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86846

UNEP

UNEP
SECRETARIAT

15/VI.21
31 October 1975

Original: ENGLISH

United Nations Industrial Development Organization

South Training Programme in Plastic
Technology

Vienna, Austria,
22 September - 23 November 1975

PRESENT STATUS AND FUTURE PLANS FOR THE
DEVELOPMENT OF THE PLASTICS INDUSTRY
IN JAMAICA

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The Plastic Industry in Jamaica has been developing rapidly over the last five or six years.

In 1966 there were 15 production companies manufacturing plastic products under Incentive Laws. At present there are twenty-eight companies that are members of the Jamaican Manufacturers' Association and approximately ten non-members of the Association.

The table below gives an indication of the development of the plastic industry in Jamaica from 1965 to 1972.

	1965	1966	1968	1969	1970	1971	1972
Payroll J\$1000	108	201	194	263	322	370	1,774
Local Sales J\$1000	574	812	1,057	1,573	1,990	2,341	8,664
Export Sales J\$1000	98	95	32	142	67	92	735
Total Sales	674	908	1,089	1,715	2,057	2,433	9,399

Development in the plastic industry has been aided by Government policy in three areas:-

- a) Incentives
- b) Restrictions on competing imports
- c) Duty-free Raw Materials.

The domestic market for most plastic products is protected by import restrictions, that is, no imports are allowed unless the item cannot be manufactured locally. Allowance is made for the importation of duty-free raw materials which are not available locally and which are imported by or on behalf of a recognised manufacturer of plastic products.

Exports are limited mainly to the Caribbean region and the main plastic products exported are:-

graphophone records, garden hoses, PVC pipes and fittings, polyethylene packing material, PVC conduits, rigid and flexible polyurethane foams, spectacle frames, zippers and a wide variety of consumer goods. Essentially all raw material is imported from United Kingdom, North America and European sources. The oil crisis triggered major cost hikes in the plastic industry in Jamaica. The worldwide shortage of petrochemical feedstocks, resins and plasticisers severely affected the industry and prices for raw materials increased by as much as 300% in some instances over 1970.

During that period of severe stress when overseas supplies of raw materials were all but cut off, many firms closed their works with closure and most had to cut back on production and many other companies had their supplies of raw materials reduced to the amount they had 'booked' for the year, and this curtailed their expansion. Thus all factories are operating well below their production capacity. At the present time it is estimated that some factories are operating at a 20% capacity.

The existing economic situation, the local, state, local and export markets, lack of indigenous raw materials, rising world prices of petrochemical feed-stocks and resins and shortage of foreign exchange have all contributed to the low production rate that currently exists.

Both thermoplastic processing and thermoset processing are utilized for the fabrication of plastic goods and equipment employed includes machinery for injection moulding, extrusion, blow moulding and thermo forming.

There are three local manufacturers of extruded plastic sheets. These three companies supply most of the needs of the packaging industry in terms of polyethylene sheets for packaging fruits, vegetables, garbans etc. and for making garment bags.

Blow moulding of plastic bottles is carried out in three companies that make high density polyethylene and PVC bottles for detergents etc. 3 1/2 million bottles valued at J\$430,000.00 were sold by one company in 1974.

The larger plastic manufacturers produce a wide range of commodities and employ a number of plastic fabrication processes. One large manufacturer produces PVC pipes, toys, household articles, melamine ware, garden hoses, pipe fittings. The raw materials used are melamine formaldehyde, high and low density polyethylene, high and low impact polystyrene, polypropylene, ABS, PVC. The capital investment in this company is approximately J\$4 million.

Another large manufacturer makes extruded polyethylene sheets for packaging, polystyrene egg containers and meat trays, ice cream containers, PVC water boots (injection moulding) drinking straws. This manufacturer's annual production for 1974 was estimated at 1 million lbs thermoplastics with a product value of J\$ million.

Figures projected for 1975 are 2 million lbs thermoplastics - product value of J\$1 million.

In recent times the use of plastics in agriculture has become increasingly important and is gaining wider acceptance among the more progressive farmers. Present agricultural usage is limited to packaging, reservoir liners, animal shelters, green-houses, silage covers, nursery wrap, pots and irrigation.

Plastic application in agriculture find its greatest use at present among horticulturists in providing shade from sun and protection from the wind. Polypropylene Chicopee Cloth and Saran shade screening is used extensively for green houses for anthuriums. The cloth is imported in various grades depending on the light penetration and filtration desired. This material has distinct advantages over more conventional materials such as wooden slits and cheesecloth because of its longevity and the ease with which light penetration and climatic conditions can be controlled. The expected lifetime of the Chicopee cloth is 10 years and on examination after 3 years there is no sign of deterioration.

