


**THE STUDY REPORT  
ON  
THE NATIONAL STANDARDIZATION AND  
INDUSTRIAL QUALITY CONTROL  
IMPROVEMENT PROGRAM  
IN  
THE REPUBLIC OF THE PHILIPPINES  
  
(SUMMARY)**

**JANUARY 1990**

**JAPAN INTERNATIONAL COOPERATION AGENCY**

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## PREFACE

In Response to a request from the Government of the Republic of the Philippines the Japanese Government decided to conduct a study on the National Standardization and Industrial Quality Control Improvement Program and entrusted the study to Japan International Cooperation Agency (JICA).

JICA sent to the Philippines a study team headed by Mr. Masayasu Sakanashi of UNICO International Corporation on two occasions; from March 6 to March 23, 1989 and from June 4 to July 29, 1989.

The team held discussions with concerned officials of the Government of the Republic of the Philippines, and conducted field surveys. After the team returned to Japan, further studies were made and the present report was prepared.

I hope that this report will contribute to national standardization and industrial quality control improvement and to the promotion of friendly relations between our two countries.

I wish to express my sincerest appreciation to the officials concerned of the Government of the Republic of the Philippines for their close cooperation extended to the team.

January, 1990



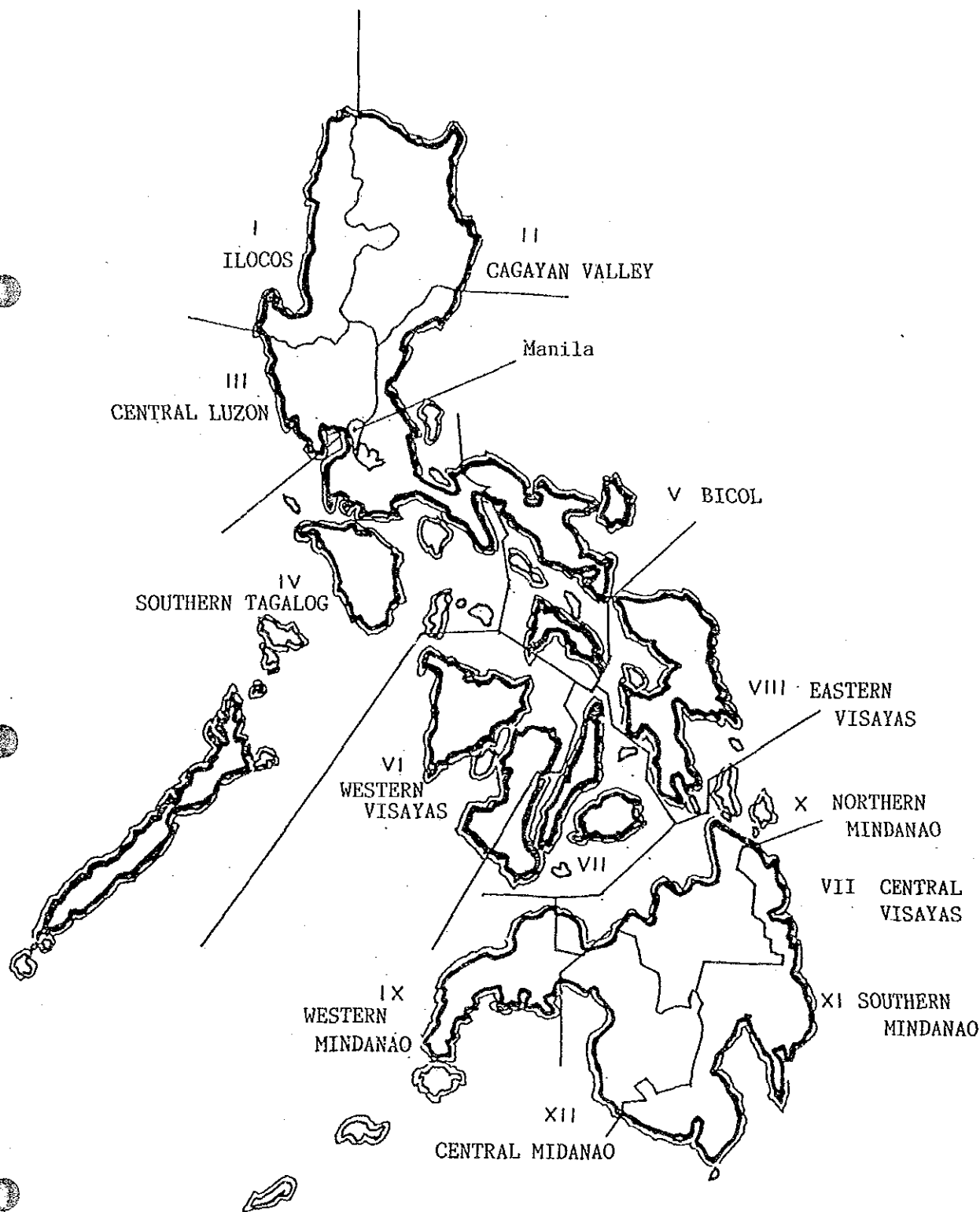
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Kensuke Yanagiya

President

Japan International Cooperation Agency





**MAP OF THE PHILIPPINES**



## LIST OF ABBREVIATIONS

### Organization, Economic Terms

AGE	AG & E Allied Services Co.
AMTEC	Agricultural Machinery Testing and Evaluation Center
ANSI	American National Standards Institute
APCIQC	Asia-Pacific Industrial Quality Control
AS	Standards Association of Australia
ASEAN	Association of South-East Asian Nations
ASEPHIL	Asephil Manufacturing Corporation
ASTM	American Society Testing and Materials
ATTC	ASEAN Timber Technology Center
AUV	Asian Utility Vehicle
BEI	Bureau of Export Inspection
BETP	Bureau of Export Trade Promotion
BFAD	Bureau of Food and Drug
BOC	Bureau of Customs
BOF	Bureau of Forestry
BOI	Board of Investments
BPMM	Buy Philippine Made Movement
BPS	Bureau of Product Standards
BPSL	BPS Laboratory
BRS	Building Research Service
BS	British Standards Institution
BS	Bureau of Standards
BSMBD	Bureau of Small and Medium Business Development
CAD	Computer Aided Design
CC UNSON	C.C. Unson Company, Inc.
CCL	Cement Central Laboratory
CCP	Chamber of Commerce of the Philippines
CFIP	Chamber of Furniture Industries of the Philippines
CGAP	Compressed Gas Association of the Philippines, Inc.
CIAP	Construction Industry Authority of the Philippines



CIGI	Consolidated Industrial Gases, Inc.
CITC	Cottage Industry Technology Center
CITEM	Center for International Trade Expositions and Missions
CME	CME Engineering and Consulting Services
COA	Commission on Aupit
CRL	Chemistry Research Laboratory, Ataneo de Davao University
DAO	Department Administrative Order
DBM	Department of Budget and Management
DCI	Department of Commerce and Industry
DECS	Department of Education, Culture and Sports
DOF	Department of Finance
DOH	Department of Health
DOST	Department of Scienceano Technology
DOT	Department of Transportation
DPWH	Department of Public Works and Highways
DTI	Department of Trade and Industry
EO	Executive Order
EPZ	Export Processing Zone
FDC	Food Development Center
FEIC	Filipinas Electro Industrial Corporation
FIDA	Fiber Inspection and Development Authority
FIRESTONE	Philtread Tire & Rubber Corporation
FPRDI	Forest Products Research and Development Insitute
FTI	The Food Terminal Incorporated
GBAP	Garments Business Association of the Philippines
GDP	Gross Domestic Product
GMP	Good Manufacturers Practice
GOJ	The Government of Japan
GOODYEAR	Goodyear Philippines Inc.
GOP	The Government of the Philippines
GVA	Gross Value Added

DIN	Deutsches Institut Fur Normung
DND	Department of National Defense
ICA	International Cooperation Agency
ICC	Immaculate Conceptions College
ICC	Import Commodity Clearance
IEC	International Electrotechnical Commission
IFI	Industrial Fastner Institute
IIII	Industrial Inspection (Int'l) Inc.
IMF	International Monetary Fund
IP	The Institute of Petroleum
ITP	Industrial Tree Plantation
ISO	International Standardization Organization
ITDI	Industrial Technology Development Institute
ITG	International Trade Group
ITM	Industrial Test Master, Inc.
IWS	The International Wool Secretariat
JICA	Japan International Cooperation Agency
JIS	Japanese Industrial Standards
KFW	Industry Modernization Loan Program of the Federal Republic of Germany
LABTEST	Labtest Philippines, Inc.
LCV	Light Commercial Vehicle
LOI	Letter of Instruction
LPG	Liquefied Petroleum Gas
MIAP	Metalworking Industries Association of the Philippines
NCR	National Capital Region
NEC	National Economic Council
NEC	National Engineering Center
NEDA	National Economic and Development Authority
NEPA	National Economic Protectionism Association
NFA	National Food Authority
NHRC	National Hydraulics Research Center
NIST	National Institute of Science and Technology
NMC	National Metrology Center
NMYC	National Manpower and Youth Council

MIRDC	Metals Industry Research and Development Center
MTI	Ministry of Trade and Industry
NQC	National Quality Campaign
NSTL	National Standards and Testing Laboratory
OHP	Overhead Projector
OQCY	Outstanding Quality Control of the Year
OSTREA	Ostrea Mineral Laboratories
PAMCOR	Philippine Automotive Manufacturing Corporation
PARES	Philippine Airconditioning and Refrigerating Eng.
PASC	Pacific Area Standards Congress
PCCI	Philippine Chamber of Commerce and Industry
PCMP	Progressive Car Manufacturing Program
PD	Presidential Decree
PDC	The Productivity & Development Center of the Development Academy of the Philippines
PDDCP	Product Development and Design Center of the Philippines
PEA	Philippine Electroplaters Association
PHILACOR	Philippine Appliance Corp.
PHILCEMCOR	The Philippine Cement Manufacturers Corporations
PHILIPS	Philips Electrical
PHILSA	Philippine Standards Association, Inc.
PHILTREAD	Philtread Tire & Rubber Corporation
PHTRC	Postharvest Horticulture Training and Research Center
PICPA	The Philippine Institute of Certified Public Accountants
PIE	Philippine Integrated Exporters
PIP	Packaging Institute of the Philippines
PIPAC	Philippine Institute of Pure and Applied Chemistry
PLPGA	Philippine Liquefied Petroleum Gas Association, Inc.
PNI	Filipinas Nissan
PNS	Philippine National Standards
PPIAI	The Philippine Plastic Industrial Association, Inc.
PPM	Philippine Productivity Movement, Inc.
PS	Philippine Standards
PSO	Procurement Service Office

PSA	Philippine Standards Agency
PSME	Philippine Society of Mechanical Engineers
PSQC	Philippine Society for Quality Control, Inc.
PTC	Philippine Technological Council
PTNMA	Philippine Toy and Novelty Mfrs. Association, Inc.
PTRI	Philippine Textile Research and Development
PTTC	Philippine Trade Training Center
PWPA	Philippine Wood Products Association
QMI	Quality Management Institute
R&D	Research and Development
RA	Republic Act
RAMCAR	Ramcar Incorporated
RCP	Refractories Corporation of the Philippines, Inc.
RSTC	Regional Standards and Testing Center
SAE	Society of Automotive Engineers
SAO	Standards Administrative Order
SC	Sub-Committee
SGE	Superior Gas & Equipment Co. Inc.
SGS	SGS Far East Ltd., Philippines
SI	Systeme International Q' Unites (International System of Units)
SIME DARBY	Sime Darby Philippines Inc.
SPB	System and Procedures Bureau
TC	Technical Committee
TCAGP	Training Center for Applied Geodesy and Photogrammetry
TMAP	Textile Mills Association of the Philippines
TPAP	Textile Producers Association of the Philippines
TTC	Transport Training Center
U.N.	United Nations
UDC	Universal Decimal Classification
UL	Underwriters' Laboratories
UM	University of Mindanao
UNIDO	United Nations Development Program
USCL	University of San Carlos Laboratory
XU	Xavier University

Unit

m	Meter	
kg	Kilogram	
S	Second	
A	Ampere	
°k	Kelvin Temperature	
cd	Candela	
mol	Mole	
pcs	Pieces	
mg	Milligram-Weight	
mm	Millimeter	
tf	Ton Force	
kgf/cm <sup>2</sup>	Kilogram Force	
mmHg	Millimeter of Mercury	
V	Voltage	
Ω	Ohm	
MHz	Megahertz	
GHz	Gigahertz	
KHz	Kilohertz	
°C	International Practical Temperature (Degree of Centigrade)	
%	Percentage	
ppm	Parts per Million	
μm	Micrometer	
L	Liter	
mV	Millivoltage	
μA	Micro Ampere	
MΩ	Mega Ohm	
g	Gram	
μV	Micro Voltage	
psi	Pound per Square Inch	1.0 psi = 0.07031 kg/cm <sup>2</sup>
lbs	Pounds	1.0 lb = 0.45359 kg

**Vol. No.1 SUMMARY**

**Vol. No.2 MAIN REPORT AND ANNEXES**



**Vol. No.1**  
**SUMMARY**





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**PART I**  
**SUMMARY**





## Chapter 1 BACKGROUND AND OBJECTIVES OF THE STUDY

In order to achieve the Medium-Term Development Plan (1987-1992) which is the current national economic development plan of the Philippines, it is important to take measures first, for fostering export industries and thus promoting exports which lead to increases in foreign exchange earnings, thereby compensating for the outlay of foreign exchange derived from increases in the imports of capital goods, raw materials and intermediates which would arise along with the expansion of the national economy; and secondly, for promoting the domestic production of those products for import substitution so as to minimize such imports to a possible extent. The domestic production for such import substitution, as long as it is economically feasible, could contribute not only to foreign exchange savings but also the creation of employment opportunities and the expansion of local markets which form the bases for the promotion of regional industry.

Nevertheless, such restructuring of the economic structure is not easy. The manufacturers who are engaged in the manufacturing of export goods or those manufacturing high quality goods even for the domestic market use imported raw materials, intermediates and component parts because of unreliable quality of those supplied from the domestic manufacturers. It has impeded the development of linkages between the mainstream industry and their peripheral industries, resulting in expanding imports and adversely affecting the balance of payment.

For restructuring the present structure, it is essential to foster the manufacturing industry which is internationally competitive in terms of quality and cost. The modernization and improvement of technology and production management especially of the small- and medium-scale manufacturers are indispensable. Thus, the strengthening of the national set-up for the extension of industrial standardization and quality control in the industry of the Philippines is immediately required. Under such a background, the Government of the Philippines (GOP) decided to formulate a program for industrial standardization and quality improvement in the Philippines, and in June, 1988 the GOP requested the Government of Japan (GOJ) to provide technical assistance.

The objective of this study is to formulate the master plan for pursuing 1) the promotion of industrial standardization, 2) improvement and extension of quality control of industrial products, and 3) improvement, upgrading and/or strengthening of testing and inspection required for standards development and product certification, which aim at improving the quality of industrial products in the Philippines so that international confidence and competitiveness of the Philippine industrial products can be gained, and thereby the expansion of export of industrial products as well as industrial development can be further promoted.

## **Chapter 2 PRESENT SOCIOECONOMIC SITUATION OF THE PHILIPPINES AND THE PROGRAM FOR INDUSTRIAL STANDARDIZATION AND QUALITY IMPROVEMENT**

### **2-1 The Current Socioeconomic Conditions, and Main Issues for Industrial Development**

The economic growth of the Philippines rapidly decelerated on entering the 1980s. The real GDP in 1972 constant prices recorded 99,920 million Pesos in 1983 having a growth less than 1% compared to the previous year, and with a negative growth in 1984 and 1985, it decreased to 89,803 million Pesos in 1985, falling to the level of 1979. Since the start of the Aquino administration in 1986, however, the real GDP tended to recover and recorded 101,534 million Pesos with a growth of 6.4% in 1988.

The economic collapse encountered during the period between the beginning to the middle of the 1980s is attributed to the development of inefficient industries enforced since 1970s with protective measures which have been heavily dependent on imported machinery, materials and parts. It led to a chronic excess of imports over exports and the deterioration of the international balance of payments, while stagnating the domestic production because of difficulties in importing the required raw materials and parts under the stringent conditions of foreign exchange.

As stated above, as a result of implementation for many years of the government's policy of intervention and protection across a broad spectrum of activity in the economic sector, the following structural defects have developed in the industrial sector.

1. Since the basic industries such as steel and petroleum refining were established at the initiative of the government under conditions of a protectionist policy, they lack the international competitiveness. These circumstances have prevented the industries from attaining enough ability to keep up with technological innovation, so they are below international levels in terms of technology, quality, productivity and cost competitiveness.
2. The garment and electronic parts industries now have important positions in terms of their contributions to the value of exports. However, almost all production is done on a consignment basis, whereby there is direct importation of materials and parts, resulting in little linkage with other parts of domestic industry.
3. In many industries with the exception of chemical industry and part of the food industry, industrial production has continued to rely on traditional labor-intensive means. Therefore not only have these industries not been developed to produce competitive products for export but also they are not adequate in terms of technology and productivity to produce materials

and parts in quality and volume required for other modern industry currently established in the country.

The Medium-Term Development Plan (1987 - 1992), announced in July of 1986, tasks to take necessary steps for economic reconstruction over the short-term and for maintaining sustained economic growth over the medium-term.

For the industrial sector, the Plan aims at mobilizing surplus, idle manpower in the cities and villages for engaging them in productive work and thereby expanding domestic demand, and in this context calls for the promotion of regional dispersion of industry and the development of regional industries, focusing on the promotion of small- and medium-scale industries. Through such efforts, a modern industrial structure is to be formed and developed based on the thus sustained growth of the domestic market over the medium-term.

At the same time, the expansion of exports has become an urgent task, because of the deterioration of the balance of payments in recent years. The government has launched an intensive promotion for the development of export industry with the provision of incentives including special treatment of taxation. Further, in order to accelerate these economic development processes, the government is active to invite foreign investment.

Any consideration of the tasks set in the Medium-Term Development Plan, that is, swift achievement of the economic reconstruction over the short-term and the medium-range formation of a modern industrial structure that is to serve as a basis for sustained growth of the domestic market, in view of the structural problems of the Philippines' manufacturing sector, must place the strategic development targets on the promotion of the industries satisfying the following conditions.

1. Those that will lead to increase of exports with little trickling effect on increase of imports accompanying such exports.
2. Those that will lead to import substitution of materials and parts with little trickling effect on increase of imports accompanying such substitution.
3. Those that will have trickling effects on the industries in the regions.

