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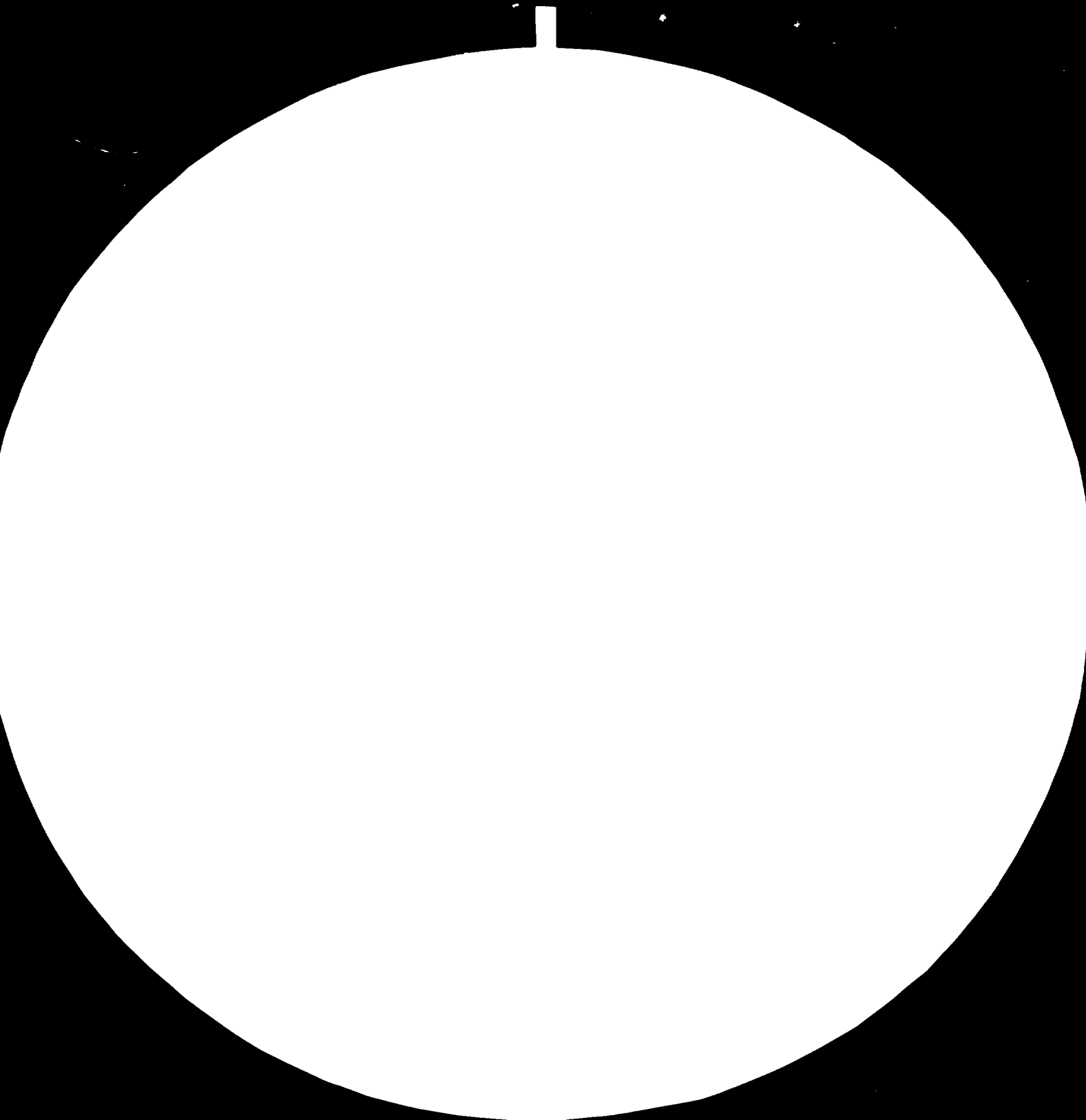
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Microcopy Resolution Test Chart