Approximately 50 acres of nursery green houses have been erected using this material and these have been highly successful.

The use of plastic liners for reservoirs is limited as farmers are using butyl rubber sheets to reduce seepage and leakage from ponds and watering areas. For large areas such as ponds the polyethylene sheet widths which are too narrow, and the desired size would have to be built up from sections sealed together. This exercise requires skilled labour which is not readily available. If these problems can be overcome the potential use of polyethylene in this area would be greatly increased as it is much cheaper than using concrete reservoirs butyl rubber and water storage is essential during the extended drought periods which are frequently experienced in Jamaica.

Approximately 3 million polyethylene nursery bags are used each year for propagating and shipping rooted plants. Polyethylene film is also used for packaging flowers especially for export. Plastic pots are widely substituted for glazed pots as need for watering is greatly reduced, and the percentage loss through breakage is reduced.

There is an active expansion of the nursery plant and flower industry which is expected to increase the demand for the use of polyethylene nursery bags, plastic pots and similar covers.

In 1973 approximately 600 tons of polyethylene was used as packaging material for fruits, vegetables and fertilizers. 90% of this was used for packaging bananas for export. The polyethylene was used to line the cartons in which the bananas were exported.

Irrigation is carried out by open pipe systems and open canals. Plastic irrigation tubing has not been widely accepted in Jamaica for force irrigation systems because of failure of the fittings under high water pressure. As a result plastic (PVC) pipes are used only for main line distribution of water and flood irrigation systems. There is increased use of polyethylene sheets in silage making. The use of these sheets has considerably reduced the cost of silage making by eliminating the necessity of constructing costly concrete or metal silos, and can therefore be of great benefit to small livestock farmers. In making the silage, plastic sheeting is applied to the sides and top of the trench silo. The results of this application have been encouraging and wider use of plastic in this area is expected, especially when the problem of spillage of the top 6 inches is overcome.

In Jamaica, the use of plastics in livestock production probably finds its greater use in the field of poultry production. Within the hatchery industry plastic is used for egg setting trays, trays for transporting baby chicks and as protective packaging for fertile eggs. The transition from metal, paperboard and wooden containers to Plastic has significantly contributed to its development. It has afforded greater disease control, a higher level of sanitation and as the containers are reusable and have a longer lifetime they have been found to be more economical. Egg containers are made from polystyrene and approximately 2 million are produced each year. Other uses in the poultry industry include catching crates, waterers and packaging for dressed poultry.

In the dairy industry, plastics finds its widest use as containers for yogurt, ice cream and carrying cases of boxed milk. The use of plastic bottles for whole milk has not yet been introduced into Jamaica.

The fishing industry uses a wide range of plastic products but only

in small quantities. These products include fishing nets, polypropylene ropes, fishing lines and fibreglass boats.

The manufacture of expanded polystyrene containers is being explored by a local manufacturer. The product is not yet on the market and its success and acceptance will be dependent on its quality, consumer education and consumer acceptance.

In August, 1975, a 3 man UNIDO team visited Jamaica under the aegis of UNIDO Special Industrial Services Programme in response to a request for assistance to the plastic industry. This preparatory mission was to evaluate the needs of the plastic industry in Jamaica and to recommend the measures of assistance by UNIDO. The report and recommendations of this mission are not yet available but there are areas where UNIDO can be of great assistance to the industry and Jamaica.

Within the plastic industry there is need for technical training in polymer chemistry and die and mould making. There is also a need for ongoing training programmes in cutting, storing and handling materials. Markets have been developed on an ad hoc basis and there is need to expand the export market. An existing problem is that of increasing expertise and technical skill in order to increase the quality and quantity of the present level of manufacture so that the high labour costs can be overcome and Jamaican goods can be competitive on the domestic and export market.


There is very little quality control and testing carried out by plastic manufacturers and users. The growing role of standardisation in home and foreign trade creates the need for applying and introducing national and international plastic standards.

