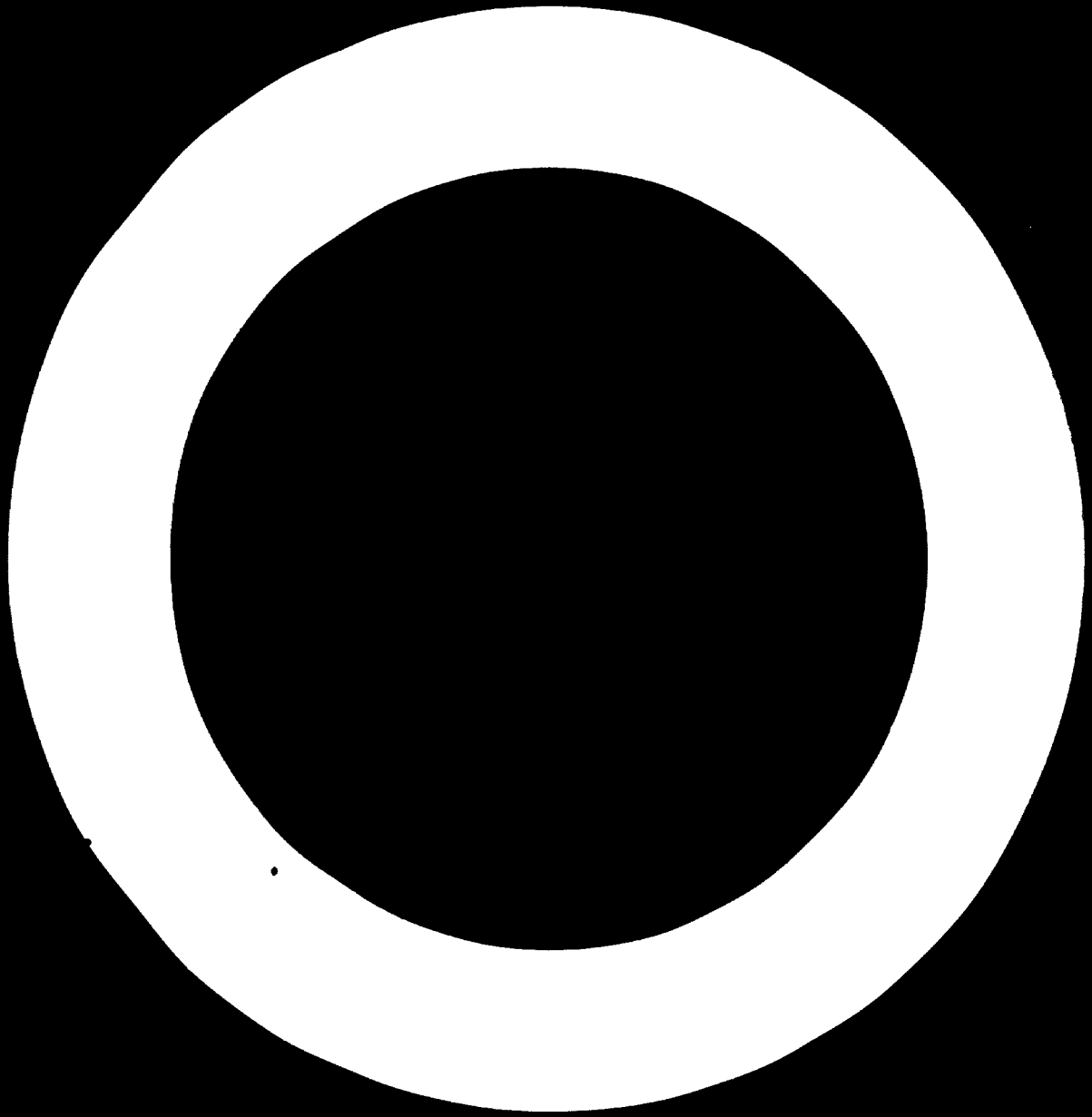
ABSTRACT

In 1969 the Government of Ethiopia requested from the United Nations Development Programme (UNDP) assistance in developing a centralized system of industrial standardization. In June 1970, under the UNDP project "Industrial Development and Productivity" (IP/ETH/68/027), the United Nations Industrial Development Organization (UNIDO), as executing agency for this project, assigned a standardization specialist to the Ministry of Commerce and Industry of Ethiopia.