The DTI has identified the following nine sectors as being of strategic importance for promoting export industry, small- and medium-scale industry, and regional dispersion of industry.

- 1) Fishery (marine products and aquaculture)
- 2) Textile and apparel
- 3) Computer service

- 4) Gifts and household sundries
- 5) Processed food, beverages and spices
- 6) Furniture and wooden products
- 7) Semiconductor and other electronic parts
- 8) Ceramics
- 9) Iron and steel, metallic products and machinery

Of these, if priority should be given to the industries satisfying the foregoing conditions and also those being effective for standardization and quality improvement with public support, it would be appropriate to select 1) furniture, wood-working and wooden housing materials industry, 2) food processing industry, and 3) the garment industry as indigenous resource based export industries, and 1) metal working industry, 2) plastic processing industry, and 3) packaging materials industry, as the industries that will enhance inter- industry linkages and can promote the substitution of imports at the level of materials and parts.

## **2-2 Needs of Standardization and Quality Improvement Program for The Target Industries**

### **(1) Metalworking Industry**

Urgent development is required for the following two points in this industry:

1. Develop the metalworking industry which can produce small items of high quality parts meeting an internationally acceptable level of quality required by the modern machinery assembly industry such as automobile and electric appliance manufacturing as well as the industries manufacturing components for them, which will be developed in the Philippines in the near future.
2. Develop the engineering industry so as to support the repair, maintenance and adjustment of equipment and machinery used in the various fields of the industries in the Philippines, so that the acquired technologies can be assimilated for their own innovation.

### **(2) Plastic Processing Sector**

It may be confidently expected that in keeping with the growth and development of the Philippines' industry and economy, demand for better-quality, higher-precision plastic products will increase. It is therefore an urgent need to develop the capabilities of processors in order to meet this change and growth of demand.

**(3) Packaging Materials**

As most of small- and medium-scale manufacturers have used locally produced low quality packaging materials even for exports, there have often arisen problems after exporting the goods. This has especially been the case for the export of processed food. Problems have been identified regarding local cans and bottles for foods and the cap with only some exceptions. In the case of plastics, sacks and bags for general use show no particular problems of quality, but there have been closure defects of containers for foods, and pinhole problems. Regarding other materials than these, there is need for improved design of labels, and study of the improvement of printing technology.

It is necessary to improve the domestic packaging materials industry for supply of good- quality packaging materials, and in particular to swiftly improve the arrangements for supply of cans for canning foodstuffs, jars and bottles, and sealed plastic containers.

**(4) Wood Products, Furniture and Wooden Housing Materials**

This sector has a great potentiality to grow as an export industry. However, in order to realize it, the sector has to tackle such tasks as, 1) prevention of shipping of inferior products for exports by enhancing quality control, 2) promotion of specialization and the division of labor in furniture and housing materials which have superior growth prospects, and 3) diversification and expansion so that the export market presently concentrated to the North American may be expanded to Japan, Europe and other markets.

**(5) Food Processing Industry**

In the case of small processors, they have many problems in marketing and quality control. The most instance is the export of indigenous foodstuff for the Philippine people living abroad which have, some times, trouble for quality contaminated by foreign matters or bacteria, or inferior quality of cans used for canning. Some frozen marine products exported by small processors had been contaminated by bacteria. Such trouble has occurred only seldom, but it brought the Philippine products into disrepute. It is necessary to take immediate measures to recover the confidence on the Philippine products, including those to prevent inferior products.

**(6) Garment Industry**

The most important issue for the consignment-based export garment manufacturing is how to meet the delivery time as ordered. In order to meet the delivery time indicated by buyers, manufacturers are compelled to keep a large volume of material inventory before the materials are supplied by buyers, causing to increase their costs. Some buyers request the manufacturers to

submit a third-party inspection certificate instead of their own inspection. As the inspection institutions are located only in Metro Manila, exporters located in the regions complain against inconvenience that it takes long time to obtain such inspection certificates. Urgent needs exist for solving these problems in order to expand the garment exports.

In the future it is important to expand the general export of garment, diversifying the presently practiced consignment-based garment export. For this end, it is necessary to enhance institutional activities which carry out market research and collection of technical information, while acquiring technologies for quality control and production control which are to be extended to manufacturers.

## **Chapter 3 THE PRESENT STATUS AND THE PROBLEMS OF THE APPROACHES TO INDUSTRIAL STANDARDIZATION AND IMPROVEMENT OF QUALITY**

### **3-1 Outline**

It was since 1964 that national standards have come to be methodically and systematically formulated in the Philippines. In other words, a foundation for the standardization movement as a nation was provided with the Republic Act No.4109 enacted on June 20 of that year.

The national standardization activity of the Philippines was mainly directed toward the regulation of exports and imports of goods in the initial stage, but in 1982 the Letter of Instruction No.1208 was issued by the President for prevention of fires in residences and a standardization activity leaning toward consumer protection was started. This direction continued till 1986.

It was since the Executive Order No.133 (Reorganization to the Bureau of Product Standards), and the DTI Department Administrative Order No.10 (Establishment of the Standards Council), both issued in 1987, that the policy came to be enforced to formulate and disseminate national standards to fulfill the function as the base for industry which forms the foundation of the national economic development. Subsequently, regular standardization activity has developed through the announcement of the government procurement guidelines of the PS Mark products and the formulation of the basic standardization program and the formulation and implementation of the annual action program.

The center of the standardization activities by the Government is the Bureau of Product Standards (BPS) in the Department of Trade and Industry (DTI). BPS is mainly in charge of 1) development of standards, 2) testing and certification of products, 3) technical assistance and consulting, and 4) dissemination of standards and the metric system.

The work of BPS in the regions is carried out by the Industrial Development Division of the Regional Offices of DTI.

As the organization which is to deliberate important matters to be recommended to the Secretary of DTI pertaining to standardization policies, the Standards Council was established in 1987. The Council is constituted by seven standing committee members who are representatives of the relevant government organizations and seventeen temporary committee members from the private industrial circles, meeting roughly bimonthly and have been active ever since its establishment.

In addition, the Technical Committee for Standards Formulation is active with the participation of many people from the industrial circles.



The industrial standards system of the Philippines is administered on the basis of three pillars, namely, the establishment of the Philippine National Standards (PNS), the Philippine Standards Certification Mark System (PS Certification Mark System) and the Import Commodity Clearance (ICC) system.

The PS Mark System consists of voluntary certification and mandatory certification. The mandatory certification is designated from the standpoint of safety of the consumers and the maintenance of fair trade, and it is based on a part of the product standards of PNS, the PNS standards other than the product standards designated by BPS such as code of practice and labeling methods, and the product standards other than PNS designated by BPS.

ICC is a system to prevent the distribution in the country of inferior imported goods and at present designated as target articles are electric wires, electrical materials, electrical parts, electrical products, fire extinguishing equipment and systems, fire extinguishing accessories and some of the articles which are the objects of the mandatory certification under the PS Certification Mark System. These object goods are inspected to check whether they meet PNS, or in the absence of PNS the international or foreign standards adopted by BPS, before clearing customs, and ICC is issued to only goods which meet those applicable standards.

### **3-2 Standards and Certification Systems**

#### **(1) The Direction of Activity for Standardization**

BPS formulates an Action Program for Standardization annually and performs the necessary activity systematically according to it.

The fiscal 1988 Program focuses on providing intensive training to the staff of DTI to enhance their capability to provide such services as consulting and training on standards, testing and certification to manufacturers, traders, consumers, institutions and other relevant organizations.

In the fiscal 1989 Program, the basic objectives of the preceding fiscal year was succeeded and the current issues were grasped again in the following manner to apply measures:

##### **a) Establishment of standards**

- 1. Lack of standards : As countermeasures, 1) introduction of the fast track method to formulate standards, and 2) structuring a cooperative system between BPS and relevant organizations and associations (structuring of a network system)**
- 2. Defining the criteria for mandatory standards and voluntary standards**

b) Implementation of standards

1. Lack of information on standards, and lack of public understanding of standards
2. Shortage of manpower, testing equipment and quality control technology in the industry
3. Shortage of independent testing laboratories
4. Indifference to standards, tendency to evade responsibility, and low conformity to standards by the industry
5. Shortage of manpower at DTI and BPS
6. Lack of cooperation among the government organizations, the industrial associations, and the consumers

And, in order to promote the formulation of standards, it is planned to strengthen the cooperative relation with the relevant associations and provide them with assistance for improving their capability to formulate draft standards, while making positive use of the Standards Council, the Regional Standards Council and the Provincial Standards Council.

In addition, there is a plan to prepare industry profiles for 13 sectors which will be basic information for formulating standards. The profiles will be made to clarify the products classified into individual industrial fields for which standardization is desirable, and also to determine the priority of standardization and further to evaluate the benefits of standardization, thus the target industrial sectors are civil and building, electrical and consumer products industries.

BPS prepared the "Visions and Targets" based on the consensus of the major industrial associations and others concerned aiming to drastically strengthen the national standardization activity in the three year period covering 1989 through 1991. It relates to the following seven points. As it is still in the stage of concept formulation, BPS is working to build up the specifics urgently.

1. Establishment of the Quality Management Institute
2. Establishment of Regional Testing Centers
3. Education on quality at each level of schools
4. Enactment of acts concerning quality assurance of products and the protection of consumers

5. Commissioning of the product testing and certification to industrial associations and specialized organizations
6. Mutual approval with foreign testing organizations of the test results and the certification marks of the Philippines
7. Quality certification for 1000 companies in the industry of processed food, garment, footwear, furniture, electronics, gifts, housewares, civil and building materials, and electrical products

**(2) Establishment of Standards**

The establishment of national standards is carried out in accordance with the "Standard for Formulating National Standards of the Philippines".

Total number of standards established and adopted as the national standards of the Philippines in 1988 totaled 954, of which the standards made by the Philippines total 535 standards, and those adopted from international standards and foreign standards total 419 standards. Majority of the standards thus established or adopted relate to chemicals, metals and metal alloys, agricultural products, building and construction, petroleum products, papers, boards and pulps, textiles and garments, plastic and electrical products, reflecting the present state of development of the industry of the Philippines. On the other hand the standards for machinery are relatively few and also the standards for electronics and information technology are very few.

Of the total number of standards, approximately 44% are product standards, and the remaining 56% are testing methods, implementation standards and terminology.

The product standards established by BPS consist of the mandatory standards which regulate the production and sales of substandard products in performance and quality and the voluntary standards which do not have such regulatory power. There are 49 mandatory standards as of May, 1989.

The mandatory standards, because of its regulatory nature, are set only for the specific fields of industry on which technical regulation is required in order to achieve certain policy objectives. In the Philippines, a major portion of such standards relate to health and safety of the public. Of the 49 mandatory standards, electrical-related standards are dominant with 20, followed by 5 high-pressure-gas-related standards, 5 metal-related standards, 3 cement-related standards, 3 fire-extinguisher-related standards, 2 tire-related standards and 11 others.

### (3) Standards and Certification Systems

In the Philippines, there is the PS Certification Mark System and the Import Commodity Clearance System which are mainly administered by BPS.

#### 1) Philippine Standards Certification Mark System

The license for the use of the PS Mark for the subject product certified is issued to the factory which BPS certified that the said factory is able to continuously produce the product which meets the national standards or the international or foreign standards adopted as national standards as the result of strict factory assessments and product tests conducted by BPS.

The factory which is licensed must subject itself to periodical checks in order to ascertain that the product quality, manufacturing conditions, equipment, etc. meet the subject standards and the quality assurance plan specified by BPS.

The PS Mark license holders by product fields as of December 31, 1988, are as follows:

Chemicals	62
Metals	32
Building materials	87
Automobiles	21
Daily goods	60
Fire extinguisher	96
Food	62
Electrical	70
Total	490

#### 2) Import Commodity Clearance System

In order to prevent the import and distribution of substandard goods, the object imported products are sampled for each cargo before clearing custom to be inspected to check whether they meet the PNS or the international or foreign standards approved by BPS, and ICC is issued to only those products that meet the standards.

All electric wires, electric materials, electric parts, electric accessories, fire- extinguishers, fire-extinguishing systems, fire-extinguisher accessories according to the Letter of Instruction No. 1208 are all objects of this system.

Also, from the viewpoint of ensuring the safety of the people, several PNS which are the objects of mandatory certification in the PS Certification Mark System are designated as object items.

### **3-3 Present Status and Issues of the Systems and Organization of Testing and Inspection**

#### **(1) Outline of the System and Organization of Testing and Inspection**

##### **1) General**

BPS controls the testing and inspection to be conducted under the PS Certification Mark System and the Import Commodity Clearance System. In addition to above, there are the testing and inspection which the enterprises commission to the testing and inspection organizations for their own.

##### **2) Tests and inspections under the PS Certification Mark System**

The tests and inspections under the PS Certification Mark System comprise the "Factory Assessment" which investigates the quality control and technical management of the factories that applied for approval to use the PS Mark, the "Standards Conformity Confirmation Test" which investigates the applied product to confirm conformity of the product to the PNS, the "Factory Inspection" and the "Standards Conformity Confirmation Test" which are conducted on the PS licensed factories once a year continuously after the approval to use the PS Mark to confirm that the PS licensed products are manufactured conforming to the PNS, the "Standards Conformity Confirmation Test" which tests the products sold in the market to confirm whether those products meet the PNS, and the "On-the-site Inspection" of licensed factories which is conducted from time to time according to BPS's judgment and the "Standards Conformity Confirmation Test" of the products manufactured at the inspected factories.

The Factory Assessment, the Factory Inspection and the On-the-site Inspection are carried out by BPS or the DTI regional offices.

The Standards Conformity Tests are conducted by the BPS laboratory and other 23 testing laboratories accredited by BPS according to the approval standards prescribed by BPS. The 23 testing laboratories consist of laboratories managed by the public institutions, those managed by private institutions, private inspection companies, and the testing laboratories of the manufacturers.

3) Tests and inspections under the Import Commodity Clearance (ICC) System

The Import Commodity Clearance (ICC) System is to approve imports into the Philippines of only electrical products and construction materials that conform to the PNS or the international standards and foreign standards approved by BPS, in accordance with the Letter of Instruction No.1208. BPS has entered an agreement with respect to the operation of this system with the Bureau of Customs (BOC) of the Department of Finance (DOF) which administers external trade.

The Standards Conformity Test which is compulsory under the ICC System is performed by the BPS laboratory and 23 testing laboratories accredited by BPS according to the accreditation criteria prescribed by BPS as in the case of PS Certification Mark System.

4) Other tests and inspections

There is no legislation which enforces the "Export Inspection" that is to ensure the quality of export products. There is also no system to check the quality and performance of imported raw materials and supplies or imported parts. Such checks should be originally done by the enterprises as acceptance inspections, but most of the enterprises actually do not conduct such tests because they do not possess adequate testing and inspection equipment.

With respect to the tests and inspections for research and development of products, a part of the tests are contracted out to the testing laboratories because they do not possess adequate testing and inspection equipment.

This kind of test is conducted by the testing laboratories accredited by BPS, the testing organizations under the control of the Department of Science and Technology, the testing organizations under the control of the National Food Authority and the private testing companies.

**(2) Tests and Inspections under the PS Certification Mark System, and Capacity of the Testing and Inspection Laboratories**

The number of applicants for the PS Mark License has steadily increased year by year. The number of applications in 1988 increased to 62, about a double of that in 1986. The Factory Inspections of the licensed factories are carried out one or more times each year and 550 inspections were conducted in 1988. Furthermore, inspections of products sampled from the market increased too.

In order to promote the PS Certification Mark System, BPS has adopted the system that is to authorize the testing for the PS Mark conducted by the testing laboratories which have been accredited by BPS after examinations based on the applications from the organizations which

meet certain conditions regardless of whether they are public organizations or private organizations.

As of December 31, 1988, 23 testing laboratories have been accredited. These are 3 laboratories managed by government institutions (MIRDC, PTRI, NFA), 3 laboratories managed by non-governmental institutions (PIPAC, AMTEC, USCL) and the remaining 17 laboratories which are owned by private testing companies or laboratories of private manufacturers, and their specialized fields are 13 for machinery industry, 1 for electric industry, 8 for chemical industry and 1 for textile industry. There is an unbalance in the testing fields that the accredited testing laboratories can serve. With respect to the field of electrical apparatuses, excepting for some lighting apparatus, there is substantially no laboratory among the accredited laboratories that can conduct tests on electrical products. Among the products which are the objects of the mandatory certification, there are cases in which it is not clear which testing laboratories can perform the tests.

Looking at the products which are the objects of the mandatory standards and the testing laboratories that can conduct the tests, there are very few laboratories that can perform even a part of the test items specified in the standards. The facilities and equipment of BPS laboratory (BPSL) are also limited, so that it cannot function well for testing and inspection related to the mandatory standards.

There are 13 accredited laboratories which are those owned by manufacturers. It is not only a problem from the confidentiality and impartiality but also that there is a fear that the period of the certification test will be prolonged because they will have to give priority to the tests for research and development and the tests on performance and confirmation of safety of their own products.

Furthermore, the locations of the 23 accredited laboratories and the BPSL are concentrated in Manila and its vicinities, except for USCL in Cebu, and the products produced at the factories located in the regions cannot be tested unless they are sent to Manila. Thus, with the additional time of transportation there would be more time required to receive the results of the tests than the factories located in the vicinity of Manila, and there is a high probability that the results of the tests may lose reliability particularly in the analysis of processed food, etc. due to the problem of change in the test sample over time.

### **(3) Testing Capacity in the Regions**

#### **1) Cebu**

The main testing laboratories in Cebu are the Regional Standards and Testing Center (RSTC) of DOST, and USCL.

RSTC mainly performs chemical analyses, but the testing equipment it possesses is only basic ones and it only performs analyses in certain fields. The testing capacity of USCL is also limited. Therefore, the testing capacity in this region is poor and is not able to meet the local demand.

2) Cagayan de Oro

As testing laboratories in Cagayan de Oro, there are the Region 10 Research Institute (chemistry) of DOST and the Xavier University (XU), but the equipment possessed by DOST Region 10 is elementary and the equipment of XU is of class work level. They are not capable to conduct testing on products for the PS Mark and other certifications.

3) Davao

As testing laboratories in Davao, there are DOST Region 11, Immaculate Conceptions College (ICC), Ataneo de Davao University-Chemistry Research Laboratory (CRL) and the University of Mindanao (UM).

The equipment of DOST Region 11 is chemistry-related, but most are not for analytical work; the equipment of ICC is also chemistry-related but is of a students' class work level; and the equipment of UM is for class work use except for the universal testing equipment, which is the only one in Mindanao island.

