



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.



**caribbean
food
crops society**

**Eighteen
Annual Meeting
August 22 to 28th 1982
Dover Convention Centre
BARBADOS**

Vol. XVIII

TRANSPORTATION OF FRUIT AND VEGETABLES IN THE EASTERN CARIBBEAN

F.S. Leonce^{1/}

ABSTRACT

This paper examines the features associated with the shipment of bananas from the Windward Islands to the U.K. and fruit and vegetables in the Eastern Caribbean.

Deficiencies affecting quality of produce are identified with the system associated with the transport by the small vessels in the regional trade. Alternative systems such as, refrigerated shipping and air-transport are constrained by economic considerations.

It is suggested that measures for improving intra-regional transport of fruit and vegetables need to be focussed on the small vessel systems. These measures must provide for improved logistics at shipping and require integration of activities ranging from harvesting, through packaging to loading on ship. The above embody timeliness of decisions and disciplined operations which are best provided for by private sector shippers with interest in the quality of the produce arriving on the market.

The scope of this paper embraces considerations of the special needs of overseas transport of fruit and vegetables. An attempt is made to examine the features associated with this function in both extra and intra-regional export in the region in question and to highlight considerations which must be brought to bear in programmes to improve transport systems in the latter.

Much of the deficiencies associated with intra-regional transport have featured in reports and studies emanating from regional bodies such as Caribbean Development Bank (CDB), Caribbean Food Corporation (CFC) and Proceedings of Annual Meetings of the Caribbean Shipping Association (CSA). Some of these reports have featured proposals for upgrading the existing transportation systems for servicing fruit and vegetables.

This paper embodies a review of current activities and proposals and attempts to provide a rationale for obtaining improvement in the transport function through greater integration of activities associated with shipping.

^{1/} Geest Industries (W.I.) Ltd.

Extra-regional transport

Established and successful experience in the above in the region under question is centered on the Banana Industry of the Windward Islands. This industry encompasses weekly scheduled shipments of fresh, green bananas from six ports in the four Islands of Grenada, St. Vincent, St. Lucia and Dominica to the U.K.

The overseas transportation function in this industry is carried out by Geest Line a wholly owned subsidiary of the U.K. based parent Company of Geest Industries, Limited. Other subsidiaries of the latter are also engaged in various aspects of this industry.

Geest Industries (W.I.) handles the buying operations and oversee the shipping from the Windwards' end:

Geest International co-ordinates the procurement with the marketing at the U.K. end. The basis for co-ordinating procurement activities in the Islands with marketing in the U.K. is provided by this framework. The co-ordination of supply with transportation is an important aspect in this regard. The co-ordination embodies consideration of forecasted tonnages to allow variation of shipping to accomplish the efficient and economic loading and also to ship the fruit in as fresh a condition as is possible. There is no doubt that the successful co-ordination of the transport function with fruit supply has been a pillar in the stable structure of this banana trade. The attributes associated with success in this function may be delineated as follows:

- (i) The provision of well equipped and efficiently managed ships.
- (ii) The provision of on-shore infra-structure relating to handling, delivery and loading.
- (iii) The linkage of supply logistics with the shipping schedule.

It is essential to note that these three attributes taken together, are focussed on ensuring that the produce is received, handled and loaded in the best possible condition then maintained in this condition during transport to the U.K.

Intra-regional transport

Much has been said about the deficiencies in this function and its influence on the under-development of intra-regional trade with fresh fruit and vegetables. These produce are generally exported by women referred to as Speculator/Trafficer from the lesser developed, agriculturally based states, to the more developed states such as Barbados,

Trinidad, Martinique and Guadeloupe. The transport is carried out largely by small vessels. These were traditionally schooner types but in recent years a number of steel hull motor vessels are involved.

These ships generally have no refrigeration facility and conditions of stowage do not provide for favourable environmental needs for the more metabolically active kinds of such produce. The systems of handling, packaging overland transportation and loading of the produce are not disciplined and systematic to provide for the protection and maintenance of their quality. Much bruising is derived from the handling and transportation systems employed. Physiological deterioration results from the over exposure of such produce to sunlight in preparation for shipping and the poorly ventilated condition of stowage in the ships. The activities related to shipping are not subject to any central coordination and success in execution is basically focussed on getting goods "on board" by what ever means. Marketing quality considerations do not feature in this transportation service.

