DOING BUSINESS WITH COOPERATIVES OF CASHEW PRODUCERS IN LATIN AMERICA

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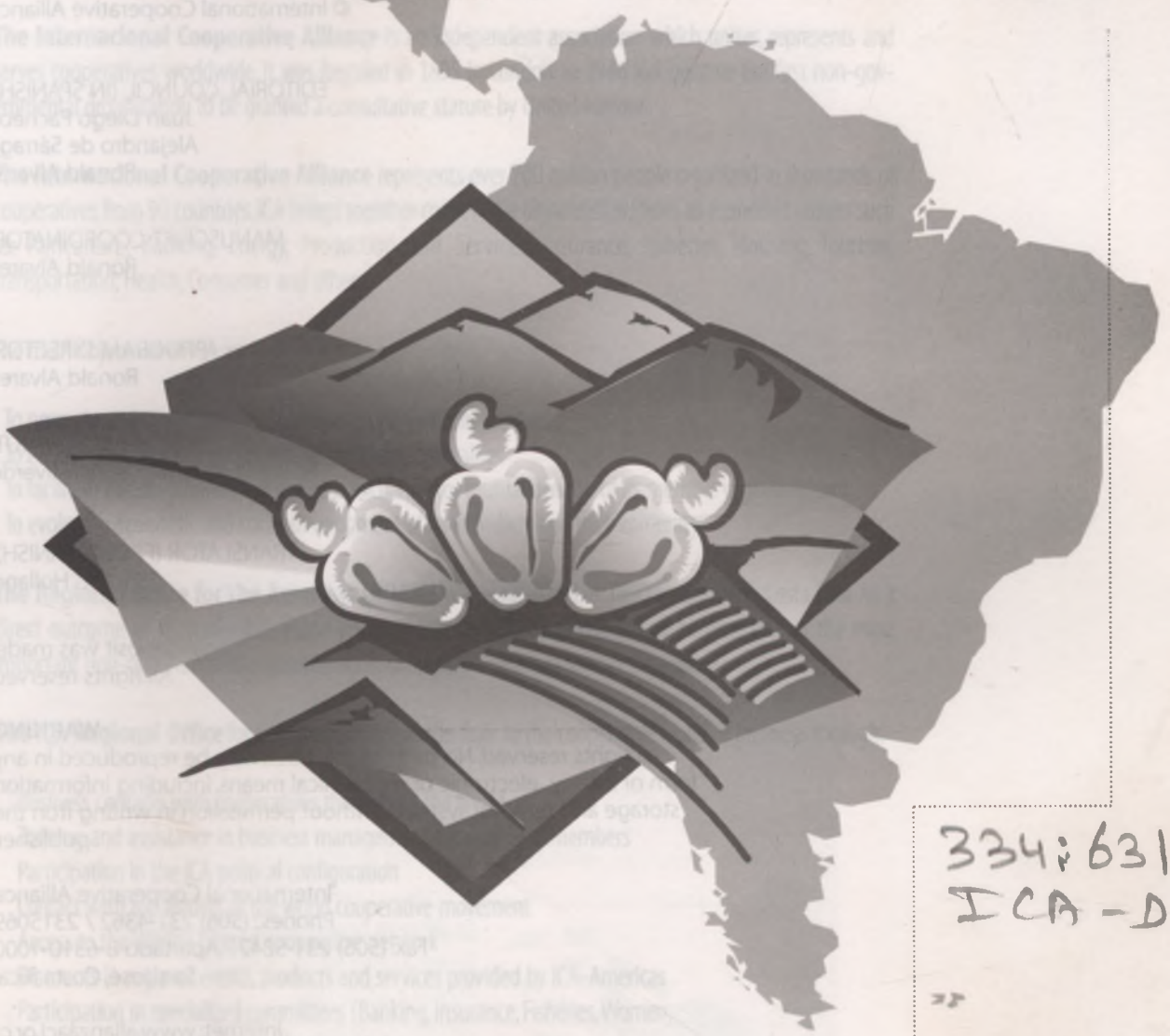

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1. Introduction

Agricultural cooperatives conform one sector that traditionally has had great strength in the Latin American region. Today this sector is searching for alternatives of competition since the protective barriers that previously existed have been eliminated due to the impact of globalization that affects everyone. The cooperatives of the agricultural sector need to search for alternates of competition that will permit them not only to subsist but to regain the strength they once had. However, the cooperatives that depend on traditional activities continually face a higher level of difficulty in achieving that goal.

There is an activity within the cooperative agricultural sector that powerfully calls attention to the strong possibility of insertion in the industrial and consumer markets that this facilitates. Such is the case of the cooperatives dedicated to the cultivation, industrial processing and commercialization of the cashew fruit (marañón). It is an interesting case to know and study as the products derived from this cultivation have a very high demand in the consumer market, both at the level of prices and of volume (cashew nuts); they are used in sophisticated markets (cashew oil) or they are used for internal consumption (eaten by consumers), which permits the complete utilization of the cultivation (pulp and seed).

However, the flow of investments and businesses have been diminished by the limited knowledge that other sectors of the cooperative movement and the business world have of the cashew market and the opportunities of investment. Because of this, the International Cooperative Alliance, Office of the Americas, with the support of the Association of Canadian Cooperatives (ACC), is sponsoring a publication on this sector to strengthen the possible investments that economical sectors could have in this dynamic and promising segment of the cooperative movement.

