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Training Workshop in Quality Control for
African Countries

Cairo (ARE), 12 - 21 February 1972

FINAL REPORT 1/

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ANNEXES

I. INTRODUCTION

Background and Purpose

1.- The Industrial Development Board in its Third Session (Vienna, 24 April - 15 May 1969) stressed the importance of standardization and quality control and the need to give special attention to these activities in developing countries.

2.- Economic practice in the developed countries has long since passed into the stage where the quality of goods and services provided has become a major element of success or failure. Purely quantitative growth of industry has led to considerable waste of resources in these countries. Such waste is unacceptable to the developing countries because of the scarcity of their resources. Quality control, therefore, is one of the most important aids to industrial growth of every country. A number of African countries, in their industrial drive, have made provision to ensure that a high standard of quality is maintained so that their products may find a good market at home and abroad.

3.- In view of the above and in order to approach the problems of Quality Control in developing countries, this Workshop was organized for representatives of a number of African countries to discuss relevant aspects of quality control and improvement in those countries to facilitate their further industrial development.

4.- The overall purpose of the Workshop was to review and discuss:

a) the concepts of quality and quality control
b) the role of quality and quality control in industrial development
c) inspection, sampling and testing (including statistical quality control)
d) the interdependence of quality control and standardization activities (including applied metrology)
e) organization and management of quality control programmes
f) quality control in selected fields (case studies)
g) training in quality control.

5.- Furthermore, the Workshop provided a forum for the exchange of experience of the participating countries of Africa in their quality control activities and their achievements in this field as well as their plans for the future on the one hand and the experts from developed and developing countries on the other hand, thereby fulfilling a training function as well as providing guidelines for possible future work of UNIDO in this field.

Organization

6.- The Training Workshop in Quality Control was held in the main Conference Room of the Arab League Building, Cairo, Arab Republic of Egypt, from 12 to 21 February 1972. The Workshop was organized by UNIDO in co-operation with the Egyptian Organization for Standardization (EOS), which was the host of the meeting, and the International Organization for Standardization (ISO). Mr. R. Schmied, Industrial Development Officer, Industrial Institutions Section, UNIDO, and Dr. Fouad Sobhy, Director-General of EOS, were Director and Technical Director of the Workshop, respectively.

7.- The Workshop discussed organizational, procedural, operational, methodological, financial and promotional aspects of quality control activities in developing countries. A number of very interesting visits to industrial plants and testing laboratories in and around Cairo had been organized. Discussions were based on several papers prepared by international experts and distributed to participants in advance of the Workshop, as well as on pages presented by participants on the quality control activities undertaken in their respective countries.

II. RECOMMENDATIONS

8.- The Training Workshop in Quality Control for African Countries, considering the importance of quality to consolidate the national economy of African Countries, and to promote their programmes of industrial development by increasing the productivity, improving the economics of production and ensuring a strong position for African products on the internal and world markets, unanimously adopted the following Recommendations:

1) THAT UNIDO continues to help African countries in the field of training in quality control:

a) by continuing to organize similar training workshops;

b) by organizing more specialized training courses for longer periods of time;

c) by organizing training courses in closely related fields, such as standardization and industrial metrology;

d) by helping the African countries to send trainees to the well-established quality centres in developed and developing countries and offering them grants and fellowships for this purpose;

e) by preparing, in collaboration with specialized organizations, suitable correspondence courses in quality control and standardization and making them available to personnel from developing African countries.

2) THAT the Governments of African countries give their full support to establishing effective national bodies for quality control and standardization in their respective countries.

UNIDO and ISO are invited to help African Governments to achieve this end by supporting their national programmes of quality control, by advising them on the best course of action and by supplying technical assistance in the form of experts and laboratory equipment.

Concerned organizations such as the EOQC could be contacted by UNIDO to assist in attaining this objective.

3) THAT UNIDO, in collaboration with ISO, ECA and other interested international and regional organizations, helps the African countries organize publicity of the importance of quality for developing countries. To achieve this end, it is recommended that:

a) UNIDO publishes short booklets showing the advantages of quality control and standardization, to be distributed among the relevant government authorities and industrialists of African developing countries;

b) UNIDO distributes the report of this, and similar training workshops as widely as possible among the responsible authorities and interested bodies in African countries;

c) UNIDO prepares, in collaboration with specialized organizations, manuals on quality control and its organization in developing countires to be made available, together with previous publications of UN specialized agencies in this field, to African developing countries;

d) UNIDO prepares, in collaboration with specialized organizations, other facilities for publicizing quality control, such as news service, popularized films, etc., and make them available to developing African countries;

e) UNIDO organizes, in collaboration with interested organisations, a Quality Day or Week to be celebrated in developing African countries;

4) a) THAT UNIDO helps African developing countries assess their needs in the field of international standardization. ISO is requested to give more attention to these needs.

b) THAT ISO holds some meetings of its technical committees and DEVCO and DEVCONF in African countries. This would be of great value to publicize the importance and activities of international standardization in developing African countries.

c) THAT the African countries members of ISO be invited to participate actively in the work of ISO Technical Committees in order to voice their needs and viewpoints in the field of international standardization in an effective way, and African countries, non-members of ISO, to attend meetings of DEVCO and DEVCONF for this purpose.

5) THAT UNIDO and ECA speed up the arrangements to establish the Standing Advisory Committee for Quality Control and Standardization in Africa within the ECA Secretariat.

This Committee should be instrumental in achieving the objectives of the above recommendations.

III. THE MEETING

Opening Session

9.- The Training Workshop was opened by Prof. Dr. Ahmed Tewfik, Under-Secretary of State for Industry on behalf of Dr. Y. El-Molla, Minister of Industry, Petroleum and Mineral Resources of the Arab Republic of Egypt. After the opening speech of Prof. Dr. Tewfik (Annex II), Mr. R. Schmied, Director of the Training Workshop, welcomed the participants on behalf of the Executive Director of UNIDO, and expressed his best wishes for the success of their gathering.

Election of Officers

10.- The Workshop unanimously elected the following officers:

- Chairman - Dr. Ahmed Tewfik, Under-Secretary of State for Industry of the Arab Republic of Egypt
- Vice Chairman - Dr. Fouad Sobhy, Director General of EOS
- 1st Vice Chairman - Mr. Zawdu Felleke, General Manager of the Ethiopian Delegation
- 2nd Vice Chairman - Mr. Hyacinthe Quedraogo, Director of Industrial Development of Upper Volta

Rapporteur - Dr. Anwar El-Tawil, Head of the Mechanical Division, Metrology Department of EOS and Delegate of Egypt

Participants

11.- The Workshop was attended by 16 delegates from 12 African countries, namely:

Cameroon, Egypt, Ethiopia, Ghana, Ivory Coast, Libya, Malagache Morocco, Sudan, Tunisia, Uganda and Upper Volta

Six expert consultants from Egypt, Poland, Spain, Sweden and ISO attended the Workshop on invitation from UNIDO to present papers and lead the discussions on the different topics of the genda.

The Workshop was also attended by observers from the Arab Organization for Standardization and Metrology, and the National Bureau of Standards of the USA, as well as by a number of specialists from Egyptian industrial enterprises and public organizations. (A complete list of the participants, experts and observers is given in Annex III.)

Agenda

12.- At its first session the Workshop unanimously adopted the work programme and agenda with some amendments to the former in order to allow for the visits to industrial plants and testing laboratories that had been arranged as well as for the official holiday (New Year's day) which had been announced for Wednesday, 16 February 1972.

It was also decided that there would be one full session per day, i.e. from 9.00 to 14.00 hours, with one fifteen minute coffee break.