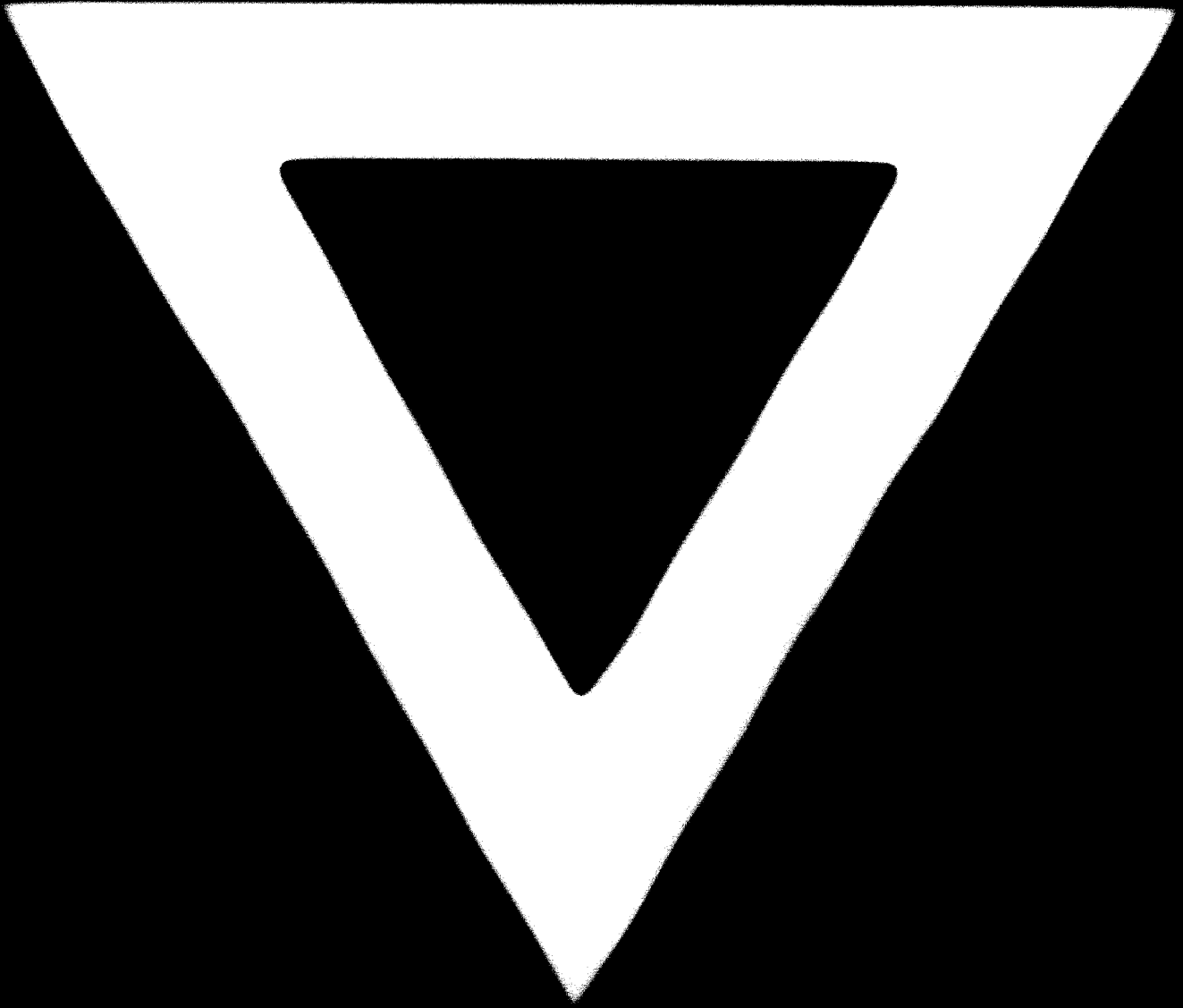
As yet, there are no Jamaican Standards for plastics or plastic commodities except in the case of PVC pipes but international specifications are available for testing and reference.

The potential of the Jamaican Bureau of Standards for influencing the Jamaican plastic industry has not been realized because of a lack of expertise within the Bureau itself. This is best illustrated by the inability of the Bureau to fully satisfy the requests from the plastics industry for assistance in -

- a) standardisation of products
- b) quality control systems
- c) guidance in development of new products
- d) methods of maintaining existing equipment and machinery
- e) adapting plastic products for use e.g. in agriculture and housing.

The Bureau of Standards in recognising its inability to fulfill its role in the plastics industry and the unfavourable effect it will have on the future expansion seeks to rectify the situation by requesting assistance from URIBI for the following:

- a) Specialised training of Bureau personnel in plastic technology, fabrication, quality control and testing.
 - b) Acquisition of modern testing equipments.
 - c) Industrial exposure.
 - d) Expansion of present building facilities.
 - e) Expansion of staff.
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