CRL possesses relatively effective equipment for chemical analysis, but as the main work is in analysis of gold, they will not contribute to the PS Certification Mark System.

### 3-4 Metrology System

(1) Outline of the System

1) Laws and regulations concerning the metrology

In the Philippines, there is no general law nor regulation pertaining to the metrology, but there are regulations stipulating the metrology in connection with the levy of taxes. With recognition of the necessity of enacting the general laws and regulations concerning the metrology, however, the preparatory work for legislation is under way with the assistance of UNIDO.

2) Metrology units

In the Philippines, the Metric unit based on the International System of Units (SI) has been adopted.



**(2) Metrology Administration**

The metrology administration is centered on the National Standards and Testing Laboratory (NSTL) of the Industry Technology Development Institute (ITDI) in the Department of Science and Technology (DOST).

**(3) Metrology Standard**

ITDI/NSTL are responsible for the establishment, maintenance and supply of the national standard, secondary standard and reference standard. The accuracy of these standards is adequate to meet the level required as the national standard, but the scope of coverage will have to be expanded along with the development of industry. The implementing agencies of the legal metrology are NSTL, and DOST's Regional Offices in Regions 1, 6, 7 and 10.

**(4) Metrology Calibration**

1) NSTL

NSTL in ITDI provides various organizations such as factories, schools, hospitals, governmental organizations, private associations, and other relevant concerns with metrology calibration with respect to mass, length, volume, density, force, pressure, temperature and electrical. The number of calibration provided by NSTL totals about 3,000 per annum.

2) Regional Standard and Testing Center (RSTC), Region 7

RSTC, Region 7 is a DOST's testing laboratory located in Cebu. This laboratory undertakes the tests based mainly on chemical analysis and the calibration service for legal metrology relating to mass, length and volume.

3) Other organizations

Besides NSTL and RSTC, there are some organizations providing the metrology calibration; MIRDC for the calibration relating to length and electrical, CIGI relating to the standard gas, and CCL relating to force.

**3-5 Activities of the Private Sector for Standardization and Quality Improvement**

There is a broad difference in the extents of approach to standardization and improvement of quality by the private sector. In the case of industries which produce products for consumption

within the country and the industries which supply raw materials and intermediates to such industries, there is a tendency for the producers to opt to reduce cost sacrificing the quality because the market is drawn to low-priced goods due to the low income level of the consumers.

In contrast to such, the industries that produce export goods and the industries that supply raw materials and intermediates to such industries, efforts are made to maintain required quality or upgrade quality. But, as the quality and standards of most of the products are determined according to the specifications of the buyers, the standards and specifications indicated by the buyers prevail rather than the national standards of the Philippines.

There is a strata of enterprises centered around the large-scale local enterprises that use technology transferred from abroad and the enterprises of foreign capital that sell products under the brands and company names that have received a certain level of evaluation in the domestic market. This group strives to maintain or upgrade the quality of their products and take a positive stance to the government activities to standardization.

There is an increasing number of firms which have come to recognize the need for modernization of the local industry in recent years, anticipating activated investments from overseas as the economy stabilizes, and have started to make positive approach to the improvement of technology and quality based in the central and regional Chambers of Commerce.

Such approach to standardization and improvement of quality in the private sector consists of the following:

1. Approach at a level of individual enterprises to promote quality control within their organization, utilizing the outside training courses for such purpose.
2. Approach at a level of industry, participating in such activities as discussions with BPS on the administration of standards, joining the Technical Committee for Standards Formulation, the planning and implementation of programs for improvement of technology and quality.
3. Approach at a regional level, such as the promotion to establish the regional testing and inspection centers, and the implementation of regional programs attached to the programs for the improvement of technology and quality which are pursued in the Metro Manila region.
4. Approach based on the quality control promotion organizations as cores at the central level.

In many cases, the strata of enterprises that join industrial associations is limited to the large- and medium-scale enterprises, and therefore the approach at the industrial level is centered on the

strata of such enterprises. On the other hand, the strata of small-scale enterprises is active through the industrial associations of the regions and the regional Chambers of Commerce. In the case of cottage industry, no approach is made generally to quality control or only at an enterprise level at best.

### **3-6 Activity to Promote Quality Control**

The organizations that are engaged in activity to promote quality control as the national level in the Philippines are 1) Philippine Standards Association, Incorporated (PHILSA), 2) The Productivity and Development Center of the Development Academy of the Philippines (PDC), 3) Philippine Society for Quality Control, Incorporated (PSQC), 4) Philippine Productivity Movement Incorporated (PPM), and 5) Buy Philippine Made Movement (BPMM), each launching activity of their own to promote quality control.

A movement that calls particular notice in the promotion of quality control is the National Quality Campaign (NQC) promoted by PPM. NQC makes its objective to enhance the interest and responsibility in improvement of quality aiming at the top management of the manufacturers as the target.

Starting in fiscal 1988, PSQC started a system for awarding of superior firms in quality control for the year, which corresponds to the Deming Application Prize in Japan. This award system has been implemented with the cooperation of NQC, and it is the most authoritative award in the Philippines.

NQC is launching on the nation-wide activity with a wide extent of professionals. However, NQC is a sort of movement, and it is not a professional institute which functions to provide continuous dissemination and extension of quality control. PSQC, PHILSA, PDC, PPM and other institutes or organizations conduct seminars on quality control, but their seminars are inadequate and the substance is also not so systematic.

## **Chapter 4 MAIN TASKS AND GOALS OF THE INDUSTRIAL STANDARDIZATION AND QUALITY IMPROVEMENT PROGRAM**

### **4-1 Main Tasks and Goals**

#### **(1) Tasks of the Industrial Standardization and Quality Improvement Program in Developing Countries**

For the present developing countries, the required technologies are available abroad in the industrialized countries, and what they need to do is to develop its own technology on the basis of the technologies introduced from these countries. In such case, industrial standardization and quality control improvement, differing from that in the advanced industrialized countries, need to fulfill the role of guiding and improving the prevailing quality to the targeted level. From this point of view, therefore, the development of standards in the developing countries is necessary to match the level required for future development of the industry and economy, instead of prevailing technology level in the country.

#### **(2) Tasks Expected for the Industrial Standardization and Quality Control Improvement Program in the Philippines from the Viewpoint of Present Level and Future Thrust of Economic and Industrial Development**

In considering the future thrust of the socioeconomic and industrial development in the Philippines, as already discussed in Chapter 2, the benefits expected from the Industrial Standardization and Quality Control Improvement Program may be summarized in the following points:

1. Contribution to export promotion by ensuring the quality reliability of the Philippines products in the export markets. In order to achieve this, one aspect is to prevent exports of substandard goods and another is to support the improvement of technology and quality.
2. Intensification of import substitution, particularly at the level of materials and components industries with further expectation of development to export-oriented industrialization. At present, the export industries and the large-scale manufacturers depend on imports for most of the materials and components they use because of the low quality of the domestic products. The improvement of the quality and standardization of the domestic products to enable procurement of such materials and components within the country is desired. Further, in the future, it is expected that many export industries with high level of technology will be established by foreign investments in the Philippines along with the foreign investment promotion. For such establishments to take place, however, there is need for the presence of the peripheral industries to supply the intermediates and components as the basis.

3. Contribution to dispersal of the industries into regions with development of local industries. That is, one is to develop the system related to technological and quality improvement in the regions including various testing and inspection facilities and equipment, the technical guidance functions and the training opportunities for technology and quality improvement. The other is to enable the products of the local industry which were handled only in the local markets to participate in the central markets by dissemination of standardization and quality control in the regions.

**(3) Tasks from the Viewpoint of Improvement of the Present Industrial Standardization and Quality Control System and Relevant Facilities and Equipment in the Philippines**

When taking into account the present level of standardization and quality control in the industries, it is necessary that each enterprise 1) acquires the quality improvement technology by themselves, 2) thoroughly practice quality control by themselves, and 3) enhance their capability to develop quality control method by themselves, in order that the industrial standardization and quality improvement become effective. However, there are several obstacle factors which have to be overcome to reach such a level. These factors and what support by the government is required to overcome them will be discussed below.

1. In stimulating manufacturers to improve their product quality, it is necessary to create environment by combining such encouragement and regulations as 1) development of an atmosphere to appreciate the good quality through education and campaigns to increase consumers' quality consciousness, and also to promote manufacturers' understanding that quality improvement brings about benefits, 2) visualization of benefits which the producers can gain as the results of quality improvement through extension and enhancement of the certification system, and 3) quality regulation in the field related to safety, health and pollution which will not permit low quality.
2. In order to encourage the manufacturer's aspiration on improvement of technology and product quality, support on 1) financing and taxation, 2) technology transfer, and 3) improvement of public facilities is indispensable. However, what is necessary and possible as public support is the one up to the encouraging or basic support in the initial stage. Subsequent to that, the development should be left to the private sector.

**4-2 Improvement of Standards and Certification System**

**(1) Improvement of the Medium-term Standardization Program, and the Annual Program**

It is necessary to explain the purpose, aims and objectives, specifically for each item so that the principles of BPS's policy are understood by the general public in addition to the people who are involved in standardization.

**(2) Strengthening of the Standards Council**

It is recommended to include the following members in the Standard Council:

1. Experts on quality control technology
2. Representatives of the mass media or opinion leaders who have influence on industry and technology
3. Representatives of PCCI, the industries of important positions in the present economy, and strategic industries to be developed in the future
4. Consumer representatives
5. Chairmen of major technical committees

It is desirable that deliberations are carried out in a comprehensive and systematic way from the viewpoint of how should the standardization policies for the economic development and technological promotion of the Philippines be in the future and what should be and how they should be implemented as standardization projects.

**(3) Improvement of the System to Develop Standards**

- 1) Strengthening of BPS, and support for improvement of the capability of the industrial associations in drafting standards.

Since the importance of work relating to standardization is expected to increase along with the development of the economy, and eventually the work volume of BPS to increase rapidly, it is recommended to take immediate measures for recruitment of staff as planned, considering the length of time required to develop manpower. At the same time, it is also necessary to strengthen the ability of the industrial associations to formulate the draft standards. In addition to the present policies to promote the dialogue with the industries and to expand the object industries for agreements on standardization cooperation, it is recommended to examine the possibility to establish a system to subsidize a part of the cost for drafting standards to the industrial associations and timely dissemination of information necessary for the development of standards.

- 2) Establishment of Technical Committees in the future strategic fields

It is recommended to organize Technical Committees in high technology fields; the fields of electronics and automobiles, and also the fields of electrical with technology of high level such as electrical machinery and apparatus, telecommunication equipment and machinery, and electrical appliance machinery and equipment, etc. In these events, the cooperation of the experts of large or leading enterprises and the professionals in these fields is essential.

#### **(4) Development of Standards**

To ensure further development of the Philippine economy, it is recommended that the establishment of standards is extended to the following fields:

1. **Basic industry field-establishment of product standards for raw materials of the industry:** In order to develop industries of high value added such as machinery, electrical and electronics, it is necessary that standards for quality and performance and for the test methods in the field particularly of iron and steel and nonferrous metals are established in time without falling behind the progress of the industry. In addition, it is recommended that the object of standards is extended to that of the quality and performance and the test methods with respect to the raw materials of textiles and garments, furniture, handicrafts, agricultural, forestry and fishery processed foods for which the Philippines is considered to have a comparative advantage over other countries.
2. **Fields in which drastic improvement of production efficiency and quality assurance can be expected by the promotion of interface and compatibility - development of the interface standards and compatibility standards:** Particularly stressed with respect to the assembly industry represented by the machine industry, enhancement of the compatibility of parts by setting standards will improve the production efficiency of the assembly industry and is important in obtaining quality assurance. For example, in the machinery industry, it is recommended that standards are established in time, matching the development of industry with respect to screws, pins, rivets, axes, rolling bearings, sliding bearings, oilers, gears, chain belts, piping, etc. and also with respect to drawings, symbols, dimension tolerance and processing accuracy. As for such product elements as component parts, the standards for size and form are required. In establishing the standards not only for parts but also for the product, it is necessary to establish the standards from the viewpoint of ensuring interface to the degree possible.
3. **Common and basic fields - establishment of the basic standards:** The standards development is particularly necessary to contribute to the improvement of quality control and production control. In addition, it is expected that standards will be established for common items which are applied broadly in the public life and the industry.
4. **Export industry field - Establishment of product standards for export products:** It is proposed to establish product standards for the important export commodities and for the commodities which are planned to be developed as strategic export commodities in the future. Standards were established fairly well for agricultural products and textiles and garments, but even in these fields it is desirable to develop additional standards or revise the existing standards responding to changes in the overseas markets without delay. However, in establishing the product standards, it is necessary to make them at a practical level considering the present

state of the domestic industry and its technological level, and the consumers' propensities in the major importing countries. If there is a considerable difference in the propensity of the consumers depending on the market or if there is a considerable difference in the technological level of the domestic manufacturers, then it is proposed to set grades within the same product standard. The product standards should be reviewed and revised in time responding to the change in technology and the conditions of the market. For that purpose it is important to establish a system to collect adequate information relating to the subject commodity available in and out of the country.

In view also of the increasing consumers' consciousness about the consumer protection and environment preservation in recent years, it is very important that the relevant issues should be thoroughly studied and the necessary stipulations should be incorporated in the product standards.

The experience of implementation of standardization in the industries is scarce in the Philippines, and the necessity of the standardization and the quality consciousness have not yet been understood well by the consumers. Under such situation, it is practical for urgent realization of particular important national objectives, that those standards relevant to the objectives have been implemented as mandatory standards.

When implemented as mandatory standards, however, the establishment of related acts and regulations, strengthening of the testing and inspection capacity, improvement of the certification system and organization and strengthening of the technical guidance and extension, etc. are indispensable, since it is necessary to be implemented strictly. As the volume of the ensuing work will notably increase, it is crucial that the necessary manpower and budget are secured.

Furthermore, with respect to the operation of the certification system, the certification relating to product safety, which is necessary to be mandatory, should be operated separately from the product quality certificate which fits the voluntary certification.

**(5) Improvement of ICC (Import Commodity Clearance)**

1) Definition of object commodities, and announcement to foreign countries

It is important to clarify and announce the detail of regulation and the commodities involved not only to the importers in the Philippines, but also to the relevant organizations in the exporting countries. The addition of commodities, modification of the system, and clarification of applied standards are the items to be announced in accordance with the GATT Standard Code. The implementation schedule should be also announced together.



2) **Obligation to carry the certification of clearance**

The system should be modified to make obligation to put certification seal on the product under ICC.

**4-3 Improvement of Testing and Inspection System**

There are several conditions which the testing and inspection system is required to satisfy. The primary requirement for the system is to have adequate capacity for undertaking the testing and inspection as required compulsorily for mandatory certification and ICC so that it can function as the basis for extending the certification system. Secondly, in order that the system can contribute to the expansion of exports, it should be capable to conduct the test in items and accuracy that are acceptable to the importers. Thirdly, the system should also function to feed back the results of the testing and inspection with assessment to the manufacturers so that they can use these results for improvement of their products. Further, the system should cover the requirement for testing and inspection in the regions so that it can support the improvement of technology and quality of the regional industries.

The present testing and inspection system is inadequate in responding to such demands including the testing organizations accredited by BPS. Particularly in the fields relating to electrical and machinery, there is almost no testing facilities and equipment available. Further, the existing testing laboratories are concentrated in the central region of the country, and the tests and inspection available in the regions are limited to an extremely few items. In consideration of these points, the following improvements are recommended:

- a) Enhance the certification test capability
- b) Enhancement of the test performing capability in the regions
- c) Review of the accrediting criteria of laboratories

To secure prevention of the leakage of information and the neutrality of tests, the accreditation should be limited to government organizations, the non-governmental neutral organizations, and private testing companies whose neutrality is strictly assured.

- d) Extension of the application of the PS Certification Mark System to the manufacturers abroad
- e) Support for investment on testing and inspection facilities and equipment of small- and medium-scale industries, and the transitional measures for them

#### **4-4 Improvement of Metrology System**

##### **(1) Restructuring of Metrology System**

###### **1) Legal metrology**

###### **a) Establishment of metrology law and implementation of legal metrology based on the law**

It is necessary to establish the metrology law as the general law, and develop the inspection and verification system based on the law.

###### **b) Definition of the measuring instrument which are the object of the inspection and verification system**

It is necessary to define, in the law described in a) above, the measuring instrument which are the object of the inspection and verification system.

###### **c) Development of the inspection and verification system applicable in the central and regions**

The DOST, which is the administration organization of the national standards, and the Department of Finance or DTI as the operation body, will be in charge of the system in the government. Among them, DOST seems to be the most appropriate organization for execution. In the regions, regional offices of DOST will be appropriate.

###### **d) Organizational reinforcement of regional offices of DOST**

If the regional offices of the DOST is assumed to be in charge of operation of the inspection and verification system as stated in c) above, the organizational strengthening of the regional offices becomes necessary. Only the regional DOST offices in Regions 1, 6, 7 and 10 are able to render the metrological calibration service. However, since the legal metrology affects all the consumers in the country, the system is necessary to be implemented in all the regions. Thus, the regional offices of DOST should be enhanced to function as the regional inspection and verification stations for measuring instrument.

###### **e) Education on metrology consciousness**

It is necessary to extend the education regarding the necessity of inspection and verification system for fairness of commercial practice, not only to manufacturers and users (shops and supermakets, etc.) of measuring instrument, but also the consumers who will be benefited finally by the operation of this system.

2) **Industrial metrology**

a) **Establishment of the national standard system**

It is recommended to establish the standard supply system from NSTL to the secondary standard administration organizations with defining the NSTL, which is the current national standard administration organization, as the National Metrology Center.

b) **Network of secondary standard supply organizations**

It is recommended to establish the network of the secondary standard supply organizations under the leadership of DOST taking into account the present situation and future development of the industry.

c) **Cooperation with the organization for industrial standardization**

It is quite effective in promoting standardization for BPS to be the center of the network of secondary standard supply organizations since most of the secondary standard supply organizations are the laboratories accredited by BPS.

d) **Education on metrology consciousness**

The systematic education of testing laboratories, which are the users of measuring instruments and execution body of calibration service at the same time, on metrology consciousness is indispensable, in addition to the education of manufacturers of measuring instruments and also factories which are the users of measuring instruments.

**(2) Improvement of Facility and Capability Related to the Metrology**

1) **Legal metrology**

a) **Development of metrological standards**

NSTL is recommended to be designated as the National Center of the metrology system, and to be responsible for establishment, maintenance and management of the national standards. The existing metrological equipment should be compared internationally and renewed if the accuracy is not sufficient to maintain an internationally acceptable level.

