PN-ABC-283
ISN-60728

CHEMONICS

PROEXAG

NON-TRADITIONAL AGRICULTURAL EXPORT SUPPORT PROJECT

PRESENT STATUS OF THE TROPICAL CUT FLOWER INDUSTRY IN COSTA RICA

Assignment Number: ST/89-01

SUBMITTED TO:

Regional Office for Central America and Panama (ROCAP)
U.S. Agency for International Development
Guatemala City, Guatemala

SUBMITTED BY:

Dr. Benny Tjia

through

Chemonics International Consulting Division
2000 M Street, Northwest
Suite 200
Washington, D.C. 20036

February, 1989

2000 M St., N.W. Suite 200 Washington, D.C. 20036 Tel: (202) 466-5340 or 293-1176
Fax: (202) 331-8202 ITT Telex: 440361 CHNC UI

PREFACE

The objectives of this short-term assignment are: (a) to get an in-depth overview of the nontraditional tropical cut flower industry in Costa Rica, (b) identification of existing problems, and (c) to suggest recommendations to correct existing problems.

These objectives are met by visits to various large and small nontraditional tropical ornamental farms in different areas in Costa Rica and in-depth interviews with the various owners and/or managers of these farms to get their opinion as to what seems to be the most important problems from their experience.

The author gratefully acknowledges the support from CAAP personnel, in particular Mr. Alberto Freer, CAAP Coordinator, and Mr. Jeffrey Chaves for tirelessly accompanying the author to the various growing sites. The author also acknowledges Mr. Jorge Cotera, President, Costa Rica Flower Grower Association, for his valuable input, suggestions and ideas, and Mr. Ricardo Frohmader from PROEXAG for accompanying the author, his analysis of marketing problems, and suggestions for correcting or improving the marketing strategy. Mr. Frohmader's suggestions are incorporated in this report.

EXECUTIVE SUMMARY

The sixteen farms, more or less, visited vary in size from small operations (less than 10 hectares) to large farms (more than 10 hectares), levels of production skills, cleanliness, and insect and disease control. Larger farms are generally well managed, clean, and meet production standards for export. Smaller farms are mostly part time in nature, where the principal owners have full time occupations other than in the field of agriculture. Those smaller farms are not run as they should be, production does not meet export expectation, nor are farm sites in a favorable location. Their products should not be channelled into export markets, but should rather be directed toward the domestic markets.

To improve the industry and achieve better returns for Costa Rican nontraditional ornamental crops, the following recommendations should be given serious consideration.

1. Rotation of plume ginger (Alpinia purpurata) plantings every three to four years to avoid excessive growth and crowding of plants and to make the regular disease/insect control program more manageable.

2. Marketing of small-size and short-stem gingers (Alpinia purpurata) rather than discarding them.

3. Implementation of rigorous disease/insect control program for prevention of infestation rather than for control only.

4. Implementation of studies and selection of appropriate and reliable brokers and marketing channels by CAAP.

5. Avoid expanding tropical ornamental production, the red ginger in particular, before a reliable marketing channel(s) is (are) found.

6. Need to look more into nontraditional cut tropical foliage production, such as palm leaves, cycads, etc.

7. Diversifying nontraditional tropical ornamentals to include the colored calla, protea, leucadendron, and leucospermum.

8. Implement studies on wet pak shipping where mature flowers rather than immature flowers can be shipped upright, simulating shipping by sea rather than by air. Preservatives should be tried in simulated shipping trials of plume and torch gingers. CAAP can assist or conduct the trials with the cooperation of growers.

9. Develop styrofoam containers that fit shipping boxes at the port of entry to avoid cold temperature damage, since the majority of land transport of tropical ornamentals are at the mercy of conditions for traditional flowers. Tropical ornamentals can therefore be shipped combined with traditional flowers which are kept at low temperatures.

10. Standardize boxes and containers to economically accommodate and expedite land transport in the United States and other markets as needed.

A. Introduction and Background:

Nontraditional ornamentals are beginning to get recognized by the world market, including Europe and Japan. The Costa Rican private sector recognizes the potential of diversification of Costa Rican agriculture and the need to use more resources in growing nontraditional crops with export markets in mind. One of the reasons that nontraditional ornamentals are emphasized is because they are very labor intensive, hence they provide employment for more people. Wherefore, the CAAP of Costa Rica finds the need to assess the actual situation and existing problems of nontraditional ornamental crop production in Costa Rica and how private producers measure up with respect to production practices, disease and insect control, quality control, postharvest handling, etc., so they can be addressed effectively in order to develop a competitive and viable industry.

B. Plume Gingers (Alpinia purpurata)

The majority of ginger farms visited are in good shape. The private owners are cognizant about export quality demands and hence are doing an excellent job in responding to export specifications. They are mostly large growers with more than 10 hectares of production.

Pink gingers should be planted under partial shade. However, due to a lack of published information on the pink variety of gingers, they are grown in full sun in Costa Rica, which results in a lack of optimal growth and fading of flower color.