The immediate objective of the expert was to establish a national standards body that would prepare, publish and implement national standards and centralize standardization methods throughout the country. His longer-term objectives were to organize the proper functioning of this standards body and to make it operational and effective.

The project continued until the end of December 1976, by which time the Ethiopian Standards Institution (ESI) had been founded, was functioning and had become a Member Body of the International Organization for Standardization (ISO). This work was funded by appropriations from UNDP that totalled \$181,330.

Recommendations for further development of ESI and for further international assistance to it are made.



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INTRODUCTION

Project background

Industrial development is a very recent factor in the economy of Ethiopia, but it is rapidly increasing in importance. While industry represented but a minor percentage of the gross domestic product according to the statistical data available in 1969, it was even then growing at a rate of 13% yearly and was one of the fastest-developing economic sectors. The establishment of a centralized system of standardization was thus clearly needed.

Some steps in this direction had already been taken: a laboratory for testing the characteristics of some building materials already existed, and the Weights and Measures Division of the Ministry of Commerce and Industry was attempting to organize its activities. In 1969, the Ethiopian Government requested from the United Nations Development Programme (UNDP) assistance in developing a suitable centralized system of industrial standardization. In June 1970, under the UNDP project "Industrial Development and Productivity" (IP/ETH/68/027), the United Nations Industrial Development Organization (UNIDO) as executing agency for the project, assigned a standardization specialist to the Ministry of Commerce and Industry of Ethiopia as adviser on industrial standardization. He continued in this capacity until the end of December 1976. This project was financed by appropriations from UNDP that totalled \$181,330.

Project objectives

The immediate objective of the project was to establish a national body to prepare, publish and implement national standards and to centralize standardization methods throughout the country. The next objective was to organize the proper functioning of this body and make it operational and effective. To achieve this latter objective, the expert was assigned to the Ministry of Commerce and Industry. After reviewing the reports, findings and recommendations of his predecessor, he was to advise the Ministry on:

Appropriate measures for the establishment of a national standardization centre vested with authority and responsibility for the preparation, co-ordination and promotion of standards in the country

A programme of work, general policies and operational activities for the national standards body

Physical and man-power requirements, budget, operational procedures etc. for the proper operation of the national standards body

Membership and functions of an advisory council for the national standards body

In addition, the expert was to advise the Ministry and the advisory council of the national standards body on:

Selection and training of personnel for the national standards body as well as matters related to its organization and operation

Preparation of national standards for products of prime importance for the national economy

Co-ordination in the national standardization programme with similar programmes and activities in neighbouring countries and in the region

I. ACTIVITIES

Legislation

Several provisions of the Third Five Year Development Plan (for the period 1968/69-1972/73) reiterate the needs to draft necessary legislation and establish an institute for standards and quality control and for the actual preparation of standards for agricultural and industrial products designed for the export and home markets.

Therefore, in co-operation with his Ethiopian counterpart, who was then the Head of the Standards Division at the Ministry of Commerce and Industry and at the end of the project was the General Manager of the Ethiopian Standards Institution (ESI), the expert concentrated on the preparation of the amended draft legal acts necessary for the establishment of a national standards body.

After the amended Draft Order on the Establishment of an Ethiopian Standards Institution (ESI) was prepared and adopted, Order No. 64 of 1970 was approved and published by the Government. That day marked the establishment of ESI as an autonomous government body, with such primary purposes as:

Preparing compulsory and optional standards relating to practices, processes, materials, products and commodities in the fields of commerce and industry

Ensuring the application of standards in the country and performing such functions as promoting standardization and quality control, adopting a standards mark to be affixed to materials, products and commodities that conform to the standards

Providing or arranging for testing facilities necessary for its activities

The publication of the order was the result of thorough preparatory work and discussions. It was decided that national standards body should be a government institution with power to prepare both optional and compulsory standards and to enforce the latter. This power was necessary, since standardization and quality control were new in Ethiopia and there was insufficient competition and a lack of standards consciousness among both manufacturers and consumers. Only such a government body was considered able to introduce standardization and quality control in the country through publication of compulsory standards, particularly in case of quality requirements, variety reduction and safety and health protection. At the same time, ESI was charged with developing public relations activities to enable manufacturers, consumers and the general public to understand the purposes of standardization and the benefits that it would bring.

