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D00035

United Nations Industrial Development Organization

Distr.
LIMITED

ID/WG.29/4
14 January 1969

ORIGINAL: ENGLISH

Expert Group Meeting on Utilization of
Excess Capacity for Export

Rio de Janeiro, Brazil
~~25 February~~ - 6 March 1969
3 - 12 March 1969

WAYS AND MEANS FOR FULLER UTILIZATION OF EXCESS CAPACITY IN ENGINEERING INDUSTRIES[1/]

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1/ The views and opinions expressed in this paper are those of the consultant and do not necessarily reflect the views of the secretariat of UNIDO.

id.68-3846

We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.

Contents

1. For the various developing nations of the world the present is an era of transition, an age of faith and a time full of work, hope and promise. However, from diverse causes, including paucity of resources - financial, foreign exchange and technical - it is often necessary and compelling for many such countries to resort to a system of pre-planning and regulation at the early stage of their development. This ensures that their meagre resources are not squandered in unproductive or comparatively less productive ventures but that instead they are utilized in projects likely to provide the maximum possible growth of the economy. In other words, one of the main purposes to be achieved by the above process, is to ensure a proper, desirable and co-ordinated growth, inter alia, in the industrial sector.

Estimation of demand

2. However, like most such measures, this one has also its limitations. It will be realized that all said and done, the demand for a particular product or a group of products can only be roughly determined after taking into consideration various factors applicable at that time or what could be reasonably foreseen. At best therefore, this is only an estimate that can never be mathematically correct or even very precise. Furthermore, even if a particular demand estimate is reasonably accurate at a particular period - with the passage of time, because of various changes in the economic condition and other related matters - the same demand is unlikely to substantially hold good in the distant future. And if the domestic demand for the product or products in question has fallen off in the meantime, this condition will lead to excess or unutilized capacity.

Excess capacity

3. The need for a fuller utilization of this excess or unutilized capacity cannot be over emphasized and it will be idle to dilate on this. However, on the question of a suitable step in this direction, there does not appear to be one or two straightforward solutions that could be uniformally applied to all cases. On the contrary, it would appear that each such case or a group of allied cases should be considered separately in order to arrive at the best solution.

4. Let us consider the case where excess capacity has occurred in industries like the manufacture of sugar making plant, cement making plant, coal mining machinery or coal washery plant. In a case of this nature it will at once be evident that the installed manufacturing plants must all be general heavy

engineering units, having facilities like grey iron foundry, steel foundry, forge shop, machine shop, gear cutting facilities, heat treatment facilities etc.

Diversification of production

5. Hence one of the appropriate measures that could be taken in such cases, may well be to resort to maximum diversification in their production programme, taking up one or more of other allied industries, for which there is sufficient demand in the country at that time and which could be conveniently manufactured in a heavy engineering workshop, requiring perhaps only installation of some balancing equipment. It will also be necessary for such units either to procure the designs and drawings for these new items by collaborating with others or by evolving such designs and drawings themselves if they have their own design office.

6. To illustrate the point, a particular manufacturing unit in India, which was originally set up only for the manufacture of coal-washery plant, but later could not find substantial orders in this respect, did in fact diversify its manufacturing activity very satisfactorily, with only minor additions of balancing equipment, in as many as the following lines:

(a) Conveyors - belt, slat, gravity and screw
(b) Coal handling system for thermal power plants
(c) Sampling systems - primary and secondary crushing and screening of bulk materials
(d) Pumps, centrifugal
(e) Valves
(f) Feeders and gates
(g) Bins, hoppers and chutes
(h) Gears, pulleys and sprockets
(i) Screens and screen plates
(j) Dryers
(k) Structural steel fabrication work
(l) Lime recovery plant
(m) Coal processing plant
(n) Manganese ore nodulizing plant
(o) Carbon paste plant, and
(p) Special coking plant

7. It may also be observed in this connexion, that this is not an isolated instance. In fact, a very large number of similar heavy engineering units in our country have also resorted to the procedure of maximum diversification of their production, in order to achieve fuller utilization of their installed capacity.

Where diversification is not an appropriate answer

8. However, a solution by way of diversification cannot bear fruit where the installed manufacturing plant is a specialized one, e.g. plant for the manufacture of high pressure gas cylinders or a bolt/nut manufacturing plant or a drum and container manufacturing plant. For such plants and also for the earlier types of industries (besides diversification) several other measures, embodying mutual assistance between the different developing countries, resorting inter alia to bilateral trade arrangements, establishment of joint ventures in third countries etc. would appear to meet the needs of the situation.