Resolution Test Chart, NBS 1963-A, 1963

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DP/ID/SER.B/315

2 July 1981

English

PRECIOUS STONE PROCESSING AND JEWELLERY MANUFACTURING,

DP/ROK/72/023

REPUBLIC OF KOREA

Terminal Report */

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

Based on the work of H. Meder,
expert in precious stone processing and jewellery manufacturing

United Nations Industrial Development Organization
Vienna

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ANNEX: Seminar Report printed in English and Korean including:

- (a) General Recommendations
- (b) Technical Recommendations
- (c) Technical Data
- (d) Book Titles
- (e) Supply Addresses

I. INTRODUCTION

The Ministry of Commerce and Industry, together with KOTRA ^{1/} realized, that the total annual export figure for this industry was not satisfactory, and requested UNIDO to send an adviser to analyse the situation. Two experts for 2 months each were selected.

The work programme itself was arranged by the Jeweller's Association at Iri. For assistance they selected 10 out of 50 companies, where the expert spent 3 to 5 days each, followed by a seminar at the end of the project. At the seminar the situation was analysed, and recommendations were made to solve the problems (see Seminar Report).

A 3-hour seminar at the vocational school in Iri was held on stonecutting and metal handling.

A 1-day seminar at the university in Iri was held over steps involved in the centrifugal casting process.

A 3-hour seminar was held in Seoul for professors, teachers, students, designers and professionals.

A briefing visit at the Ministry of Commerce and Industry and Science and Technology was held towards the end of the project.

^{1/} KOTRA - Korea Trade Promotion Co-operation.

II. FINDINGS

The industry at Iri is for Korea a very young industry. It lacks adequate raw material, tools, machines, highly skilled and trained craftsmen.

To train craftsmen would take years. Therefore, to make the industry profitable would take a long time. Very few directors have the experience and knowledge of the market pertaining to the stone processing industry.

The construction of the buildings was not conducive to running a systematic production flow: buildings were far too high, which is expensive, some basic essentials like one big door to bring in heavy machines or workbenches were lacking, and there were too many partitions.

Most of the directors had no training in middle management and no experienced secretaries, they had no information regarding production methods, techniques, machines, trends and the market.

An export-oriented industry has to be able to communicate at least in English, to find and keep customers, to be able to survey the market, to have access to all published information. Without this information a firm would be out of the market in no time, because production-methods and designs change continuously.

Some companies had invested heavily in oversized or wrong machines and equipment. As a result, they could not use them profitably. Some companies had invested in cheap hobby machines or tools, and some even tried to build or make things by themselves, which was very uneconomical, since lots of precious time was wasted on building inefficient machinery. Known equipment is proven and therefore cheaper to use.

The 50 producers of Iri copied the same products and therefore had no interesting product range variation for overseas customers; they were therefore competing against each other, which was reducing the profit margin to the bare minimum.

The working conditions in many companies were bad, sloppy electrical connections were a security hazard, and untidy workfloors caused accidents. The solution of these problems costs no money and, moreover, increases production potential.

The Jewellery Association, basically a good and helpful institution, is no help at all at the moment, since nobody in the Association speaks English, understands or knows the trade, or is willing to help. The companies elect each year a president to head this Association, but they do not take the election seriously and so they have now a nice, but inactive president. The idea of forming an association is to help the companies. However, the present Association does not even collect and distribute information on technical data, supply addresses, machine-catalogues, and trade-channels.

The two schools (vocational and university) have poor facilities and equipment for classes, and even the teachers are no professionals, because they have no idea of the practices followed by overseas companies. This would be essential for export oriented industries, where the students would ultimately find employment.

The location of the industry at Iri itself is a big handicap, since there is no airport nearby, no acceptable hotels, and no taxi-driver or telephone operator speaking or understanding English, and the town is rather dirty and unattractive, a foreign visitor would have no choice, but to turn back, since he would be completely lost.

