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**MAIN AREAS FOR TECHNICAL ASSISTANCE IN
PACKAGING IN DEVELOPING COUNTRIES ^{1/}**

A CRITICAL REVIEW

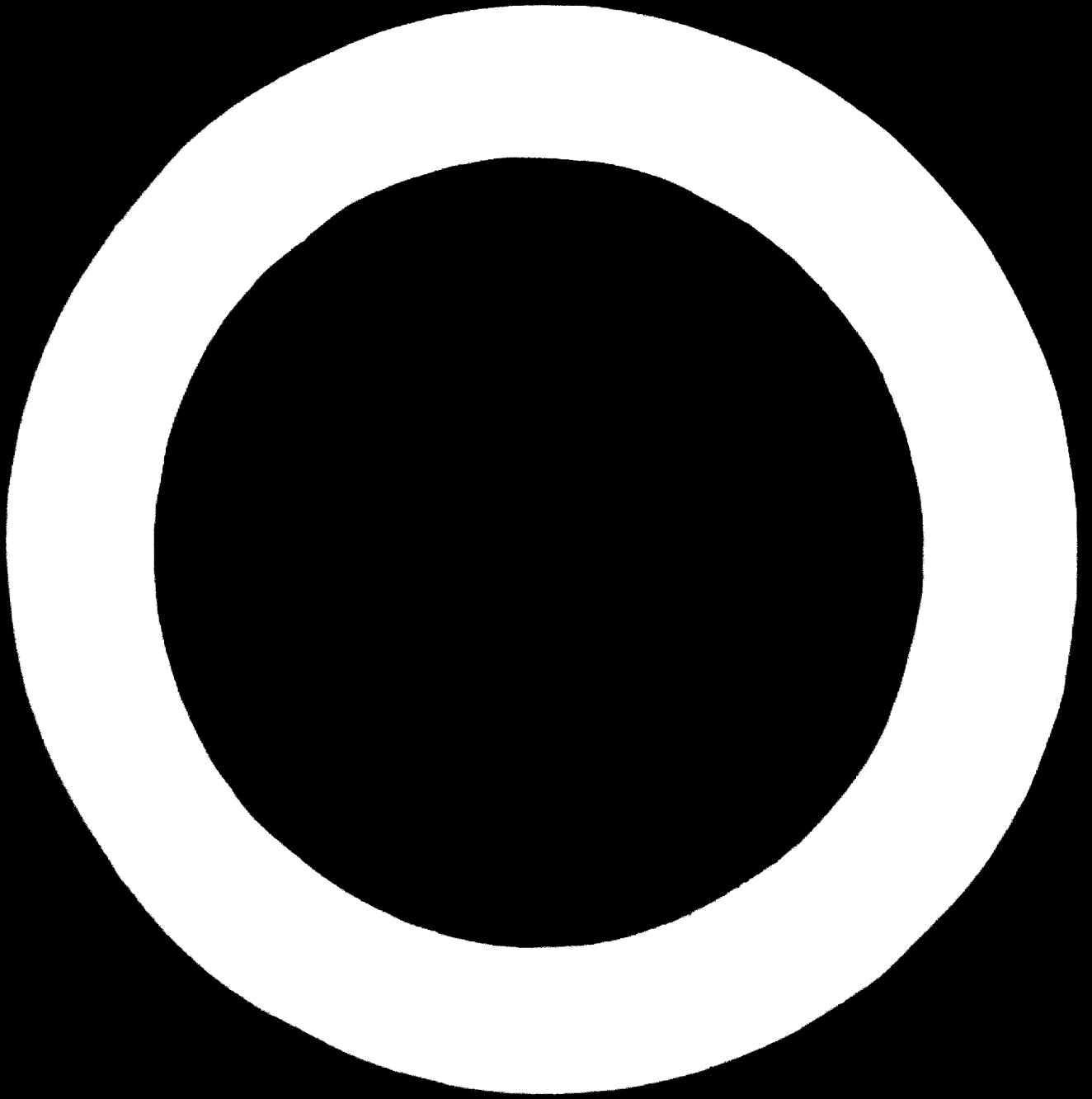
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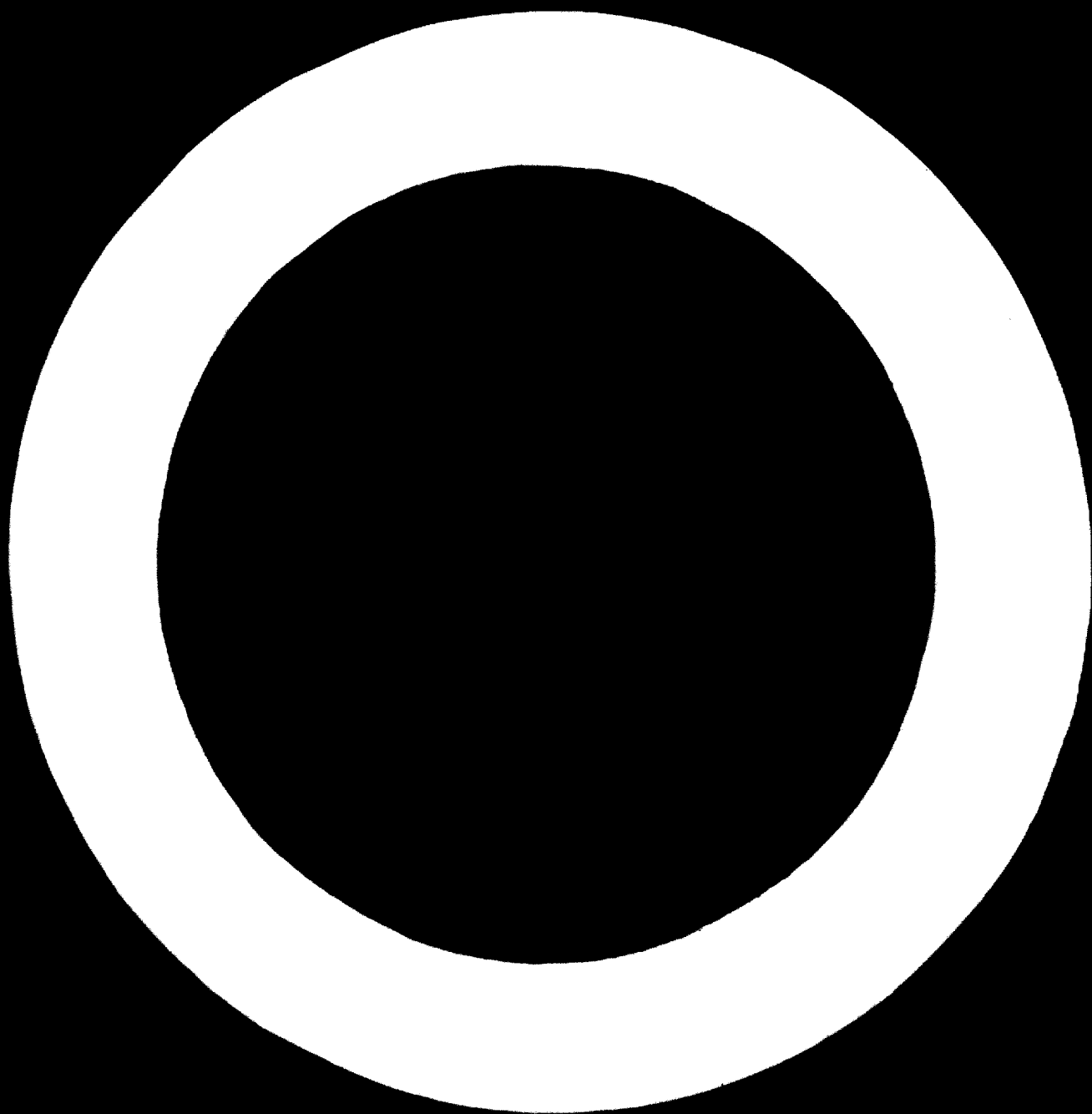
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We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.