Little by little the cooperatives of this sector have grown in importance and in number, which has permitted more families of associates to enjoy the

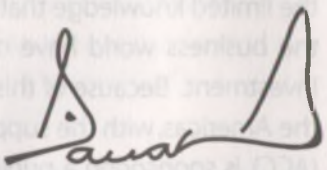
benefits. The sector has maintained a constant dynamic, modernizing the practices of cultivation and processing, and also the techniques of commercialization.

We propose, with this publication, to elevate the flow of investment and business toward the cooperatives of the sector of cashew farmers in Latin America. We are seeking to open a window of opportunity for Latin American cooperatives that need greater investments, and for the cooperatives of developed countries that are searching for opportunities to invest and interchange technologies and enlarge markets, thereby creating a favorable framework to form strategic alliances.

We want to serve as a means of creating strategic alliances among the cooperatives in Latin America, both at the level of cooperatives and also between these and companies that supply materials that are commercially and financially linked with the private sector, giving emphasis to the possibility of forming strategic alliances.

The present study is an effort of the International Cooperative Alliance, regional Office of the Americas, and we would like to thank the Director, Juan Diego Pacheco, for his initiative. Also, we want to thank the ACC for their economic support for the production of this study. We also want to express our thanks to the Organization of Brazilian Cooperatives (ACB) and to the Association of Orientation of the Cooperatives of Northeastern Brazil (ASSOCENE) for their support in supplying technical information on cashew cultivation and processing. Also, we express our appreciation to the cooperatives that provided us with their information in order to present the offer of cooperative development of a product that is becoming an important alternative within the vigorous cooperative agricultural sector of the Americas.

Dr. Desjandir Dalpasquale
President, Agricultural Committee for the Americas
International Cooperative Alliance



Dr. Desjandir Dalpasquale
President, Agricultural Committee for the Americas
International Cooperative Alliance

2. Why search for Business Opportunities with the cooperatives of cashew producers in Latin America

The search for non-traditional activities within the agricultural sector has been a pressing need during the 1990s, when the processes of the opening of new markets and globalization have required organizations of the sector to search for new options. This allows them to increase the opportunities for insertion in the worldwide market as the local markets are now less protected and, therefore, more competitive.

The initiatives coming from the cooperative sector are becoming more dynamic. Many new business opportunities have emerged in this important sector, due to the many advantages of this model and given its effect on the redistribution of wealth, something greatly needed in the economic sector of agriculture because of its strong impact on a large number of people.

Next we present the areas and the reasons for which the cooperatives of cashew producers have been seen as excellent generators of business opportunities for all the people and institutions interested in the cooperative sector.

2.1. Growing Market

Cashew cultivation has grown in a very important way during this century. After cashew cultivation was carried from Brazil to Mozambique and to India in the XVI and XVII centuries, it developed a market that has steadily acquired importance. However, the true revolution began when important technological efforts were made for its industrialization.

The most important growth that has taken place in the cashew market in recent years is found in Latin America, especially in Brazil, where this cultivation has been rediscovered. The so-called "cajucultura" is an agricultural sector in growth, especially in the northeastern sector of the country that accounts for more than 95% of the total crop produced in Brazil. A large part of this growth is in the hands of cooperative organizations.

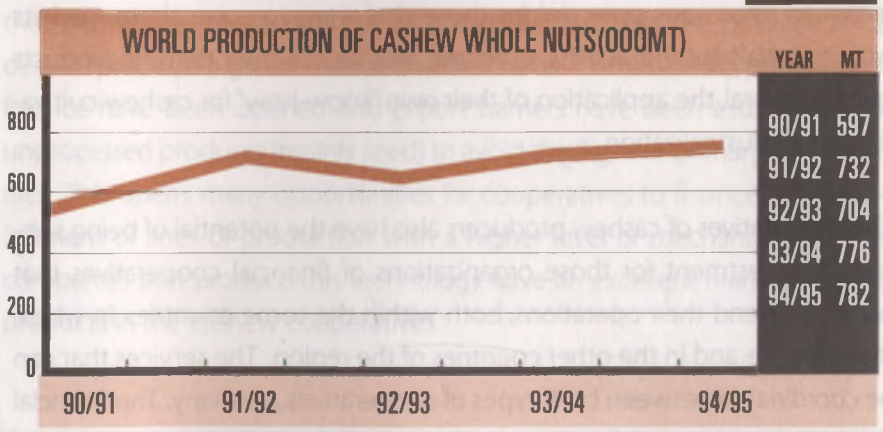
In Central America cashew cultivation has also experienced important growth during the last ten years. Especially in El Salvador, where there is an important project of planting and processing cashews in the hands of a consortium of cooperatives, cashew production every day achieves greater support and strength.

2.2. Favorable Macroeconomic Conditions

The opening of markets and the search for new alternatives of cultivations for traditional activities have favored the impulse that the governments have given to the cultivation of cashews, as it is a cultivation that allows producers a market for export (nut and CNSL — cashew nut shell liquid), and a market of products for local consumption (nut and products derived from the apple or false fruit). The production of cashews has increased during the 1990s, because governments have encouraged this activity and due to world market demands.