Another legal instrument, and indeed the main one, was enacted when Parliament passed the Ethiopian Standards Institution Proclamation No. 300 of 1972, in which the full powers of ESI were defined, including the power to certify that imported and exported materials, products and commodities conform to Ethiopian Standards (ES), examine and test materials, and fix, impose and collect fees for services rendered by it, such as examining, testing, certifying and marking. In this way ESI was established as an autonomous government body provided with all necessary powers, financed through the collection of fees from the implementation of ES through quality control and certification marking. It was subsidized through the government budget only partly (for capital investments in particular). The main reason for adopting this method of financing was that standards are prepared mainly for the benefit of industries and consumers, who should therefore carry the highest portion of the financial burden. It was in this connexion that the amended draft concerning the use of a standards mark was discussed and decided.

After their approval by the Government, the Standards Mark and Fee Regulations of 1973 were published. The regulations provide for the operation of the Standards Mark certification schemes, the purpose of which is quality assurance undertaken by ESI on the basis of established factory quality control in industries so that the same level of products quality will be maintained, and the consumers protected. Producers are permitted to use the ESI Standards Mark only under licences granted upon entering into contracts with ESI. The use of the Standards Mark by producers is either compulsory or optional, depending upon the status of the relevant ES.

Organization

After the Standards Board, which is the main organ of ESI and which consists of representatives from the six ministries most concerned, the Dean of the Faculty of Technology and one representative from the Ethiopian Chamber of Commerce, with the Minister of Commerce and Industry as Chairman, had been formed, it was necessary to prepare all necessary documents in order to permit the convocation of its first meeting. The expert therefore, in co-operation with his counterpart, prepared of the most urgent documents for consideration and adoption by the Board. According to the law, the Board was to establish its own rules of procedure, organize and prepare the activities of ESI and ensure that they were properly carried out.

The General Manager was responsible for the conduct of the activities of ESI. The counterpart of the expert was therefore appointed to the post of Acting General Manager and later (January 1972) upon the recommendation of the Standards Board, was appointed as General Manager of ESI, the post he still occupied at the end of the expert's assignment.

The first meeting of the Standards Board was held in November 1970, six months after the arrival of the expert. At this meeting, the Board adopted the document "Basic concepts of standardization, its aims and benefits and recent developments", which was prepared to familiarize the board members with standardization. The first budget of ESI (for the 1971/72 fiscal year), which was covered completely by a government subsidy, was also adopted.

At subsequent meetings, the Board adopted resolutions to approve the following matters:

The design of the ESI seal

The design of the ESI Standards Mark

A document on the duties and functions of the ESI and its organizational set-up

The organizational structure of ESI

Rules on the working procedure of the ESI in preparing and publishing Ethiopian Standards (ES)

Rules of procedure concerning the work of the Standards Board

Rules on the establishment and working procedure of Technical Committees (TC)

Guide for the presentation and formulation of Ethiopian Standards

System of classifying and numbering Ethiopian Standards

Classification of Ethiopian Standards by economic and industrial fields (in English and Amharic versions)

Principal working fields and general programme of work

A set of the listed basic documents covers a total of over 200 typewritten pages.

Later, (in 1976) the document "Rules on the working procedure in translating, publishing and documenting Ethiopian Standards" was prepared by a committee and approved by the General Manager for immediate implementation.

The purpose of this set of resolutions was:

To organize ESI so as to make it an effective national standards body and to provide the economy of the country with the norms required for

various aspects of standardization such as terminology, types, dimensions, quality requirements, sampling, testing methods, packing, and designation related to materials, products and commodities, starting with those that have been given priority

To establish rules for the uniform formation of technical organs to be responsible for scrutinizing the standards proposals prepared by the Secretariat of ESI (that is, by the relevant Standards Engineers)

To introduce uniformity in the preparation of standards proposals and follow the basic principles concerning clarity, precision and consistency avoiding duplication and ambiguities

To introduce uniformity into the procedure concerning all stages up to the publication and implementation of ES

To delimit the responsibilities in the ESI

Generally, to put the ESI on a firm foundation from the beginning and make it viable

Planning

In developing countries, planning is widely accepted as a powerful means to make the best use of available resources, particularly when they are in limited supply. Standardization is considered prerequisite infrastructure for development planning.