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1. INTRODUCTION

THE PACKAGING INDUSTRY in the west has progressed to such an extent that it has been aptly described as the Second Industrial Revolution. Packaging which was originally a minor industry in the early part of the century, got a tremendous boost owing to the rapid urbanisation as a result of the establishment of industries in a big way. More trade routes developed and exports to various countries in the world became imperative and competitive. The consumer in the developed countries became increasingly package conscious as he became more and more sophisticated in his habits and tastes. Due to the establishment of industries, labour became scarce and automation in production and distribution was found imperative. The old marketing methods gave place to the newer systems like super-markets, self-service stores and the like, necessitating the use of better packaging materials, methods and machines. Packaging got a further impetus during the first and second world wars.

The emergency and the post-war periods saw an intense activity in the research laboratories and industrial establishments towards the utilisation of the hitherto unutilised research findings as well as newer ones, all aimed towards production of better packaging materials, methods and techniques. Soon after the second world war, many countries became independent one by one and the advanced countries had

to compete with others in the markets of their erstwhile dependencies. The developing countries needed great deal of equipment and machinery for their development. Newer and better packaging techniques had therefore to be adopted to satisfy not only their internal needs but also export purposes. Transport systems had also to be geared up to meet the changed situation. Today, everyone, the producer, the packager, the shipper, the marketing man, the common man and not the least the Government are all deeply involved in Packaging. Packaging in developed countries has risen to great heights in an integrated manner, and thus has become an important means for their progress and prosperity.