In the following graph one can observe that the worldwide production of whole nuts has maintained a good rhythm of growth during the 1990s, a product of the support received from the governments and the world market:

GRAPHIC **2.1**



2.3. Oportunities of investment

The cooperatives devoted to cashew cultivation in Latin America have been converted into excellent organizations for investment due to several reasons. On the one hand, these are the organizations that are more frequently identified in the market. This is due to a policy by which national governments have favored cashew cultivation and have organized the projects developed as cooperatives. Being organizations with very defined social objectives and belonging to the nonprofit sector of society, they adapt better to the interests of these population stratums.

On the other hand, the cashew cooperatives include wide geographical zones. This is possible because cooperative organizations of cashew production are inserted, in general, within networks of national and international cooperatives that greatly facilitate the commercialization of their products. These networks, so widely distributed throughout the world, represent an enormous potential for those that want to cover these markets with materials for the activity, purchase and sale of their derived products and, in general, the application of their own "know-how" for cashew cultivation and industrialization.

The cooperatives of cashew producers also have the potential of being subjects of investment for those organizations of financial cooperatives that want to extend their operations, both within the same countries in which they operate, and in the other countries of the region. The services that can be coordinated between both types of cooperatives are many. The financial cooperatives can provide a variety of services for the cashew cooperatives, such as collection agents, backers of projects, administrators of capital, and agents of investment in stock-markets.

One field of great interest for investment that exists at the level of cooperatives of cashew producers is their own investment and strategic alliances, which could be created among themselves at the level of different Latin American countries. This is because the joint purchase of materials, along with the combined development of technologies of processing and production, would help to create a strong sector with greater negotiating power in the world market.

2.4 Use of Technology of Cultivation and Processing in Constant Improvement

The national governments are promoting the development of programs that permit the introduction of technologies that give the production of derived products a greater national added value. Consequently, programs of finance have been opened and export barriers have been established for unprocessed products (mainly seed) to avoid the flight of primary raw materials. This opens many opportunities for cooperatives to finance the establishment of lines of production with a higher level of mechanization. The companies that produce this technology have an excellent market for their products in the cashew cooperatives.

2.5 Cultivation that Fits with Current and Future Requirements

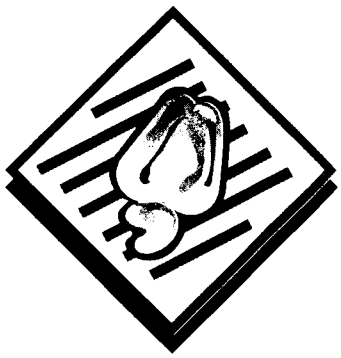
The cooperative producers of cashews hold in their hands a cultivation that has a series of characteristics that are very difficult to find in other agricultural activities. This involves a cultivation that creates products that have sustained market growth, to which one cannot find a glimmer of limitation. Activities of diverse nature demand their products (pastry, industry of sandwiches and "snacks," makers of jellies and marmalades, liquors, bakery goods, factories of foods for animals, makers of industrial resins, industry of the production of lubricants, industry of paints, etc.), which offer a range of diversification and of local and international markets that are difficult to equal.

On the other hand, in addition to the impressive existent market, the process of the industrialization of cashews does not pollutant the environment and one can deal with clean technologies, which is a condition that does not dictate against its establishment nor attack the environment and is not threatened with closings or community pressures for its elimination.

As if the preceding were a small matter, we are dealing with a cultivation that actually strengthens the soil where it is developed, due to the depth of growth of its roots. Also, its dense foliage and branches make cashew cultivation, considered regenerative, to be very desirable for projects of reforestation.

All these factors attract the interest of governments by encouraging cashew production, which has led to the development of many projects to finance its cultivation and extend the area under cultivation, along with industrial facilities of greater capacity and with the desire of giving greater participation to the community through cooperative projects.

3. General Characteristics of Cashew Cultivation



3.1. Introduction[1]

The Maconde tribe in Mozambique calls the cashew, "the Devil's nut." This was offered in wedding banquets as it was believed to have properties of fertility. Indeed, when the nut was analyzed in the laboratories of the University of Bolonia, it was discovered that the nut had a large quantity of Vitamin E, which is considered by many to be an aphrodisiac.

The history of how this nut extended geographically is now a legend. The Portuguese discovered the tree in Brazil and introduced it first to Mozambique and then to India, between the XVI and XVII centuries. They noticed that the roots of the tree grew very deep in the soil, in search of water, thereby preventing the erosion of the soil. Also, its leafy branches and evergreen foliage protected the delicate crop from the wind, while catching and spreading humidity in semi-arid soil. In this manner, today it is considered a plant that is very important from an ecological and economic perspective.

In the XIX century, cashew plantations were extended to a large number of countries in Latin America, Asia and Africa. The processing of the cashew utilizing manual techniques began in India between the two world wars, and the finished products arrived at the rich western markets, particularly in the United States of America, packed in 25 pound cans that then became very famous.

During the 1960s, the first steps were taken to mechanize the process of industrialization. This permitted the producing countries to process their own raw nuts domestically, exporting the two principal products, the kernel and the shell liquid. This created more work for local people and gave an impulse to small collatoral activities around the cashew plantations.