It is recommended that the secondary standards are equipped at each regional office of DOST.

b) Improvement of inspection and verification capability

The periodical training at DOST is recommended for the inspection and verification engineers to improve their capability. The possibility of movable inspection and verification system should be examined to conduct efficiently the inspection and verification system of the manufacturing measuring instrument which are scattered in the regions.

2) Industrial metrology

a) Development of metrological standards

It is recommended to designate NSTL as the National Center of the metrological system with the functions of establishment, maintenance and management of the national standards.

b) Improvement of accuracy of the standards

The existing standards are necessary to be renewed if the accuracy is hard to be maintained. At the same time the required accuracy is necessary to be improved further in accordance with the development of the industry.

c) Improvement of calibration service capability

In order to cope with the increase in demand, it is recommended to renew and increase the metrological standard facilities, conduct the periodical training of metrological technology, and establish the movable calibration service system.

**4-5 Improvement of the System for Promoting Quality Control**

The required function for promotion activities of quality control such as, 1) support for the enterprises that practice quality control, 2) formulation of appropriate themes necessary for promotion, and 3) training of leaders to promote quality control are lacking, or insufficient. The establishment of an organization which will be the core of such function is recommended.

**4-6 Framework of National Standardization and Industrial Quality Improvement Program**

Following four objectives are set as the framework of this program to pursue the tasks, and to achieve the target discussed in the foregoing sections.

1. Enhance the quality consciousness, and at the same time, develop the system required for promotion of standardization.
2. Develop public facilities necessary for standardization and also for supporting technology and quality improvement by industries.
3. Support individual and joint investment of enterprises to set up the facilities for technological and quality improvement.
4. Support quality improvement of industries by technology guidance.

**(1) Improvement of the System to Enhance Quality Consciousness in the Industries and Promote Standardization**

This Program makes it its objective 1) to enhance the quality consciousness of the producers through regulation of quality on one-hand, 2) while, on the other hand, to provide incentives for the improvement of quality by demonstration of the benefits brought about by the improvement of quality, 3) to simultaneously develop manpower for the leaders of quality improvement, 4) to develop a system to disseminate the methods to improve quality, 5) to investigate and research the appropriate means of quality control in consideration of the fact that direct application of the methods used abroad might be difficult or ineffective in view of difference in scale of the enterprises, the nature of the enterprises or the behavior pattern of the employees in the Philippines, 6) to improve the system to formulate long-term and basic policies relating to standardization and to strengthen the execution body of it, and 7) to promote the development of the standards in the fields which are in urgent need.

**1) Improvement and strengthening of the national standardization, and the system for quality regulation and administration**

All the functions relating to regulations, inspection and the administration of quality standards except for food and drugs in the Philippines at the present time are concentrated in BPS. Because of this, both the development and the enforcement of standardization are not sufficient in view of expected development in the future, and the situation is in need of review and improvement. The Government of the Philippines has started reorganization to strengthen the system and is preparing a bill for this purpose. Under the new system, the quality regulation and administration will be executed by the government agencies that supervise the respective industrial sector. BPS needs to put its functional emphasis on planning and coordination of standardization under this system. Development of basic plan of standardization is also necessary as a basis of the coordination. This Program makes it its objective to support the strengthening of the system in the aspects of formulation of basic plan, organizational setup and procedural development.

2) Introduction of export inspection system

The Export Inspection System contemplates the implementation of mandatory inspection at the point of export on the goods prescribed as the objects of the System, permitting export of only those goods that can clear the prescribed quality standards, thus preventing the export of substandard goods and maintaining the reputation of the export goods of the Philippines. However, the inspection and certification system is necessary to be set up to be able to handle the inspection promptly.

On the other hand, it is necessary to improve simultaneously a system to render financial and technological support for the producers who are striving for improvement of quality.

The export inspection system proposed here needs to be operated with consensus of industries on the following points to operate the new system efficiently and effectively.

- a) The system is applied to the limited items of export goods which is regarded effective in export promotion by ensuring the good reputation of Philippine goods in the export market.
- b) The system is applicable only when the appropriate inspection method which is effective to prevent the export of substandard goods, is available.
- c) The inspection will be conducted on all the applicable export goods compulsively once the system is introduced, but the operation will be started only after the inspection system is established sufficiently so that the delay in export procedure may be avoided.
- d) The real objective of this system is not regulation, but to improve the profit of exporters.

3) Establishment of an organization for research and promotion of quality control - tentatively named as "Quality Management Institute (QMI)"

For improvement of quality, it is necessary to exert efforts to get all strata of the society and industry including the producers and the consumers to recognize the importance of quality consciousness. With this, it is necessary for producers to understand the need for improvement of production technology and the measurement techniques for the quality evaluation, and to make such technology function effectively within the enterprises. This Program will establish an organization with the objective to do application research on the methods for dissemination of the concept of quality, taking into full consideration the features of the industrial structure and the behavior pattern of the people of the Philippines, and to promote quality control.

4) Scheme for standards development in the strategic industry fields

Although the industrial standards are fairly well developed in certain industrial fields, the development of standards tends to concentrate on current problems, and many of the existing standards are for the purpose of regulation, resulting, as a whole, in a state which is not in harmony.

**(2) Establishment and Improvement of Supporting Facilities for Standardization and Technology/Quality Improvement**

In the fields to be covered by the public organizations with respect to the testing and inspection system, there is a field of testing and inspection required for quality regulation and administration as a system and a field as the certifying agency when the private sector needs certification for the third party. There are many cases in the Philippines at present where, in addition to the above, the individual enterprise contracts out quality inspections of raw materials and products, which they should have to perform by themselves, to outside testing and inspection institutes because they do not own the testing and inspection equipment and such demand is increasing remarkably in recent years with the activation of the industry.

This Program contemplates the improvement of the systems for testing and inspection, research and development, metrological calibration service, etc. which have to be developed by the public sector through the new installations or improvement of the existing facilities.

- 1) Establishment of a Central Testing Laboratory and Regional Testing Laboratories are proposed as organizations to conduct testing and inspection related to the PS Certification Mark System and other quality regulation and administration system separately from the existing testing and research organizations or technical centers. The Regional Testing Laboratories will have the functions to provide various technical services to the regional industries in addition to the functions to conduct the testing and inspection, in consideration of the difficult conditions for enterprises in the regions to access the existing technical centers. No regional laboratory will be established in Luzon because of the availability of the Central Testing Laboratory to be established in Manila and also of various existing research organizations. In the Visayas, Cebu which is developing as a new industrial center is appropriate to locate the laboratory. On the other hand, in the Mindanao, the laboratories will be located in Cagayan de Oro in the North and Davao in the south, respectively, because of the inconvenient traffic system between north and south Mindanao.
- 2) The equipment necessary for the metrological calibration service for the testing and inspection equipment of the various industrial sectors will be installed in the Central and the Regional Testing Laboratories above mentioned to conduct the metrological calibration service. Incidentally, with respect to the national metrological system, ITDI in DOST is formulating a

development plan at present and the Program is premised on the implementation of their plan, but at the same time with consideration for probable delay in its implementation.

- 3) With respect to the following fields of research and development to be urgently implemented for the improvement of the technology and quality of the strategic industries selected, studies for formulation of a development plan is proposed to be conducted with the objective of establishing a new technical center or strengthening the existing center.
  - a) Metalworking: Strengthening of function of the research and development, and technical guidance of MIRDC.
  - b) Metalworking, plastics processing: Die and mold technology center function for design, repair, and improvement of dies and molds.
  - c) Plastics processing: Application research and development center function for high level technology and new technology
  - d) Furniture, woodworking: Technology guidance center function for technologies for improvement of the accuracy of tools, tool repairs, and maintenance and rearrangement of machineries
  - e) Furniture, woodworking: Strengthening of the functions of marketing research and design development of PTTC
  - f) Garments: Center function for marketing research and design development
  - g) Food processing: Strengthening of marketing research and new technology information dissemination function of FDC
  - h) Packaging material and technology: Research and development and technical guidance center function for improvement of packaging material production technology

**(3) Support of Individual and/or Joint Investment on Technology/Quality Improvement**

This Program makes it its objective to encourage and promote investment by the private manufacturing sector in the build-up of necessary equipment and machinery for quality control and improvement of technology and quality.

Setup of institutional financing and preferential taxation treatment are proposed for the promotion of investment on the following facilities and equipment:

1. Equipment and facilities necessary for the quality test of the raw materials, parts, and products.
2. Equipment and facilities necessary for attaining precision and quality of products in the process of manufacturing as required in the standards.
3. Research and development facilities for improvement of technology and quality.



The investment support program consists of the two following sub-programs:

1. Institutional financing will be established and the preferential taxation treatment will be applied to investments by individual enterprises in equipment and facilities that meet certain predetermined objectives.
2. With respect to equipment and facilities which are urgently required for the improvement of technology and quality of the strategic target industries but which involve an excessive burden of cost for the individual enterprises to invest separately because of the small scale of production, support will be given to investment on commonly used facilities assuming the facilities to be operated jointly.

**(4) Technological Support In Technology/Quality Improvement**

This Program contemplates to transfer technology necessary for improvement of quality and market information which induces quality improvement to the enterprises that need them.

With respect to technology transfer, there are two types; some of technologies and information may be transferred through transmitting to and learning by enterprises that needs it, others will require a certain degree of application development on an existing technological base. For the former, the technology transfer may be carried out by seminars and workshops. In the latter case, it is necessary to carry out a development scheme centered on a certain technical center and to transfer the results to each enterprise. The Program consists of:

1. Holding seminars and workshops necessary for improvement of technology and quality.
2. Scheme to support the preparation of standards of the industry for improvement of technology and quality.
3. Research and development scheme to improve quality and the extension of the results to the industry.

## **Chapter 5 NATIONAL STANDARDIZATION AND INDUSTRIAL QUALITY CONTROL IMPROVEMENT PROGRAM**

### **5-1 Improvement of the System to Enhance Quality Consciousness in the Industries and Promote Standardization**

#### **(1) Improvement and Strengthening of the National Standardization, and the System for Quality Regulation and Administration**

##### **(1)-1 Strengthening of the planning and coordination function of BPS, and Improvement of the Basic Plan of National Standardization**

- 1) Organization in charge : BPS
- 2) Contents of the Program

The internal organization of BPS is proposed to be improved and strengthened in the following two respects:

1. Function as the secretariat of standard development and coordination
2. Function to maintain close cooperation with industries for the industrial standards to be the basis of industrial technology development

In implementing the program, BPS is recommended to form an ad hoc project team for examining the reorganization of internal organization of BPS. The project team will study their past experience and the similar cases overseas, and conduct the following activities:

1. To define the functions and activities which should be strengthened as that of the secretariat of standard development and coordination, examine the reorganization of internal organization of BPS, if necessary, and prepare guidelines for work implementation.
2. To develop the Basic Plan for Standardization Development Plan which forms the basis of national standardization, and propose the plan to the Standard Council.
3. To define the required function and activity to keep close cooperation with the industries, examine the reorganization of internal organization of BPS, if necessary, and prepare guidelines for work implementation.

4. To prepare a draft program of the direction of the standard development and quality regulation for the respective industries, in cooperation with the respective industrial associations. (The contents is premised on the implementation with the approval of the Standard Council.)

**(1)-2 Training of factory assessors of quality control system**

- 1) Organization in charge: BPS
- 2) Contents of the program

A leader development course is organized for the factory assessors of BPS and relevant government offices who have certain experience in the assessment of quality control system. The persons who have completed the trainings shall subsequently carry out the succeeding training for new factory assessors. These courses should be established as the permanent course in BPS, and the BPS undertake the planning of the courses, schedule coordination, and trainer arrangement, etc.

**(2) Introduction of Export Inspection System**

- 1) Organization in charge: BPS and BETP (Bureau of Export Trade Promotion)
- 2) Contents of the program
  - a) Implementation of the program

In implementation of the program, a Working Committee is proposed to be organized to introduce the system according to the introduction steps described below. The committee consists of the representatives from:

1. relevant government offices
2. industrial associations
3. professionals
4. testing and inspection organizations

BPS and BETP organize the secretariat of the committee. BPS is especially responsible for preparing the regulations and laws, applied standards and specifications, and establishment of execution organization with formulation of their operation guideline. BETP, on the other hand, should be in charge of examining the timing of system introduction, defining the object goods, and development of the system if necessary, in view of export promotion.

b) Step for introduction of the Export Inspection System

1. Modification and establishment of the legal and organizational setup for the Export Inspection System

2. Preparation for applying Export Inspection

- a. Establishment and promulgation of the standards and specifications to be applied
- b. Implementation of the program for improvement of technology and quality

3. Introduction of Export Inspection

c) Modification and establishment of the legal and organizational setup for the Export Inspection System

1. Enactment of export inspection law

2. Formulation of standards required for implementation of the Export Inspection System

- Definition of the object products
- Formulation of inspection standard for each product
- Decision of inspection fee for each product

3. Assignment of the inspection organization, or formulation of accreditation standard of the inspection organization

4. Establishment of qualification system of the inspector

d) Organization for system operation

It is proposed to establish a new organization, Bureau of Export Inspection in DTI, to be responsible for the operation of the system. The organization is necessary to have regional offices in the regions where the international port or airport is located. The organization will act as the secretariat of the export inspection system after it is introduced, and operate the system cooperating closely with the relevant government organizations which are in charge of promotion of the object industry.

e) Inspection organization

1. Required condition for the qualified inspection organization

It is proposed that inspection organization which is engaged in export inspection should be the non-profit making and the third party organization.

## 2. Collection of inspection fee

The fee collected by them is recommended to be allowed to be used for their operation, assuming the organization to be non-profit making one.

### f) Establishment of the guideline for selection of the object products

The export inspection system is the system with the strong legal force. Therefore, the execution without intensive support of the government organizations and sufficient consensus of the relevant industries, will result in the useless confusion. Thus, it is necessary to select the object products on the basis of clearly defined and generally understandable criteria. The guideline is recommended to be formulated in this context.

### g) Financial projection of system operation

The additional costs required for the operation of the export inspection system are:

1. Wage and salaries of the inspectors
2. Direct inspection costs
3. Costs of additional facilities and equipment required for the inspection, and
4. Indirect operation costs of the system such as the relevant costs of the government.

The basic facilities and equipment required for the export inspection will be installed in the Central and Regional Testing Laboratories to be proposed in the latter part of this program, but still some additional facilities and equipment will be required depending on the products inspected.

According to the financial projection of the system operation, the inspection fee can cover around 25% of total costs of the inspection facilities and equipment even in the initial stage of operation when the number of inspection is still few. When the number increases, the fee will be able to cover around 50% of the costs. In other words, if a certain portion of facilities and equipment are available already and the additional cost requirement is less than the range indicated above, then the system can be operated by the inspection fee alone. The additional cost requirement for the facilities and equipment is estimated to be less than around 30% of the total cost, assuming the existence of the Central Testing Laboratory which is proposed in the latter part of this program. Thus, it is estimated that the implementation of the export inspection system will not result in the financial burden of the government with existence of the Central Testing Laboratory.

h) Effect of the implementation of the system

Generally speaking, the rejection rate was decreased significantly after implementing the inspection, and the export volume was increased at the same time. It means the instability of product quality at the introduction stage to the market, but at the same time, it indicates the improvement in the quality stability and resulting growth of export.

**(3) Establishment of the Quality Control Research and Training Organization - Tentatively Named as "Quality Management Institute (QMI)"**

1) Organization in charge: BPS

2) Contents of the program

a) Contents of QMI's undertaking

This organization is given the status to perform the central function of the quality control activity of this country. The activities include not only the function to transfer the results of the research of this organization to those who will be the core of the quality control activity in the future, but also such activity as joint development with the technical centers of the respective industrial associations relating to quality control techniques particularly applicable to that industry including the encouragement of such development activity. The envisaged contents of undertaking of this organization are as follows:

1. Research on the methodology to disseminate the quality control
2. Educational courses for quality control leaders
3. Establishment of the theme for national quality control activity, and its development
4. Diffusion and general publicity of the quality control consciousness among the enterprises and the people
5. Collection and dissemination of information relating to quality control and standardization in and out of the country

b) Implementation of the program

This organization will be established in Manila, and regional offices of DTI or the regional Chambers of Commerce will act as the regional representative offices. In the future if a large demand is identified in the regions, the establishment of regional branches will be studied.

In implementation, the promotion committee is recommended to be established consisting of the representative from BPS, PHILSA, PSQC, PDC-PPM, and PCCI, etc. to undertake the preparation activities.

c) Financial projection of the program

The required initial investment is estimated as follows (including the construction of the building):

	(Unit: million yen)
Buildings and civil works	384.5
Interior works	13.7
Training equipment	103.2
(Sub-total	501.4)
Engineering & management expenses	61.7
<hr/>	
Total	563.1

The projected cashflow in the 3rd year of operation is as follows:

	(Unit: million yen)
Total cash inflow	54.9
Revenue form operation	54.9
Total cash outflow	73.1
Operation costs	57.2
Interest of loan	7.0
Repayment of loan	8.9
Balance	-18.2
(Depreciation *1	24.0)

Note: \*1 The operation costs exclude depreciation.

The largest cost factor in this program is the cost for spaces such as conference room and seminar rooms, etc. The revenue from operation consists of the annual member fee and the fees from seminars and lectures. The annual revenue is almost equivalent to the annual operation costs, but it can not cover the costs for spaces (interest, repayment and depreciation). The rental fee of the buildings are extremely high in Manila and it is not appropriate to implement this kind of project on rented buildings. Actually, the difficulty in securing the spaces for conferences has been the impediment factor for quality control promotion activities in the past both in terms of scheduling and costing. The fact that the existing quality control promotion organizations have felt the difficulty in securing the meeting spaces, and that it caused the stagnation of their activity, is one of the reason for strong expectation for this program expressed by the relevant organizations.

d) **Social and economic costs and benefits of the program**

The economic cost factors of this program are the same as that of the financial cost factors. The economic benefit of this program, on the other hand, is the expected improvement of the quality as a result of the activity of the organization, which may be quantified as the amount of fee to be paid to the organization by the participants by appreciating the activity of the organization.

The major part of the benefit from the program expected socio-economically is the benefit expected indirectly from the quality improvement. The fee paid by the participants for the organization is equivalent to the benefit they feel that they can get from the activity. However, the amount of the fee they are willing to pay is limited to the amount they are sure to get as the benefit. The extent of the fee they are willing to pay may be lower than the benefit actually produced by the activity, especially in such country as the Philippines where the quality consciousness is still poor. Thus, there are benefits unpaid by the fee, or not recognized by the participants. However, such benefit is difficult to be quantified. Nevertheless, it would be reasonable to say that the benefit estimated in the financial projection was underestimated compared with the economic benefit.