Documentation, Report and Working Language

13.- Documents prepared in English and French in connection with the Workshop included the following: information and discussion papers prepared by the experts and distributed to the participants in advance of the meeting. In addition country statements were prepared by the participants and distributed during the Workshop. An audio-visual (slides and tape recorder) presentation was made by Dr. L. Sandholm, Sweden, on his paper. A list of the documents prepared by the experts is given in Annex VI.

Closing Session

14.- At its closing session, the Workshop was addressed by Dr. A. Tewfik, Under-Secretary of State for Industry, Arab Republic of Egypt, Mr. H. Ouedraogo, Director of Industrial Development, Upper Volta, Mr. Z. Felleke, Director General of the Ethiopian Standards Institution, Dr. F. Sobhy, Director General of the Egyptian Organization for Standardization, and Mr. R. Schmied on behalf of UNIDO. The participants, experts and UNIDO expressed through their speakers their sincere appreciation for the very kind and generous hospitality offered by the Egyptian Government and EOS during the entire duration of this Workshop.

IV.- THE WORKING SESSIONS

Working Sessions

15.- The subjects on the Agenda of the Training Workshop were discussed in seven working sessions. Visits were also organized to several industrial firms representing different industries. During these visits the participants got acquainted with the quality control systems applied in these firms.

(The Work Programme of the Trainig Workshop is given as Annex V.)

A brief account of the working sessions is given below.

1st Session (Saturday, 12 February 1972, Noon)

16.- Dr. M. Salama, Secretary General of ASMO presented a paper dealing with "Aspects of Regional Co-operation in Quality Control".

The ensuing discussions dealt with the co-operation between international, regional and national organizations interested in quality control and standardization. It was agreed that standardization and industrial metrology play a fundamental role in quality control, and that the latter should supply feedback information to the standardization process.

17.- Special attention was paid to the role of UN specialized agencies in helping developing countries to promote standardization and quality of production. In particular, the co-operation between UNIDO and ECA, ISO and ASMO was discussed.

18.- The importance of training in the field of quality control was emphasized. It was agréed that co-operation between the interested international and regional organizations should be speeded up to enable them to offer suitable facilities for training and information in the field of quality control to developing countries in the African Region.

2nd Session (Sunday, 13 February 1972, Morning)

19.- Dr. L. Wasilewsky, expert-consultant from Poland, presented a paper on "Inspection, Sampling and Testing".

The following discussions started with the definition of quality. It was agreed that it should be defined as "fitness for use". The efficiency provided by the statistical methods of quality control and the practical application of these methods were then discussed. It was agreed that the application of statistical methods is a very powerful tool of quality control provided that quality control personnel receive proper training on the use of these methods

3rd Session (Sunday, 13 February 1972, Noon)

20.- Dr. L. Sandholm, expert-consultant from Sweden, made an exposition, on behalf of Mrs. A. Zaludova of Czechoslovakia, of her paper entitled "The Concepts of Quality and Quality Control and Criteria for their Definition". Then, he presented his own paper entitled "Quality, Quality Motivation, Reliability and the Consumer".

The ensuing discussions dealt with creating quality services in small industries, and also with issuing a manual to guide developing countries in the field of quality control.

21.- The relative advantages of each of the three famous systems of quality motivation, namely, the American, the Russian and the Japanese systems were discussed. Dr. Sandholm was of the opinion that the Japanese System of Quality Circles could be applied with advantage by developing countries.

22.- The discussion also touched on equipment to be used in industrial enterprises of developing countries, and whether to give preference to highly sophisticated automated equipment, or to similar equipment. It was agreed that this problem has to be solved in each individual case depending on the prevailing conditions and the objectives of the production activity.

4th Session (Tuesday, 15 February 1972, Morning)

23.- Mr. V. Koukhar, representative of the ISO, presented a paper entitled "Quality and Standardization".

The following discussions dealt with the relation between quality control and standardization. It was emphasized that standardisation is a necessary base for quality control activities.

Participants showed great interest in the activities of ISO and Mr. Koukhar provided them with information regarding the conditions of admission and the facilities provided by the ISO for developing countries.

5th Session (Tuesday, 15 February 1972, Noon)

24.- This session was opened by a country statement presented by the Delegate of the Cameroon.

25.- Then, Dr. L. Wasiliewsky, expert-consultant from Poland, presented a paper dealing with "Quality Training". The presentation of this paper was followed by a demonstration by Dr. Sandholm, expert-consultant from Sweden, of a lesson in statistical quality control, conducted with the help of a tape recorder and specially prepared probability paper.

The following discussions dealt with problems of training, and in particular, the problem of the introduction and application by trainees of the new ideas and techniques that they learn.

26.- It was agreed that it is necessary to start training on the level of top management, and also to train more than one person from each enterprise.

27.- The training of personnel of national bodies of quality control was also discussed. Several delegates raised the question of the psychological aspects of quality training. It was agreed that this training should include a psychological preparation, and also that the efforts to promote quality in a country should be supported by a campaign on the national scale to increase quality consciousness and create quality mentality.

28.- Next, Dr. Brisac, expert-consultant from Spain presented a paper entitled "Organization and Management of Quality Control Programmes".

The ensuing discussions dealt with various aspects of the organization of quality control programmes on the level of the enterprise and on the national level. In particular, the different alternatives of the position of the quality control department in the organizational structure of the enterprise were discussed. The possibility of applying the different systems of quality control in different national conditions were also dis- -cussed.

The discussions also dealt with the quality incentive system, the governmental control of quality and the role of consumer's associations.

Training courses in the field of quality by correspondence or otherwise, available in Spain, were also discussed.

6th Session (Thursday, 17 February 1972, Morning)

29.- This session was devoted to the study of practical cases of quality control. Dr. F. Sobhy, Director General of EOS made a presentation of four practical cases of quality control in the cement industry, the textile industry, the food industry and the engineering industry.

30.- After his presentation, the participants discussed various aspects of quality control in these cases, such as the inspection of raw materials and the rejection of defective lots, the use of control charts to anticipate deviations in the production process before they take place, the research and experiments carried out to decide the quality level of new products, etc.

31.- The participants showed great interest in the quality control activity of the EOS. In particular, they discussed the mandatory versus obligatory nature of Egyptian standards, the quality marking system of the EOS. Dr. Sobhy provided the participants with detailed information on these aspects of the quality control activity of the EOS.

7th Session (Thursday, 17 February 1972, Noon)

32.- This session was devoted to country statements made by the different delegates to the Training Workshop.

Statements on the situtation of quality control in the following countries were presented by their respective delegates:

Egypt, Ethiopia, Ghana, Ivory Coast, Libya, Malagache, Morocco Sudan, Tunisia, Uganda, Upper Volta.

8th Session (Sunday 20 February 1972)

33.- The whole session was devoted to the considerations, discussions and finally the adoption of the Recommendations and Report of the Workshop. The closing session which then took place concluded the series of working sessions, while on the last day of the Workshop, i.e. Monday, 21 February 1972, the participants visited the Iron and Steel works at Helwan.

ANNEX 1

Egyptian Organization for Standardization

Address

delivered by

Dr. Ahmed Fawfik, Under-Secretary of State for the Ministry of Industry

and Head of the Board of Directors of the Organization at the Inauguration of the

Training Workshop in Quality Control for African Countries

In the name of God, the merciful, the compassionate, we inaugurate the Training Workshop.

It is indeed an honour for me to welcome you on the African soil — of Arab Egypt on behalf of Dr. Yehyo el Mulla, Minister of Industry, Oil and Mineral Wealth.