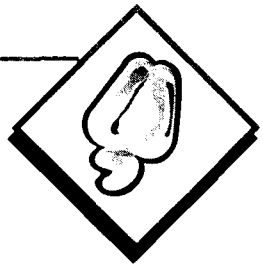
[1] Nomisma. The world cashew economy. Oltremare SpA, Bologna, Italy. 1994.

The Oltremare firm, an Italian company established in 1960, commissioned an extensive project of investigation in 1987 on the development of the cashew from the well-known Nomisma Study Center in Bolgna. The publication of this investigation had very positive results for awakening interest in this new "fountain of tropical wealth." Five years later, the cashew was considered a cultivation with the a great future in the world, due to the prices of its products, its stability and its high demand. There emerged a global market of more than US$500 million at the trading level, which is about US$1,000 million at the consumer level.

Although these figures seem modest when compared with the classical markets of tropical products, like coffee, tea and cocoa, we are viewing a product that has an enormous importance for farmers, for workers who process the raw materials, and for financial institutions that finance new plantations and processing plants at the local and international levels. This acquires greater importance when thinking that the emerging cashew economy may be ready for an important breakthrough as a result of proper planning of plantations and improved systems of industrial processing and marketing.

Investors, both public and private, are convinced that increased cashew cultivation will enhance ecological improvement and economic development, something that is difficult to achieve through investment projects of any kind.

The cooperative movement in our region has understood this opportunity and is taking advantage of it by becoming one sector that is deriving the greatest profit from this new and exotic market.



3.2. Horticultural aspects[2]

The cashew (anacardium occidentale) is an evergreen tree that can reach a height of 20 meters in highly favorable conditions. A subspecies also exists in Brazil — the dwarf cashew — that only grows to a height of three meters.

The cashew tree produces a whole nut that has a seed or kernel within the hard shell or pericarp. A peduncle, also called the cashew apple, supports the whole nut. The principal product is a edible, kidney-shaped kernel, which is obtained by processing the whole nut and eliminating the shell. The normal yield of the kernel is 20% to 30% of the whole nut.

The cashew apple, which weighs five to ten times that of the whole nut, contains a high level of Vitamin C and is used for juice and for other products, mainly in India and Brazil. The cashew nut shell liquid (CNSL) is found in the shell of the whole nut. This product can be obtained by means of certain methods of processing. The CNSL is a natural phenol (carbolic acid) with properties of resistance to heat. Its main market is in the automotive industry where it is used to make resins for the fabrication of drum- and disk-brakes and clutches. The normal level of CNSL that is recoverable is 8% to 10% of the weight of the whole nut.

As stated previously, the cashew is a tree of deep roots that has developed a reputation for being hard and resistant to drought, and also for its ability to survive in bad conditions. It is a heterogeneous tree of open pollination, whose seed normally has a wide genetic variation — with a genetic integrity that can only be maintained by means of vegetative propagation.

[2] "CRECER" Project. *Review of the perspectives for the production, processing and commercialization of Cashews in "Cooperativas de la Reforma Agraria La Marañonera de R.L. (CORALAMA)"*

The cashew tree is cultivated mainly by small-scale agriculturists of developing countries as a nursery plant that has low priority as to soil selection and that requires little care and maintenance. In places where its cultivation has been patronized by the government, it is often part of projects of reforestation or of stabilizing the soil.

As a consequence of contemporary conditions of its development, the cashew generally has low production. However, investigations in some locations have proven that one can achieve yields of up to ten times the current average, if consideration is given to genetic improvement, proper attention and necessary maintenance.

3.2.1. Morphology

The cashew belongs to a botanical family that comprises 400 species of tropical and subtropical trees and shrubbery, including the mango and the pistachio. A wide variation of the cashew species exists as to habits of growth and production. The simplest classification would separate the common cashew that grows to a height of 15 meters from the "midget" variety that produces early and only grows to a height of three meters.

Life of the tree. Few reliable data on the productive life of the cashew tree exist. Some authorities show evidence that the tree can still produce fruit after 50 years. Another authority maintains that the most productive life could be shorter — perhaps 25 to 30 years. After this time, the tree may enter a stage of slow decline. Nevertheless, it is clear that the conditions of cultivation will depend considerably on the life and development of the tree.

The tree canopy. A healthy cashew tree that does not suffer from a serious disease or attack of plagues should exhibit a thick canopy, even at the end of the dry season. A tree with a thin canopy generally shows certain unfavorable conditions.

Root system. If favorable conditions exist (well-drained sandy soils), the cashew tree can develop a system of lateral extensive roots and a deep primary root. In Tanzania it was found that the lateral roots of six-year-old trees could extend to 7.3 meters. In Madagascar, five-year-old trees can have a primary root that descends more than five meters.

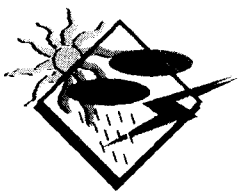
Flowering. The age that a cashew tree begins to flower and bare fruit depends on genetic factors and cultivation conditions. Normally this occurs at 2-3 years, but in exceptional conditions this could occur within the first year of growth. Generally the flowering occurs after the arrival of new buds at the end of the rainy season and can last about four months. However, maximum blooming occurs generally nearly four weeks after the first buds appear. The cashew tree produces both masculine flowers and feminine ones (bisexual); it has been found that the relationship between the two varies from 1:28 to 1:37 (documents of investigation from several countries).