2. STATUS OF PACKAGING IN DEVELOPING COUNTRIES

In contrast, the status of Packaging in many areas of the world is still in a stage of infancy. Practically in all developing countries, be they in Latin America, Africa, Asia or Far East, the advantages of adequate and functional packaging seem to have touched the fringes of the population. Dependence on agriculture, rapid increase in population, low levels of literacy, low productivity and inadequate financial resources, etc. are some of the factors which are impeding the establishment of industries on a large scale. The industrial revolution which boosted the economy of the West by leaps and bounds did not have any significant impact on the present day developing world. In fact, packaging used for daily necessities of life in the developing countries is still similar to the one that existed some 50 years ago in Europe and the USA.

In many of the developing countries, the co-existence of gluts and famines is not uncommon. Products produced in one area are not reaching the consuming markets in adequate quantities creating conditions of scarcity. This situation is mainly attributable to the use of improper means of transport, inadequate packaging and lack of techniques. Many developing countries are yet to realise the importance of scientific packaging of their products. Packaging consciousness, which is the first necessity for improving packaging methods is not in evidence in many developing countries. Knowledge of the techniques of packaging particularly those adopted in western countries is not easily available. Modern methods of processing and manufacture and the integrated systems of packaging of goods and marketing are yet to be adopted. Mechanisation in packaging which is so important in mass-production is not yet in sight in the developing countries.

Age-old packaging materials like the jute bag, heavy wooden boxes are mainly used for bulk packaging. For perishables like fruits and vegetables and highly perishable materials like fish and poultry baskets made of bamboo strips or similar agricultural materials are most commonly used in practically all the countries in the Asian Region. While these containers were suited to short distance transport in earlier days, they are unable to meet the changing situation. Consequently, it is not uncommon to find a good proportion of fish perishing in the coastal areas, fruits and vegetables getting spoilt to the extent of about 25 to 30 % due to improper means of transport and handling and a good proportion of foodgrains becoming unfit for the human consumption due to attack of insects and rodents. In many countries, the above situation is aggravated by increase in population, low levels of productivity and large scale unemployment. All the same, many countries after their independence have been making all out efforts to establish industries, to improve their economic situation. Although in some countries like India quite a few packaging industries have come up in recent times, a great deal more remains to be done not only in terms of quality and quantity but also establish industries to produce newer varieties of packaging materials to suit the changing situation.

For the rapid industrialisation and the improvement of their economy, the developing countries have to import raw materials and machinery and obtain technical know-how involving a heavy outgo of foreign exchange. To pay for such imports, the developing countries have to export their products in as large a measure as possible. For example, countries like India are making all out efforts to export large variety of materials in bulk like spices, tea, coffee, cashew, wall-nuts, tobacco, etc. and

manufactured goods like footwear, garments, machines and machine-parts, like engineering goods, processed foods, marine products, handicrafts, etc. If only India could export packaged goods, instead of the goods sold in bulk, there would be substantial increase in foreign exchange earnings. Products from developing countries have to be sold in the highly sophisticated and discriminating world markets. Obviously, packaging for these products would not only be functional and adequate but also generate impulse buying.

In some developing countries, as in India, there is already a base for the production of packaging materials but owing to the various factors like lack of packaging education and expertise, finances, etc. newer and better types of packaging materials as are available in western countries are not produced. In the developing countries, there is no shortage of mineral wealth or man-power or talent. What is hampering the progress is the lack of knowledge and expertise and a forum for exchange of knowledge, guidance to the packaging industries as well as concerned authorities, the lines on which packaging should progress for their economic development.

This phenomenon therefore calls for quick action not only at the national level but also at the international level so that the developing countries make every endeavour to improve their packaging pattern not only for their benefit but for the progress of the world as a whole.

3. TASKS AHEAD

3.1. FORMATION OF PACKAGING INSTITUTES & ASSOCIATIONS

For the progress and planned growth of Packaging in the developing countries, the usefulness of a forum for collective thinking needs hardly any emphasis. Therefore, the formation of Institutes or Associations is the first necessity. In many developing countries, there is no forum at all where the Packaging and allied industries could examine their problems and develop plans for progress. Even where there is a viable packaging industry in a country, packaging is dealt with by bodies like chambers of commerce or industry. The rapid industrialisation in the developing countries would naturally lead to the realisation of the need for improved packaging of goods not only for internal markets but also for exports. The logical sequence of this process should be the formation of Associations/Institutes.