Insect/disease control programs of all the ginger farms visited varied from biweekly to occasional control, rather than a regular

preventive program. In most cases insects are still present on bracts and inflorescences, especially inside the lower bracts, where the insecticide does not get to them. The insects are mainly non-host specific and consists mainly of aphids, mealybugs and scales.

Flowers are harvested and cleaned individually in clean water or a malathion solution, the lower bracts pried open, inflorescences bent sideways, and insects scrubbed off from inside the bract surface. Although this is an effective method of removing remaining insects, this may not be the best method since the inflorescences and bracts are handled roughly and breakage of inflorescences is not uncommon. If they do not break, internal tissue damage might have occurred which will reduce keeping quality at the consumer level.

In order to keep the insect population at a minimum, the flowers are presently harvested at an immature stage, i.e. before they are fully open, when only three to ten bracts are barely beginning to unfurl. This practice reduces its postharvest life. Flowers should be harvested when they are fully open, but before the terminal bracts begin to elongate and develop more bracts. Flowers harvested at this stage will have better postharvest life and minimize consumer complaints of flowers bruising easily and not having lasting qualities. Any remaining insects on open bracts and inside the lower bracts should be removed by a gentle water pick rather than bending the inflorescences and scrubbing them. This method reduces bruising, breakage, and other damage due to rough handling during the cleaning process.

It is documented evidence that gingers respond to preservative treatment, extending harvest life by one hundred per cent (Broshat 1988, Tjia 1988). It is beneficial to inform importers, brokers, wholesalers, and retailers to treat flowers with preservatives.

Shipment studies should be undertaken to explore the possibility of shipment by sea rather than by air. Flowers should be shipped in an upright position in water containing preservatives because plume gingers develop a negative-geotropic response after harvest when they are placed horizontally or at an angle. This upward bending becomes more of a problem when inflorescences are harvested in a more mature stage.

One complaint is that importers in Miami are not cognizant enough about handling tropical flowers. Because they are shipped together with traditional flowers, claims of chill damage to flowers are frequently reported.

Marketing is the main problem faced by the ginger farms visited. They have difficulty selling the product. One farm has to discard 3,500 saleable, good quality flowers each week. Marketing could be improved by shipping more to reliable brokers at ports of entry or directly to large wholesalers in the United States. A method of check and counter check should be developed to validate claims, i.e. damage to flowers and reliability of broker claims.

A market needs to be developed for short-stemmed flowers of good quality, but do not meet the standard stem length. They can be marketed for tropical bouquets, combined with several cut foliage and psittacorum heliconias.

C. Torch Gingers (Etlingera elatior)

Torch ginger farms visited (both red and pink cultivars) are all excellent and well maintained, trimmed, and clean. The main problem is that there seems to be no marketing strategy. The red torch gingers are presently thrown away. One farm reports throwing away 1,500 stems each week. The pink cultivar seems easier to market. The only complaints come from brokers. Complaints are similar to those in regard to plume gingers, i.e. that flowers arrive in bruised condition and are of short keeping quality. This is a reasonable complaint since torch gingers are harvested and shipped when they are basically still in bud stage or when two or three petals begin to unfurl. In many cases the florist forces them open by manipulating the petals. Torch gingers are heavy when mature, difficult to pack, and cost more to ship. It is one of the magnificent tropical flowers in existence to day however. Yet, marketing people, designers, and consumers do not get a chance to take advantage of its beauty because they never or seldom see torch gingers that are mature and fully open with their brilliant red, pink, and yellow colored bracts and petals, and white inflorescences. When harvested in the mature stage, they are long lasting and can compete with any other traditional flowers with respect to vase life.

Insect/disease control on torch gingers is somewhat easier to implement since flower stalks are borne on separate stems. Therefore, insect/disease control measures can be directed at the flowers without the necessary expense of spraying the whole plant. By

current harvesting practices, torch gingers do not need additional cleaning at harvest time because it is not easy for insects to crawl between the tight petals in its bud stage. Those present on the surface can easily be wiped clean.

Torch gingers have also been found to respond to preservatives. Studies with simulated shipping trials, similar to those on plume gingers, should be undertaken. The success of these studies will enable buyers to see the magnificent mature flowers for themselves, and this will increase the market for torch gingers. Flowers arrive in better condition when shipped by sea rather than by air. This in turn will result in longer lasting qualities and cheaper prices.

D. Heliconias and Ornamental Bananas

Heliconia farms visited are mostly larger farms. They are well managed, have excellent quality control, postharvest handling and packing methods. These farms have developed a reliable marketing channel and have no complaints of non-marketability of the flowers. One large heliconia farm is not interested in a visit from CAAP personnel. However, the manager called me and discussed his problems over the phone. He told me that he has problems with root rot diseases, that the market is soft and he has difficulty marketing all he can produce.