Pollination and formation of the fruit. Insects are the principal pollination agents. This is achieved generally by means of crossed pollination, although self-pollination could occur. After this, the proportion of initially formed fruit can vary considerably (3% to 38%), while a variation exists of similar scale between the number of mature nuts obtained as a proportion of the initially formed fruit.

Development of the whole nut. The nut generally becomes visible nearly a week after pollination, and it can reach its maximum size from five to seven weeks after pollination. From that time, the nut shrinks, the shell becomes hard, and the green color turns gray. The mature nut is about 75% of its maximum size (when green) and this loss of size is mainly humidity — the kernel does not change its size. The apple develops little but grows quickly about 20 days after the fruit has been formed. Usually, the apple reaches maturity 60 to 70 days after the fruit was initially formed.

Characteristics of the whole nut. The size of the nut can vary between 4 and 18 grams. The relationship kernel/whole nut can vary considerably. Research data shows that the size of the kernel generally, but not always, is not necessarily correlated negatively with the size of the whole nut. The rate of recovery — the most important relationship between the kernel and the shell — can vary from 18% to 40%. It has been found (Ohler) that the relationship between the kernel and the whole nut varies between 1.3% and 3.6%. The cashew nut shell liquid (CNSL) is found in the mesocarp of the shell and its relationship by weight to the whole nut can vary from virtually zero to almost 22%.

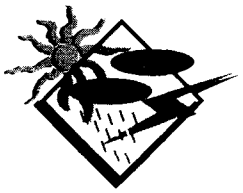
Characteristics of the apple (false fruit). The cashew apple can vary considerably in size and form. It can vary in a relationship from 1:1 to a size of 1:15 with the whole nut. The apple contains 85% juice, of which 10% are inverted sugars. The apple is of red or yellow color.



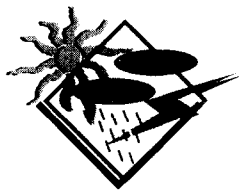
3.2.2. Climatic Factors

Being a tropical plant, the cashew tree prospers at higher temperatures. An ideal range is considered a maximum of 38°C and a minimum of about 20°C. The cashew can tolerate low temperatures (for example, approaching 0°C) during short periods.

Precipitation (water requirements). To date there is no firm data on how much water the cashew tree needs. It can grow under a regimen of wide precipitation, depending on the extent of the dry season and the soil conditions that will affect the growth of the root. In favorable soil conditions, where the root system is well developed, the tree can survive low precipitation better than in less favorable soil conditions. In conditions where there is a rainy season followed by a dry season of 4-5 months, a total precipitation of 1,000 to 2,000 millimeters is considered as generally preferable. The cashew tree responds well to complementary watering during the dry season. The volume of water applied is a factor as well as the type of soil and the method of application.



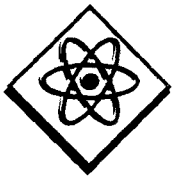
Comparative humidity. The cashew tree can resist long periods of low humidity (for example 25%), whenever the it has access to enough water (irrigation). However, high humidity (more than 80%) is favorable for the development of fungi, especially anthracnose, and for the excessive presence of plagues of insects.



3.2.3. Soils

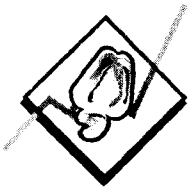
The best soils for the cashew tree are loose, deep sandy soils, or well-structured sandy-clay soils or clay loams, that are well-drained. The depth of ideal soil is about three meters. The cashew tree cannot resist soils with poor drainage, especially those with a high content of mud or compacted soils with a hard covering. The structure of correct soil is very important; the fertility of the soil is less important since the cashew tree will prosper in these conditions whenever nutrients are applied. The cashew tree also prefers acidic soils to neutral ones — a pH of close to 6.0.

3.2.4. Genetic selection



The vast majority of the world's cashew trees have been planted by seed sown in fields or plants are transplanted after growing in pots. Because the cashew is a tree of open pollination, seed planting leads to a wide variation in the production process. To maintain complete genetic integrity, other forms of multiplication are required. Propagation "in vitro" has not yet been successful and propagation by means of cuttings [esquejes] is notably difficult. Cashew rooting difficulties have promoted the use of budding and wedge grafting [el injerto de escudete] as the preferred method of reproduction.

3.2.5. Yields



The yields obtained depend on the genetic reserve, conditions of the environment (soils, climate), spacing and the managed inputs [insumos de manejo]. The contemporary practice involves nursery plants with a low level of nutrients and pesticides. In this situation the commercial yields vary from close to 250 kg. per hectare, where the conditions are not favorable, to nearly 1,000 kg. per hectare, where the conditions are good.

Investigations done in Australia have shown that when all the factors are favorable (soil, climate, trees of superior implants, nutrients, watering and control of plagues), one can achieve extremely high yields, with a crop of good quality. In these circumstances, yields can be obtained of 4,000 kg. per hectare in five to six years, and it is estimated that future yields will be even greater.