It is also my pleasure on this occasion to welcome you in the name of Egyptian Organization for Standardization which I have the honour to head its board of directors. I avail myself of this opportunity to thank you for kindly responding to UNIDO's invitation to participate in this important workshop which we hope would be fruitful by realising the aims for which it was held, wishing you a pleasant stay in our rising republic.

Gentlemen,

Our republic, believing that standardization is a vital necessity essential for the attainment of the desired quality of local industrial products and commodities to increase the efficiency of industry, safeguard the consumer's rights and safety, and develop confidence in the production, whether in the local or the external markets, established

early in 1957 a national organization for this purpose — the General Egyptian Organization for Standardization, whose functions would be:

- To serve as the national authority for specifications and measures in the Arab Republic of Egypt;
- To issue the standard specifications for raw materials, products, machines, equipment and methods of operation and testing with the aim of raising the standard of accuracy and quality control during operation and reducing costs;
- To organize quality control operations as well as the regular checking of machinery and equipment to ensure the conformity of our local production to the specifications recognized;
- To participate in the work of international and regional organizations for standardization and measurements so as to raise the standard of local production to international standards.

The Arab Republic of Egypt has taken considerable steps towards laying down and applying standard specifications, in order to catch up with industrial progress and so that Egyptian standard specifications would be a basis for joint technical co-operation between our country and members of the international family. Egyptian standard specifications have been laid down on the basis of the actual potentialities of local industry, and in accordance with corresponding foreign and international specifications.

Gentlemen,

As we take wide strides towards industrial development, we are concerned with establishing the planning necessary for our industry and drawing our industrial projects within the framework of a well-studied and established plan in order that we may force our way into the field of world competition. Our products must be in conformity with standard

specifications to ensure their quality and safe circulation. Following standard specifications in production means accuracy in selecting the most suitable materials and the soundest industrial operations, and the most favourable conditions for the production of commodities with the required properties. It also means checking these properties by standard tests established after extensive studies. All this serves to ensure the production of commodities of the quality desired. The General Egyptian Organization for Standardization has exerted appreciable efforts in realization of its objectives in the fields of specifications, Metrology and the quality of industrial production. These efforts could be summed up in the following:

1. Establishing Egyptian standard specifications

The general Egyptian Organization for Standardization sought the realization of its objectives along parallel lines with the implementation of the industrialization programmes adopted by the state. In planning the standard specifications programme it sought to give priority to the products of raw industries so that they would be of high quality which would contribute to the desired success of industrial growth. In addition, attention was given to the quality of export goods and as well as those needed for government use. With the assistance of the technical committees formed to execute the plans approved by the board of directors, the Organization issued until the end of December, 1971 about 1,200 standard specifications for over 2,200 basic products comprising the types and measurements of the products, in addition to about 2,600 standard methods used in examining materials and commodities and in testing measuring equipment.

2. Quality Control

Like any national organization for standardization, the main objective of General Egyptian Organization for Standardization is to ensure the means of applying and its specifications and the conformity

of local industrial products to these specifications.

The Organization has drawn up a plan for organizing conformity and quality control activities. This plan gives particular attention to export products as well as products, where safety of use must be ensured and products whose usefulness depends on their conformity to the specifications, in addition to commodities and products of which consumers complain because of their non-conformity to specifications.

This plan is realized through one of the following methods:

1. Obligatory standard specifications:

This is done by ministerial decrees which make conformity to Egyptian standard specifications obligatory. These compulsory specifications concern products which require safety guarantees, export products and products not hazardous to public health.

Ministerial decrees regarding compulsory conformity to standard specification cover 105 products.

2. Quality Insurance:

This system is applied to products with optional specifications. It consists of taking sample products from factories and sending them to authorised laboratories to be examined and tested on the basis of Egyptian standard specifications. The results are studied by experts of the Organization in order to find out how much the products conform to the reorganized specifications. In the case of the non-conformity of the product, the Organization contacts the producing factory to find out the causes behind the inferior quality, and to try to overcome the difficulties through technical guidance, the application of modern techniques of

quality control and technical inspection of the various stages of production, and conducting the technical research and studies necessary to ensure the conformity of the final products to the specifications required. Such studies may result in the revision or modification of certain specifications.

3. The Mark of Quality System:

To safeguard the reputation of local products and comply with consumer's wishes, the Organization has adopted the system of issuing certificates of conformity and marks of quality, thereby becoming the authority responsible for the conformity of products to standard specifications. The "mark of quality" system was first applied to locally produced articles operated by liquefied petroleum gases, such as stoves, heaters, and water-heaters.

This system was developed to include other products in various industrial sectors. The Organization laid down the bases, rules, and conditions for granting permits for putting the mark of quality on industrial products proved to be in conformity with the relevant Egyptian standard specifications. This system includes inspection operations, taking samples to be examined and tested in authorized laboratories and inside the factories, and special system of supervision, control and regular inspection of the producing factories having the right to use the mark of quality.

Since the application of this system in January 1969, the mark of quality has been granted to 85 products in various industrial sectors.

3. Standards and Measures

To complete its activities in the field of quality control, the Organization is establishing the necessary bases for controlling the accuracy of measuring instruments used in various factories and checking

them against highly accurate recognized sources. It establishes the necessary laboratories comprising the highest level of national measuring instruments; lays down a comprehensive system of checking measuring instruments and issuing official certificates for them, co-ordinates the metrology among centres and laboratories based on the national and international levels, and establishes standard specifications for units, quantities, symbols and conversion factors, measuring instruments, standard methods of metrology and the application of the metric system.

4. Examination and Testing Laboratories

The Organization recognizes some government laboratories as the official authorized departments entrusted with testing and examining industrial products according to Egyptian standard specifications, until the Industrial Production Quality Control Center is established in 1973.

5. Training

Believing in the importance of training and its role in the field of specifications, quality control and testing the Organization has collaborated with the industrial organizations concerned in the Arab Republic of Egypt in organizing training programmes for expert technicians responsible for specifications, standards and quality control in factories. The Organization trains its experts in the fields of specifications, quality control and standardization at both internal and external levels. The number of experts trained at the organization has reached 350 and the training courses it organized 24.

6. External Relations

Believing in the importance of co-ordinating the work regarding standard specifications in the Arab Republic of Egypt with similar

regional and international activities and appreciating the benefits of exchanging technical information and experience in the field of specifications, measures and quality of production, the Organization has joined many regional and international organizations and has assisted in 30 regional and international conferences and meetings.

Friends and Brothers:

Before concluding I would like to emphasize the significance of the specialized seminars held by UNIDO in collaboration with national and regional organizations to study the difficulties and problems faced in the field of standardization. They are considered an effective means of studying these problems realistically and finding appropriate solutions for them.

This seminar has brought together the valuable experience of many industrial countries, developing countries and international specialized agencies. Its agenda includes important and basic issues related to the quality control in industrial production.

I hope that the discussion of the subjects on the agenda of this session would lead to sound views and concrete results that would contribute to the realization of the desired objectives and purposes of this seminar, and facilitate the adoption of practical proposals and recommendations that would help to raise the quality of industrial production, ensuring the proper functioning and guarding consumers at the regional and international levels.

I conclude by reiterating my welcome to you, thanking you for your participation in this seminar, and wishing you every success.

Annex II - 1

ROLE OF QUALITY AND QUALITY CONTROL IN INDUSTRIAL DEVELOPMENT

By Mr. Samuel Mbamba, Cameroon

At a time when the industrially advanced, developed countries and their experts are examining the major problems confronting the emerging countries - population growth, the brain drain, economic growth, industrialization, and so forth - we have an opportunity today of considering a concept that is by no means as clear-cut as it might be: that of quality in the industrial development of African countries. While for some of us this notion of quality has scarcely any meaning, in the eyes of distinguished UNIDO experts under whose auspices we have assembled here it is of very definite and practical significance.