**(4) Standards Development Scheme in the Strategic Industry Fields**

- 1) Organization in charge: BPS
- 2) Contents of the program

In developing the standards in the fields related to the strategic industry, Technical Committee are supported by engaging the experts from abroad, according to a definite schedule, experts versed in the standards and specifications and technology of the respective type of industry.

- 3) Implementation of the program

In engaging a number of experts from abroad, it is necessary to define the direction of the policy of the development of standards, and the technical or development basis. On the basis of such direction the experts should be engaged. It is necessary for BPS to fulfill the task of preparing such a schedule and standards and to fix the engagement schedule.



## **5-2 Establishment and Improvement of Supporting Facilities for Standardization and Technology/Quality Improvement**

### **(1) Establishment of Central Testing Laboratory**

- 1) Organization in charge: BPS
- 2) Contents of the program
  - a) Function and organizational structure

Improvement of the facilities relating to the testing and inspection of quality is required in various areas of testing and inspection as follows:

1. Testing and inspection related to the PS Certification Mark System
2. Testing and inspection related to the execution of the mandatory standards and the quality regulating law which are to be enacted
3. Testing and inspection for the Export Inspection System proposed by this Program
4. Testing and inspection for Import Commodity Clearance
5. Testing required in research and development and technical guidance
6. Contract testing and inspection requested by manufacturers, export import traders and others

The Central Testing Laboratory proposed to be established will have the primary objective of satisfying functions 1 through 4 above which are indispensable in maintaining the system relating to standards and quality regulation. The functions 5 and 6 will be covered when there is extra capacity.

This laboratory is proposed to be started as a part of the laboratory of BPS until the law defining the organization is enacted, but it is recommended to be converted to a non-profit and the third party organization independent from BPS in the future. However, BPS or other appropriate government agency should maintain the supervision of the testing and inspection relating to quality regulation and its governing, including the determination of the operating policies of the Central Testing Laboratory and coordination with the existing testing and inspection laboratories.

The function of the Central Testing Laboratory is necessary to be organized first of all to be able to perform the testing and inspection relating to the standards enforced at present as mandatory standards. Conformity of the mandatory standards will be administrated by the respective regulatory agencies in charge, but the testing and inspection required by the respective agencies will be undertaken primarily by this Central Testing Laboratory. That is,

the existing testing and inspection laboratories will conduct the testing and inspection under the supervision of this Central Testing Laboratory and according to a commission of this Laboratory.

The Central Testing Laboratory is also responsible to conduct factory assessment under PS Certification Mark System and inspections under ICC and Export Inspection System, in addition to testing services. In order for the functions of Central Testing Laboratory to be distinguished clearly from that of BPS and other relevant government offices, and to be made good of, in execution of these systems, the followings are recommended to be furnished to the functions of The Central Testing Laboratory.

1. The standard regulation and administration function should be established separately from testing and inspection function, and the function of this laboratory should be limited to the latter function,
2. the function to accumulate the testing and inspection results and to develop them to the basis of standardization and quality improvement, should be assigned to the Central Testing Laboratory, and
3. the testing and inspection system to be able to respond to the increase in the demand should be established,

in the case of PS Certification Mark System,

1. the initial assessment of the factories for the PS Mark license, is undertaken by BPS or regional offices of DTI, and accompanying testing and inspection are carried out by the Central or Regional Testing Laboratory. In all events the certification will be issued by BPS, and
2. the follow-up assessment of the licensed factory including on-the-site inspection and accompanying testing will be mandated to the Central and Regional Testing Laboratories by BPS, while BPS might undertake it directly in some cases.

In the case of ICC and export inspection system,

1. the Central and Regional Testing Laboratories undertake the inspection, and they report to BPS in the case of Manila and to regional offices of DTI in the case of out of Manila, and
2. BPS in the case of Manila, and regional offices of DTI in the case of regions, will issue the certificate based on the report.

b) Facilities and equipment to be installed

These testing laboratories, in general, should have the testing capacity and coverage maintained at an internationally acceptable level. In the long run the accredited laboratories

should be confined to public and neutral specialized testing and inspection organizations, though use of testing facilities in the private sector is acceptable under the present insufficient situation of the facilities. The testing laboratories belonging to DOST, as mentioned before, are mainly used for research and development and technical guidance and the testing and inspection functions for quality regulation and administration are recommended to be concentrated in the Central and Regional Testing Laboratories so as to be able to maintain the nature of impartiality. The existing BPS Laboratory will be merged with the Central Testing Laboratory.

### 3) Implementation of the program

The execution body is proposed to be BPS, and the Central Testing Laboratory is regarded as the extension of BPS laboratory for the time being. The Central Testing Laboratory is recommended to be operated as a non-profit making and the independent third party organization which shall be established under the relevant law.

### 4) Financial plan of the operation

#### a) Initial investment requirement

The initial investment requirement is estimated as follows:

	(Unit: million yen)	
	<u>Case 1</u>	<u>Case 2</u>
Buildings and civil works	558.2	443.9
Interior works	46.7	41.8
Testing equipment	1,663.9	847.3
(Sub-total	2,268.7	1,332.9)
Engineering & management expenses	667.2	334.5
Total	2,936.0	1,667.5

The Cases 1 and 2 are set with the difference in assumption on the role of 23 accredited laboratories. The Case 1 assumes that the Central Testing Laboratory handles all the required testing and inspection with abolishing any testing and inspection by the accredited laboratories, whereas the Case 2 assumes that the existing public laboratories will continue their function in the testing and inspection as it is, but those of private sector will not handle the testing and inspection for the certification system any more.

b) Projected cashflow

The projected cashflow in the 3rd and 5th year of operation is as follows:

	(Unit: million yen)			
	<u>Case 1</u>		<u>Case 2</u>	
	<u>3rd year</u>	<u>5th year</u>	<u>3rd year</u>	<u>5th year</u> *1
Total cash inflow	102.2	120.2	102.2	120.3
Revenue form operation	102.2	120.2	102.2	120.3
Total cash outflow	360.3	334.2	197.5	184.0
Operation costs	24.9	25.9	21.6	22.6
Interest of loan	108.7	81.5	57.2	42.7
Repayment of loan	226.5	226.5	118.7	118.7
Balance	-258.1	-213.9	-95.3	-63.7
(Depreciation *2	304.5	304.5	155.8	155.8)

Notes: \*1 3rd year or 5th year of operation

\*2 The operation costs exclude depreciation

The annual revenue can cover the annual operation cost with sufficient surplus, but can not cover the costs incurred from the initial investment which is assumed to be financed by long term loan. Around 25% of the depreciation can be met by the annual balance (surplus) if the interest and the repayment is neglected. In other words, if the burden of the initial investment is reduced, the operation is financially possible including maintenance and small scale renewal of the equipment. However, this projection assumes that all the annual revenue are consumed for the operation of the Center, in other words, the annual revenue will not be transferred to the National Treasury.

5) Social and economic cost and benefit expected from the implementation the program

The direct benefit expected from the implementation of this program is the benefit from the testing and inspection, which may be quantified by the fee paid by the client appreciating the effect of the test and inspection. However, in the case of the Philippines, due to 1) the backwardness in quality consciousness, and 2) low income level, the fee has to be set at the lower level than otherwise expected. Thus, the benefit quantified by the fee revenue may be undervalued than the expected. With respect to the price level of the Philippines, for example, the shadow price coefficient is estimated by NEDA at 1.2, which means the fee is undervalued by 20% with this factor alone.

In addition, with the improvement of the testing and inspection system, the overall quality improvement effect may be expected as the indirect benefit through development of certification system, and increase in the chance of material testing, etc.

**(2) Establishment of Regional Testing Laboratories with Technical Center Function**

- 1) Organization in charge: BPS
- 2) Contents of the program

It is necessary that the functions of the Central Testing Laboratory are fully installed not only in the national center (Manila) but also the regions. In Cebu, in particular, where industry is newly developing at present, it is expected that the demand for testing and inspection will increase rapidly hereafter. In the Mindanao region, no remarkable increase in the demand for testing and inspection is conceivable now or in the near future, but as the use of the laboratories located in Manila and Cebu is difficult and the need for such to turn on industrial development hereafter is high, establishment of regional testing laboratories is necessary. In the case of Mindanao, it is desirable to establish the laboratories in Davao and Cagayan de Oro, respectively, because of the insufficient and expensive transportation facilities between the southern and the northern areas. It is necessary to determine the types and capacities of the testing and inspection equipment required so as to meet the demand of each region. The testing and inspection facilities and equipment in these regions will be determined not only to cover those listed 1 through 4 above but also to meet the demand of 5 and 6 in the region, considering the small size of demand in the region and the lack of the existing testing facilities and equipment. Also, considering difficulty of access to the testing and research organizations and technical extension organizations in the capital area, each regional testing laboratory is recommended to have a technical extension function attached to it. The technical extension department is recommended to be a branch of the central technical extension organizations or organized to hold close linkage with such technical extension organizations.

3) Financial plan of the operation

a) Initial investment requirement

The initial investment requirement is estimated as follows:

	<u>Cebu</u>	<u>Davao</u>	<u>Cagayan De Oro</u>
Buildings and civil works	211.5	145.8	145.8
Interior works	28.2	22.7	22.7
Testing equipment	175.6	148.4	148.4
Engineering and management expenses	84.9	63.0	63.0
<hr/> Total	<hr/> 500.2	<hr/> 379.9	<hr/> 379.9

The land is assumed to be furnished by the local industries for all the cases, and excluded in the above estimates. The test to be carried out by each testing laboratory was assumed to be limited to the basic testing items only of mechanical, electrical, and chemical fields. The special testing items will be undertaken by the Central Testing Laboratory. In the case of Cebu, chemical testing, especially of processed food was assumed to be carried out at sufficient level due to the existence of the demand for this field.

b) Projected cashflow

The projected cashflow in the 3rd and 5th year of operation are as follows. The required number of staff in each testing laboratory was estimated as two each for mechanical, electrical, and chemical fields, assuming that the regional testing laboratories will carry out the technical extension to factories, and training. In the case of the testing laboratory in Cebu, the additional number of staff is included; one for mechanical testing mainly for furniture and wood products, and two for chemical testing mainly for food processing. The additional is included for chemical testing area, one each for Davao and Cagayan de Oro.

	(Unit: million yen)					
	<u>Cebu</u>		<u>Davao</u>		<u>Cagayan De Oro</u>	
	<u>3rd year</u>	<u>5th year</u>	<u>3rd year</u>	<u>5th year</u>	<u>3rd year</u>	<u>5th year</u> *1
Total cash inflow	25.7	28.9	21.8	25.4	10.8	12.7
Revenue form operation	25.7	28.9	21.8	25.4	10.8	12.7
Total cash outflow	47.4	44.4	38.1	35.7	37.7	35.2
Operation costs	7.2	7.4	5.2	5.5	4.8	5.0
Interest of loan	13.0	9.8	10.7	8.0	10.7	8.0
Repayment of loan	27.2	27.2	22.2	22.2	22.2	22.2
Balance	-21.7	-15.6	-16.3	-10.3	-26.9	-22.5
(Depreciation *2	37.4	37.4	29.7	29.7	29.7	29.7)

Notes: \*1 3rd year or 5th year of operation

\*2 The operation costs exclude depreciation

The annual revenue can cover the annual operation costs sufficiently, but can not cover the cost incurred from the initial investment which is assumed to be financed by loan. Of the required depreciation, 50% can be covered by the revenue assuming no interest and no repayment of loan in the case of Cebu, while this percentage is 55% for Davao and 20% for Cagayan de Oro. In other words, if the burden of the initial investment is reduced, the operation is financially possible with covering the maintenance cost and small scale renewal of their equipment. However, it should be noted that this estimate is assuming the revenue being utilized in their operation, instead of transferred to the National Treasury.

**(3) Improvement of Calibration Service System for Measuring Instruments in the Industrial Field**

- 1) Organization in charge: BPS
- 2) Contents of the program

This program is to improve the organization and facilities and equipment required for the metrological calibration service in the industrial field, assuming that BPS shall shoulder the central role

in the metrological calibration service in connection with the industrial standardization. The BPS Testing Laboratory is considered appropriate as the implementing organization until the Central Testing Laboratory is established. The calibration service in the regions will be appropriate to be conducted by the Central Testing Laboratory until the demand in the regions will increase, and after that by the regional laboratories.

It is thought that the improvement of the National Metrology System which forms the basis of the metrological calibration service for the industrial sector will be promoted by DOST (ITDI is already studying the Improvement Program and are at a stage ready to present a proposal). The Program is premised on such improvement of the national system, and assumed to improve the metrological calibration system at a minimum level required by the industrial sector. Assuming the case of delay in Improvement Program by DOST, however, this program includes all the facilities and equipment required for the calibration service so as to be operated even in case of delay in the DOST program. Transfer of a part of the equipment should be examined to avoid duplication when the improvement of the National Metrology System is implemented in the future.

3) Financial plan of the operation

a) Initial investment requirement

The initial investment requirement is estimated as follows:

	(Unit: million yen)
Buildings and civil works	183.3
Interior works	12.5
Metrological equipment	502.2
Engineering and management expenses	236.5
<hr/>	
Total	934.5

The building construction cost was included in the above estimate, but it is a part of the building cost for the Central Testing Laboratory, because it is built in the central building.

b) Projected cashflow

The projected cashflow in the 3rd and 5th year of operation is as follows.



	(Unit: million yen)	
	3rd year <u>of operation</u>	5th year <u>of operation</u>
Total cash inflow	1.2	1.6
Revenue form operation	1.2	1.6
Total cash outflow	112.5	104.2
Operation costs	6.7	7.0
Interest of loan	34.3	25.7
Repayment of loan	71.5	71.5
Balance	-111.3	-102.6
(Depreciation *1	98.8	98.8)

Note: \*1 The operation costs exclude depreciation.

The annual revenue is not sufficient to enable the operation with covering only the variable cost for the operation. This is due to the fact that it is necessary to have the minimum number of staffs and facilities and equipment covering for each metrological area despite the insufficient demand for the calibration at present. Metrology system, however, is the prerequisite as the infrastructure for industry, and should be improved even if the operation is subsidized. It is necessary, especially, that the budget for maintenance of facilities and equipment, and procurement of spare part should be secured to maintain the accuracy of the facilities and equipment to be installed.

4) Social and economic benefit expected from implementation of the program

As examined in the case of benefit of the Central Testing Laboratory, the benefit quantified by the fee is undervalued. Further, the expected indirect benefit from improvement of the metrology system is estimated to be high, and therefore, the program is recommended to be implemented even if it is found difficult to be operated based on their fee alone. The improvement of quality caused by improvement of accuracy is expected to be conspicuous, and the government expenditure as a subsidy may be justified from this viewpoint.

**(4) Research for Formulation of the Plan to Strengthen and Build-up the Capability for R&D and Technical Extension Services**

- 1) Organization in charge: BOI and the testing and research organizations under DOST
- 2) Implementation of the program

The functions of R&D and technical guidance which are expected to be strengthened urgently for the improvement of technology and quality of the strategic industry sector selected previously are as follows. The existing organizations handle some of these functions but insufficiently, and no organizations are in charge for others. In the implementation of the program, it is recommended to organize the steering committee mainly by BOI for plan formulation and implementation coordination. The committee will formulate the overall implementation program and execute it with the cooperation with DOST. The organization to handle the similar programs is necessary to be integrated, and the action should be taken with cooperation with relevant organizations and industrial associations to decide priority of implementation. The following points are necessary to be examined and included in the overall implementation plan:

1. The final terms of reference and implementation schedule of each research item taking into account the relationship with other related programs in the respective industries
2. Organization in charge for each research item
3. Budgeting for the costs and expenses required for conducting each item of research, and arrangement for inviting foreign experts as necessary.

3) Contents of the program

- a) Metalworking sector: Study to formulate a plan to strengthen the research and development and the technical extension function of MIRDC

The study is needed to formulate a plan for strengthening the following functions of MIRDC. It is especially necessary to make a study on the specific needs of the industries and the optimum guidance system to cope with it:

1. Introduction of equipment necessary to meet the technical problems of the existing plants, for example, the introduction of cupola equipment, forging and press equipment into the foundry
2. A system that will allow continuous opening of seminars and workshops inviting foreign experts
3. Strengthening of equipment and manpower in the die and mold manufacturing development
4. Strengthening of equipment and manpower in the technical extension department for machinery maintenance technology

- b) Metalworking, and plastic processing : Study to formulate a plan to install a die and mold technology center function

The primary objective of the die and mold technology center should be the trainings of engineers and technicians for die and mold manufacturing. However, as the small and medium-scale manufacturers of die and mold are situated in difficulty in acquiring modern die and mold making machines because the users since they can get only a limited number of order due to low quality of dies and molds manufactured by them, the center, for the time being, will have to have the functions of manufacturing, repairing and reconditioning of dies and molds commissioned by the users.

On the other hand, however, if they concentrate on manufacture, it will conversely, obstruct the development of the die manufactures. Therefore a system should be studied so that the Center will sub-contract the orders for dies received gradually to the outside manufacturers and perform technical extension at the same time.

Whether this center functions should be established independently of the existing organizations or made into a section of MIRDC or a section of the plastic processing center as will be discussed later is also necessary to be studied in drawing up the Program.

- c) Plastic processing: Study on a plan to establish a R&D center function to apply advanced technology and new technology.

If the assembling of electrical appliances and automobiles becomes active, the development of the parts manufacturers may be expected and the demand for plastic molding requiring precision will increase. It is conceived that the demand for knowledge and molding technology relating to plastic materials to meet such a situation will increase. For the Philippines, collection of information relating to application technology and the field of technical guidance based on such information are required. Even the industry has not grasped adequately the specific details of their requirement. Therefore, the program formulation study is necessary to be undertaken especially with respect to what area the research and development should be targeted to, and what kind of technical transfer is necessary.

- d) Furniture and woodworking: Study to formulate the plan of establishment of technical extension center function for improvement of the accuracy and repair of tools, maintenance and adjustment of machines

As mentioned before, in the furniture and wood building components sector, improvement of the accuracy of the products to respond to the specialization is increasing in importance. But, at almost all plants except for a part of the large-scale enterprises, old machines and tools are

used without repair and adjustment, resulting in no improvement in the accuracy of the products.

It is required to study as to what sort of instruction curriculum is appropriate, whether a permanent center is necessary for such a technical extension center, and whether the existing center or a continuous seminar workshop can fulfill such demand, etc.