The spacing plays an important role in yields, since the cashew tree gives

fruit only in the surface of the canopy. Its growth is greatly affected if the canopies are allowed to mingle. The trees of high density (say 7 x 7 meters) could be used to obtain an early harvest, whenever the appropriate pruning [raleo] is carried out subsequently, or else a later thining out [raleo] will be affected. The procedure now employed in Brazil with nursery plants is to plant trees in a space of 12 x 12 meters to 15 x 15 meters.

4. The supply in the world cashew market[3]

4.1. Production

The principal cashew producers in the world are India and Brazil. Until the middle of the 1970s, Mozambique and Tanzania were, along with India, the principal producers. However, due to political and other problems in East Africa, there was a significant decline in cashew cultivation in the early 1980s. This led to a worldwide decline in production and an increase in cashew prices. The higher prices stimulated greater production by India and Brazil and by new producers, especially Vietnam and other Southeast Asian countries.

Perhaps only 60% of world cashew production enters the world market. Part of the crop is consumed in local villages while another part is processed locally and sold to local commercial interests. There is a very large national market in India and in some Southeast Asian countries, where there is a preference for cashews in the national diet.

TABLE 4.1

Table 4.1

Worldwide Cashew Production (000 MT of whole nuts)

Country	90/91	91/92	92/93	93/94	94/95
India	290	305	349	340	321
Brazil	110	190	120	170	210
Mozambique	31	54	24	29	33
Tanzania	20	40	39	47	30
Vietnam	25	30	40	60	90
Kenya	25	18	24	20	20
Nigeria	18	10	18	15	31
Indonesia	10	15	13	10	12
Others	68	70	77	85	135
TOTAL	**597**	**732**	**704**	**776**	**882**

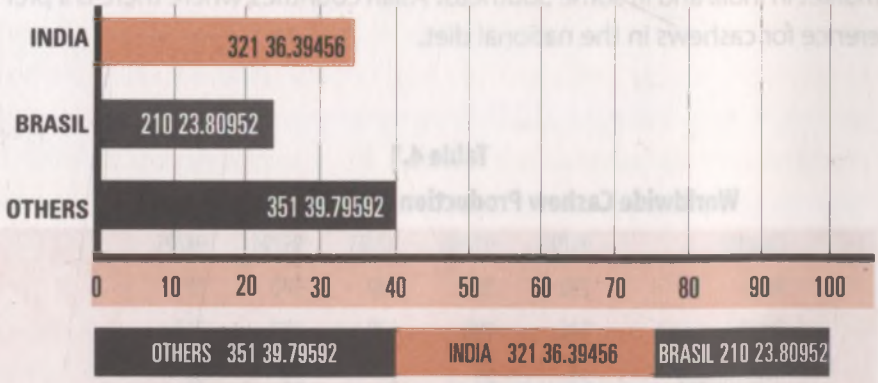
[3] Information taken from: Nomisma. The world cashew economy. Oltremare SpA, Bologna, Italy. 1994
And "CRECER" Project . *Review of perspectives for the production, processing and comercialization of the cashew in 'Cooperativas de la Reforma Agraria La Marañonera de R.L. (CORALAMA)'*

Notes: Table 4.1

1. Other countries are, mainly: Sri Lanka, Thailand, Madagascar, Togo, Ivory Coast, Nenin, El Salvador, Venezuela, Guatemala, The Philippines and others of minor importance.

2. There are no precise data published on worldwide cashew production. The previous table was constructed based on estimates from a variety of commercial sources. This is because most of the worldwide production comes from small properties that cultivate cashews with little or no nutrients and, consequently, with low productivity. In Brazil, however, the principal processing companies have established large plantations in order to have an internal source of the crop. These plantations produce near 50% of the Brazilian crop, but they make little use of nutrients or pesticides and have low productivity.

GRAPHIC 4.1



Note: Others include Mozambique, Tanzania, Vietnam, Kenya, Bissau Guinea, Nigeria, Indonesia, Sri Lanka, Thailand, Madagascar, Togo, Ivory Coast, Benin, El Salvador, Venezuela, Guatemala, and The Philippines.

Source: CRECER Project . *Review of perspectives for the production, processing and commercialization of the cashew in "Cooperativas de la Reforma Agraria La Marañonera de R.L." (CORALAMA).*

4.2. Development of Cashew Processing

Until the 1960s, most of the world's cashew crop was processed in India, where methods of manual processing had been perfected in a cost-effective manner. During this time, the Hindus controlled the international trade in the processing and commercialization of the cashew. Apart from their own crop, they imported large quantities of the crop produced in Mozambique and Tanzania. In 1960 India processed and traded 95% of all cashew products offered in the world market.

The predominance of India in the worldwide market was sustained by the scale of the import program of the whole nut, which reached a maximum of nearly 200 thousand MT in 1972. At that time, world cashew production reached some 400 thousand MT.

The installation of factories of mechanical processing in East Africa, together with the reduction of the cultivation in the 1970s-1980s, stimulated the Hindus to enlarge their local production, and also to diversify their source of imports of the whole nut. In recent years, Vietnam especially and Indonesia and West Africa have become more important sources of the crop. However this tendency is changing as Vietnam is promoting local processing due to the recent introduction of a tax on exports of whole nuts — the current FOB of 20% will increase to 30% next year. This measure has been used by several countries from time to time for stimulating internal processing of the whole nut.