Owners of smaller farms visited have their expertise in areas other than in agriculture. The farm is a second income to them. Their lack of ornamental horticultural background clearly shows in their operation. These part-time farms will have difficulty in consistently producing acceptable quality flowers that are exportable. They should therefore not be encouraged to export until their

product quality can meet export standards consistently because they may not be an asset to the Costa Rican flower industry's image. They should presently be encouraged to develop their markets for domestic consumption. If it is within the jurisdiction of CAAP, seminars on production, etc., need to be conducted by CAAP to upgrade and improve their cultural practices. Tours to neighboring farms would be helpful to expose them to good ideas and incentives to improve their own operation.

Most of the ornamental banana farms are usually also heliconia producers. Although no problems are observed with the larger heliconias, i.e. H. wagneriana, H. humilis, etc., some disease problems are observed with H. psittacorum, H. angusta, and ornamental bananas such as M. velotina, M. ornata and M. coccinea. Heliconia psittacorum bracts have pinpoint dark brown spots which may have been caused by alternaria. Pseudomonas is observed on H. angusta and banana diseases on ornamental bananas, causing dark brown spots on foliage and stems. When infestation becomes severe, bracts will also show spots and flowers become unsaleable. Disease control using the appropriate fungicide/bacteriocide on these heliconias and bananas is a necessity and should be implemented on a routine basis.

E. Calla Lilies (Zantedeschia sp.)

Calla lily farms visited are the white Z. aethiopica, an evergreen species, grown outside in the field. Most of them are harvested during the winter/rainy season. However, these calla lilies can be

made to bloom almost year round with the lowest production occurring during the dry season when water becomes scarce and light intensity increases, and they become semi-dormant. Since they are available as wild flowers in these areas and grow without any care whatsoever, they are not considered difficult to cultivate and are therefore given little attention. This species of callas is resistant to major pests and diseases, including the dreaded erwinia. It is only susceptible to diseases when it is under stress, i.e. due to lack of water, high light intensities, high temperatures, or all three. Harvesting methods and postharvest handling need to be improved and standardized.

The white calla has tremendous potential for development into two distinct commodities for export, i.e. flower and rhizome production.

Flower production can be increased year round through the following:

(1) Growing under temporary saran houses during the summer in order to reduce heat and light intensities during the day.

(2) Removing saran during the winter when light transmission is reduced naturally.

(3) Installing an irrigation system to provide moisture during the dry season.

For rhizome production the white calla should be planted at the beginning of the rainy season and dug the following summer when they are semi-dormant during the dry season.

Another unexplored potential is the colored calla lily

(Zantedeschia elliottiana, Z. rehmanii, Z. albo maculata, and Z. pentlandii). The colored calla also has potential for development into two marketable commodities for export, i.e. year-round flower and tuber production. Research at the University of Florida shows that they can be grown and made to flower year round.

Production of tubers can be hastened from two to three years, to less than one year through a process developed by the University of Florida for which a patent is pending.

F. Cut Foliage, Calatheas, and Other Crops

Cut foliage operations visited are already exporting to European markets and meeting acceptable standards for that purpose. They are well managed and can compete with any other operation in existence today, such as Hawaii and other tropical countries. However, diversification to include other possible tropical foliage needs to be given serious consideration, such as cyperus, zamias, diones, foliage of the bird of paradise, palms, cycads, and other hardy tropical greens.

Calathea spectabilis, ginger, and bird of paradise farms observed are usually small and family operated and they have potential to be developed into exportable crops. Information on these crops needs to be developed and made available to farmers; small farms need to be visited more frequently by CAAP field personnel and encouraged to plant on a larger scale.

G. Conclusions

In conlusion, the ginger, heliconia and ornamental bananas, cut foliage and calathea farms are well managed, organized, and meet standards of exportable quality.

Insect/disease control programs should be preventive in nature and therefore need to be implemented on a regular basis.

Improvements can be made on plume gingers by implementing a three to four year rotation schedule to facilitate easier access for harvesting, prevent overcrowding and unnecessary removal of excessive long stems, and apply a more manageable insect/disease control program.

CAAP should play a role in the following:

(1) Developing/collecting educational material for distribution to growers who need improvement in management of their farms.

(2) Dissemination of educational information through seminars, workshops, and tours to neighboring farms that growers can model after.

(3) Conducting simple simulated shipping experiments with cooperation of the growers. For example, it is not a lack of market that limits sales of torch gingers, but rather a lack of postharvest knowledge. The problem is how to transport mature flowers rather than immature buds to distant markets.

In general, expansion at this time should not be encouraged until marketing channels have been studied. A market needs to be developed for short-stemmed flowers of good quality, but do not meet standard stem length.

White and colored calla lilies should be looked into for year-round flower and tuber production. White calla lilies should be grown under a semi-permanent structure with installed irrigation.

Diversification should be looked into, such as the protea, which is native to South Africa, exotic foliage such as cycads, etc.