Clearly the first question we have to ask ourselves is: **WHAT IS QUALITY AND HOW DOES ONE DEFINE IT?**

- "Quality" is a term used to indicate that an industrial product or other article meets certain clearly specified standards and conditions and is able to satisfy the requirements of a particular consumer.
- The concept of quality is <u>abstract</u>: the quality of an industrial product is not tangible nor can it be weighed and measured. The quality of a product is always hard to express in concrete terms: generally speaking, the quality of a product is appreciated during its use while the quality of a service becomes apparent when it is resorted to.

The concept of quality is <u>relative</u>: it is the ultimate user or consumer of an industrial product whose demands determine its quality.

The quality of an industrial product is something that is <u>acquired</u>: the manufacturer or craftsman with his skill sets the stamp of quality on a crude, natural product and transforms it into a finished article.

An industrial product may lose its quality over a period of time and become sub-standard. When that happens, it is said to have <u>depreciated</u>.

Quality changes with the product. In other words it is specific to a particular industrial product. For instance, the quality of a hammer cannot be expected to be the same as that of a piece of cloth.

Following this summary definition of quality, the question arises: WHAT IS THE ROLE OF QUALITY IN INDUSTRIAL DEVELOPMENT?

Industrial products can be defined by their quality: an industrial product is 'known' to the extent that the user is familiar with all its qualities and perfections. This concept of quality is not far removed from that of aptitude: a particular tool will be described as capable of doing a particular job.

Industrial products can be classified by their quality: an industrial product can be distinguished from others by its quality.

- Quality leads to standardization: Industrial products must meet certain standards and criteria before they are recognized as being of a certain quality: hence the widespread use of grading as a means of distinguishing between similar industrial products e.g. the classification of sugar in terms of its saccharose content. Reference should be made here to the existence of the French standardization body AFNOR (Association française de normalisation).

- QUALITY AS A MAINSTAY OF INDUSTRIAL DEVELOPMENT IN THE AFRICAN COUNTRIES

In their search for increased productivity it is vital that the African countries should not lose sight of the importance of aiming at higher standards of quality, which must, in my opinion, constitute a mainstay of industrial development in Africa.

The African consumer is becoming noticeably more exacting; he expects the articles he buys to be properly made, well finished and constantly improved - in other words, what he wants is a choice, quality product.

Quality in production must therefore be the aim and target of Africa's emerging industries. Quality alone will make it possible for African products to compete on world markets.

WHAT DOES QUALITY CONTROL IN INDUSTRY CONSIST OF?

Quality control makes it possible to ensure that industrial products and services meet the standards laid down for them and satisfy the requirements of the consumer.

Concern for the quality control was the reason for the establishment of catalogues and systems of nomenclature for industrial products (e.g. ISIC: International Standard Industrial Classification).

It would be desirable for this classification to be adapted to the situation in the African countries.

Control of the quality of industrial production is achieved through control of industrial product prices. The price of a product is a function of its availability and quality. The question to be asked when reviewing the price level of an industrial product is whether it is being sold at a fair price considering its quality.

Quality control is carried out not merely at the level of the industrial product but also at the level of the production unit

At this stage, control consists in checking the quality of investment and intermediate consumption.

WHAT METHODS OF QUALITY CONTROL SHOULD BE APPLIED IN INDUSTRY?

Considering the number and diversity of the branches into which industry is divided we feel that quality control is best achieved by statistical methods.

The exhaustive method cannot be used because it is cumbersome and impractical.

The sampling method is acceptable since it sharply reduces the statistical spectrum to be studied. The only major problem to be solved here is that of the representativity of the sample.

QUALITY CONTROL IN INDUSTRY PRESUPPOSES THE EXISTENCE OF AGENTS RESPONSIBLE FOR CONTROL

- Public authorities: in general public authorities are responsible for controlling quality in industry, either through a price control department or through an industrial promotion service.
- The private sector: the public authorities may ask bodies specializing in standardization and patents to undertake the control of quality in industry.

WHAT RESULTS MAY BE EXPECTED FROM QUALITY CONTROL IN THE INDUSTRIAL DEVELOPMENT OF AFRICAN COUNTRIES?

The aim of quality control should be:

- To make quality:

  An active factor in industrial development,

  An objective of African industry,

  A determining factor in the price of a product.

- To make public opinion aware of the concept of quality in industry.

Distinguished experts and delegates, ladies and gentlemen, we have felt in duty bound to express our views on the rôle of quality in industrial development and on how it can best be controlled. We wished in this way to make our modest contribution to the success of the present workshop, on which our hopes are based.

Indeed, we hope that the workshop will introduce us to rational and more effective methods of achieving quality control in African industry, and that we shall leave here imbued with new ideas and a broader understanding of the concept of quality in general.

The methods we wish to apply will be meaningful only to the extent that they are adapted to the African countries, and here we must mention a problem of no little importance: that of deciding WHAT MARGIN OF ERROR SHOULD BE TOLERATED DURING QUALITY CONTROL.

This workshop which is seeking to resolve the many problems besetting Africa particularly that of quality control in industry will be successful if every delega tion brings to bear on the discussion the full weight of its intelligence and experience in a spirit of equality complete understanding and frank co-operation among men of science

YAOUNDÉ, 8 February 1972

ANNEX II - 2

PROBLEMS OF QUALITY CONTROL IN ETHIOPIA

by Mr. Zawdu Felleke

Introduction

1. Ethiopia is a developing country with agriculture as the mainstay of its national economy and the manufacturing sector next to agriculture. Efforts were made in the past to support the industrial development of the country, particularly when some fourteen years ago planning was introduced with the aim of attaining rapid economic development. Numerous small enterprises were established and new ones are under construction. According to the Third Five Year Development Plan, which is presently under implementation, the manufacturing industries are growing at an annual rate of 15%.

Quality Control in the Past

2. In the past, problems of quality control were in most cases left to the discretion of individual enterprises and factories and to be settled, if considered necessary, through their internal control arrangements without any interference by Government authorities.

3. More recently, in some economic branches certain Government Agencies such as the National Coffee Board, the Livestock and Meat Board and the Ethiopian Grain Board have been created. The major objectives of these Agencies include the promotion of exports and of the foreign exchange position of the country as well as the regulation of prices and of improving the quality of concerned products. Activities in the field of quality essentially include the preparation and implementation of specifications, concerning quality.

4. Certain specifications and regulations have also been established by some Ministries and other Government authorities dealing with some aspects of quality, safety and health protection.

Establishment of the Ethiopian Standards Institution (ESI)

5. In September of 1970, the Ethiopian Standards Institution (ESI) was established as an autonomous Government body with the main purposes of preparing and publishing Ethiopian Standards (ES) of optional and compulsory status relating to practices, processes, materials, products and commodities in the field of commerce and industry, of ensuring their application and of promoting standardization and quality control in the Empire. After the creation of the ESI, all existing specifications, standards and similar documents dealing with quality and other aspects of standardization will continue in force until they are replaced by the relevant Ethiopian Standards.

6. Since national standards should be the result of team work representing viewpoints of all interests and be exactly adapted to national economic needs, the ESI is presently the central institution where Ethiopian Standards, relating to different economic and industrial fields, are prepared and published after being processed through established procedure, and from which their implementation has to be supervised and an efficient quality control programme organized.

Preparatory Activities Concerning Quality Control

7. The ESI is presently in its preparatory stage concerning quality control programmes. Several groups of Standard Proposals are under discussion at Sub-Committee and Technical Committee levels and when finally adopted and published they will form a firm basis for the introduction of quality control.