Immediately after it was created, ESI began to plan in advance its activities for each coming working year. In parallel with the work plan, a budget was prepared for the same year to cover the expenditures for the planned activities. In this way, ESI was enabled to accomplish its objectives.

For the draft Fourth Five Year Development Plan (1974/75-1978/79), a project concerning standardization and metrology was prepared by ESI and submitted to the Planning Commission Office for inclusion under the relevant chapter in the Country Plan. This five year development plan concerning standardization and metrology was intended to serve as a framework for the preparation of annual programmes of work. However, the Country Plan has been neither completed nor published by the Planning Commission.

The Plan Concerning Standardisation and Metrology included sections relating to the establishment of a quality control testing centre and a metrology laboratory. However, the main part included the planning of preparation, implementation and revision of ES by year for the period 1974/75-1978/79.

Recruitment and training of staff

According to the approved organization chart, staff were gradually recruited in co-operation with the Central Personnel Agency (CPA) after the vacancies had been advertised and the candidates had been interviewed by a selection committee. In many cases, the candidates had little experience or none at all. After six years, the composition of the ESI work-force was as follows:

Professionals	19
Administrative service	3
Sub-professionals	11
Clerical and financial service	45
Trades and craft service	14
Custodial and manual service	<u>20</u>
Total	112

The personnel indicated above include employees engaged in the weights and measures activities of ESI. It should be mentioned that, for the last two years, some important technical staff members have been transferred to other organizations to assume new duties.

The Divisions of ESI to which the above personnel have been assigned are the following:

Administration
Finance
Engineering Standards
Biological Standards
Quality Control, Inspection, Certification and Marking
Translation, Publication and Documentation Division
Branch offices

Training the recruited staff was one of the most important and time-consuming duties of the expert. From the beginning, all newly engaged technical staff members were given basic theoretical knowledge on standardization and quality control through participation in orientation courses that were organized for the purpose. The programme was very similar to the one recommended later (in 1975) to developing countries by the International Organization for Standardization (ISO). In this way, the Standards

Engineers were enabled to begin the preparation of proposals for ES and the Testing Officers to assume their duties in the implementation of approved and published ES.

An other method used was on-the-job training, which absorbed most of the expert's time teaching the trainees and discussing problems with them so as to help them apply the rules of standardization in their practical work.

Yet another kind of technical training was sending Standards Engineers and Testing Officers (Quality Control (QC) Inspectors) abroad to upgrade their theoretical knowledge and practical training by means of fellowships granted by UNIDO and certain foreign governments and national standards organizations.

In November 1970, shortly after the arrival of the expert, a Training Workshop for Personnel Engaged in Standardization in English-Speaking African Countries, organized jointly by UNIDO and the Economic Commission for Africa (ECA) was held in Addis Ababa. Its primary purpose was to review and discuss the role of standardization in the African countries and its contribution to industrial development. The expert, who was one of the five invited from various parts of the world, presented a paper on regional standardization. After discussion, a recommendation was adopted concerning the need to establish a regional standards co-ordinating body for Africa.

Several courses in the implementation of ES were held, in Amhario, by some ESI staff members for the inspectors of the Livestock and Meat Board concerning raw hides and skins, and for the inspectors of the Grain Board concerning grains.

A seminar on problems and obstacles impeding normal accomplishments of the tasks of various divisions of ESI was organized by the expert for a group of about 25 staff members. There were ten meetings. Conclusions were formulated and their fulfillment implemented.

Public relations

In order to familiarize people from different interest groups and the general public with various aspects of standardization and quality control as well as with the benefits that could accrue from the implementation of standards, several public relations activities were undertaken from the beginning.

For a few years, responsibility for the popularization of standardization lay with the expert and the General Manager of ESI; only towards the end of 1975 was a full-time Public Relations Officer (PRO) engaged to undertake permanent activities in this field. This delay resulted from an inability to recruit a suitable person for this important position.