- e) Furniture and woodworking: Study to formulate a plan to strengthen the guidance function relating to the marketing research and design development

The furniture industry of the Philippines has conducted exports mainly to North American market. Japan and Europe which are the large importers of furniture remains almost untouched. In order to expand the exports to Japan, there is a need to develop designs for Japan and to improve accuracy and quality. This Program will study the possibility of strengthening of a technical extension center function in these aspects. PTTC at present conducts such market-oriented technical guidance and PDDCP is the center for design development. CITEM has extended the support for marketing research. This program is to bring into full play of these functions in an integrated manner, and extend technical guidance to the industry in which small- and medium-scale industries account for the majority.

In this study, the basic points should be examined with respect to such questions as "whether the furniture and woodworking industry of the Philippines is appropriate for its development for exports?", or "should they specialize in components export and orient themselves toward marketing to meet such?", and "what measure should be taken to bring into full play in an integrated manner of the functions of such organization as PTTC, PDDCP and CITC, etc."

- f) Garments: Study to formulate a plan to establish a center for marketing research and design development

The garments sector of the Philippines is mainly engaged in exports under consignment contract and the designs of garments are also provided by the buyers. But in order to ensure future growth in the sector, development of the general exports is necessary. Also, major portion of the exports in the past was directed to the North American market, and advances to Japan and other markets were inadequate. In order to develop new markets and expand general exports in this way, marketing research and design development are considered necessary, as in the case of furniture and wood working sector.

- g) **Food processing: Study to formulate a plan to strengthen the functions of marketing research and dissemination of information on new technology**

The manufacturers involved in the processed food export are mainly the large-scale firms, and have well developed sales network and sufficient capability of market research and technology development. However, in the case of small- and medium-scale manufacturers, they lack all of these functions, and have limitation in collecting the information required and introduction of technology. The FDC has a consulting function in addition to the testing and inspection function, and is expected to play an important role in the food processing sector. The FDC has an intention to strengthen the marketing research function of the processed food industry if fund is available. PTTC has also conducted technical extension service from marketing point of views. Thus, if these functions of marketing research and supply of new technology information by FDC is fully brought into play, the required functions in the food processing sector will be almost fulfilled. However, there are some issues as to how to cope with the fund shortage of FDC, and the future operation of PTTC after termination of the aid from Japan. The program is necessary to tackle these issues before these will occur.

- h) **Packaging material and technology : Study to formulate a plan to establish a R&D and technical extension center function for packaging material and technology**

With respect to the guidance of packaging materials and technology, there are three fields to be tackled, namely, 1) guidance of design and printing of packaging as a part of marketing, which is now undertaken by PTTC for some industrial sectors, 2) guidance and information supply from the stand point of package development as a part of product development, 3) guidance of packaging method and materials in view of product protection. There are organizations such as FDC, PTTC, and PDDCP, which have undertaken the guidance for their relevant industries, and there are some organizations which have conducted the R&D in view of individual material aspects like glass, plastics, metal, wood, and paper, etc. The study is necessary to find out the optimum system for integrated guidance taking into account the fact that the needs is especially significant in general package and sealed package for food in the Philippines.

### **5-3 Support of Individual and/or Joint Investment on Technology/Quality Improvement**

#### **(1) Support of Investment for Improvement of Technology and Quality by Individual Manufacturers**

- 1) **Organization in charge:BOI and Bureau of Small and Medium Business Development**
- 2) **Implementation of the program**

Many projects are under implementation related to the small- and medium-scale industries by the government, UNDP and other organizations. These projects are often modified and added. In order to implement this program efficiently in an organized manner with these projects, the steering committee is recommended to be organized among the relevant government organizations and industrial associations. It is recommended to unite the responsible organizations into one and study the priority of implementation, monitor the operation situation and its effectiveness at the implementation stage.

**(2) Support of Joint Investment for Technology and Quality Improvement**

1) Organization in charge : Bureau of Small and Medium Business Development

2) Implementation of the program

It is proposed to organize the steering committee by the representatives from the relevant government organizations, technical guidance organizations, and industrial associations. The committee will formulate the program, and at the implementation stage, undertake the monitoring and improvement of implementation program.

This program is not only support the joint investment but also to aim the modernization of management and technical aspects through establishment of joint venture and its operation. Therefore, the applicants are requested to provide the sufficient data to evaluate its feasibility, and the implementation organization is recommended to organize the ad hoc project team for each application so as to study the management and technical aspects, and extend the recommendation for improvement as necessary.

3) Contents of the program

1. Facilities for purchasing raw materials and supplies, warehousing and sizing for metalworking sector

2. Facilities for treatment and recovery of waste water related to the plating operation in the metalworking sector

3. Facilities for cooperative business in the furniture, woodworking and builders' woodwork sector

-Kiln driers, finishing equipment and rental tools,etc.

4. Cooperative sizing equipment for garments sector

5. Facilities and equipment for landing, marketing and refrigeration at the regional fishing ports, in the fishing products processing sector

#### **5-4 Technological Support in Technology/Quality Improvement**

##### **(1) Seminars and Workshops for Improvement of Technology and Quality**

- 1) Organization in charge: BOI, DOST, and BSMBD
- 2) Implementation of the program

The overall implementation schedule is proposed to be formulated by the Steering Committee organized for research program for strengthening and build-up the capability for R&D and technology extension services functions, as described in the previous section. This implementation plan should consists of mid-term plan for the coming three years and annual plan. In formulating the plan, it is necessary to examine the way to implement it in an organized manner with the similar projects proposed by UNDP, and other foreign aid agencies, etc. The responsible organization should be united into one if possible, to avoid the inefficiency. The committee will act as the secretariat in:

1. Selection of implementation body of each seminar and workshop
  2. Budgeting
  3. Engagement of foreign experts for lecturer as necessary
  4. Raising the participants through the industrial associations
- 3) Contents of the program
- a) Seminars and workshops for improvement of the technology to adjust various machines (woodworking and metalworking)
  - b) Seminars and workshops relating to understanding of the technology of the whole process from raw material, quality, manufacturing process of the metalworking sector.
  - c) Seminars and workshops on the fundamental technology relating to designing and handling of molds in the plastics processing sector.
  - d) Seminars on the high level technology and new technology trend in the plastic processing sector
  - e) Seminars and workshops on the technology to improve the accuracy in the furniture and woodwork manufacturing sector.

- f) Seminars on information relating to new technology and market for the furniture and wood-work manufacturing sector.
- g) Seminars and workshops on the quality control of the purchased cans and the canning process in canned products manufacturing.

## **(2) Scheme for Improvement of Technology and Quality**

### **(2)-1 Scheme to prepare GMP by subsector of the food processing sector**

There are many cottage enterprises in the food processing industry and even the fundamental understanding of hygiene control is inadequate. FDC prepared for some subsectors GMP which will be called a common company standards for the food processing industry and they have guided the manufacturing according to the GMP, producing results in improvement of the technology and quality. For most of the types of industry, nothing has been done and they hope to expand the target subsectors. This scheme aims to prepare the GMP intensively and contribute to the improvement of technology and quality of the foods processing industry.

- 1) Organization in charge: FDC
- 2) Specifications and the outline of the implementation

This Scheme is to prepare the GMP by organizing an advisory committee constituted by FDC, PTTTC, BFD, BPS, etc., formulating a schedule, organizing a counterpart team according to this constituted by the representatives of the industry, etc. The committee will engage consultants from abroad according to the schedule prepared and extend and encourage the manufacturing based on the GMP.

In the dissemination of GMP and encouragement of use of GMP, a GMP certification system is recommended to be established. This system authorizes the manufacturers that manufacture according to the GMP for attachment of the certification mark on their products.

### **(2)-2 Scheme to standardize the manufacturing process of the furniture and woodwork sector**

As mentioned earlier, it is expected that specialization and division of labor will progress in the furniture, woodwork and building components manufacturing sector. To meet such a situation it is necessary to render it possible to manufacture identical quality standard products by standardization of the process as well as to establish the quality and standards of the products and to acquire the technology to improve the accuracy.



- 1) Organization in charge: CITC
- 2) Linkage to other programs

Along with the "Improvement of the standards for furniture and woodwork" and the "Seminars and workshops on technology to improve the accuracy" mentioned before, effects of improving the technology and quality of the furniture and woodwork manufacturing sector may be expected.

- 3) Specifications and the outline of the implementation

This scheme is to investigate and study the standard manufacturing process to match the meteorological conditions and the actual situation of the manufacturing plant, establish target standards to follow to improve the manufacturing process, and encourage the use of such standards.

It is recommended to establish the certification system so that the manufacturers who manufacture according to the standards will be authorized to attach the certification mark on their products for the purpose of dissemination of the standards and encouragement of use.

## **Chapter 6 IMPLEMENTATION PLAN AND ORGANIZATIONAL SETUP FOR THE EXECUTION**

### **6-1 Implementation Plan**

#### **(1) Basic Consideration in Implementing the Program**

This program consists of wide varieties of contents to be implemented. All of these sub-programs are necessary to be implemented in well-organized manner to achieve the objective set for standardization and quality improvement. Some sub-programs have inter-relation with others, and some are planned on other sub-programs as its basis. It is indispensable to formulate an implementation plan taking into account such points as mentioned above, and to establish an execution organization with adequate control and arrangement function.

The following two programs are recommended to take immediate actions for prompt implementation:

1. Establishment of testing and inspection facilities in the National Central Region
2. Establishment of testing and inspection facilities in Cebu Region

The reasons are as follows:

1. These programs require a large amount of investment, a number of decision makings of relevant organizations, and wide variety of actions in the preparatory stage as described in the later part of this chapter.
2. Development of some part of the export inspection system and mandatory certification system is urgently needed, and the establishment of these facilities is the presumption of these systems.
3. The establishment and upgrading of these facilities are of high use in implementing programs effective for the future development of standardization and quality improvement.
4. The execution of this program requires direct participation of the government, since the testing and inspection facilities, especially those engaged in the mandatory certifications, should be operated neutrally.

These two programs are recommended to be implemented simultaneously. If only one of these programs is assumed to be implemented, however, the Cebu facilities establishment should have the priority in that this program is the minimum requirement for development of export inspection system and mandatory certification system over the country.

## **(2) Preparatory Actions for Implementation**

All the programs require some preparatory actions for the implementation. The required actions vary depending on the types of programs. The following sections give the required preparatory actions by type of program. The thoroughgoing preparatory actions are especially essential for the facility development programs which require a large amount of investment.

- 1) Preparatory actions for facility development programs which require a large amount of investment
  - a) Establishment of the executing body
  - b) Preparation of Detailed Program
  - c) Basic design study
  - d) Equipment and materials specifications study
  - e) Preparatory work for procurement of equipment and materials
  - f) Procurement of equipment and materials, and construction work control
  
- 2) Preparatory actions for the programs which involve the establishment of new organization or revision of the existing law system

The points to be taken into account in organizational setup, and execution procedure in implementing the programs are described in the respective part of the programs in Chapter 5.

- 3) Preparatory activities for the programs which are expected to be implemented under the supervision of the government offices other than BPS

Of the sub-programs contained in this program, those which are directly related to the standardization and quality control improvement are expected to be implemented by BPS as the core body for the implementation, or under the supervision of BPS. However, other programs related to technical support, investment support, and facilities support, have many relevant government offices and industrial associations. The core agencies to implement these programs are not necessarily agreed upon among them. Establishment of adequate implementation plan and executing organizations, details of which are given in Chapter 5, is quite essential for the programs to be implemented at appropriate time and effectively.

### **(3) Implementation Plan**

#### **1) Implementation plan with assumption for the total program to be implemented in sequence**

Figure 1 gives the timing of implementation start by individual program, assuming the total program to be implemented in sequence, and taking into account the time sequence among each program and the required time from implementation start through completion or operation. This implementation program assumes that the starting time of total program implementation is the starting time to formulate Basic Standardization Plan of Standardization and starting time of preparatory activities for construction of Central Testing Laboratory. The implementation program also assumes that the financial arrangement will be implemented without delay.

#### **2) Implementation of the program with delay in the original plan**

The implementation schedule presented in the foregoing section assumes that the total program will be set to work in line with the original program, and all the program components will be implemented without any obstacles in the implementation process. However, the actual implementation might be pushed back from the original schedule due to delay in:

1. ensuring the necessary fund,
2. ensuring the necessary staffs because of delay/difficulty in budgeting and/or fostering qualified engineers,
3. authorization for revision of the system, and establishment of new organization, etc., and
4. necessary budgeting, and resultant difficulty in operation cashflow, etc.

Even if such is the case, it is recommended to set to work as soon as possible, starting with the items possible to be set to work. Followings are the activities possible to set to work immediately without such problems, and at the same time, desirable to set to work as soon as possible to promote the total program:

1. Strengthening of the planning and coordination function of BPS, and improvement of the Basic Plan of National Standardization
2. Establishment of the Implementation Committee and its secretariat organization for execution of overall program, with function of prioritization of the program components, arrangement and coordination of implementation, and monitor of implementation progress.
3. Establishment of Promotion Committee for QMI, and commencement of preparatory and promotion activities for foundation of the institute. The preparatory and promotion activities can be started without own building/offices, and are recommended to be set to work immediately even if it is difficult to ensure the building/offices.



Figure 1 IMPLEMENTATION SCHEDULE (2)

I T E M	1st Year	2nd Year	3rd Year	4th Year	5th Year
1.2 Introduction of export inspection system		<ul style="list-style-type: none"> <li>1) Preparation for organizational/law system</li> <li>2) Selection of commodities to be inspected</li> </ul>			
<ul style="list-style-type: none"> <li>3) Discussion/coordination w/industries</li> <li>4) Establishment of inspection standard</li> <li>5) Technical support for technological/quality improvement</li> <li>6) Start of operation</li> </ul>					
1.3 Establishment of quality control research and training organization					
<ul style="list-style-type: none"> <li>1) Establishment of preparation committee</li> <li>2) Feasibility study</li> <li>3) Establishment of foundation</li> <li>4) Organization and operation preparation</li> <li>5) Operation commencement</li> </ul>					
1.4 Standards development scheme in the strategic industry fields					
<ul style="list-style-type: none"> <li>1) Formulation of scheme schedule</li> <li>2) Start of scheme</li> </ul>					
2. Establishment and improvement of supporting facilities for standardization and technology/quality improvement					

Figure 1 IMPLEMENTATION SCHEDULE (3)

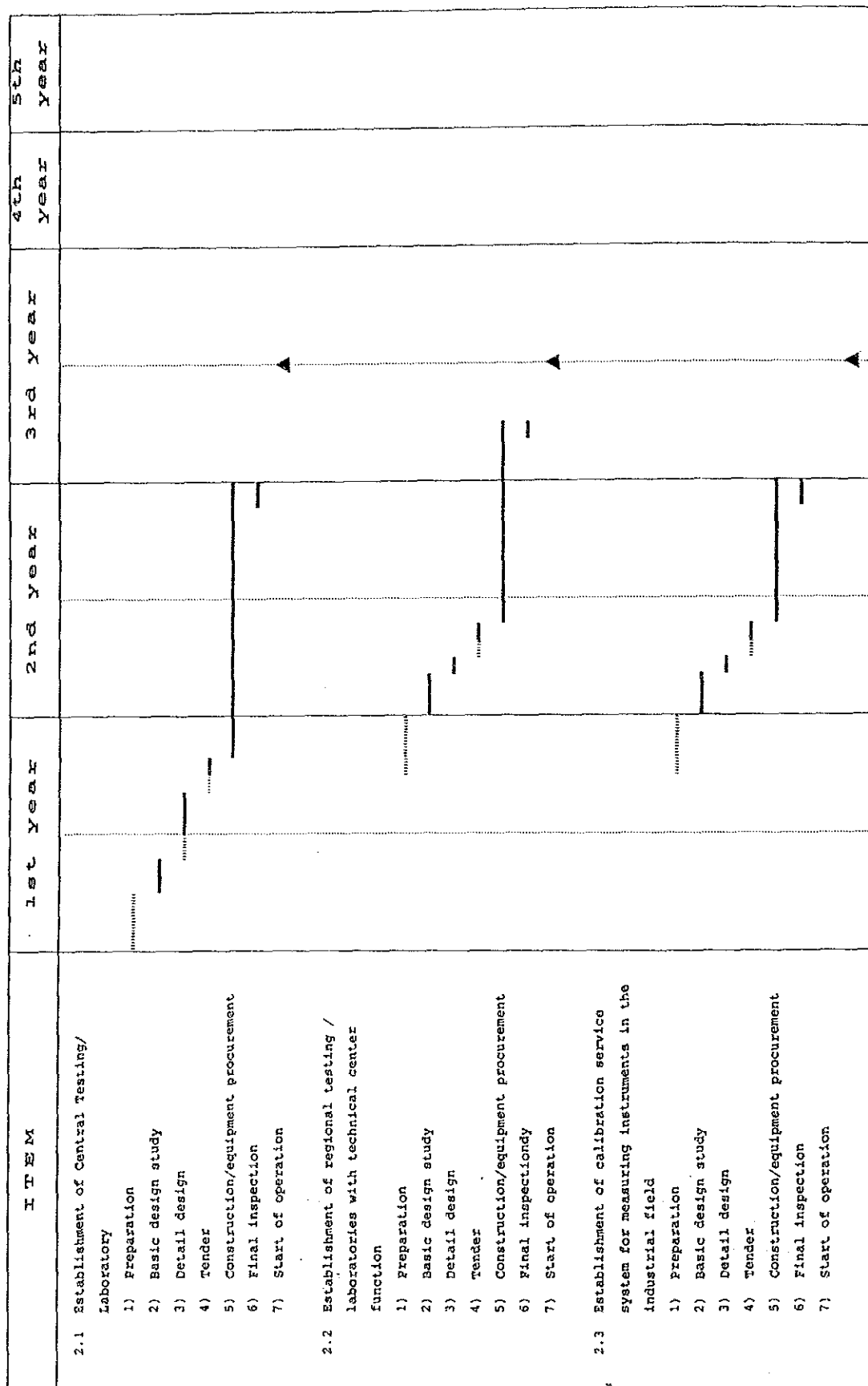


Figure 1 IMPLEMENTATION SCHEDULE (4):

ITEM	1st Year	2nd Year	3rd Year	4th Year	5th Year
2.4 Strengthening and build-up the capability for R&D and technology extension services	1) Establishment of execution body and detail plan formulation 2) Research study	3) Basic design study (1st lot) 4) Detail design (-"-) 5) Construction / equipment procurement (-"-)		6) Organization setup (-"-) 7) Start of operation (-"-)	
3. Support of individual and/or joint investment on technology/quality improvement	1) Basic concept formulation and feasibility study	2) Institutional preparation	3) Start of operation		
4. Technological support in technology/quality improvement	1) Establishment of execution body 2) Program formulation	3) Operation			



4. Preparation activities for introduction of export inspection system. If the export inspection on food processing products is found urgently necessary to be implemented, it is recommended to examine the way to start the inspection utilizing the existing facilities and equipment. In such case, installation of minimum required facilities and equipment in the regions should be examined separately from the total system.
  5. Establishment of regional committee for Regional Testing Laboratories by the organizations concerned in the respective regions, taking necessary actions for preparation and promotion including examination of the method to provide the necessary land, building, testing engineers, and operation organization, etc.
- 3) Modification of original plan to ensure the implementation schedule

The program components presented in the original program are the optimum ones after scrutinized from the possible alternatives. However, if there are any impediment factors for the planned schedule including difficulty in ensuring finance, and limitation of available funds, etc., it is recommended to examine the optimum programs under existence of such factors.