Bilateral trade

9. These steps ought to go a long way to secure a fuller utilization of excess capacity by way of exports. For instance, let us assume that developing country A has substantial excess capacity for production of high pressure gas cylinders, which its internal requirement cannot fully consume and at the same time, it requires, say, sulphuric acid which it does not manufacture. Let us also assume that another developing country B has surplus capacity for production of sulphuric acid but it does not manufacture high pressure gas cylinders. Subject to the quality of their respective products being good, it will appear reasonable that each could assist the other by entering into a bilateral arrangement.

Establishment of joint ventures in third countries

10. Similarly establishment of joint ventures in third countries should offer even greater scope and this type of measure should lead to a reduction in their respective cost of production. For instance, let us assume two developing countries A and B manufacture complete cement making plants to a high standard and a third developing country C has enough limestone deposits but it does not produce cement making plant. Here, it would appear that the proposition to set up cement making factories in country C, jointly by countries A and B, should offer good scope, since instead of each of these latter countries producing all

the items that go to make a complete plant - they could conveniently decide among themselves to earmark only a part of the plant to each (depending upon their relative advantages, e.g. castings made by one with comparatively cheaper labour, whereas gear cutting would be taken by the other, which is more specialised) and by so doing the available quantum of production for fewer items that will go to each, would be considerably larger and this by itself, apart from other advantages, is likely to lower the over-all cost of the plant.

Export promotion

11. In the field of export promotion there are certain elements in the economy, mainly relating to prices, inflation, low productivity, higher rate of population, temporary increase in internal demand etc. which handicap the promotion of exports. It has often been observed that the slightest maladjustment in the internal economy generates a tremendous resistance to making an effort for promoting exports. Such tendencies need therefore to be suitably thwarted as soon as they appear. Besides this, in order to create a proper climate for export promotion, certain basic steps should be taken. These could be broadly outlined as:

Basic steps for export promotion

(a) Supply of the required quantities of pig iron, rolled steel, special steel and other engineering materials to the exporting units at international prices;

(b) Substantial reduction in rail and ocean freight, wherever these are excessive;

(c) Adequate facilities in respect of foreign exchange for market surveys; opening up of offices in foreign countries; deputation of study and sale teams; grant of commission; provision of adequate after-sales service with depots and workshops abroad;

(d) Establishment of market and commodity research centres;

(e) In certain cases, facilities for making available deferred payments and long-term credit to foreign buyers; and

(f) Wherever possible, stock-piling of exportable commodities for immediate sale abroad.

Condition for satisfactory competition in the world export market

12. It may be remarked that for raising the export achievements in the world market two vital considerations come into play:

(a) the cost of the product should be competitive, and

(b) the product has to be of good quality.

Factors beyond the control of the manufacturing units

13. In regard to cost, it will be realised that the export price of a product will depend on various factors, some of which are beyond the control of the manufacturing units such as:

(a) Various taxes;

(b) Duty on imported raw materials and components that go into the products;

(c) Internal transport cost from the place of manufacture to the port of shipment;

(d) Ocean freight charges.

14. But there will be other factors that are within the control of the manufacturers and which, if controlled and improved - and it is here that UNIDO could assist them, if required - would lead to both lowering of the ex-works cost of the product as well as bettering their quality. It will be seen that irrespective of whether equipment is made to order or standardized, a high level of design and engineering capability would normally be required. Technology can be purchased but successful transfer of modern technology is one of the major problems faced by the engineering industries. Hence success in the matter of lowering the cost and production of quality goods can be achieved only by combining, among others, the following basic elements:

Factors within the control of the manufacturing units and steps required in this direction

(a) Introduction of modern methods of production planning;

(b) Improvement of labour productivity;

(c) Adoption of proper techniques of quality control;

(d) Use of suitable raw materials and components;

(e) Engagement of capable engineers and skilled operatives;

(f) Substantial designing capabilities;

(g) High managerial skill.

15. All the above factors are within the control of the manufacturing units themselves and it is here that they need to exert their greatest efforts.

Technical assistance from UNIDO and other United Nations agencies

16. In the light of the above, it would be seen that the specific fields where technical assistance from UNIDO and other United Nations agencies can be most profitable to the developing countries, will be broadly:

(a) Modern methods of production planning;

(b) Improving labour productivity (including actual demonstration by experts);

(c) Techniques of quality control;

(d) Transfer of modern technology.

Conclusion

17. With the march of science and technology and a helping hand from the highly developed nations of the world and granted a share in the ever-accumulating knowledge of mankind - there is no reason why the developing nations of the world should not be in a position to better utilize their excess capacity for the purpose of export. All that they will need is firm determination.