8. The ESI has already undertaken the necessary organizational, budgetary and legislative measures in order to create the basis for the establishment of programmes of quality control in the country. A Standards Mark is being established, as the property of the ESI, for the purpose of certifying the compliance of products with the requirements of relevant Ethiopian Standards, thus assuring the quality of products intended for the home market and export.

9. There are in the country a number of research institutes and testing laboratories which are able and which will be used for making necessary tests on the basis of Ethiopian Standards. Parallel with the publication of standards, such institutes and laboratories will have more incentive to develop their facilities to enable them to undertake further tests according to new groups of standards concerning different materials and products.

Conclusion

10. After the establishment of the ESI in 1970, concerted efforts are being made in order to prepare and publish the first group of Ethiopian Standards in priority fields such as Basic Standards, Agriculture and Food Products, Building and Civil Engineering, Mechanical Engineering, Chemical Engineering, Printing, Office Activities and Materials. Some initial preparatory activities concerning quality control are also being undertaken by the ESI. It is therefore our hope that information obtained from this Training Workshop, which we consider essential and timely, will enable us in preperly establishing and orienting our national quality control programmes. We thank UNIDO and the Egyptian Organization for Standardization in making this opportunity possible.

ANNEX II - 3

THE PLANS FOR AND THE SETTING UP, ORGANIZATION, PROBLEMS, ETC. OF QUALITY CONTROL PROGRAMMES IN GHANA

by Mrs. Agnes D. Akuffe

Quality Control is just beginning to have a place in the thinking of government officials as well as industrialists. This awareness of the importance of quality is linked with the greater awareness on the p part of the Ghana government that standardization is needed not only to improve the quality of products of our local industries for the Ghanian market but also for export. The awareness of the importance of standardization and quality control in sound industrial development of Ghana led to the setting up of the Ghana National Standards Board in 1967.

Prior to this period the country has been so preoccupied with setting up factories that there was no time to consider the quality of products these factories would produce. This was during the immediate post independence era when we realized that as a nation we couldn't go on being primary producers forever. As these factories started to put their products on the local market, Ghanian consumers began to complain about the quality especially as these local goods became substitutes for imported items. The Ghana Government realized that to improve local products to become worthy substitutes for improts as well as for export, a national organization should be set up to deal with standardization and quality control. Thus the Ghana National Standards Board where I am a quality control officer was set up. Since the National Standards Board was set up what have been our plans in the field of quality control? Firstly, we at the National Standards Board realized that there can be no quality control without standardization. Thus our main concern at the initial stages was to establish Ghanian standards for specific products and then use these standards as basis for quality control.

Secondly, the G.S.B. has a quality control section which is responsible for introducing process quality control in factories. This section has helped a lot of indigenous factories to introduce quality control from design, raw materials through manufacturing to the final product.

This task had not been easy but from the initial stages we adopted the attitude that it is top management which determines the quality of products. We had always tried to sell the idea of quality control to management first. Once we had the co-operation and the goodwill of the management on our side it had, to some extent been easy to work with the production manager in introducing quality control. The system we had tried to introduce has not been the same in all the factories which we have so far dealt with (which varies from textiles, garments through stationery to travelling goods factories). The size, conditions, turnover and the number and the level of education of employees usually determine the system. Sometimes we use control charts with upper and lower limits already drawn on charts, other times we use process control inspection forms. Other times we use fixed dimensions on tables and yet on other occasions we use reference samples. But in all cases the use of statistics has been almost absent because of the level of education of supervisors and the size of the factories involved.

However, there is another group of companies where the story of quality control is different. This group consists of companies which are subsidiaries of international companies such as Coca Cola International, Pepsi Cola, Heyle, Union Carbide, Unilever group, etc. Such factories usually have some semblances of quality control systems to be found in the parent company. But whether due to the environment in which the system is being operated in Ghana or due to some other reason, the system tends to be haphazardly operated. In such cases the National Standards Board's quality control personnel help the company to improve upon and to maintain the system.

The problems facing us in Ghana in the field of quality control may be similar to those facing other African countries, namely:

(a) Scarcity of qualified quality control personnel in the factories as well as at the N.S.B. The N.S.B., in an attempt to improve the situation, has been using the technical aid offered by the Netherlands Government to train engineers as well as graduates in Social Sciences at the Boucentrum.

(b) Lack of well-equipped laboratories - few of the factories have laboratories to test their own products. There is a Central Government Chemical Laboratory which is at the moment too overworked to help with routine testing of a factory's products. The National Standards Board has laboratories for textiles, chemical analysis, electronics, etc. for routine testing in connection with Certification and Marking Scheme where some routine testing is done for factories. The laboratories in the Universities and research institutes are too busy engaged in research to devote much time to routine tests. Private laboratories are almost non-existent.

(c) Lack of technical know-how on the part of the entrepreneurs as well as managers and workers.

(d) The problem of non-standardized raw materials. This problem is especially acute with factories processing local raw materials like pinapples, oranges, etc.

(e) The perpetual vicious circle of low quality leading to low sales which leads to inability of factories to employ trained personnel to introduce quality control to improve quality.

Thus the National Standards Board set up by the Government to introduce standardization and quality control has been plagued with such problems as the lack of understanding of the need for quality on the part of the entrepreneurs, lack of personnel, etc. However, though the Certification and Marking Scheme which requires that a manufacturer producing items for which there is a Ghana standard to conform, the Board has tried to introduce or help factories to maintain quality control systems. Quality control officers constantly visit factories to advise them on quality control. The National Standards Board has also started compiling quality control guides or manuals for various industries. It is hoped that as time goes on the quality control situation will improve considerably.

ANNEX II - 4

Quality Control in Libya

by Mr. Muftah El-Mabs

In Libya at this time there are only twenty quality standards available. Very obviously additional standards of quality are required. All of these standards are compulsory, most of them are food standards. The Ministry of Industry is controlling the local product either by testing them in the industrial research centre or the Government health centre for determining the chemical and microbiological standards.

At this time most factories in Libya are ignorant about the importance of standards and quality control.

While the equipment in most plants is very modern indeed, it is quite obviously in the early stages. The Libyan product quality is seriously and adversely suffering from the following conditions:

1.- Lack of quality standards
2.- Lack of adherence to Libyan sanitation rules and regulations
3.- Very poor housekeeping
4.- Poor training of production workers
5.- Inefficient operating methods
6.- Poor management
7.- Lack of Government examples
8.- Lack of inspection techniques.

The quality control section in the Ministry of Industry and Welfare must be given complete authority and support over product quality. It must be understood that product quality cannot be compromised.

Inefficient operating methods exist, in most of the plants the production workers develop their own operating methods. For the most part, such methods are costly, accident and reject prone, and must be corrected. Since quality depends on the methods and since productivity and quality improvement are so closely related, it is suggested that both the quality control section and the production section report to the Industrial and Quality Control Department.

The product quality in many parts is affected by misuse of machinery and equipment. All technical specifications for all machinery and equipment should be available in the plants as well as in the files of the industrial Organization. Such information should include any and all preventive maintenance information and set-up charts. Not only will this information help to improve product quality, but it will cure many costly production delays caused by equipment breakdowns.

Material handling in general cost improvement possibilities from 30% to 50% are observed in most plants. These improvements are possible through improvement in operating methods and material handling as follows:

1.- Material handling
2.- Method improvement
3.- Possibility analysis for worker movements
4.- Plant layout
5.- Preliminary operation check list.

These questionnaires should be turned over to the productivity section for their application of these principles to the plants. Any improvement or reduction in material handling will definitely be beneficial to Libyan product quality.

