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of the Mexican Law on Licensing and Patents and comparable
experience in other developing countries

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THE ROLE OF UNIDO ASSISTANCE IN TECHNOLOGY TRANSFER/
AND ESPECIALLY LICENSING TO DEVELOPING COUNTRIES ^{1/}

prepared by

the Secretariat of UNIDO

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I. INTRODUCTION

International licensing plays an important role in the overall economy of any country, and especially in the developing countries. It is not necessary to underline the impact of transfer of technology on industrialization, acceleration of industrial and economic growth, balance of trade or exportation.

For example, according to Japanese statistics approximately 80% of that country's marine engine production is based on foreign licenses, 40% of its transistor production, and so on. It is also estimated that in 1970 between 20 and 30% of Japanese industrial production was based on foreign technology ^{1/}.

Similar figures could be given for other countries in order to illustrate the impact of technology transfer agreements on national economies. The impact of technology transfer agreements on the economy of developing countries is even greater.

The following are some factors of this specific situation:

1. In general the economies of these countries are at low or relatively low levels of development;
2. Historical and political conditions do not allow the development of indigenous technologies, or local industries;
3. There is a permanent lack of a skilled labour force, educational facilities, etc.;

^{1/} A. Wolf and C. Wenth: Der internationale technisch-industrielle Zinsentausch.

W. Martin and R. Griftsmacher: Der Lizenzverkehr mit dem Ausland Handelsagranicsny (69, p.71 and 73).

4. The colonial past of the majority of these countries has caused a monocultural economy which has been oriented towards exploring natural and mineral resources without further processing;
5. The industry, if any, has been dominated either by foreign capital or by foreign multinational corporations.

It is possible to cite an endless number of factors to support the thesis of tremendous impact of foreign technology on the economy of developing countries, but the above five basic elements are sufficient for the purpose of this paper. Taking just these into consideration, the dependence of economies of developing countries on foreign technology is clearly seen.

Rich natural and mineral resources and cheap labour are the main assets of developing countries which make them attractive for foreign capital and foreign technology inflow. It is therefore of utmost interest and importance for these countries to see their own needs and possibilities very clearly and to identify ways to achieve their own national economic goals, where technology transfer may play an important role.

II. A SHORT REVIEW OF UNIDO'S RECENT ACTIVITIES IN THE FIELD OF LICENSING AND TECHNOLOGY TRANSFER

The overall programme of UNIDO's activities in the field of licensing and technology transfer is oriented towards assisting developing countries achieve a position where transfer of technology will be effected in a way which is beneficial to the donors of technology and profitable and in line with the development of the economy of the countries involved.

To achieve this long-range objective, various forms of activities have been undertaken in the past and are continuing today.

As mentioned, licensing plays an important, if not deciding role, in technology transfer and therefore special attention is to be paid to these arrangements.

Transfer of technology may be effected in various ways, such as: relocation of specialists from one country to another (whether they are skilled workers or engineers and technicians); through the specific education system itself; flow of various information; turn-key deliveries of plants which remain the property of a given country; supply of various machineries, and last but not least various licensing arrangements in which technology transfer is effected in the purest way.

In December 1973 the General Assembly of the United Nations passed a resolution calling for adoption of an international agreement on transfer of technology. This has been followed by a series of other meetings dealing with the question of drafting an international policy, like the recent Pugwash Meeting or the UNCTAD Meeting of the Inter-Governmental Group on Transfer of Technology. While these or other bodies are dealing with the formation of the universal code of conduct on technology transfer or are reviewing possibilities of international agreements in this respect, UNIDO concentrates all its efforts on aspects of licensing at the enterprise, industrial sectors and national levels. This is a very important differentiation and from UNIDO's point of view international agreement on technology transfer will only be possible after technology problems of the lower levels have been solved. International agreement on technology transfer is to be much desired provided, however, that on national levels a clear policy has been developed and implemented.

The UNIDO approach to licensing of technology transfer has mainly been based upon the practical experience of both developing and developed countries in the area of technology transfer and international licensing. Bearing this in mind, the following areas and activities of UNIDO in licensing and technology transfer can be specified:

1. Strengthening and/or establishing of national institutions or machineries handling the flow of foreign technology into the countries;
2. Improvement of negotiating strength of developing nations in the field of international licensing;
3. Promotion of co-operation among developing countries in the field of international licensing.

These areas of UNIDO activities have been selected to meet the most urgent needs of developing countries on one hand and on the other to eliminate possible duplication of efforts with other UN agencies. A large scale programme has been established and various ways and means explored and applied.