## **6-2 Implementation Organization**

### **(1) Execution and Monitoring of Overall Program**

It is proposed to formulate the secretariat organization for execution of overall programs by the members from BPS and BOI, and Implementation Committee consisting of the representatives from BPS, BOI, BSMBD, BETP, DOST, etc. headed by the Secretary of DTI. The Committee should specify the Implementation Plan and monitor progress of implementation from time to time.

### **(2) Implementation of Individual Programs**

#### **1) Implementation organization and its function**

The implementation organization of individual programs with expected function in implementation was given in Chapter 5. The relationship between the relevant organization and implementation of individual programs is shown in Table 1.

#### **2) Engagement of experts abroad in program implementation**

The coordination and monitoring function for overall program implementation, and execution body of individual programs are already examined in the previous sections. In addition to these

Table 1 ORGANIZATION FOR IMPLEMENTATION

Program	Execution agency	Implementation Organization	DTI				Industries			Pro-fes-sionals	
			BPS	BOI	BSMBD	BETP	DOST	PCCI	Ind.Assn		
1. Improvement of the system to enhance quality consciousness in the industries and promote standardization											
1.1 Improvement and strengthening of the national standardization, and the system for quality regulation and administration											
(1) Strengthening of the planning and coordination function of BPS, and improvement of the Basic Plan of National Standardization	BPS	Ad hoc project team within BPS	E/Team								
(2) Training of factory assessors	BPS	Inservice training institute	E								
1.2 Introduction of export inspection system	BPS/BETP	Working committee for introduction of the system	E/M	M	E/M						M
1.3 Establishment of quality control research and training organization	BPS	Promotion committee for establishment of QMI	E								M
1.4 Standards development scheme in the strategic industry fields	BPS	BPS	E								M
2. Establishment and improvement of supporting facilities for standardization and technology/quality improvement											
2.1 Establishment of Central Testing Laboratory	BPS	Advisory committee for establishment	E/M								M
		Ad hoc project team for preparation	M								M
		Ad hoc project team for preparation	M								M
2.2 Establishment of regional testing laboratories with technical center function	BPS	Ad hoc project team for preparation	M								M
2.3 Establishment of calibration service system for measuring instruments in the industrial field	BPS	Ad hoc project team for preparation	M								M
2.4 Strengthening and build-up the capability for R&D and technology extension services	BOI/DOST	Steering committee	M	E/M	M	M	E/M				M
3. Support of individual and/or joint investment on technology/quality improvement											
(1) Support of individual investment	BOI/BSMBD	Steering committee	M	E/M	M	M	M				M
(2) Support of joint investment	BSMBD	Steering committee	M	M	E/M	M	M				M
4. Technological support in technology/quality improvement	BOI/DOST	Steering committee	M	E/M	M	M	E/M				M

Note: E - Execution agency, M - Member of implementation organization

organizational setup for implementation, engagement of experts abroad is recommended in some speciality areas as the advisors, in order to study their similar experience abroad and transfer it to the Philippines.

The major recommended areas, estimated number of experts required, and duration of advisory service expected are as follows:

1. Advisor for development of basic plan of standardization and standardization system (for the expected terms of reference, see Supplementary Information 10 in Annex 1)

Organization in charge: BPS

Required number of experts: One

Duration of service: 3 years starting the beginning of 1990

2. Advisor for formulation of export inspection standards

Organization in charge: BPS/BEI

Required number of experts: One

Duration of service: 6 months from the middle of 1990

3. Advisors for establishment and operation of quality control research and training organization

Organization in charge: QMI

Required number of experts: Two

Duration of service: 2 years from 3 months before the commencement of operation of QMI

4. Experts for establishment program of Central Testing Laboratory and Metrological Calibration Service System

Organization in charge: BPS

Required number of experts and duration of services:

- 1) Advisor for establishment of testing and inspection system

Required number of experts: One

Duration of service: 1 year from 6 months before the commencement of operation

2) Experts for testing techniques guidance

Required number of experts: One each for electrical, mechanical, and chemical testing

Duration of service: 1. 1.5 years from 3 months before the commencement of operation

2. 6 months at testing area expansion

3) Expert for calibration techniques guidance

Required number of experts: One

Duration of service: 6 months from 3 months before the commencement of operation

In addition to the above, following areas are considered effective in engagement of expert(s) or consultant(s), if necessary:

1. Lecturers for specific areas of quality control
2. Technical advisors for standard development in the electrical and mechanical fields
3. Advisors for research studies to formulate the programs for strengthening the R&D and technical guidance function
4. Lecturers of seminars and workshops for technological and quality improvement
5. Technical advisors for technological and quality improvement schemes

3) Training programs required for implementation of the programs

The followings are the training programs required for implementation of the programs:

1. Training of quality control factory assessors and their trainers

Organization in charge: BPS

Trainee: Quality control factory assessors in BPS and relevant government organizations. The number of trainees should be determined later when the responsible area of each government organization is fixed.

In or abroad: Training of trainers is held abroad.

Other trainings are in the Philippines.

Duration of training: One month for trainers

Two months for others

Curriculum: See Supplementary Information 2 in Annex 1.

2. Training of prime testing/inspection engineer for Central and Regional Testing Laboratories

Organization in charge: BPS

Trainee: Prime testing/inspection engineers of Central and Regional Testing Laboratories

In or abroad: Abroad

Duration of training: 1. 3 months from 9 months before the commencement of operation  
2. 3 months from 6 months before commencement of operation

**PART II**  
**ATTACHMENTS**



## LIST OF ATTACHMENTS

ATTACHMENT 1	Implementing Arrangement on the Technical Cooperation
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**ATTACHMENT 1**

**Implementing Arrangement  
on the Technical Cooperation**



IMPLEMENTING ARRANGEMENT

ON

THE TECHNICAL COOPERATION

BETWEEN

JAPAN INTERNATIONAL COOPERATION AGENCY

AND

DEPARTMENT OF TRADE AND INDUSTRY

FOR

THE STUDY ON THE NATIONAL STANDARDIZATION AND INDUSTRIAL

QUALITY CONTROL IMPROVEMENT PROGRAM IN THE REPUBLIC OF THE PHILIPPINES

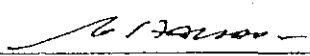
AGREED UPON BETWEEN

JAPAN INTERNATIONAL COOPERATION AGENCY

AND

DEPARTMENT OF TRADE AND INDUSTRY

Manila, Philippines  
October 27, 1988



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UNDERSECRETARY CEFERINO L. FOLLOSCO  
Department of Trade and Industry



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DR. KENJI TOMITA  
Leader of the Preparatory  
Study Team, Japan International  
Cooperation Agency

## I. INTRODUCTION

In response to the request of the Government of the Republic of the Philippines (hereinafter referred to as "GOP"), the Government of Japan (hereinafter referred to as "GOJ") had decided to conduct the study on the National Standardization and Industrial Quality Control Improvement Program in GOP (hereinafter referred to as "the Study") and to exchange the Notes Verbales with GOP concerning the implementation of the Study.

Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation program of GOJ, will undertake the Study, in accordance with the relevant laws and regulations in force in Japan.

On the part of GOP, Bureau of Product Standards, Department of Trade and Industry (hereinafter referred to as "BPS"), shall act as counterpart agency to the Japanese study team (hereinafter referred to as "the Team") and also as coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

The present document constitutes the implementing arrangement between JICA and the BPS under the above-mentioned Notes Verbales exchanged between the two Governments.

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## II. OBJECTIVES OF THE STUDY

The objectives of the Study are to work out the programs to promote the development of industrial standardization, quality control, and testing (hereinafter "testing" means the testing for standards development and products certification) in the Philippines and to formulate the study report.

## III. SCOPE OF THE STUDY

In order to achieve the above objectives, the Study shall cover the following items:

1. To study the background and relevant conditions.
  - 1.1 Present situation of industry in the Philippines
  - 1.2 Export condition of the Philippine industrial products
  - 1.3 General situation concerning the industrial standardization and testing in the Philippines
  - 1.4 Situation of quality control for the industrial products
  - 1.5 Relevant laws and regulations
  
2. To study the present situation and future plan of the industrial standardization, quality control, and testing, and to identify their problems.
  - 2.1 Governmental policies, laws and regulations, and administrative mechanisms for the promotion of industrial standardization, quality control, and testing

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- 2.2 Present institutions and their mechanisms for industrial standardization, quality control, and testing
- 2.3 Facilities and personnel for standardization, quality control, and testing
- 2.4 Methods of testing and calibration, and qualifications of technical personnel
3. To set up policies and strategies for the development of industrial standardization, quality control, and testing.
  - 3.1 Policies, laws and regulations
  - 3.2 Organizational system and function among standardization, quality control, and testing
  - 3.3 Methods of testing and calibration
  - 3.4 Facilities for testing and inspection
  - 3.5 Personnel education and training in industrial standardization, quality control, and testing
  - 3.6 Public relations and private sectors' participation
4. To formulate the development programs.
  - 4.1 Overall development plan
  - 4.2 Detailed implementation programs
  - 4.3 The effect of the development of industrial standardization, quality control, and testing with special reference to industrial development and export promotion

#### IV. STEPS AND SCHEDULE OF THE STUDY

##### 1. Steps

Step 1: Preparatory work in Japan

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Step 2: Work in the Philippines

Step 3: Work in Japan

Step 4: Presentation and discussion on the Draft Final Report

2. Schedule

As shown in Annex

V. REPORTS

JICA will prepare and submit the following reports in English to the GOP.

1. Progress Reports during the Step 2: 10 copies
2. Draft Final Report and its summary within seven (7) months after commencement of the Step 3: 15 copies
3. Final Report and its summary within two (2) months after the receipt of comments on the Draft Final Report by BPS: 30 copies

VI. UNDERTAKING OF GOP

In accordance with the Notes Verbales exchanged between GOJ and GOP, GOP shall accord privileges, immunities and other benefits to the Team and, through the authorities concerned, take necessary measures to facilitate smooth conduct of the Study.

1. GOP shall be responsible for dealing with the claims which may be brought by the third parties against the members of the Team and shall hold them harmless in respect of claims or liabilities arising in the course of or otherwise connected with the discharge of their duties in

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the implementation of the Study, except when such claims of liabilities arise from the gross negligence or willful misconduct of the above-mentioned members.

2. The BPS shall, at its own expense, provide the Team with the following, if necessary, in cooperation with other agencies concerned:

2.1 Available data, information and materials (including photographs and maps) related to the Study

2.2 Counterpart personnel

2.3 Administrative and technical support staff

2.4 Suitable office space at Manila with adequate floor space and necessary office equipment

2.5 Credentials or identification cards to the members of the Team

2.6 Appropriate number of vehicles with drivers and fuel

3. The BPS shall make the necessary arrangements with the governmental and non-governmental organizations concerned for the following:

3.1 To secure the safety of the Team.

3.2 To permit the members of the Team to enter, leave and sojourn in the Philippines for the duration of their assignment therein.

3.3 To exempt the members of the Team from taxes, duties and any other charge on equipment, machinery and other materials brought into and out of the Philippines, for the conduct of the Study.

3.4 To exempt the members of the Team from income tax and charges of any kind imposed on or in connection

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with any emolument or allowance paid to the members of the Team for their services in connection with the implementation of the Study.

- 3.5 To arrange customs clearance, handling and storage at the port/airport and inland transportation of equipment, machines, instruments, tools and other articles to be brought into the Philippines in connection with the implementation of the Study.
- 3.6 To provide necessary facilities to the Team for remittance as well as utilization of the funds introduced into the Philippines from Japan in connection with the implementation of the Study.
- 3.7 To secure permission for entry into private properties or restricted areas for the conduct of the Study.
- 3.8 To secure permission to take all data and documents (including photographs and maps) related to the Study to Japan by the Team.
- 3.9 To arrange/coordinate meetings with authorities/agencies concerned.
- 3.10 To provide medical services as needed. Its expenses will be chargeable on the members of the Team.

#### VII. UNDERTAKING OF GOJ

In accordance with Notes Verbales exchanged between GOJ and GOP, GOJ, through JICA, shall take necessary measures for the implementation of the Study.

1. To dispatch, at its own expense, a study team to the Philippines.

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2. To pursue technology transfer to the Philippine counterpart personnel in the course of the Study.

#### VIII. CONSULTATION

JICA and BPS shall consult with each other in respect of any matter that may arise from or in connection with the Study.

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ANNEX

TENTATIVE SCHEDULE OF THE STUDY

□ Work in Japan    ▨ Work in the Philippines

Year.	1989												1990
	Month	Feb.	Mar.	Apr.	May	Jun	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
Project Month	1	2	3	4	5	6	7	8	9	10	11	12	
Preparatory Work in Japan (Step 1)	□												
Work in the Philippines (Step 2)		▨		▨	▨	▨	▨						
Work in Japan (Step 3)			□	□	□	□	□	□					
Submission of Draft Final Report									△				
Presentation of Draft Final Report (Step 4)										▨			
Submission of Final Report													▲

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**ATTACHMENT 2**

**Minutes of Meeting**



MINUTES OF MEETING

FOR

THE STUDY

ON

THE NATIONAL STANDARDIZATION AND

INDUSTRIAL QUALITY CONTROL IMPROVEMENT PROGRAM

IN

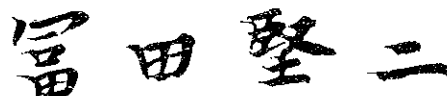
THE REPUBLIC OF THE PHILIPPINES

Manila, Philippines  
October 27, 1988



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DIRECTOR RENATO V. NAVARRETE  
Bureau of Product Standards  
Department of Trade and Industry



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DR. KENJI TOMITA  
Leader of the  
Preparatory Study Team,  
Japan International  
Cooperation Agency



1. The Preparatory Study Team made a visit to the Philippines from October 19th to October 29th, 1988 to discuss with the relevant Philippine authorities on the Implementing Arrangement for the Study.
2. In connection with the above, meetings were held at the office of the Bureau of Product Standards on October 20th, 21st and 25th, 1988 between Philippine officials, chaired by Director Renato V. Navarrete on the Philippine side, and the Preparatory Study Team headed by Dr. Kenji Tomita on the Japanese side (Attendance as in the list of the Philippine and Japanese Delegations) to discuss the Implementing Arrangement drafted by the Preparatory Study Team.
3. This Minutes of Meeting is a record of discussions which complements the Implementing Arrangement for the smooth conduct of the Study.
4. The Japanese side proposed, and the Philippine side agreed, to establish a steering committee for the smooth implementation of the Study. The Philippine side explained that the steering committee will be established under BPS/DTI, with the cooperation of relevant organizations, such as DTI/PTTC, DOST/ITDI, PCCI, among others.
5. The BPS explained on its priority concerns to improve the National Standardization and Quality Control, as follows:
  - 5.1 Accelerated development of quality/safety standards affecting public health and safety, and exports.
  - 5.2 Intensified enforcement of standards.

- 5.3 Increased product testing and certification capability.
  - 5.4 Expansion of laboratory accreditation in regions/provinces.
  - 5.5 Government procurement of more BPS-certified products.
  - 5.6 International (bilateral or multilateral) recognition of Philippine certification marks or laboratory test results.
  - 5.7 Wider dissemination of technical information.
  - 5.8 Expansion of BPS in-house technical consultancy and training skills.
  - 5.9 Intensified promotion of value of standards and PS mark certification.
6. Both sides agreed that the detailed implementation programs (I/A III.4.2) will be formulated from a wide point of view to improve the National Standardization and Quality Control in the Philippines, considering the above-mentioned concerns, the cooperation and coordination with the relevant governmental and non-governmental organizations, the utilization of the existing facilities, and so on.
  7. Visits to testing laboratories and a sanitary wares factory were conducted by the Preparatory Study Team.
  8. The Preparatory Study Team met with leading representatives of the Philippine industry sector who discussed their needs for a wider range of technical services in standardization and quality control.

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9. Trade and Industry Secretary Jose S. Concepcion, Jr. and Undersecretary Ceferino L. Folloso met with the Preparatory Study Team to express thanks, on behalf of the Government of the Philippines, to the Government of Japan, particularly the Japan International Cooperation Agency and the Preparatory Study Team. They likewise underscored that the Study being prepared is of high priority, because of the need to support the trade and industry plans, programs and targets under the Philippine national development plan with a strong and dynamic national standardization and quality control system.