During his orientation courses, the expert would emphasize that not only the PRO but also each Standards Engineer should be able to contribute to the popularization of standardization at opportunities such as visits to industries and organizations and by talking about standardization on suitable occasions and preparing informational or technical articles on topics from his particular field.

During the entire period of his assignment in Ethiopia, the expert gave talks about the main aspects of standardization and concrete activities already undertaken, for example, at the opening meetings of each of the more than 50 Technical Committees (TCs) and Sub-Committees (SCs). Discussions were held at these meetings and the answers to many questions were given. After six years, about 300 people from various interest groups had thus received short courses in standardization and quality control with respect to the products for which standards proposals were under discussion.

From time to time, articles on standardization and information on current activities of ESI were prepared and published in the daily press, both in English and Amharic. World Standards Day (14 October) of each year was taken as an opportunity to undertake public relations activities by Radio Ethiopia and Television through interviews on current related topics.

For that occasion, press conferences were held also in the premises of ESI every year to explain the purpose of observing that day and to inform the public on this achievements of the ESI and its co-operation with ISO. An ISO film was presented at first for the ESI staff and invited persons in 1975 and the second time on television for the World Standards Day in October 1976.

A form of popularization of standardization was also preparation and distribution of printed publications such as:

Short pamphlet Standardization - an Activity Aimed towards the Economic and Industrial Development of Ethiopia issued in 1972 in English and Amharic versions and widely distributed to government and other organizations, private companies and individuals, including TC and SC members during the meetings

An annual report on the activities of the ESI was prepared, illustrated and printed every year in both Amharic and English and widely distributed within the country, to international organizations dealing with standardization and to all foreign National Standards Bodies that are members of ISO

A set of 108 Ethiopian Standards (the first group), printed and published in both languages, has been widely distributed within the country and abroad

An Ethiopian Standards Catalogue: 1975 was published to popularize standards that had been issued and were being implemented. It was widely distributed both in the country and abroad

ESI News, a monthly publication for the information of the ESI staff, was first prepared and distributed in February 1974, but only seven numbers were issued. It is hoped that it will be re-established and even that it may be transformed into a periodical bulletin of ESI

International activities

The most important international activity of ESI has been co-operation with ISO, the seat of which is in Geneva. It is one of the world's most important technical organizations. Beginning as a Correspondent Member, ESI up-graded its status with ISO to become a full Member Body as of January 1973. ESI was represented as an Observer in a number of ISO/TCs and ISO/SCs in order to have access to their working documents and to follow their activities in the preparation of International ISO Recommendations and later ISO Standards.

After a few years, ESI has also registered as a participant in the activities of a small number of ISO/TCs and ISO/SCs concerning products of particular interest to the Ethiopian economy, particularly as regards exports. ISO standards are extremely useful as bases for the preparation of ES, which is the primary purpose of international co-operation in this area, so as to eliminate the barriers to commerce that result from divergent or conflicting national standards.

A complete set of the publications of the International Electrotechnical Commission (IEC) was acquired to serve as the basis for the preparation of ES in the field of electrical engineering. ESI also became the national contact point for the Codex Committee of the World Health Organization (WHO) and the Food and Agriculture Organization of the United Nations (FAO).

Direct contacts have been established with other National Standards Bodies (Member Bodies of ISO); the exchange of standards, catalogues and periodicals is functioning regularly. Sets of ISO Standards and those of a

number of countries constituted the basis for the establishment of the ESI library, which is open to the public as well as to the concerned ESI staff.

Co-ordination of activities

Since it was established in 1970, ESI has grown both in the number of its staff and in the number of economic and industrial fields in which ES have been prepared and published; still more are in preparation. The co-ordination of its activities is thus of increasing importance. In order to eliminate any duplication of effort and discrepancies between adopted standards, a Co-ordinating Committee, under the chairmanship of the expert, was established. However, routine activities concerning the preparation of standards proposals in various fields according to the rules laid down in the Guide for the Presentation and Formulation of Ethiopian Standards (ES) and their processing at committee meetings required a lot of discussion and was found to consume much time, energy - and patience.