The establishment of packaging institutes/associations would necessarily result in an immense awareness of the advantages of packaging amongst all the sectors of economic activity. To fulfil its functions, adequately the Institute would have to be the forum for imparting packaging education, providing testing and research facilities, planning the growth of the industries on right lines, establishing priorities for the growth of the packaging industries on sound and scientific lines. Indeed, it was only after the establishment of the Indian Institute of Packaging in 1966 that it was possible to provide some of these services to all those interested in packaging and also prepare a document on the development of ^{packaging} industry in Fourth Five Year Plan. The pattern and the working of the IIP is more or less on the same lines as that elaborated

Krogulecki + Czerniawski and
by Messrs. / Dr Sicre in their papers. Their views should serve
as useful guidelines for formulating the organisational structure of
Packaging Institutes in the developing country. It is needless to
mention that the countries' specific requirements and conditions would
have to be taken into account while drafting the organisational set up,
providing for such adjustments in the constitution from time to time.
In fact, the existing set up of the Indian Institute of Packaging is
the outcome of such adjustments and still further adjustments may become
necessary on the basis of experience gained and the diversification
achieved by the Packaging Industry. As Dr Sicre has rightly said, the
Packaging Institutes being essentially service oriented should strive
hard to be self-sustaining as far as possible.

Although during the last decade, a few countries in Asia have
established Packaging Institutes/Associations, with limited functions,
there are still large number of countries in the developing world who
have no forum to deal with the subject of packaging adequately.

In order to hasten the process of establishment of Packaging Insti-
tutes in the developing countries, in addition to the UNIDO establishing
contacts with existing trade associations and the Government, following
measures need to be taken:

- 1) Providing Experts to organize seminars, lectures and assist in
holding exhibitions and packaging contests so as to stimulate
the consciousness of packaging in the industrial establishments
and organisations and the Government so as to impress upon them
the need for a common forum for packaging in the country;

- 2) Providing a model organisational set up of a packaging institute/ or association with built-in flexibility for local adjustments;
- 3) Preparing a code indicating the extent and type of aid forthcoming from UNIDO.

1.2. DEVELOPMENT OF PACKAGING EXPERTISE

1.2.1. Packaging Education: As Mr Munte has rightly said, "knowledge is power" and the packaging knowledge is a powerful tool for economic development. Packaging is a vital link between production, marketing and the ultimate consumer and therefore persons engaged at all levels from managerial to operators in any industry must be package minded and should necessarily have adequate knowledge in Packaging. The material manufacturers should have a good comprehension of the properties of the materials they produce on the one hand and the users of packaging materials should have deep understanding of the packaging requirements of their product on the other hand, which will enable them to adopt appropriate type of packaging materials suited to their products and market.

According to the aims to be achieved, either highly technical or essentially practical, Mr Louis has identified three categories of persons who need to be trained, viz:

- i) Students at Universities to be trained as Packaging Research Scientists and Engineers;
- ii) Other young people like the foreman type who will be in-charge of packaging lines;
- iii) Persons already in-charge of packaging companies.

Development of packaging expertise at the university level is a very useful measure. The institutions and universities concerned with technical education should consider including packaging technology in their curricula. But from the point of view of the developing countries, whether it would not be advantageous to take up this at the Diploma level to begin with and later raise to degree courses, needs to be examined.

With regard to imparting packaging education to persons who are already engaged in the industry, Mr. Louis has suggested the following three types of programmes:

- a) One Year Educational Programme with only a few hours, say 24, per month;
- b) Two weeks condensed programme for imparting basic concepts in packaging; and
- c) Education through correspondence courses.

While a one-year part-time training course on practical aspects of packaging would be suited to personnel at the operators level, it is for consideration, if such a long period would have the necessary sustaining interest among the participants, unless incentives by way of allowances, stipends, etc. are provided. There is also the problem of arranging long term courses at the numerous industrial centres in the country. Similarly, two weeks condensed course which is suited to executives in the industry may present problems in finding adequate number of personnel for the course to be successful. In the developing countries, the industrial units being comparatively smaller in size do not have separate executives to be incharge of the important departments of the unit.

Imparting packaging education through correspondence is an excellent idea. But the question is how to make this course to fulfil its objective in which student and teacher's personal contact is not possible. However, this type of instruction if suitably devised would be very useful to those who are unable to take up any other type of training.