UNIDO's field activities are mainly concentrated on direct technical assistance, for example, an expert assigned to the Ministry of Trade, Industry and Tourism in Ethiopia has prepared a draft of the patent and trademarks law including basic provisions for the establishment of a licensing screening and evaluation unit. It is expected that in the near future follow-up assistance will be given to this unit. UNIDO experts were called for assistance to strengthen the licensing activities of INTI, Argentina, as well as to assist in the preparation of the Mexican legislation on technology transfer. Actually, three experts are assisting the Registro Nacional de Transferencia de Tecnología in various questions pertaining to international licensing. Further increased assistance is expected there in due time.

Bearing in mind the increasing needs and requirements of developing countries in strengthening and/or establishing national machineries handling licensing, a rapid growth of technical assistance in this particular field is expected in the immediate future.

The developing countries are also at a disadvantage due to a lack of negotiating strength and due to a relatively small number of experienced licensing experts. For this purpose a number of fellowships have been offered by UNIDO. These opportunities, however, are not fully used by developing countries.

Moreover, a number of meetings have been organized recently oriented towards increasing the practical knowledge of developing countries about licensing. In a meeting on Know-how About Licensing Arrangements, which was organized in Manila in June 1974, 50 participants attended from the Far East Asia region. It was found that working meetings at the national level are of immediate interest and a series of these should start in 1975.

A publication entitled: Guidelines for the Acquisition of Foreign Technology to Developing Countries was released in 1973 in English, French and Spanish in order to make available practical knowledge of licensing at the national and enterprise level. Further publications giving a review of the prevailing approaches in different countries to licensing are in the process of publication and will be available in the first half of 1975.

Further, a post of regional adviser on technology transfer has been established for ECLA countries and a similar one for the ECAFE region should be established at the end of 1974.

It is the feeling of UNIDO that there is need for closer co-operation and exchange of experience in licensing among developing countries themselves. Having this in mind, UNIDO in co-operation with the Mexican Government has organized an Interregional Consultation in Mexico City and is prepared to continue this kind of activity.

III. ATTEMPT TO ESTIMATE THE NEEDS OF DEVELOPING COUNTRIES IN THE FIELD OF TRANSFER OF TECHNOLOGY AND LICENSING

It is difficult to project a well balanced estimation of the needs of developing countries in licensing and technology transfer. Based upon recently held meetings and seminars as well as according to communications received from the field, it is possible to distinguish the following areas in the broad spectrum of licensing where the needs of developing countries are most acute:

1. Human and educational requirements;
2. Information requirements;
3. Organizational and administrative requirements.

Before going into details one should take into consideration the fact that the developing countries themselves do not form a monolithic structure; they are highly diversified, especially with regard to the level of economic development, their political and social systems, their human and natural resources, and their historical past. All these obvious elements are to be taken into account in the course of estimating the countries' needs. Among developing countries, there are countries with strongly developed economies, like Brazil, Mexico or Venezuela; there are powerful producers of crude oil, like Kuwait, Iran, or Saudi Arabia; there are traditionally developed ones, like India or South Korea, and there are countries like Thailand, the Philippines, Ghana or Sri Lanka with relatively lower levels of development. Their needs must naturally differ, which requires from UNIDO a very elastic and individual approach. We feel that experienced licensing experts from Mexico, Argentina, or India could contribute much in this field by passing their experience to other countries. The necessary adaptation or modification to the existing conditions is a precondition but this has to be done, otherwise the only source of assistance and experience will remain similar to the source of technology supply. One of the objectives of this meeting is to bring people together from all parts of the world and let them talk and exchange their experience and knowledge. It is felt that one of the problems which developing countries are facing now is lack of information. Below are various points that in our opinion would have to be considered if developing countries are to achieve a higher level of economical independence in the area of technology transfer:

1. Information on source of available and alternative technologies;
2. Information on available indigenous technologies;
3. Information on research and development activities in developing countries;

4. Comparable information on financial, legal and technical conditions of technology transfer agreements;
5. Information on legal framework in which foreign companies are operating;
6. Information on foreign companies, especially multi-nationals;
7. Information on recent development of international licensing, patent and trademark law, compulsory licensing, etc.

It is obvious that some of these areas are very well covered in certain countries. It could be mentioned, for example, that the Korean Ministry of Science and Technology has issued a survey of advanced technology resources for the inflow of technologies in 1973. This publication contains over 4.000 itemized processes with short technical description, operational data, and full name and address of the owner of the technology. Unfortunately, this publication is known to a very limited number of persons, not to mention countries. It is very well known that Mexico and India have modern legislation and administration of technology transfer agreements. The point is that only a limited number of countries have tried to adopt this experience. It might therefore be said in this light that almost all the above mentioned areas of information are probably well covered and that what is lacking is a permanent flow and exchange of this information among developing countries themselves. It is the feeling in UNIDO that this kind of information or at least some selected area could be, with the co-operation of interested countries, collected, worked out and disseminated by UNIDO.