To put all the companies together in such a small area is not good for the development of the companies, since nobody can keep any production or design secret and it is hard to retain valuable manpower. These factors cost the companies a lot of effort and investment.

The free trade zone is not so important, since it helps the companies in one way, but restricts them in many others - also creating corruption, which is very unhealthy in the long run for everybody.

The quality of the polished cubic zirconia is very acceptable, but too many are producing this material. All will have to start with other materials as well to produce a wider product range. In Asia the profession or craft of a stonemaker is not known at all, but they need one badly because without proper setting, stones fall out of the setting, which spoils reputation and restricts the companies to one type of setting-design.

III. RECOMMENDATIONS

1. A worldwide trend is for countries to establish downstream industry for their raw materials, so that they could be sold as semi-finished or finished products. It is difficult for countries like Korea to follow this trend, since they depend on imported raw-material and the situation is getting worse because of the spread of protectionism. Therefore, the Government of Korea can help this industry in three ways:

(a) 50 companies are too many to be able to survive in future, and only the healthy and serious ones will be able to establish themselves in the already competitive market. So the Government should not continue supporting companies which cannot cope with the situation, because of bad management or lack of knowledge. In all countries the jewellery industry is a private sector industry, which works without government interference, and survives on private initiative.

(b) Initiate search for domestic mineral which do exist. However, geologists and mineralogists are not specially trained for exploration, or informed about the identification of valuable minerals. Such exploration would open small mining operation on private basis, and the minerals could be supplied to the industry at Iri.

(c) Import of roughstones should be allowed freely or under licence. Collective bulk-orders should be placed through the Association to get the material direct from source at the lowest price possible. (For example: Brazil is accepting orders over US\$100.000 only - too much for any single company; therefore the Koreans have to buy through second or third dealers in Japan or the United States, which triples the price).

2. At Iri there are 2 schools, and one at Seoul, for stonecutting and/or jewellery making. Each makes some efforts and receives some money for material and equipment, but their work is dispersed. Combine them into one school with all the needed facilities, tools, machines, books, so that they can offer day and evening courses at different levels, of different length and directions, practical and theoretical. Get at least 3 professional teachers from Europe as indicated below, with industrial experience and up-to-date methods, for a period of 1 to 3 years for those schools, so they can train an up-to-date generation of valuable craftsmen.

- 1 or 2 stonecutters for 2 to 3 years;
- 1 or 2 goldsmith/designers for 2 to 3 years;
- 1 stonemaker for 1 to 2 years.

3. The Gemmological Society together with the Jewellery Association and the help of overseas gemmological associations, should collect and translate basic information into Korean language so that the industry can give their stones the correct, internationally accepted names, and acquire knowledge of the gems. At the moment, it is very confusing and even illegal what they do and it shys away many potential customers.

4. Participate in exhibitions and fairs, national and international, to help create interest, international standard, and knowledge of the market for all the parties involved.

5. The government should initiate - on a private or a joint-venture basis - the installation of a precious metal refinery to ease the importing, alloy, loss and cost problems of this industry. One error in alloy making can cost international reputation.

6. The Jewellery Association should collect all foreign hallmarking laws, alloy regulations and restrictions, to help the industry. They must open a showroom, where each company can exhibit in one showcase their actual production range - to help buyers to make the right choice.

IV. RECOMMENDATIONS FOR INDUSTRY

1. They have to observe the market more, as competition is very strong. They have to travel once in a while to visit customers, fairs, suppliers, and to get to know the situation better to be able to react quickly. In the long run it will save far more money, than the cost of the trip.
2. Marketing is unavoidable and not a waste of money. Western companies invest approximately 5 per cent of the annual turnover in marketing activities.
3. Subscription to 1 or 2 trade magazines is important to be kept informed. Some technical books should be acquired to gain easy access to methods, techniques, data, and useful practical information.
4. Try to send one of the best craftsmen for some time to other companies or schools abroad so that he can see other methods and ways of doing things, and in trying they will be able to train your people better and more flexibly.
5. Do not just buy any machine. Inform yourself and compare price and capacity for the lifetime of the machine. A very cheap machine may not be as precise and longlasting as others, and breakdowns may be much more expensive than originally estimated.
6. Do not produce just one and the same product as your neighbour because then you have to compete against each other and the buyers would have an easy time knocking down the prices.