In this context, the experience of the Indian Institute of Packaging is worth mentioning. As a result of a Seminar held immediately after the set up of the Institute, training courses of 3 to 5 days duration suited to middle level executives in the industry are being organised. Topics selected for these courses relate to packaging materials, packaged products, techniques and ancillary materials and also packaging of products with high export potential. These courses include lectures on specific topics pertaining to the course visits to factories, case studies and exhibitions of films and slides. So far, the Institute has held 42 short-term training courses on different topics at different centres in India.

In addition, the Institute has developed a Three-Months Intensive Training Course containing most of the elements of the Syllabus of the European Packaging Federation for producing packaging technologists. Teachers for these courses are mostly drawn from the industry, supplemented by the Institute staff. Audio-visual aids like films, slides, etc. are made use of to the extent available.

It is heartening to record that both these courses have been found to be extremely useful and to date over 1100 persons have availed of the short term training courses and 80 of the intensive training course .. From this year onwards, as India's contribution to the developing countries, a few seats have been reserved in the intensive training course for

candidates from such countries. The developing countries might like to study these courses for adoption with suitable modifications.

Mr Louis has indicated in his paper that teachers for training courses should come from one of the European Packaging Institutes/Laboratories. Apparently, the suggestion has been made in view of the progress made by these countries in the field of packaging. In this context, it may be equally desirable to have persons from developing countries trained as lecturers in Institutes in advanced countries. Furthermore, the training aids like the ones mentioned by Mr Louis are quite expensive and involve foreign exchange. There are also no textbooks on Packaging which forms an essential tool for imparting packaging education.

2.3.2. Experts and Specialists from Advanced Countries: There is no doubt that the lack of knowledge has impeded the progress of packaging in the developing countries. The inflow of knowledge is a must. These countries need specialists and experts in specified fields in relation to products, packaging materials and modern methods of transport, handling and ware-housing. Practically, every speaker at this meeting has spoken of modern trends in marketing and transport which have been the motivating factors, amongst others, for the progress of packaging. Towards this end, there should be a free-flow of expertise in modern packaging techniques. The expert chosen for a country should necessarily have a fair background and the problem of the country he is visiting.

While an expert is on his job in the country, a counter-part from the country should be attached to him both as an "under-study" and to

advise him on the local conditions. It is needless to mention that the type of expertise provided to the developing country should be related to its packaging status in terms of local needs and facility.

3.2.3. Overseas Training of Technical Personnel: While experts from advanced countries would accelerate the inflow of knowledge and expertise to the developing countries, the local personnel should have opportunities for being trained in different branches of packaging in advanced countries. They should study in specialised institutions and establishments, concerned with packaging materials and methods. For the training to be purposeful, the person deputed should have a prior understanding of the packaging problems in his own country. The advanced countries should make every endeavour to shed the "mirage" of trade secrets, etc. Overseas trained persons on their return will impart their knowledge to others and give to the local entrepreneurs the necessary confidence to set up packaging industries on modern lines. Such a step would result in not only improvements relating to locally available materials but also setting up new packaging industries. Owing to lack of information about the facilities available in advanced countries as well as financial resources, many developing countries have not made much headway in getting their persons trained.

3.2.4. Developing Package Consciousness: As the developing countries become more and more industrialised, the producer and the user of packaging materials need to become enlightened in all facets of packaging. This is necessary to enable the industries to produce packaged goods suited to rapidly changing tastes of the common man. This is to be achieved through conferences, seminars and institution of national awards

and exhibitions, group meetings on specific subjects, etc. In addition, the Packaging Institutes should have to disseminate technological information through journals, abstracts, newsletters, etc. A well-equipped library would materially assist the industries in keeping abreast of the modern trends in packaging. A comprehensive packaging directory listing all the manufacturers of packaging materials and all those related to packaging would be a helpful guide for all concerned with packaging. The usefulness of such a publication was amply borne out by the publication of the Indian Packaging Directory in 1969 by the Indian Institute of Packaging.

In order to enable the developing countries to acquire power, that is knowledge, the following lines of action may be considered:

- 1) Provision of training facilities for training of teachers in the institutions and establishments in advanced countries;
- 2) Preparing model syllabi for training programmes suited to various levels of management in the industry and also those aspiring to obtain diploma/degrees in Packaging Technology;
- 3) Providing training aids, audio-visual material and modern types of equipment for library and latest books and periodicals related to packaging;
- 4) Encouraging authorities in packaging to write text-books on various aspects of packaging;
- 5) Organising periodical conferences and seminars on the scientific aspects of packaging in the developing countries;
- 6) Providing training to persons from the developing countries in the laboratories/industrial establishments in advanced countries in specific fields of packaging;

- 7) Providing foreign experts in areas pertinent to the countries' requirements;
- 8) The UNIDO may impress on the concerned UN Organisations and developed countries the need to include Fellowships for packaging in bi-lateral or multi-lateral technical assistance programmes.