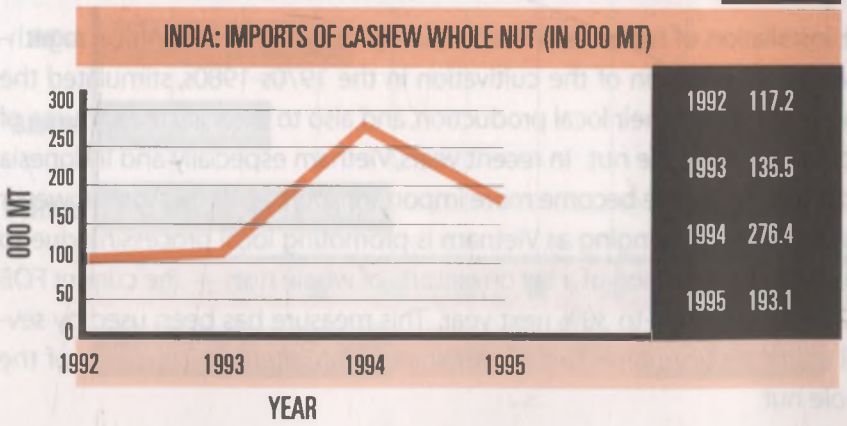
TABLE 4.2

Table 4.2

Imports of Whole Nuts in India (000 MT of whole nuts)

Country	1992	1993	1994	1995
Tanzania	17,1	38,4	55,7	49,9
Mozambique	14,8	19,9	ND	7,7
Vietnam	44,4	26,5	43,9	12,3
Indonesia	11,3	13,5	25,8	14,0
Guinea Bissau	0	9,1	31,4	28,2
Costa de Marfil	0	5,6	19,1	24,1
Others	73,4	27,5	80,5	ND
TOTAL	**117,2**	**135,5**	**276,4**	**193,1**

GRAPHIC **4.2**



The processing industry in India employs nearly 300,000 people (mainly women), and it is estimated to have a capacity of processing 500,000 MT of whole nuts per year. Because national production and imports have not reached this level, the industry has operated below its capacity. However, the available capacity is shrinking in proportion to the expansion of local production in India.

In Brazil, on the other hand, the processing industry has developed the capacity to process all the crop mainly using mechanic methods. This situation was helped, until very recently, by a prohibition on exports of the whole nut. In the last few years, certain exports of the whole nut have been permitted, in a very limited way, from Brazil to India (3.9 thousand MT in 1992).

In Africa and Southeast Asia, the producers have maintained a mixture of local processing and exports of the whole nut to India. Although these producers would prefer, without a doubt, to process all their crop and sell the kernel, they face strong competition from commerce of the whole nut in India, which probably has an advantage of about US$150-200 per MT that reflects the greater efficiency of processing in India.

4.3. Development of Mechanic Processing

During the 1960s, there was a significant growth in cashew production in Mozambique and Tanzania, to the point that these countries were producing 70% of the worldwide crop at that time. This drove them to want to have greater control on their crop, for both economic and national reasons. Among the reasons were the necessities of earning a greater proportion of the finished product's added value and of creating more employment.

From the 1960s to the early 1970s the processing systems of Oltremare (Italian) and Sturtevant (England) were developed to satisfy the domestic need of processing the whole nut imported from African nations. These new mechanical systems essentially involved the process of toasting and removing the shell of the whole nut (a difficult and dirty task), while hand

work was used mainly where it was more efficient — for example, for peeling and classifying the kernels. Later, these companies introduced machines for other processing functions, like peeling and classifying, but these were not necessarily more cost effective than the alternative manual methods.

Subsequently, similar processing systems were designed in Japan and Switzerland, although without much success. Probably about 50 factories of mechanic processing were installed, mainly in Africa and a few in Asia. Although most of these plants were constructed in the 1970s, many of them are no longer operating for a variety of reasons.

Although these factories gave the African countries an opportunity to process their own crops, the cashew industry of India has maintained its comparative advantages, as to lower costs. It is estimated that this advantage is about US$150-200 per MT for whole nuts, as noted earlier. Although the use of manual labor is much greater in India, the cost is not a significant factor due to the low wages in that country.

4.4. Supply of kernels

India has been the dominant provider of cashew kernels, but Brazil is also important, especially for the American market. Tanzania and Mozambique were previously important providers, but they are now relatively small producers. Vietnam and, to a certain extent, Indonesia, although they are small producers, represent an important part of the new growth in production.