General housekeeping: Libyan product quality is further adversely affected by very poor housekeeping in all plants visited. A set of general housekeeping rules and regulations for all plants have been developed by this writer. These rules and regulations should be adopted and placed in practice without delay.

Food plant sanitation specifications: This industry, at this time, is experiencing consumer resistance because of poor quality. Although Libyan Law No. 5 spells out very adequate and detailed rules and regulations, most plants are in complete "non-conformity" with this law (see our reports on: macaroni; noodles; date syrup; sweets; flour; biscuits and tomato paste canning). This is an intolerable situation, and for the sake of public health, must be corrected through education of plant management and strict

quality control inspection. In this connection it has been proposed that all details of law No. 5 as it applies to sanitation rules, be posted in all plants in both Arab and English languages. No new plant should be licensed to operate unless it is in complete compliance with the rules and regulations of law No. 5. Plants that were licensed prior to 1965 when law No. 5 became effective should be given a special time period within which they would be expected to update all facilities to comply with the sanitation rules and regulations of law No. 5.

"Buy Libya" Contest: To gain consumer confidence in Libyan products and, at the same time, to educate the Libyan manufacturing community that the quality of their products can be improved by their adherence to sanitation rules and regulations, better housekeeping, better methods and through progressive thinking managements, a national flag award contest has been proposed.

Licensing of new businesses or industries: It is proposed here that when industries are re-licensed or when licenses are issued for new industries, the following be added to the present procedures:

1.- The industry is to furnish complete technical operating, maintenance and set-up data for all mechanical or electro-mechanical equipment;

2.- If special training is required to operate, maintain, and set-up such equipment, a Libyan worker must be trained either locally or abroad.

3.- If a Libyan worker cannot be trained or is not immediately available, the equipment supplier must be contractually obligated to train a Libyan worker(s) as soon as possible.

These steps are intended to,

first, enhance product quality and

second, to assure continuous operation of the equipment.

Annex II - 5

NOTE ON PRODUCT CONTROL IN MADAGASCAR

By Mrs. A. Rakotobe

Aware of the importance of product quality in domestic and, more particularly, international trade, Madagascar has already set up several control agencies which are concerned with three sectors of its economy: agriculture, industry and mining.

I. PRESENT SITUATION

1. Control of manufacture: Most industrialists practise this form of control However, they apply standards which suit them or which they themselves have set.

2. Official control of production (general control).

(a) CONTROL OF AGRICULTURAL PRODUCTS

Control of products for domestic consumption is confined to a ban on unripened fruit and mildewed products unfit for human consumption. Moreover, a number of factors limit systematic control of agricultural products.

Exports: Before any agricultural products leave Madagascar they are inspected by the Control Department. To solve the commercial problems that arise the Department has found it necessary to set up a standards division; this is still in an embryonic stage but should eventually lead to more thorough-going standardization. In fixing standards account is taken both of international standards and of local conditions (the Department is in constant touch with AFNOR, ISO and the Codex Alimentarius).

(b) CONTROL OF MANUFACTURES

Chiefly cement and paint. Control is effected by the MINISTRY OF EQUIPMENT at various stages of manufacture. Standards have been set for cement and paint.

(c) CONTROL OF MINERAL PRODUCTS

The exploitation of all mineral reserves is subject to stringent control by the Department of Mines. Inspection takes place at the production stage (conservation of the deposit) and before the products are exported.

II. FUTURE OF QUALITY CONTROL

Control can only be effective if it is based on carefully prepared standards. This involves the setting up of a Malagasy Standards Institute. The establishment of the Institute is provided for in the second Five-Year Plan

Programmes to be carried out to achieve this aim (personal views and suggestions

(a) PRELIMINARY CONDITIONS: the interest of all those concerned must be aroused. They must be made to realize that quality standardization and control is a lengthy process and that quality is determined at the production level

Contact with users: this can be of the greatest value in helping the Institute to assess the merits or defects of particular products

(b) CREATION OF THE STANDARDS INSTITUTE

It is proposed that this body should be operated jointly by the Government and by private interests. Its job would be to lay down standards for Madagascar, to improve the quality of exports and to protect domestic consumers.

In the initial stages it might be wise to proceed as follows:

(1) Select the first few products to be standardized. Selection should be made from a few promising products of undoubted quality, locally manufactured in expanding enterprises, and for whose standardization there is, as a rule, a considerable demand

(2) Make use of local standards experts but provide them with technical assistance from abroad in setting up the Institute, training new staff and broadening the knowledge of existing local staff. This assistance is important if the Institute is to succeed.

(3) Establish machinery for the official approval of Malagasy standards.

(4) Consider sources of financing.

Upon completion of this preliminary stage, additional products suitable for standardization may be sought, and the Institute's resources and methods gradually improved.

QUALITY CONTROL IN THE KINGDOM OF MOROCCO

By Mr Mohamed Coco

As in most countries, product control in Morocco is exercised not only at the plant manufacturing level but also at the transaction level A number of bodies responsible for checking the different characteristics of manufactured products have been set up for this purpose.

Particular attention has been paid to products for the export market and a special agency which strictly controls these products has been in existence since 1936.

1. CONTROL LABORATORIES

1.1 Marketing and Export Office (Office de Commercialisation et des Exportations OCE) - Control of food and cottage-industry products

In addition to its work of seeking markets abroad and promoting the sale of food products, this Office is responsible for controlling these products.

The Office has a quality control department consisting of:

- a Standards Service
- a Laboratory
- a Labelling Service.

1.1.2 The Standards Service

This service works in close co-operation with the various Moroccan committees n standards In addition, special OCE standards are established with the participation f suppliers. These standards are more exacting in the case of products for the export arket which are therefore of better quality. The service also lays down rules for ampling and testing the characteristics defined in the standards set for a particular roduct.

1.1.3 The Laboratory

The laboratory conducts the various tests required for every shipment of a roduct abroad, including composition and bacteriological tests.

Tests to improve control methods are constantly conducted in the general research epartment (research on storage, conservation, packaging, etc.).

1 1 4 The Labelling Service

The Labelling Service grants the OCE-Morocco label for products which meet a number of quality criteria laid down by the OCE authorities on the basis of foreign market surveys.

This service exercises control over products to which labels are granted and deals with legal problems arising from failure to implement a contract on the quality label.

1.1.5 Other OCE activities

The OCE is able to call on any of the various official laboratories for the carrying out of specific tests. Moreover, these laboratories are entrusted with control over other products.

1.2 Mining and metallurgy

Control over ores and their derivatives, is exercised by the following laboratories:

- The Mining Department Laboratory at Rabat, which has the most up-to-date equipment;
- The Laboratory of the Office of Mining Research and Participation, at Rabat;
- The Mining Laboratory at Casablanca;
- The Laboratory of the Sherifian Office of Phosphates;
- The Official Laboratory at Casablanca.

In addition to these laboratories there is a control authority (Société Générale de Surveillance) which ensures that samples meet certain standards and checks the value of exported ores. There is also a laboratory, attached to the Customs Department, which specializes in precious metals quality control.

1.3 Building metals

The Public Testing and Research Laboratory (LPEE) exercises control over the quality of materials used in the building industry and on building sites.

1.4 Electricity and electronics sector

In addition to the National Department of Electricity and the State Electricity and Water Works, a committee has been set up to inspect and approve material used in the electrical and electronics industry and to uncover manufacturing defects, if any. It also lays down safety regulations for electrical appliances

1.5 Petroleum products and by-products

Control over these products is exercised chiefly by the Official Laboratory at Casablanca, by the laboratory of the Société Chérifienne des Pétroles and in the SAMIR laboratory.

1.6 Textiles and chemical products

The Official Laboratory at Casablanca is equipped to inspect most of these products. It is a State-owned laboratory which acts as arbitrator in business transactions.