At the stage of translation of ES into Amharic, according to the relevant "Rules on the working procedure in translating, publishing and documenting Ethiopian Standards", for each group of ES, an ad hoc working team consisting of a Standards Engineer, a translator and legal adviser is formed to ensure that this work is done correctly.

In order to co-ordinate the activities of the Testing Officers and quality control inspectors in the implementation of ES and those of the Standards Engineers concerning the possible need for later revision of relevant ES, feedback of information and their common discussions were normally introduced. Another form of co-ordination of work was necessary concerning co-operation with ISO. ESI had gradually increased the number of ISO/TCs, ISO/SCs, ISO/WGs and Council Committees in which it was registered as either an Observer (O) or as a Participating (P) member until there were nearly 150 of them. As a result, voluminous packages of documents were arriving weekly, which were usually distributed among the Divisions for comment or to be studied by individual Standards Engineers and other staff members. Therefore, co-ordination in this area was necessary to channel the documents properly and consistently, so as to prevent duplication and to ensure that the necessary follow-up is made in a uniform way in agreement with the relevant ISO Guide.

Regional standardization - establishment of ARSO

The expert was in correspondence, by preparing informational and explanatory notes, with the Economic Commission for Africa (ECA) Section for Science and Technology, and UNIDO headquarters concerning further action to be undertaken to implement the recommendation of the training workshop held in 1970 in Addis Ababa, that there be created, under the aegis of ECA, a regional standards co-ordinating body for Africa. Although various steps in this direction were taken by the ECA secretariat no such a co-ordination body had actually been created.

Therefore, in 1974/75, this idea was revised and strongly supported by a group of African national standards institutions, including ESI. At an exploratory meeting held in September 1975 in Accra, Ghana, it was agreed that an African Regional Standards Organization (ARSO) should be established as soon as possible.

On the basis of the draft documents prepared by the ECA secretariat concerning the constitution, regulations, programme of work, priorities and budget of such a body, a meeting of the Interim Steering Committee, chaired by the General Manager of ESI, was held in March 1976 at Addis Ababa. For this occasion the comments of ESI on the draft documents and participated at the meeting as adviser of the ESI delegation. After long discussions, the principal documents were amended and adopted, and it was decided to convene the founding meeting of the ARSO General Assembly in January 1977 in Accra to create ARSO, establish its Central Secretariat, and decided where its seat will be.

Taking into consideration the great importance of co-ordinating standardization, quality control and metrology activities in the African continent in order to eliminate discrepancies, facilitate inter-regional trade by co-ordinating the activities of the countries concerned, project documents have been prepared jointly by UNIDO and ECA to provide technical assistance and to support regional co-ordination activities in Africa. However, since no support for the prepared projects has been provided by UNDP, the founders of ARSO will have to provide their own means at the beginning.

Quality Control Testing Centre (QCTC)

In agreement and in co-operation with UNIDO headquarters in Vienna and UNDP in Addis Ababa, the expert prepared, in 1973, the first draft of a three-year project document concerning the establishment of a Quality Control Testing Centre (QCTC) to be operated as a division of ESI. The document was amended several times; its final form was prepared in April 1976. In it, both the long-range and immediate objectives were explained in detail, and the project was given high priority for approval; its final implementation was to begin on 1 January 1977.

Since the Ethiopian Government recognized the importance of establishing such QCTC under ESI, ESI was granted the necessary funds to begin construction of laboratory buildings at a building site of about 10 hectares in Addis Ababa, also granted by the Government.

The preliminary sketches for the laboratory buildings had already been prepared by an architect engaged by ESI for this purpose. On the initiative of UNIDO, the expert prepared an additional project document concerning the engagement, through UNIDO, of an international consulting firm specializing in preparing plans for such laboratory buildings, with the responsibility of reviewing the prepared preliminary sketches and submitting its recommendations. However, owing to financial constraints, the final approval and implementation of both projects have been postponed.

Weights and measures

Immediately after the establishment of ESI, the Government decided to transfer weights and measures activities from the Ministry of Commerce and Industry to ESI in order to combine activities concerning standardization and metrology under it. The legal metrology work has thus benefited from the technical support and guidance of ESI. A revised draft of Weights and Measures Regulations was prepared by ESI and published in March 1973 providing for the efficient administration of the national weights and measures programme in line with the standardization activities of ESI.