There are hundreds of products possible in stonecutting and jewellery manufacturing. Select some, concentrate on them and nobody will be able to meet your price, quality and capacity.

7. In the western world stonecutting and jewellery making are always two different enterprises, because each requires completely different skills and craftsmanship, completely different machinery, tools, marketing and supply. To combine them means one can concentrate on neither of them, and the investment is doubled. There is not a single machine or tool which can be used for both industries. If one would concentrate on one business only, one could invest better, plan better, train better and, therefore, one could sell cheaper and bigger quantities.

8. At Iri nobody speaks English - one would save and make a lot of money by doing so, and one would get more contacts and information and could keep existing customers.
9. The industry needs good middle management, a director cannot do everything himself.
10. Many companies do not have proper production flow. Store unused machinery out of the way, keep the production floor dry and clean, knock some partitions down, and never place new machines in a wrong place. Workers would have to run too much around, and one loses control. Systematic working means more production, higher efficiency, and bigger profit margins.
11. Security is an important aspect, especially since stonecutting is done with a lot of water and humidity, sloppy connections and open or wet contacts are a health hazard.
12. Do not be satisfied with the already achieved goals, even if certain things are already okay. One has to admit to oneself constantly that more skill and more knowledge is needed in future; therefore try always to experiment and risk new methods and techniques.

V. SCHEDULE

Companies visited:

Far East Gem Corporation
Dae-Kwang Industry Co. Ltd.
Jemyeong Yangheng Co. Ltd.
Dae Young Manufacturing Co. Ltd.
Shin Jin Jewellery Co. Ltd.
Orient Handicraft Co.
Gemkor Co. Ltd.
Kingstone
Bo Woo Industry Co. Ltd.

Seminars:

8 April 1981 Vocational school Iri
a. gemstone cutting-class
b. metalworking-class

10 April 1981 University Iri - lost wax
or centrifugal casting
process

13 April 1981 Jewellery Association Iri
Free Trade Zone
Analysis of situation

14 April 1981 Seoul, for teachers, designers
and professionals

15 April 1981 Briefing of the Ministry in
Seoul

United Nations Industrial Development Organization

REPUBLIC OF KOREA

Job Description

Post title: Expert in the processing of precious stones and jewellery manufacturing

Duration: Two months

Date required: As soon as possible

Duty station: Seoul, travel within the country

Purpose of project: To improve the quality of precious stones processed in the country. The expert's assistance will be required in solving such specific problems as identification, faceting, cutting and polishing.

Duties: The expert will be attached to the Korea Trade Promotion Corporation and will in collaboration with the Corporation assist Korean processors of precious stones to improve the quality of their products and to make them competitive in the international market.

Specifically, the expert will be expected to:

1. Study their existing products and production process;
2. Suggest improvements in their products or production processes;
3. Participate in seminars on processing of precious stones, held for the benefit of Korean precious stone processors.

The expert will also be expected to prepare a final report, setting out the findings of his mission and his recommendations to the Government on further action which might be taken.

Qualifications:

Extensive experience in the processing of precious stones and associated engineering, preferably supported by relevant academic qualifications.

Language:

English

Information:

The project is aimed at assisting the country in achieving its planned export targets through developing and improving the production capacity for export products to selected foreign markets.

The project is attached to the Korean Trade Promotion Corporation (KOTRA) founded in 1962 and supervised by the Ministry of Commerce and Industry. KOTRA is responsible for implementing Korea's export promotion drive and maintains a network of branches overseas. Its main activities have been in the marketing sphere. To ensure better results it was decided to introduce a product adaptation programme to complement marketing activities by strengthening their assistance to manufacturers to adapt their products or production processes to the requirement of a particular foreign market.