3.3. ESTABLISHMENT OF TESTING & RESEARCH FACILITIES

If packaging has to reach the desired standard, the country should have centres equipped with modern testing instruments and adequately staffed with trained technical personnel. In many instances, the producing industries are unable to afford the 'luxury' of a testing laboratory. Consequently, even after being in the trade for several years, they are not aware of the short-comings of the products put out by them and therefore have been unable to effect such improvements as would be necessary. The same is true in the case of packaged goods also. This aspect has been highlighted by all the speakers more particularly by Dr Sieze who has made a number of constructive suggestions from which the developing countries could benefit a great deal.

It is realised that scientific research is the sheet anchor for industrial progress, and packaging technology which is even more dynamic, is no exception. There is need for research not only to improve the functional qualities of the indigenously available materials but also on newer ones. Due to rapid urbanisation, there would be great deal of shift in marketing methods, necessitating search for better packaging. It must be made clear at this point that no Institutes, however well

equipped, will be capable of carrying out fundamental research on newer plastics, better tinplate, improved glass containers, better paper, etc. This must obviously be left to the specialised Institutes wherever they exist.

In advanced countries, the material manufacturers have their own research establishments to impart better functional qualities to the materials they produce. The product manufacturers and packagers too have equally well-equipped laboratories for quality control, compatibility, shelf-life studies of the packaged product and also to evaluate transport-worthiness of the pack. In addition, the acceptability of the packaged goods, is continuously assessed by the manufacturing industries, by conducting test marketing, market surveys, consumer preferences, etc. Thus, the packaging institutes, in addition to providing test data on packaging materials and packages as and when required by the industry are mainly concerned with problems of common interest to the industry such as laying down standards for methods, materials and packs. This has been amply elaborated by Mr Krogulski and Dr. Sicre.

The situation in the developing countries is entirely different. Owing to the size of the unit, no material manufacturer, due to the expenses involved, is in a position to have facilities for quality control, let alone for research. Even comparatively bigger units who have foreign collaboration do not have much facility for research, as this is mostly done in the overseas laboratory of the parent company. The industries which have come up with local resources and with no foreign collaboration, have no means to improve their packaging pattern to be able to compete even with those who have foreign collaboration.

This is very relevant to India where a large number of small and medium scale industries are unable to make much headway for want of requisite testing and research facilities. This situation could be improved not only through free-flow of the results of research in developed countries but also by equipping the Packaging Institutes to be able to test the efficacy of the application of such research findings in the context of local needs and environmental conditions.

There are a few countries among the developing countries who have the necessary base and are in a take off stage and given the necessary wherewithal could progress very rapidly, as in the case of India. There may be others at the end of the scale, who, even when provided with all facilities, may not find use for them immediately. The assistance needed would naturally depend largely on the packaging status of the country concerned, which needs to be assessed carefully by a team of competent and understanding experts.

In this context, it gives me great pleasure to express our grateful thanks for the promised assistance for the further development of the Indian Institute of Packaging at Bombay, by the United Nations Development Programme through the Agency of UNIDO. I am mentioning this particularly to highlight the anxiety of the UNDP to assist the developing countries.

Towards the establishment of research and testing facilities as part of the Packaging Institutes/Associations in the developing countries, assistance in the following forms is suggested:

- 1) To prepare a technological design of the research and the testing facilities taking into account the local needs;
- 2) To prepare a list of testing and research equipment needed for the purpose, indicate the sources of supply, their approximate price and to provide funds for their procurement;
- 3) The expert provided for the above purpose should detail a work programme for the Institute and provide the necessary expertise for testing and research programmes of the Institute;
- 4) Providing a free-flow of results of research in developed countries to the Institutes/Associations for further dissemination of knowledge to all concerned.

2.4. MEASURES TO PROMOTE EXPORTS

No country in the world can progress without exporting a sizable part of their production and this is more so in the case of developing countries for their rapid industrial growth. Foreign aid for their development though welcome, can only be a transitional measure and is no substitute for self-dependence. Exports have to be made to advanced countries not because of their affluence but because the equipment and raw material needed for industrial development have to be imported from these countries.

The products from developing countries would face severe competition. In order that the goods be competitive, they must not only be adequate and functionally packed but also the pack must generate impulse buying. This therefore calls for a study of the packaging needs of each market and adoption of improved packaging methods for a correct export strategy.