As a result, a growing number of measuring instruments such as balances, weights, length and capacity measures, fuel pumps and equipment such as tank lorries have been inspected every year and verified in Addis Ababa and in other towns and market places in different provinces by ESI Weights and Measures Inspectors and their mobile teams, which operate from four bases: the

Central Regional Office in Addis Ababa, the Northern Regional Office in Asmara, the Eastern Regional Office ~~Diredawa~~ and the Western Regional Office in Jimma. Such teams have also reached some administrative regions where weights and measures inspection had never been undertaken before.

The principal impediment to the proper development of weights and measures activities in Ethiopia has been the absence of support from a national metrology laboratory where the national primary and secondary standards would be kept and properly maintained for calibrating and checking the accuracy of field and working standards. Therefore, a project document on the establishment of such a national metrology laboratory, to be operated under ESI, was prepared. The project was approved by the Government and a subsidy was granted for the necessary studies and construction of a laboratory building.

In order to provide a more scientific and effective measurement system for the country's continued development of commerce, technology and science in co-operation with other industrialized and developed countries, the Ethiopian Government required full membership of the International Organization of Legal Metrology (OIML) in March 1974, with ESI being responsible for collaboration and activities.

II. RECOMMENDATIONS

Further services of international experts

Although young, ESI is already a functioning organization. The Government has established it and granted it certain legal powers, its administrative and technical organs have been formed and are operative, and the recruitment and training of its staff are well under way. Nevertheless, problems remain that must be eliminated through further training, improving the co-ordination between and within the Divisions of ESI, supervision of the implementation of the approved Rules of Working Procedure and strengthening the Quality Control Division so that it will be able to keep pace with the growing number of ES that reach the implementation stage. To solve these problems and to sustain the momentum of the work that has already been accomplished, ESI will still require the services of highly qualified international specialists in standardization.

Opportunities for staff training abroad

Some members of the technical staff of ESI have been sent abroad for additional training in standardization and quality control through UNIDO programmes. These arrangements have been very useful in broadening the knowledge of the participants. It should be noted that some of the participants in such programmes were later transferred to other organizations, both agricultural and industrial. Although such transfers represent immediate losses to ESI, it is very probable that these trained people will be able to apply their theoretical knowledge and practical experience in their new positions in organizations in which internal quality control for the proper implementation of ES should be established.

There is this a need further to provide ESI staff with training opportunities such as fellowships for study abroad. After their return these trainees will be enabled to accomplish their duties, wherever they are assigned, with improved understanding of problems and thus with greater effectiveness.