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ANNEX

LIST OF ATTENDANCES

Japanese Side

Preparatory Study Team

- |  |   |
|--|---|
| Dr. Kenji Tomita<br>(Leader)   | - Special Technical Advisor,<br>JICA                                  |
| Mr. Yasujiro Suzuki<br>(Coordinator)   | - Industry Division, JICA   |
| Dr. Masaaki Mishiro<br>(Industrial Standard-<br>ization & Certifica-<br>tion System) | - Director,<br>International Standardization<br>Affairs, AIST, MITI   |
| Mr. Naoyuki Sato<br>(Quality Control)  | - Standards Division,<br>AIST, MITI                                   |
| Mr. Yoshiki Chayahara<br>(Testing & Inspection)                                      | - Deputy Director,<br>Consumer Product Safety Division<br>ITIII, MITI |
| Mr. Takenori Yajima<br>(Metrology)   | - Deputy Director,<br>Weights and Measures Office,<br>MIIB, MITI      |

JICA Philippine Office

- |                |  |
|----------------|--|
| Mr. Toru Saito | - Assistant Resident<br>Representative, JICA |
|----------------|--|

Philippine Side

Bureau of Product Standards, Department of Trade  
and Industry, (BPS/DTI)

- Mr. Renato V. Navarrete - Director
- Ms. Norma C. Hernandez - Chief, Standards Conformity  
Division
- Ms. Jocelyn A. Espiritu - Product Standards Analyst

Industrial Technology Development Institute,  
Department of Science and Technology (ITDI/DOST)

- Dr. Ernesto S. Luis - Chief, Tests and  
Standards Division
- Mr. Edwin T. Palma - Head, Standards and Instruments  
Calibration Laboratory

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**ATTACHMENT 3**

**Members of Study Team of JICA**



**ATTACHMENT 3: Members of Study Team of JICA**

Mr. Masayasu Sakanashi	Team Leader
Mr. Kanji Kakinuma	Deputy Team Leader
Mr. Ryuichi Sasaki	Deputy Team Leader
Mr. Tetsuo Inooka	Team Member
Mr. Hiroshi Maruyama	Team Member
Mr. Yawara Tomiyama	Team Member
Mr. Masaru Sekiguchi	Team Member
Mr. Tsutomu Matsuno	Team Member
Mr. Ikuo Inoue	Team Member
Mr. Masanobu Sakakura	Team Member
Mr. Takenosuke Kuroda	Team Member
Mr. Yoshio Satoh	Team Member
Mr. Takeshi Inoue	Team Member





**ATTACHMENT 4**

**Members of BPS Counterparts  
and Steering Committee**



**ATTACHMENT 4: Members of BPS Counterparts and Steering Committee**

Director Renato V. Navarrete  
Bureau of Product Standards

Assistant Director Melba M. Valdez  
Bureau of Product Standards

Miss Norma C. Hernandez  
Chief  
Standards Conformity Division  
Bureau of Product Standards

Miss Ermelinda P. Andres  
Assistant Chief  
Standards Conformity Division  
Bureau of Product Standards

Mr. Melchor A. Camina  
Standards Conformity Division  
Bureau of Product Standards

Mr. Joselito C. Soler  
Standards Development Division  
Bureau of Product Standards

Director Rufino C. Lirag, Jr.  
Industrial Technological Development Institute

Mr. Reynaldo Adriano  
Philippine Chamber of Commerce and Industry

Mr. Rolando de Mesa  
President  
Philippine Society for Quality Control, Inc.

Director Cecille Gonzales  
Bureau of Food and Drugs

Executive Director Alicia O. Lustre  
Food Development Center

Director Constante V. Ventura  
Metals Industry Research and Development Center

Director Eduardo Villanueva  
Philippine Textile Research Institute

Executive Director Antonio J. Tria Tirona  
Philippine Trade Training Center

Dr. Antonio F. Mateo  
President  
Philippine Standards Association



**ATTACHMENT 5**

**Record of Field Work**



No.	Date M D	Members in charge	Name of Organization/Persons
3	6 Mon	Sakanashi/Inooka /Maruyama	Arrival from Tokyo JICA Manila office
3	7 Tue	Sakanashi/Inooka /Maruyama	Bureau of Product Standards
3	8 Wed	Sakanashi/Inooka /Maruyama	Bureau of Product Standards SGV & Co.
3	9 Thu	Sakanashi/Inooka /Maruyama Other members	Bureau of Product Standards Arrival from Tokyo JICA Manila office Japanese Embassy Bureau of Product Standards
3	10 Fri	All members	Undersecretary C. L. Follocco Regional and Domestic Group, DTI Bureau of Product Standards Office of Operational Planning, DTI Board of Investments
3	11 Sat	All members	Internal Meeting
3	12 Sun	All members	Summary of Field Survey
3	13 Mon	1 Sakanashi/Sekiguchi /Kakinuma/Tomiyama	Bureau of Product Standards Philippine Standards Association Philippine Productivity Movement Productivity and Development Center Philippine Society for Quality Control
		2 Inooka/Maruyama	Bureau of Export Trade Promotion Bureau of Small and Medium Business Development Asst. Secretary Madarang
		3 Sakakura/Kuroda /I. Inoue/Sato	Philippine Trade Training Center Philippine Textile Research Laboratory Industrial Technological Development Institute
		4 Sasaki/Matsuno /I. Inoue	Metals Industry Research and Development Center Industrial Technological Development Institute Philippine Cement Corporation Laboratory
3	14 Tue	1 Sasaki/Kuroda	Bureau of Food and Drugs Laboratory Food Development Center
		2 Sakakura/Inooka /Kakinuma/Tomiyama	Confederation of Philippine Exporters
		3 Sakanashi/Maruyama /Sato	C. C. Unson Manufacturing Co. Inc. Moldex Products Inc.
		4 Sakanashi/Maruyama	Retailers Council
		5 Sekiguchi/I. Inoue /Matsuno	Consolidated Industrial Gases, Inc.
		6 Sakakura/Sasaki /Kakinuma/Tomiyama	Garments Business Association of the Philippines Textile Millers Association of the Philippines Textile Producers Association of the Philippines Philippine Toy Manufacturing Association
		7 Inooka/Sato/I. Inoue	Dutch Boy, Phils.



No.	Date M D	Members in charge	Name of Organization/Persons
		8 Matsuno/T. Inoue /Sekiguchi	Precision Electronics
		9 Sasaki/Kuroda	Bureau of Food and Drugs Laboratory
3	15 Wed	1 Sakanashi/Inooka	Center for International Trade Expositions & Missions
		2 Inooka/Maruyama /Sasaki/Kuroda	U.P. Institute of Small-Scale Industries U.P. Home Economics
		3 Kakinuma/Kuroda /Sakakura	Chamber of Furniture Industry of the Philippines
		4 I. Inoue/Kakinuma /Sakakura	Philippine Integrated Exporters, Inc. Plant visit at local firms
		5 Sasaki/Sato/Matsuno /T. Inoue/Maruyama	Philippine Institute of Pure & Applied Chemistry Laboratory BPS Laboratory
		6 Sato/Sakanashi	Philippine Association of Paint Manufacturers
		7 Tomiyama/T. Inoue /Sekiguchi	Metals Engineering Resource Corporation
		8 Matsuno/T. Inoue /Sekiguchi/Sasaki	Columbia Wires & Cable
3	16 Thu	1 Kakinuma/Tomoyama /Maruyama/Sasaki /I. Inoue	Construction Industry Authority of the Philippines
		2 I. Inoue/Sekiguchi	Consolidated Auto Parts Producers Association
		3 I. Inoue/T. Inoue	Filipinas Nissan
		4 Matsuno/Sakakura /Inooka	Export Processing Zone Authority
		5 Kakinuma/Tomoyama /Maruyama/Sasaki /I. Inoue	Move from Manila to Cebu
		6 Sakanashi/Kuroda /Sato	Move from Manila to Cagayan de Oro Meeting with DTI/DOST/NEDA/FIDA
		7 Sakakura/Sekiguchi	Move from Manila to Davao
3	17 Fri	1 Inooka/T. Inoue	National Economic and Development Authority Philippine Foundry Society Metals Industry Association of the Philippines
		2 Kakinuma/Tomoyama /Maruyama/Sasaki /I. Inoue	Meeting with DTI/DOST/NEDA/Chamber of Commerce and Industry A&P Foods Corporation Shenberg Marketing Corporation
		3 Sakanashi/Kuroda /Sato	Meeting with Sectoral Associations Paras Ceramics Paras Machinery Mahogany Corporation Rectan Wood Products PINE Cebu Export Corporation DARS Ceramics
		4 Sakakura/Sekiguchi	Meeting with DTI/DOST/Chamber of Commerce and Industry Immaculate Concepcion College Almendras Agro Industries Sirawan Food Corporation
3	18 Sat	1 Kakinuma/Tomoyama /Maruyama/Sasaki /I. Inoue	METAPHIL University of San Carlos DOST Laboratory

No.	Date M D	Members in charge	Name of Organization/Persons
		2 Sakanashi/Kuroda /Sato	Move from Cebu to Manila Move from Cagayan de Oro to Manila Plant visit at local firms
		3 Sakakura/Sekiguchi	Consolidated Plywood Industry Corporation University of Southeastern Philippines
		4 Inooka/T. Inoue	Move from Davao to Manila Preparation for Progress Report
3	19 Sun	All members	Preparation for Progress Report
3	20 Mon	1 Sasaki/I. Inoue 2 Sekiguchi	Societe Generales de Surveillance Laboratory PSQC PHILSA
		3 Maruyama	United Architects of the Philippines
		4 Kakinuma/Sato /I. Inoue	Energy Regulatory Board
		5 T. Inoue/Sakakura	MOLDTECH
		6 Kuroda/Sato/I. Inoue	Del Monte Philis. International Food Snack Corporation
		7 All members	Bureau of Product Standards
3	21 The	All members	Progress Meeting with Undersecretary C.L. Follosco, BPS and Steering Committee
3	22 Wed	1 Sakanashi/Kakinuma /Sasaki 2 Other members	JICA Manila Office Signing of Minutes of Meeting Summary of Field Study
3	23 Thu	All members	Leave Manila to Tokyo
6	25 Sun	Maruyama/Kuroda	Arrival from Tokyo
6	26 Mon	Maruyama/Kuroda	JICA Manila office BPS Construction Industry Authority of the Philippines
6	27 Tue	Maruyama/Kuroda	Cement Industrial Association Steel Bar Industrial Association
6	28 Wed	Maruyama/Kuroda	Nail & Wire Industrial Association G.I. Sheet Industrial Association
6	29 Thu	Maruyama/Kuroda	Consumer Electronic Products Mfrs Assn Conception Industries, HQ
6	30 Fri	Maruyama/Kuroda	Semiconductor Electronics Industry Foundation, Inc. Philippine Appliance Corp. (Philacor) Conception Industries (Plant)
7	3 Mon	Maruyama/Kuroda	CECOPHIL Uniden Philippine Institute for Development Studies
7	4 Tue	Maruyama/Kuroda	Architects Office Motorola (Philippines)

No.	Date M D	Members in charge	Name of Organization/Persons
7	5 Wed	Maruyama/Kuroda	National Housing Authority Precision Electronics
7	6 Thu	Maruyama/Kuroda	Industrial Inspection (International) Inc. Association of Structural Engineers in the Philippines Meeting with Local Construction Company at BPS Large Construction Company
7	7 Fri	Maruyama/Kuroda	Mindanao Steel Corp. Capitol Steel Corp.
7	9 Sun	1 Sakanashi/Inooka /Sakakura/T. Inoue /Sato 2 All members	Arrival from Tokyo  Internal Meeting
7	10 Mon	1 Inoue/Maruyama 2 Sakakura 3 Sakanashi/Inooka  4 Kuroda/Sakanashi 5 Inoue/Inooka /Maruyama 6 Sakakura	Benguet Management Corp. Philippine Textile Research Institute JICA Manila office Presentation/Discussion with Mr. Navarreti/BPS Phil. Chamber of Food Manufacturers Asso. National Steel Corp. HQ  Fiber Inspection and Development Authority Textile Mills Association
7	11 Tue	1 Kuroda/Sakanashi 2 Sakakura 3 Sato/Inooka 4 Sakakura 5 Inoue/Maruyama 6 Kuroda/Sakanashi 7 Inoue/Inooka /Maruyama 8 Sakakura	Mandaluyoug Packaging Industries, Inc. Textile Producer's Association Chemical Industries Association of the Phils. Philippine Wood Products Association Edge Corp. FDC MIRDC  Garments Business Association of Philippines Garments and Textile Export Board
7	12 Wed	1 Some members 2 Sakakura 3 Sasaki/Matuno 4 Sakakura 5 Some members 6 Inoue/Maruyama 7 Sakakura	Presentation/Discussion with Mr. Navarreti/BPS Technology and Livelihood Resource Center/Garment Arrival from Tokyo Philippine Integrated (Mftrs.) Exporters, Inc. Presentation/Discussion with Mr. Navarreti/BPS Metal Industry Association of the Philippines (MIAP) Forest Products Research and Development (Furniture) Forest Products Research and Development (Wood)
7	13 Thu	1 Sato/Inooka 2 Sakakura 3 Inoue/Maruyama 4 Sato/Inooka 5 Sasaki/Matuno 6 Sakakura 7 Kuroda/Sakanashi 8 Inoue/Maruyama	Plastic Industrial Asso. of the Phils (Telephone Interview) Bureau of Export Trade Promotion (Wood) ACME Tools Manufacturing Co. Inc. Filipinas Eslon Mftg Co. Philips/Laboratory Bureau of Export Trade Promotion (Sundry) Wise and Co. IMF Chrome Inc.

No.	Date M D	Members in charge	Name of Organization/Persons
		9 Sasaki/Matuno 10 Sakakura	Institute of Integrated Electrical Engrs of the Phils., Inc. Chamber of Furniture Industries of the Philippines
7	14 Fri	1 Sato/Inooka 2 Sakakura 3 Inoue/Maruyama 4 Sasaki/Matuno 5 Inoue/Maruyama 6 Sasaki/Matuno 7 Sato/Inooka 8 Sakakura 9 Kuroda/Sakanashi 10 Sakakura 11 Kuroda/Sakanashi 12 Inooka/Maruyama	Philippine Petrochemical Product Inc. Nippon Paint (Phils.) Inc. Asian Transmission Corp. Industrial Inspection (Int'l) Inc. Capitol Steel Corp. (Alln of Mr. Alvin Cheng (ME)) Lab Test Basic Packaging Corporation CITC Erma Industries Inc. Philippine Toys & Novelties Mftrs. Association Sta Monica Inc. PIDS
7	15 Sat	Kakinuma	Arrival from Tokyo
7	16 Sun	Sakakura	Move from Manila to Cebu
7	17 Mon	1 Inoue/Maruyama 2 Sakakura 3 Sato/Inooka 4 Kuroda/Sakanashi 5 Sakakura 6 Most members 7 Sakakura	Ani Philippine Forge Inc. Emeralde Craft, Inc. (Cebu) Yuasa Battery Phil Inc. FTI Climaco Furniture Co., Inc. (Cebu) Presentation/Discussion with Steering Committee Orient Design (Cebu)
7	18 Tue	1 Some members 2 Inoue/Maruyama 3 Sakakura 4 Sato/Inooka 5 Sasaki/Matuno 6 Tomiyama/Sekiguchi 7 Kuroda/Sakanashi 8 Sakakura 9 Sasaki/Matuno 10 Kakinuma 11 Sakakura 12 Kuroda/Sakanashi 13 Sato/Inooka	Discussion with Mr. Navarreti /BPS Filipinas Electro Industrial Corp. Mindanao Rattan Corp. (Cebu) Philippine Belt Mftg Corp. Forest Products Research and Development Institute Arrival from Tokyo AA Expt. & Impt. Corp. Arkane International Corp. (Cebu) Osterea Mineral Laboratories, Inc. Chamber of Furniture Industries of the Philippines Alenter Cane Corp. (Cebu) Packaging Institute of the Philippines Manly Plastics
7	19 Wed	1 Matsuno 2 Some members 3 Sakakura  4 Tomiyama/Sekiguchi /T. Inoue/Maruyama 5 Matsuno 6 Some members 7 Sakakura 8 Some members	Philacor/Labo Metal working/Construction materials Departure from Cebu to CDO Kiln dryer utilization project Honda Phil. Inc.  NSTL/Labo Plastics/Non-tire rubber/Cann'g/Paper-based packag'g Departure from CDO to Manila Discussion with Mr. Navarreti /BPS
7	20 Thu	1 Some members	Garments/Wood-based products/Leather/Export sundries Internal Meeting at BPS

No.	Date M. D	Members in charge	Name of Organization/Persons
		2 Matsuno 3 Sato 4 Inooka/Maruyama	Philippine Textile Research Institute Philipinas Kao Inc. NEDA/Public Investment Dept
7	21 Fri	1 Some members 2 Sekiguchi/Sato 3 Sakakura 4 Matsuno 5 Sakakura 6 Sato/Inooka 7 Some members 8 Sakakura 9 Inoue/Maruyama 10 Sakakura/Sato	Food processing Pheips Dodge Phils., Inc. Artland Inc. Technology and Livelyhood Resouce Center Ramie Textiles, Inc. Atlas Metal Products Mfrg. Co., Inc. Presentation/Discussion with DOST Gold-Zack Phils. Inc. BOI Lab Test (at BPS)
7	22 Sat	1 Sekiguchi 2 Some members	PSQC Meeting with Undersecretary Ordonez
7	23 Sun	Sakanashi/Inooka /Sasaki/Kakinuma /Tomiyama	Departure from Manila to Cebu
7	24 Mon	1 Matsuno 2 Sakakura/Sato 3 Sakanashi/Inooka /Sasaki/Kakinuma /Tomiyama 4 Sekiguchi 5 Matsuno 6 Sekiguchi 7 Sakakura/Sato	Departure from Manila to CDO Goyu & Sons, Inc. Presentation/Discussion with Regional Industrial Groups  PHILSA Regional Testing Facilities in CDO "Buy filipino" Movement TV Broadcasting (Channel 7) Leisure Products Industries, Inc.
7	25 Tue	1 Tomiyama 2 Sekiguchi 3 Sakanashi/Inooka /Sasaki/Kakinuma 4 Matsuno 5 Tomiyama 6 Matsuno 7 Sakakura/Sato 8 Inoue/Maruyama 9 Sekiguchi 10 Sakanashi/Inooka /Sasaki/Kakinuma 11 Sakakura 12 Matsuno 13 Tomiyama	Depart from Cebu to Davao POC Discussion with Cebu Industrial Groups  Depart from CDO to Cebu (Arrival at 935) Factory Assessment of BPS in Davao (G.I sheet) Depart from Cebu to Davao (Arrival at 1110) Regional Testing Facilities in Davao Designs Ligna, Inc. Pentagon Steel Corporation PPM Departure from Cebu to Manila  Manel's Leathersgoods Inc. Depart from Davao to Manila Depart from Davao to Manila
7	26 Wed	1 Sekiguchi 2 Sakakura/Sato 3 T. Inoue 4 Tomiyama 5 Sasaki/Matuno	Meeting with UP Professor Universal Textile Mills Inc. Philippine Resin Sand Foundry Factory Assessment of BPS in Manila National Engineering Center/Testing Center

No.	Date M D	Members in charge	Name of Organization/Persons
		6 Inoue/Sato	Tanghal Engineering
		7 Sekiguchi	Precision Electronics #QA Dept
		8 Maruyama	Central Bank of the Philippines
		9 Kuroda/Sato	Sharp (Phils) Corp.
		10 Sekiguchi	Broadcasting Association of the Philippines
		11 All members	Cocktail Party
7	27 Thu	1 T. Inoue	Manly Plastics Inc.
		2 Sekiguchi	PSQC Seminar
		3 All members	Progress Meeting
		4 Sakanashi/Inooka	Preparation for Minutes of Meeting
7	28 Fri	1 All members	BPS
		2 Some members	JICA Manila office







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