1.7 Other laboratories

A number of laboratories have not been mentioned, particularly those concerned with foodstuffs. They are mainly concerned with research (Cold Storage Laboratory, Fruit and Vegetables Canning Laboratory, Fish and Meat Canning Laboratory, Laboratory of the National Institute for Agronomic Research and Animal Husbandry Laboratory).

Reference has been made above only to those laboratories or other agencies concerned with quality control.

2. BODIES PARTICIPATING IN QUALITY CONTROL

2.1 Standardization and the Quality Label

2.1.1 Standardization

Work on standardization began in Morocco in 1962 but has been the subject of legislative provisions only since the end of 1970.

Standardization in Morocco is organised as follows:

- Higher Inter-Ministerial Council on Quality and Productivity (CSIQP), attached to the Office of the Prime Minister

- Moroccan Industrial Standards Department (SNIMA), attached to the Department of Industry

- Technical Committees on Standardization, one for each branch of the economy, attached to the Ministries concerned

The technical committees, with the participation of industrialists and consumers, and in accordance with international procedures, fix standards which, generally speaking, are adhered to by the majority of enterprises and must be included in government contract specifications.

Application of these standards guarantees the consumer a certain standard of quality. That is why the authorities are endeavouring to extend the range of standardization in Morocco, with the eventual aim of granting the quality label to all industrial products.

2.1.2 The label

The quality label is now granted to food products for the export markets. However, the Sherifian Department of Exports, desirous of making high-quality products available, has for some time given thought to the possibility of granting its label to all the products under its control. Only those which meet certain standards will be entitled to bear the quality label.

In other areas labels will be introduced as soon as the necessary standards have been set.

2.2 The Instruments and Measures Departments

This department was set up to ensure that quantity specifications are correctly observed in commercial transactions. It inspects instruments for measuring length, volume and mass. Its field of activity will shortly be expanded to include the electricity and electronics industry.

The department, which is attached to the Department of Trade, is in touch with agencies abroad and operates control centres and laboratories all over the country.

2.3 Industrial Property Department

Apart from patents, this department, through its well-documented office at Casablanca, is responsible for the registration and control of trade-marks.

2.4 Fraudulent Activities Department

The main function of the Fraudulent Activities Departments is to uncover instances of fraud and falsification likely to be prejudicial to human health. It is attached to the Ministry of Agriculture and has centres in every major city. In its activities it makes use of the services of all the State laboratories, especially the Official Laboratory at Casablanca and its annexes.

2.5 Department of Price Control

As recently as 1971 a department, attached to the Office of the Prime Minister, was set up to deal chiefly with price controls on goods sold locally. It will also be concerned with quality control and is therefore keeping in close touch with the agencies mentioned above.

3. CONCLUSIONS

Morocco has gained considerable experience in food product control. Its OCE-MAROC label is known throughout the world, mainly in Europe. In some sectors, however, quality control is still in its initial stages.

A number of important projects currently either under consideration or in course of implementation will make it possible for Morocco to achieve its objectives very shortly.

The authorities will have to overcome various problems, particularly the lack of trained personnel, equipment and data (manufacturers and consumers alike are not particularly interested in the question of quality)

Current projects relate to strengthening the Price Control Department and the Standards Department and improving the equipment of existing laboratories. In some sectors, such as textiles, consideration is being given to the establishment of an agency to be responsible for marketing and quality control.

ANNEX II - 7

Standardization and Quality Control in the Sudan

by Mr. El Tahir A. El Sheikh

Introduction

A standard in general could be defined as "the establishment by authority, custom or general consent a rule or model to be followed". Industrially it could be said "it is a description of a product which is for sale and the performance that could be expected of it".

The aims of standardization are to achieve:

1.- Maximum product and promotion of industrial and economic development , and that is by ensuring a degree of reproductibility and of conformity to criteria of quality which are acceptable to both the manufacturers and the consumers.

2.- Protection of consumer's interests through the adequate consumer quality of goods and services which have been standardized. The consumer can safely expect that the goods and services will fulfil certain requirements of good quality.

The quality of goods and services in the modern economy is influenced to a very high degree by standardization. Standardization forms an important part of the programming of quality control in a mass and batch production. Optimum quality can only exist through optimum standards.

Most of the industrial countries have long ago realized the importance and need for quality control and standardization and have established their own national organization. In the international field many organizations have been formed such as the International Organization for Standardization (ISO) which succeeded in promoting and distributing international recommendations, and have done great work in the field of standardization.

Standardization and Quality Control in Sudanese Industry

Sudan, being one of the developing countries aiming at industrialization, has realized the importance of standardization and quality control for industrial promotion and production of goods of high quality at a reasonable cost. Many trials had taken place to establish a national body for standardization and quality control. Six years ago the Ministry of Commerce, Industry and Supply which was at that time entrusted with planning and implementation of industrial development policies, assigned one expert to prepare for the establishment of a national body for standardization. Until that time the country adopted some foreign specifications fixing the standards of quality of both local and imported goods. Sometimes the manufacturing industries were left free to choose their own standards for quality control.

In 1966 a department for standards testing and quality control was initiated at the Sudan Industrial Research Institute. One of the basic tasks of this department is the practical implementation of quality control in a wide range of industries and that is by performing tests and analysis of the local production and raw materials, and to give advice accordingly. Another aim of this department is to determine the standards of quality and to acquaint the local industries of the available methods of industrial quality control.

Finally in 1967 the Government of the Sudan passed the Organization and Promotion of Industrial Investment Act 1967, which called for the establishment of the Sudanese Organization for Standard Specifications which was authorized to issue Sudanese Standard Specifications.

Then in 1968 the regulations governing this act were passed by the Minister of Industry. These regulations gave the authority to the Chairman of the Organization to constitute technical committees for the preparation of draft specifications for industrial products and raw materials.

According to these regulations the Sudanese Organization for Standard Specifications shall be the sole authority for setting up and issuing standard specifications. According to these regulations the Sudan Industrial Research Institute shall assist the organization in carrying out studies and investigations necessary for the preparation of draft standard specifications and in carrying out analysis and research concerning quality control.

The Standards, Testing and Quality Control Department of the Industrial Research Institute accordingly has already started assisting the organization in the preparation of Sudanese Draft Specifications. The department programme could be briefly outlined as follows:

1.- To make a detailed survey of the existing industries with the aim of collecting information regarding quantity and quality of production, available quality testing equipment, standards adopted (if any) or any other relevant information.

2.- To contact and visit other research centres and departments which are interested in standardization and quality control and who could help a lot in their field of specialization in drafting and setting acceptable specifications of quality.

At present more than seventy preliminary draft standards have been prepared. The technical sub-committees approved, after discussion, twenty of these preliminary draft standards which at present are in their final form ready for the Sudanese Organization for Standard Specifications to adopt them. Some more preliminary drafts are under discussion or preparation.