Public relations activities

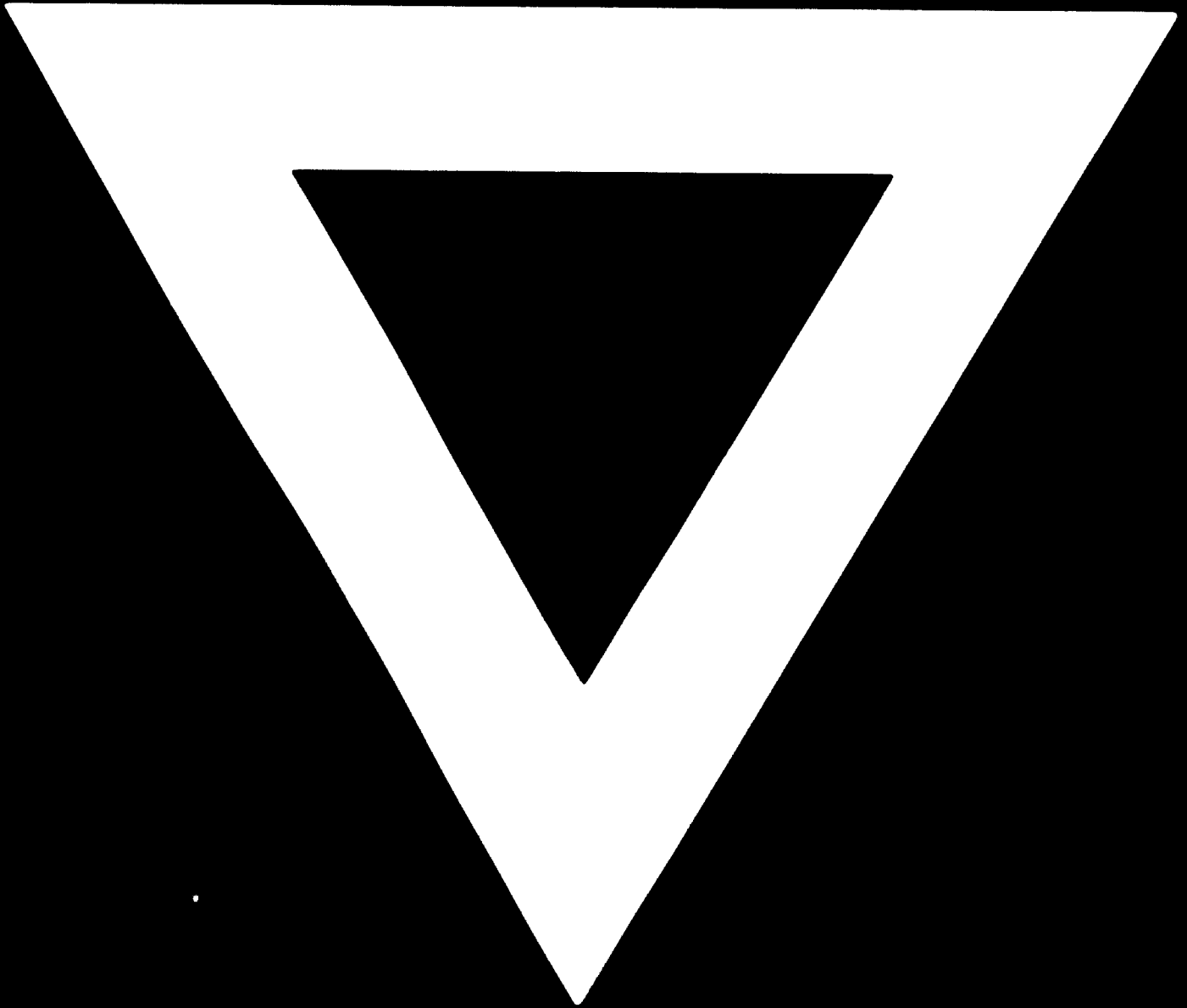
The further progress of standardization in Ethiopia will require the expansion of present public relations activities. Both producers and consumers should be made aware of the benefits that can accrue through the

implementation of standards. This concept should be presented in as concrete a manner as possible. An example of this approach was a document prepared by the expert showing the economic benefits, calculated in terms of money, that had been achieved through standardization in several other countries. He followed up this study with similar analyses of the results of the implementation of ES for various products. These studies demonstrated that, in each case, there had been savings that could be calculated in hundreds of thousands of Ethiopian dollars.

Quality Control Testing Centre and National Metrology Laboratory

There is an urgent need to approve the draft project for the establishment of a national Quality Control Testing Centre (QCTC) to be operated under ESI. In parallel with the development of standardization, ESI is concerned with weights and measures activities, since the determination and control of product quality cannot be achieved without proper inspection and verification of the weights and measures used in normal commercial transactions. However, the lack of support from a National Metrology Laboratory where the national primary and secondary working standards for calibrating and ensuring the accuracy of field and working standards would be kept and properly maintained has impeded the proper development of weights and measures activities. To remedy this situation, the establishment of a National Metrology Laboratory, to be operated under ESI, has been prepared. For these reasons, preparatory work for the establishment of both the national Quality Control Testing Centre and the National Metrology Laboratory has begun. The Ethiopian Government has already granted ESI a building site in the outskirts of Addis Ababa and the necessary funds for the fiscal year 1976/77 to undertake the preparatory activities for the construction on it of laboratory buildings. There is therefore an urgent need to approve the project document (subcontract) concerning the engagement, through UNIDO, of an international consulting firm that specializes in such work, to assist ESI by reviewing the preliminary sketches for the laboratory buildings of both the quality control centre and the metrology laboratory. Such a consulting firm should be engaged as early in 1977 as possible.

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