In recent years Marketing Boards also feature as users of the small vessel transport system for intra-regional export of fruit and vegetables. Naturally, these institutions apply greater considerations for quality control than the Speculator group from the stand point of selection, handling and packaging. However, they also are affected by the inability to coordinate supply with ship loading as is carried out for exports to the U.K. through Geest Line. The timing of operations from harvesting through to shipping to provide a limited time of exposure to ambient temperature which forms a basis of logistic considerations in the Banana Industry is not organized for intra-regional transport of fruit and vegetables.

The transportation of such produce is generally carried out between closely located territories e.g. Dominica with the French Antillies; St. Lucia with Barbados; Grenada with Trinidad. The short distance of haulage compensates for the lack of refrigeration providing that the produce is still relatively fresh and contained in well ventilated packages at loading.

Air temperature also allows for short time haulage even between more distance points. This system of transport is only used for perishables with relatively high market value. Breadfruit is frequently shipped in this way from St. Lucia to Barbados but the latter merely serves as the transshipment point for onward transport to the U.K.

Development programmes

The only marine transport body which operates a scheduled service to all states of the region is the West Indies Shipping Company (WISCO). This Company is jointly owned by CARICOM Government and currently operates five vessels which include two container vessels. It is assumed that

containerisation will be the focus of any programme to involve WISCO in improving intra-regional transport of fruit and vegetables.

The subject of intra-regional transportation in agricultural marketing organized by CDB in Barbados in 1980. The following represents relevant extracts from recommendations of this conference:

- (i) That agricultural production should be integrated with transportation and marketing. It was suggested that the CFC would be responsible for coordination of shipping of the agricultural produce using WISCO, small vessels and Extra-Regional Shipping Lines. The CFC would operate in close collaboration with the Marketing Boards and the private sector in the various territories.
- (ii) The CFC would administer an information flow system on transportation to embody information on availability and movement of ship types and facilities offered.
- (iii) Technical and financial assistance should be provided to enable small vessel operators to upgrade vessel designs with capacity and equipment to satisfactorily transport perishables. Similar assistance will be provided to encourage standardization of packaging.
- (iv) Provision of adequate arrangements and facilities including on-shore storage capacity to facilitate handling of perishable cargo.

The conference recognized that the variable volume and seasonal pattern of much of the agricultural produce made the small vessel types currently in use the most suitable of this service.

DISCUSSION

The problems associated with intra-regional transportation of fruit and vegetables have been highlighted.

The small vessels are likely to continue to dominate in this service because of their lower operating cost, less dependence on organized labour for handling the cargo and greater flexibility in scheduling. The short distance haulage which is generally practiced compensates to an extent for the lack of refrigeration facility.

Haulage over the longer distances requires refrigeration. Reefer container facility of WISCO appears to be the best prospect for providing this service. Such a service is likely to be constrained by the shipping schedule which results in a long interval between shipments from a given port and the costs involved in handling and operating reefer containers.

Fruit and vegetables are low value food products compared to meats. Fruit can exude much heat in storage depending on kind, maturity and condition. The level of energy consumption in their refrigeration can be high and costly. As the container is a unit of loading, economic considerations require it to be filled with produce which are compatible for a given storage environment.

Aircraft transportation is likely to continue to be constrained by costs.

It is apparent from the above that steps to improve the scale and quality of intra-regional transportation of fruit and vegetables must be centered on improving the system of the small vessel service. The provision of refrigeration facility on such ships is constrained by capital and operational costs. The need for this facility is reduced if the produce could be loaded in as fresh a state as possible and stored in well ventilated areas on ship. The time expended in haulage between loading and discharging ports is generally a small portion of the total time such produce is exposed to unfavourable environment before marketing.

The integration of activities of harvesting, packaging and delivery to dockside is essential for the provision of fruit and vegetables in a fresh condition for loading. These activities need to be carried out within a limited time framework and therefore logistics is an essential provision to be embodied in the shipping system. The integration also requires that the boxes used for packaging the produce be standardised as far as is possible in order to facilitate handling and stacking. Proper stacking is a fundamental requisite for improving the stowage and ventilation in shipping.

As is the case with the Banana Industry, shipping schedule must be the focus of the timing of the activities related to individual shipment. The Marketing Boards have been identified to provide the information flow related to market and shipping schedule.

In the absence of specific produce export organization such as the Banana Growers Association or the Citrus Growers Association, the shipping activities can best be coordinated by Private Sector persons or groups with interest in the final quality outcome of the produce on the market. Such groups are likely to function much closer to the ground to provide for the timeliness of decisions and application of disciplined operations from harvesting to loading which are essential ingredients of logistics associated with shipping of perishables.

REFERENCES

Caribbean Development Bank. 1980. Proceedings of "Conference of Agricultural Marketing".