ANNEX III

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ANNEX IV

1. Opening Addresses
2. Election of Officers
3. Adoption of the Agenda and the Work Programme
4. The concepts of quality and quality control and criteria for their definition
5. The role of quality and quality control in industrial development
6. Inspection, sampling and testing
7. The interdependence of quality control and standardization activities (including applied metrology)
8. Organization and management of quality control programmes for a successful industrial development
9. Quality, quality motivation, reliability and the consumer
10. Quality control in selected fields (case studies):
    - Building materials
    - Textiles
    - Food and natural products
    - Engineering industries (manufacturing)
11. Training in quality control
12. Formulation of Recommendations
13. Adoption of Report and Recommendations
14. Closing Session

ANNEX I

WORK PROGRAMME

Saturday, 12 February 1972

9.30 - 14.30 - Registration, Administrative and Financial Matters
- Opening Addresses
- Election of Officers
- Adoption of the Agenda and Work Programme
- Organization of the Work
- Aspects of Regional Co-operation in Quality Control Activities by Dr. M. Salama, ASMO
- Discussion

Sunday, 13 February 1972

9.30 - 14.00 - Inspection, Sampling and Testing, by Dr. L. Wasilewski (Poland)
- The Role of Quality and Quality Control in Industrial Development, by Dr. (Mrs.) A. Zaludova (Czechoslovakia)
- The Concepts of Quality and Quality Control and Criteria for their Definition, by Dr. (Mrs.) A. Zaludova (Czechoslovakia)
- Quality, Quality Motivation, Reliability and the Consumer, by Dr. L. Sandholm (Sweden)
- Discussion

Monday, 14 February 1972

9.00 - 14.30 - Visits to industrial enterprises and testing laboratories in:
1. Nist/Helwan Textile Factory (weaving and spinning)
2. Helwan Cement Company

Tuesday, 15 February 1972

9.30 - 14.00 - Quality and Standardization by Mr. V. Koukhar, ISO
- Quality Training, by Dr. L. Wasilewski (Poland)
- Organization and Management of Quality Control Programmes, by Dr. A. Brisac (Spain)
- Statements by participants
- Discussion

Wednesday, 16 February 1972

Official holiday (New Year)

Thursday, 17 February 1972

9.30 - 14.00 - Quality Control in Selected Fields: Building Materials - Textiles - Food Processing Industries - Engineering by Mr. F. Sobhy (ARE)

Saturday, 19 February 1972

9.30 - 14.00 - Visits to industrial enterprises and testing laboratories:
1. The Eastern Company S.A.E. (Tobacco - cigarettes)
2. Essential oils and perfume factory

Sunday, 20 February 1972

9.30 - 14.00 - Formulation of recommendations
- Discussion
- Adoption of recommendations and report
- Closing session

Monday, 21 February 1972

9.30 - 14.00 - Visit to the Helwan Iron and Steel plant

ANNEX VI

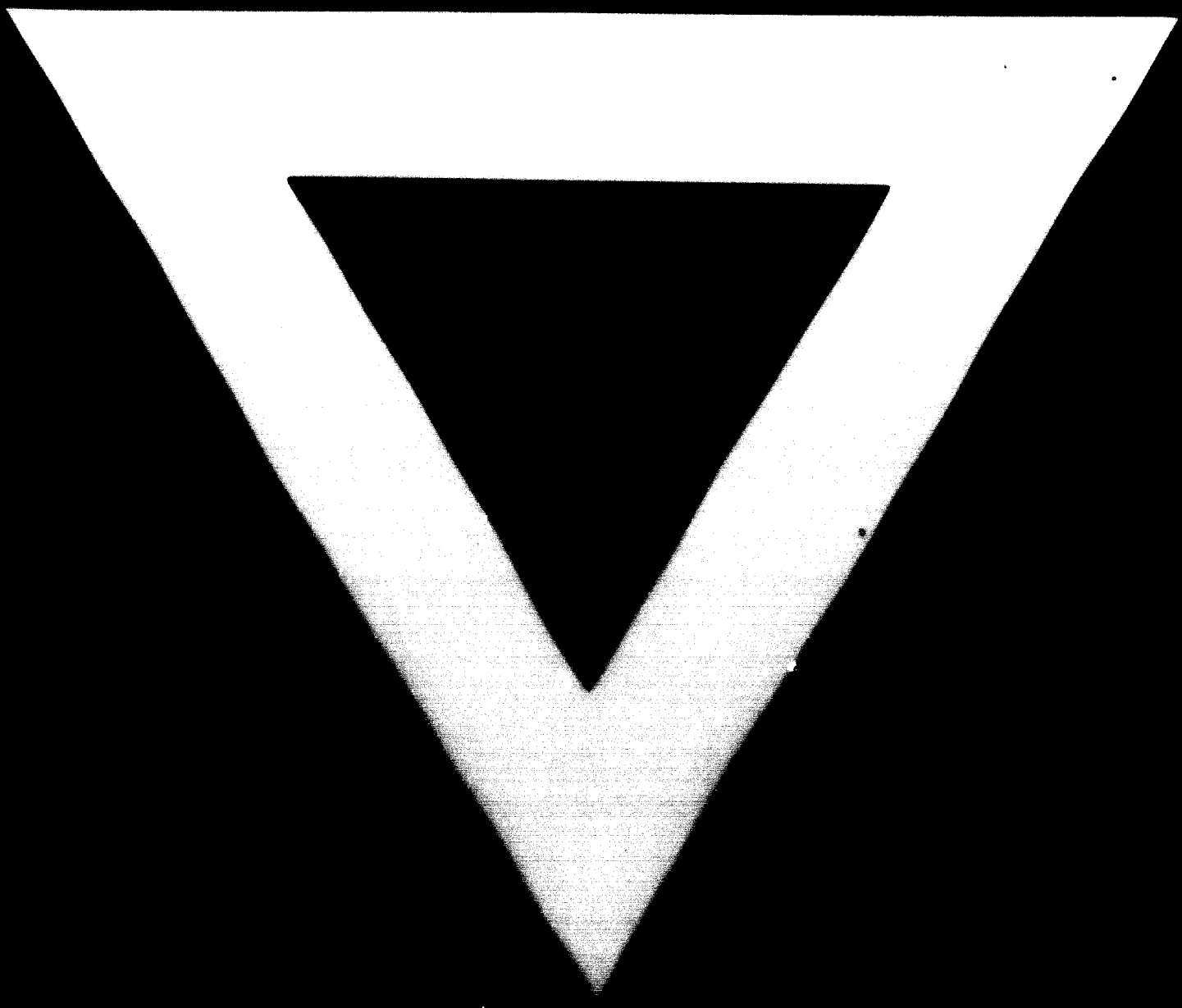
LIST OF DOCUMENTS

1. Information Papers

	Reference No.
- Provisional Agenda	ID/WG.100/1/Rev.1
- Provisional Annotated Agenda	ID/WG.100/2/Rev.1
- Provisional Work Programme	ID/WG.100/3/Rev.2
- Aide Mémoire	
- List of Documents	ID/WG.100/13
- Final Report	ID/WG.100/15

2. Discussion Papers

- Aspects of Regional Cooperation in Quality Control Activities by Dr. Mahmoud Salama, Cairo (ARE)	ID/WG.100/4
- Quality and Standardization by Mr. V. Koukhar, Geneva (Switzerland)	ID/WG.100/5
- Quality Training by Dr. Leslaw Wasilewski, Warsaw (Poland)	ID/WG.100/6
- Inspection, Sampling and Testing Dr. Leslaw Wasilewski, Warsaw (Poland)	ID/WG.100/7
- Organization and Management of Quality Control Programs for Successful Industrial Development by Dr. E. Blanco Loizelier, Madrid (Spain)	ID/WG.100/8
- Quality Control in Selected Fields: Building Materials - Textiles - Food Processing Industries - Engineering Industries by Mr. F. A. Sobhy, Cairo (ARE)	ID/WG.100/9
- Quality, Quality Motivation, Reliability and the Consumer by Dr. Lennart Sandholm, Stockholm (Sweden)	ID/WG.100/10
- The Concepts of Quality and Quality Control and Criteria for their Definition by Mrs. Agnes H. Zaludová (Czechoslovakia)	ID/WG.100/11
- The Role of Quality and Quality Control in Industrial Development by Mrs. Agnes H. Zaludová (Czechoslovakia)	ID/WG.100/12



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