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Summary

Paper of Lebanon

for

The United Nations Conference
On Science And Technology For
Development (UNCSTD)

Lebanon in several ways is a unique country. Lebanon does not enjoy any natural resources, minerals, fossil fuels or an abundance of fresh water supplies, that could have contributed to its economic development. In contrast to many other countries in the Middle East, the traditional comparative advantage of Lebanon has been in trade and services; this advantage clearly reflects a highly skilled labour force with a renowned mastery in trading and entrepreneurship throughout the world, and also the strategic geographical position of Lebanon.

The very high dependence on the service sector - this sector contributed about 70 per cent of GNP in 1974 - has been related to the traditional open door policy: technology imports have neither been screened nor registered. At the level of the individual firm, there is reason to believe that, by and large, the absence of any controls in regard to foreign technology imports have not led to any negative effects.

Lebanese nationals and traders located around the world provide industrialists and entrepreneurs at home with an extended information network, serving as a scanning device both for identifying opportunities for the purchase of foreign technology and know-how, and for efficient contractual acquisition of preferred know-how.

But a well functioning information network, and skills acquired in the very contractual acquisition of imported proprietary know-how are but two necessary agents for stimulating effective demand for technology upgrading at the enterprise level. Guidance to enterprises at the national level is required to restructure effective demand; moreover industrial promotion policy must be synchronized with tariff, fiscal and credit policies. For instance, there would seem to be ample opportunities for an import substitution programme in selected fields. In regard to food stuffs, for instance, Lebanon with the exceptional table salt and preservatives for the canning industry, still imports most products and intermediates. Food products is but one field, another one is the pharmaceutical industry, where surely there is scope for - and need of - an import substitution programme, for a technology planning at the firm level, and where the work is drawn up or already initiated for instance by the National Council for Scientific Research (CNRS).

It is true that a major problem facing Lebanon is the lack of an adequate supply of skilled technical manpower, particularly at the technician level. Also there is a rising scarcity both of skilled and unskilled workers. This problem, in large part, reflects the lack of security or the war-like conditions in Lebanon of today. But, the high salaries and rewards offered to technical skills in the Gulf countries is an additional factor. It seems a foregone conclusion that part of the present manpower shortage will remain, even when normal security conditions again prevail in the country. Therefore, it may be concluded that for most, if not all, parts of the Lebanese industry, the screening of foreign technology imports with the view to acquire labour intensive and employment generating industries rather than capital intensive units is not a foreseeable or pressing issue. Again in this regard, therefore, Lebanon stands out as a country in no particular need of a policy to screen or to administer guidelines vis-à-vis foreign technology imports.

In Lebanon, considerable progress has been registered in the building up of an institutional structure supporting advanced education and training and the research potential of universities and research institutes. The CNRS, in particular, has strived to establish a base for qualified researchers in Lebanon and to increasingly incorporate them in multidisciplinary endeavours and applied fields. To a large extent these efforts were handicapped by the advent of the 1975-76 war.

Nonetheless, once security and order are reintroduced, this groundwork - the creation of an institutional infrastructure supporting research geared to national development objectives - is an asset. Given the creation of the Council for Reconstruction and Development (CDR) in 1977, with executive powers, the lack of guidance witnessed in years past in regard to a nationally coordinated science and technology planning no longer should remain.

To continue to solely import foreign technology is very expensive and Lebanon cannot afford it. The strategy to be pursued by Lebanon for future years, therefore, will be:

(a) to restructure effective demand at the enterprise level for the technology components of productive systems, and

(b) to restructure and extend the institutional infrastructure to accelerate the technological transformation.

In discussing the methods of achieving these objectives, of integrating science and technology policy in economic and social development, a number of proposals are made.

To begin with, the UNIDO's proposed Industrial Information Centre is surveyed; the cost-effectiveness of this proposal must be studied. The Lebanese proposed World Data Bank also merits a serious discussion, particularly so, since this plan apparently envisages a strengthening of the direct enterprise-to-enterprise information flows, rather than primarily drawing upon published sources or reference systems of international organizations.

It stands to reason that raising the effective demand for technology at the enterprise level would require additional measures and action. Given a high risk aversion among Lebanese businessmen which favours investment with high yields and short time horizon and therefore militates against the undertaking of new industrial ventures, a Technology Loan Fund is proposed. This Fund, providing medium and long-term finance at concessionary rates as compared to commercial bank credit, and also extending technical assistance, would be an important instrument for upgrading technology and improving know-how at the firm level. The Fund would help to turn the disadvantage of war-damaged industry into a longer term advantage. In Lebanon, two priority areas for the Technology Loan Fund would be to help modernize and restructure the already established engineering industry with the view to start local manufacturing of machine parts and tools, thus accelerating the transformation of the now common relatively simple assembly operations. Another priority area would be to examine the potential for manufacturing of local low cost solar heating equipment. Moreover, the already referred to possibilities of import substitution in the fields of food product and pharmaceuticals represent two other areas.

In the paper, considerable attention is devoted to the need of creating and/or strengthening the links between the CNRS and other institutions supporting education, training and research, and productive agents. In regard to industry these links must be considered as nonexistent, but less so in the case of agriculture. In the latter sector more applied research has been undertaken but too often, at least in the case of the public research institutes, has the proper extension of this research been lacking. Moreover, there is evidence of a need for an improved coordination of agricultural research; presently the applied research conducted presents a fragmented and scattered picture.

The CNRS itself is interested in undertaking a number of measures so as to increase the possibilities for supporting applied research geared to the economic and social development of Lebanon. Hence, the socio-economic evaluation of research projects will be improved; moreover applied research in the social sciences will receive support.

Still it seems a foregone conclusion that the CNRS will need whatever assistance it can acquire in regard to the identification of problems and constraints, where the accumulated know-how and research potential within Lebanon can contribute towards feasible technical and economic solutions. For this purpose, viable technical assistance teams administered by CNRS are proposed for rural and semi-rural areas.

Seven mobile regional teams, comprising one engineer and one economist, are proposed; the target population would comprise about 10,000 inhabitants. The teams will function as delivery service providing technical assistance together with production credit - usual requirements for collateral do not need to apply. The proposed project would be a pilot project and it is planned to be replicated to later cover the whole of Lebanon.

To further improve the identification function for opportunities for applied research, it is proposed that with the help of CDR and the UNDP, a system for the retrieval of information acquired by expatriate experts (UN and others) will be set up. More often than not, foreign experts come and leave without briefing by, or debriefing to, the local researchers and groups with know-how in the particular area.

Finally, an improved cooperation between universities and industry is proposed; the proposal embodies more outwardly looking-universities, and the incorporation of case study of local industry in the regular teaching courses. Faculties of engineering have an important promotional role in the endeavour. Moreover, it is proposed that industry corporations be established with a view not only to be able to fund research projects but also to see to it that professional services are made available for the commercial exploitation of successful laboratory research and prototypes; in the absence of these ancillary services; applied research conducted with the best of intentions will too often become an end in itself and a costly and ineffective exercise.