Mr Turner has very ably set out a number of guidelines that need to be followed for successful export promotion. He has correctly said that: "the products, the market and the package are the three inseparable and inter-related parts of marketing strategy and its success would be measured by success of the weakest link". According to him, "the best package will not compensate for a bad product and vice versa", if the excellent product and excellent packaging is marketed in the wrong country, then success is hardly likely to be achieved. "Good packaging, therefore, must take into full account a significant amount of the three related parts of which the most important part is the market". Continuing, Mr Turner lay great emphasis on Graphics and Convenience; as well as a thorough knowledge of the market to which goods are proposed to be exported. These views have been amply emphasized by all the speakers.

In the field of export packaging, the problems facing the developing countries are the lack of suitable types of packaging materials, packaging machinery and modern techniques, in addition to inadequate appreciation of the markets abroad. Many developing countries either obtain the requisite types of packaging materials or try to improvise with whatever is produced in the country. Such a state of affairs may serve the immediate needs but in the long run it would not enable the country to develop its own packaging industry.

Furthermore, the developing countries are today content with exporting commodities in bulk to advanced countries for want of adequate packaging knowledge and facilities. The case in point is that of cashew, kenaf, tea, coffee, spices, etc. which are exported in bulk from India. If only these items are exported in consumer packs, the packaging indus-

try would grow to enormous proportions and the foreign exchange earnings will increase and the industry will get a boost.

Marketing of goods in advanced countries particularly in the highly sophisticated and discriminating areas, needs a great deal of understanding of the subject. In order to successfully market their products, the developing countries should have to acquire expertise in the techniques of international marketing. The following measures would go a long way in assisting the developing countries in their export promotional measures:

- 1) Providing Expert(s) in specific areas/fields to advise the exporting industries on the ways and means of improving their packaging suited to different markets;
- 2) Financing Study Teams to visit markets, research and industrial establishments in advanced countries to enable the Team to learn the international marketing techniques, trends, consumer preferences, etc.
- 3) Compiling packaging standards and laws prevalent in various countries and disseminating this information to the developing countries.

2.5. ESTABLISHMENT & MODERNISATION OF PACKAGING MATERIAL & MACHINERY MANUFACTURING INDUSTRIES

Mr Selin of Finnish Institute of Packaging has made a very objective and balanced study of the problem of local production of packaging materials vs imports. His counsel against hasty and subjective decisions on

setting up production units for packaging materials, deserves careful consideration. Of the problems facing the developing countries in the matter of their industrial development, the one of local production vs imports is the most important. Also the developing countries can ill-afford the luxury of basing their decision on "National Pride". But if they have to take certain decisions, which may not necessarily conform to the generally accepted norms of economic viability, it is because of certain compulsions, such as scarce foreign exchange, chronic unemployment accompanied by high cost of living and the need to plan investment due to shortage of capital.

In the midst of foreign exchange shortages and deficit balance of trade, the developing countries find no alternatives but to limit imports to bare essentials. If packaging has not made much headway in the developing countries, it is because these countries had necessarily to give low priority to packaging. Unless the developing countries are assisted to produce packaging materials indigenously at least in some essential areas, the cause of packaging may remain not well-served. This does not imply that there should be either a total ban on imports or blind decisions taken to set up large and uneconomical packaging material manufacturing complexes. What is meant is that balance between the two points of view will have to be arrived at. The need of the country in matters of providing employment, ensuring optimum utilisation of finances and economic viability of the unit must necessarily be kept in view while deciding on the size of the packaging enterprise.

In India small scale industries have made such a significant contribution to the industrial growth and creation of employment opportunities that they have come to occupy an important place in the economic growth of the country. While certain areas must obviously belong to medium and large scale industry, there are certain others for which small scale operations may be advantageous to the developing countries.

In some developing countries, as in India, there are already some packaging material manufacturing industries. These should necessarily form the base for not only enlarging their scope but also for establishing newer ones to be complimentary to the existing ones. With the increasing tempo of industrialisation in many countries, this step is quite essential to ensure optimum utilisation of resources and even supply of packaging materials to the industry.

Traditional and indigenously available packaging materials which were good enough in earlier days are still in use in many developing countries. In the changed circumstances, requiring goods to long distances and under adverse climatic conditions these containers may not be found adequate and functional in many cases. It is believed that with necessary improvements they could be made to suit the present day marketing conditions. Obviously, efforts towards modernising the existing units, establishments of new industries as well as improving the performance characteristics of the traditional materials, should all go hand in hand.