Another element which in our estimation plays a predominant if not deciding role is human requirements. This should be seen first of all from the point of view of the level of development of the particular countries. The kind of experts Mexico or Peru would require in the immediate future is of a different calibre and experience than the requirements of Sri Lanka or Tanzania. In this particular field UNIDO foresees that one of the biggest difficulties will be to meet

the demands of developing countries on the one hand and the achievement of independence of these countries on the other.

The process of becoming an expert requires years of time and experience, particularly in licensing, where practice plays a predominant role.

On the other hand the requirements of developing countries in the organizational and administrative character seem to be relatively easy, provided, however, that the other requirements are sufficiently met. In this connection any country has to expect a difficult task if it tries to adopt regulations or machineries intended to accelerate industrial development. The mistakes here, especially taking into account the uncertain world economic situation, could be extremely costly for any country's economy. It should be noted that in economics there are no ready solutions which could be applied to any system or any country. The point is that any solution should take into full consideration the country's situation and possibilities as well as possible reactions of all elements involved.

For the purpose of this meeting a special questionnaire has been sent to all participants. Part of the questionnaire has been devoted to an estimate of the countries' needs in the field of technology transfer. Below are the results of the questionnaire which will add some information on the needs of developing countries as seen by developing countries themselves:

The majority of the countries concerned foresee for the immediate or later future a preparation of the legislation dealing exclusively with technology transfer, licensing, turn-key deliveries, trademark arrangements, consulting services, etc. Some of them refer to the successful experience in Mexico when justifying the need of such a legislation. It should also be noted that respondents, with the exception of four, do not apply any legislation in this field in their countries. Only one respondent, in whose country free policy and enterprise-to-enterprise attitude prevails, does not feel the necessity of a regulation in the sense of regulation of inflow of

technology. The need for strengthening of information on available technologies, licensing conditions, etc. prevails in all answers received. The countries of a relatively low level of development have also expressed a need to extend training facilities for their nationals and underline lack of experienced staff. An interesting point should be mentioned: that the question of development of local research and development efforts has been treated rather marginally and the general impression is that countries tend to build their industries based on imported technology rather than develop their own. This might look at first rather strange but this point of view might be justified due to the orientation of the whole exercise towards importation of technology, especially highly sophisticated. Anyway, the general results of this by its nature limited exercise have confirmed UNIDO's attempt of estimation of the needs of developing countries related to technology transfer and licensing.

IV. FORECAST OF UNIDO'S PROGRAMME RELATED TO TECHNOLOGY TRANSFER AND LICENSING

Bearing in mind specified areas of greatest needs of developing countries in international licensing and technology transfer UNIDO's activities have been selected in a way to meet these.

It is obvious that there is a need for closer co-operation among developing countries in this particular field and that UNIDO could play a very useful role, especially in initiating such a co-operation or exchange of experience. For this purpose a number of consultation meetings are scheduled to take place in the next years. The meetings will have specified different objectives based on actual requirements of developing countries. In this connection a centre on licence agreements to be established within UNIDO is under consideration. Terms and references as well as modus operandi are not yet decided. Nevertheless, the purpose could be described as a collection of agreements on technology transfer from selected preferential sectors, processing of

received material and supply of basic elements, such as financial and technical conditions, sources of technology, sales possibilities, to participating developing countries. The project will require close and continuous co-operation of developing countries which are expected to supply UNIDO with relevant information which will be circulated in a processed way. As far as UNIDO is informed, some co-operation regarding exchange of information takes place already between certain countries and it is believed that the more countries that participate in such a pool, the better and fuller will the obtained information be. So far, preliminary assurance from various countries has been received concerning the supply of information.

It is also intended to increase the availability of fellowships, which will differ from the traditional ones by their programme. The fellowship holder will first of all visit those countries where licensing policy is clearly defined and implemented by legal and administrative mechanism.

Following the demands related to improving the knowledge of licensing, specialized workshops are to be organized in the immediate future where case studies on licensing, licence agreements in selected industries will be discussed. It is believed that findings and conclusions with a certain background information will be published and circulated among developing countries.