With regard to packaging machinery, practically all developing countries have to import them. Till such time as the country is able to manufacture machines either through international collaboration or otherwise, machines suited to local conditions may have to be imported. Ultimately, the indigenous engineering industries and local resources in talent which fortunately are not lacking in many countries should be exploited towards the establishment of packaging machinery building industries suited to local needs.

In the matter of improving the standard of packaging material and establishment of new industries related to packaging, the developing countries need the following assistance:

- 1) Providing the latest technology to enable the existing industries to produce packaging materials suited to modern trends;
- 2) Providing assistance on easy terms to potential entrepreneurs in the developing countries to establish newer types of packaging material manufacturing units;
- 3) Providing Scientists to the developing countries to work with local scientists towards imparting better functional qualities to the indigenously available packaging materials;
- 4) Assisting the engineering industries in the country to manufacture packaging machinery suited to the local requirements by providing the requisite technical know-how, designs and drawings, on favourable terms.

3.6. STANDARDS AND CONSUMER PROTECTION LAWS

The importance of producing materials and packs conforming to appropriate standards and suited to the type of transport need hardly any emphasis. In some developing countries, there are organisations dealing with standards for a number of materials. Packaging being one of the newer branches of applied science, standards for packaging materials particularly those relating to their performance characteristics have not received due attention so far. The standards institutions should actively consider drafting standards for materials, filled packages and codes of practice for specific commodities which have a large export potential. Needless to mention that labelling and marking should also be given due attention.

In order to assist the developing countries to formulate suitable standards and consumer protection laws in the field of packaging, the following action is necessary:

- 1) Compiling standards with regard to packaging materials and packages as are adopted in advanced countries and tests therefor;
- 2) Compiling laws relating to consumer protection as are prevalent in different countries.

In addition to standards, the developing countries would have to speedily consider formulation of laws aimed at protecting the interests of the consumer. For example, laws relating to the type of packaging material that could be used for a product, the size, the shape and the net-weight of the contents would not only be re-assuring the consumer regarding the quality of the product but also contribute significantly towards the improvement of the health of the population.

3.7. INTERNATIONAL CO-OPERATION

It has been made clear that the progress of packaging in developing countries cannot be achieved in isolation. At the national level, the packaging institutes will fulfill the task of exchange of knowledge within the country and abroad, provide testing and research facility, take stock of the status of packaging and suggest to the authorities to take such action as is necessary in the national interest. Even so, there should be exchange of knowledge and expertise at the regional level and regional research centres to take up problems of common interest to the region. This is necessary because in most cases, the problems of packaging in the countries of the region are more or less similar. It was in this context the Asian Packaging Federation comprising Korea, Japan, India, Taiwan (China), Philippines, Thailand, Hong Kong in Asia was constituted in 1968. This Federation has since been doing excellent work in promoting the cause of packaging in the region. In this connection, holding of an Asian Packaging Congress and Asiastar Award Competition at Bombay in January 1972 is an important step in generating alround awareness in Packaging.

It is understood that a Federation consisting of the Packaging Institutes in Latin America, entitled "LATINE AMERICANE DEL EMBALAJE" is under formation. It is hoped that in not too distant a future, similar federations of packaging institutes in other areas would also be formed and these federations would further strengthen the recently formed World Packaging Organisation so as to enable it to raise the status of Packaging on a global basis.

With regard to international collaboration and co-operation, this distinguished gathering may consider:

- 1) Assisting the Packaging Institutes to form Federations in their respective areas with the ultimate objective of securing their affiliation with the World Packaging Organisation;
- 2) Assisting the Regional Packaging Federations so as to enable them to implement their regional programmes in packaging in an effective manner as necessary to raise the level of Packaging;
- 3) Assisting the Packaging Federations to establish Regional Training and Research Centres.

I am aware that my paper has become somewhat lengthy. This is partly because I had to deal with a large number of problems facing the developing countries and suggest some important lines of action to meet the situation. Even so, there may be some areas which might have escaped my attention. I am sure they will come up during the discussions.

Some of the suggestions I have made in the foregoing may be easy for the UNIDO to implement while there may be others which need further examination. The views expressed in this paper are the outcome of my intimate knowledge of the needs of packaging in my own country and a few others, which I am sure, will reflect the needs of other developing countries also. In any case, if my paper

were to generate the necessary thinking and result in a plan of action for assisting the developing countries in raising their packaging status, my purpose would have been amply served. I have no doubt in my mind, that every effort will be made by the distinguished gathering to do whatever they can to spread the cause of packaging to the areas which have not hitherto received due attention.

In this context, convening of this Expert Group in Packaging by the UNIDO to focus attention on the ways and means of assisting the developing countries in the field of packaging is most opportune.





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