Direct technical assistance by UNIDO in licensing should be multiplied in the future with priority given to governments, in creation and strengthening of national agencies to co-ordinate the acquisition of foreign technology. It is expected that these institutions will play a promotional and regulatory role and their responsibilities should include:

1. Advice on negotiations with foreign licensors and suppliers of technology to local entrepreneurs (the negotiations themselves should preferably be carried out by local entrepreneurs);
2. Advice to local entrepreneurs and enterprises of alternative sources of technology;

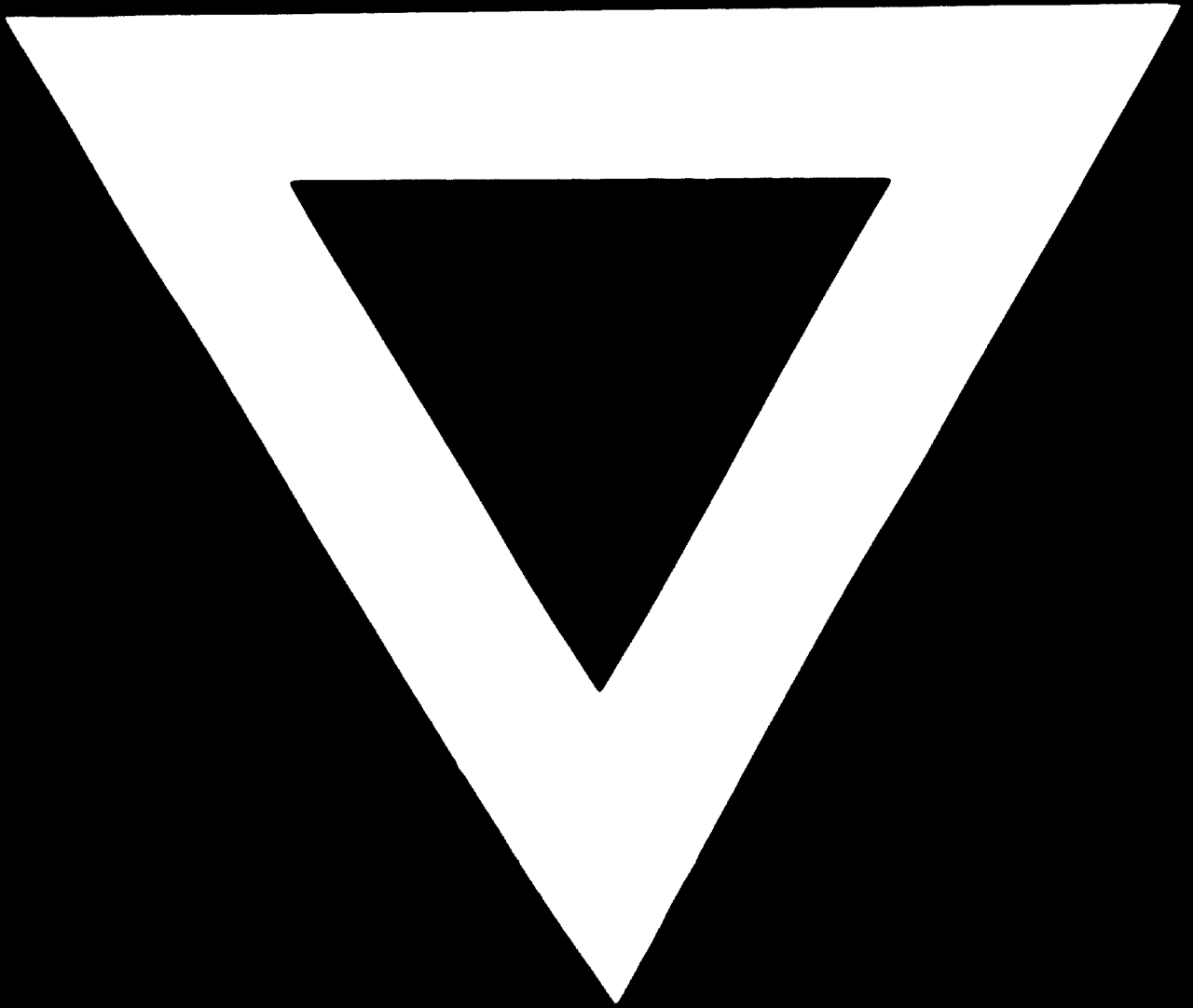
3. Identification in co-operation with other governmental bodies of major technological needs of the given country;
4. Services to potential licensors and investors as an information centre of promotion for the establishment of local enterprises;
5. Supervision of technology transfer agreements, (in general, the approval of such an agency is required before any contract is finalized).

The scope of technical assistance provided by UNIDO should also include the elements of patent and trademark legislation as well as investment law, as these form an integral part of all arrangements related to technology transfer, whether proprietary or non-proprietary technology is involved.

Greater efforts will also be made to increase the technical assistance in licensing at the enterprise and sectorial levels.

It is also expected that the number of publications related to the various practical aspects of international licensing with special emphasis to developing countries will be considerably increased in 1975 and beyond.





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