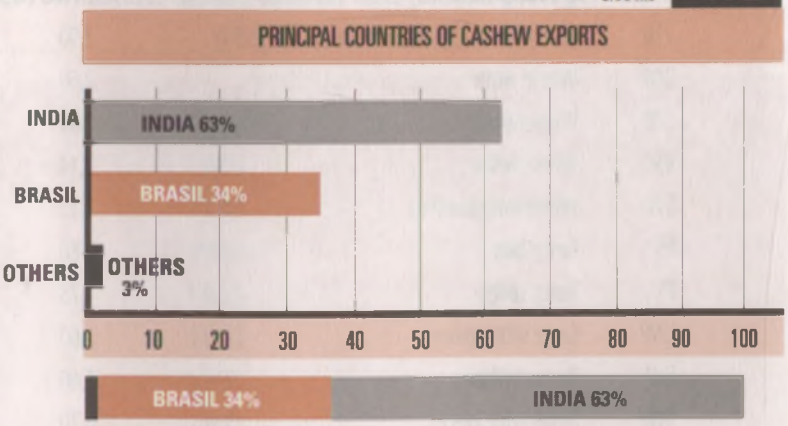
TABLE 4.3

Table 4.3
Exports of Cashew Kernels (000 TM)

Export Country	1991	1992	1993	1994	1995
India	47,7	52,1	62,8	78,3	68,1
Brazil	23,4	37,1	29,9	22,7	36,3
Mozambique	3,3	4,0	2,7	0,9	0,5
Tanzania	1,1	1,0	0,05	0	0,1
Others	4,7	3,3	2,9	5,0	2,3
Total export.	80,1	98,2	97,9	106,9	107,3

Source: Mann Producten Rotterdam

GRAPHIC 4.3



4.5. Kernel Prices

The United States of America is the largest importer in the world of cashew kernels and other products derived from cashew cultivation (see chapter 5).

Consequently, it is the New York market that effectively establishes the worldwide prices. The class W320 (300 to 320 whole-white kernels per pound) is used as a point of reference for all price rates. The larger whole-white classes are sold at premium prices, while the classes with burns, small holes or broken pieces are sold at a discount.

The following table shows the prices of some classes that are marketed with greater frequency:

TABLE 4.4

Table 4.4
Varieties of Cashew kernels and their prices in the international market (in US$/Lb to december of 1996)

Class	Description	Price (US$/Lb)
210	Whole white	2,90
240	Whole white	2,60
320	Whole white	2,35
450	Whole white	2,14
SW	Whole with burning	2,12
FB	Fancy buts	1,80
FS	Fancy splits	1,75
LWP	Large white pieces	1,60
DW	Dessert wholes	1,60
SWP	Small whte pieces	0,70

The reference price generally reflects the product of India. The kernels from other sources may be sold at a discount depending on quality and previous reputation.

The prices are fixed mainly by the factors of supply and demand. However, speculation on future crops could produce price fluctuations, especially due to the frequent problem of a lack of precise data.

In the period 1975-1980, the prices of cashew kernels increased to more than double due to the scarcity of the crop occasioned by a drop in production in Mozambique and Tanzania. Apart from some temporary reverses, prices have remained at high levels since the beginning of 1989. In the last 6-7 years, prices have remained at more moderate levels, and this has stimulated a very considerable growth in consumption.

TABLE 4.5

Table 4.5
Historic Cashew Kernel Prices (annual average)
(US$/Lb of class W320)

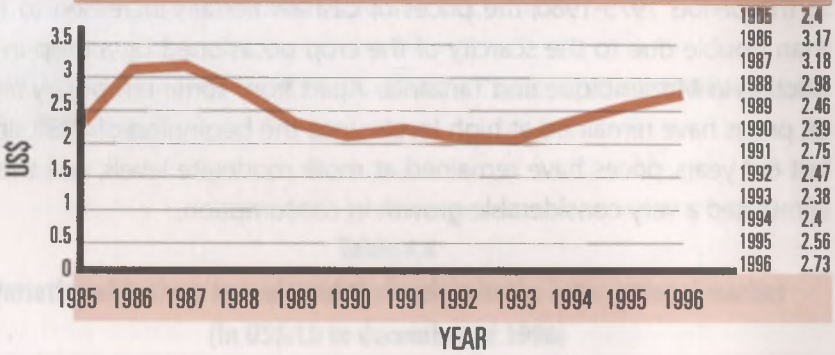
1985	2,40
1986	3,17
1987	3,18
1988	2,98
1989	2,46
1990	2,39
1991	2,75
1992	2,47
1993	2,38
1994	2,40
1995	2,56
1996	2,73 (jan-june)

Prices for 1997 (january) of kernel class W320 are:

Ex India US$2.40 FOB Ex Vietnam US$2.42 FOB

GRAPHIC 4.4

HISTORIC PRICES OF CASHEW KERNELS(US$/LB OF CLASS W320)



1985	2.4
1986	3.17
1987	3.18
1988	2.98
1989	2.46
1990	2.39
1991	2.75
1992	2.47
1993	2.38
1994	2.4
1995	2.56
1996	2.73

4.6. Production in Latin America

When the cashew apple matures in Latin America, its pulp is used directly for human consumption as a fruit: in pastries, in marmalades, in natural fruit drinks, and in the preparation of the famous "cashew wine," a fermented drink. It is also the basic ingredient in other native products. Finding the fruit in local markets in a region where the fruit grows naturally is not strange. This fruit is considered a delicacy, and it has stimulated the development of a whole processing industry.

The cashew tree has been used more for the apple, or "false fruit," in this region than for the nut. Contrary to other parts of the world, in Latin America the nut has always been considered a by-product. This explains the little disposition that tradicionally existed regarding the nut.

The diffusion of large cultivated areas and the industrial processing of the fruit and the nut are relatively recent in the region. During the early 1940s, the cashew in Latin America was mainly for internal consumption and it did not appear in the world market until the beginning of World War II, due to the increased demand for the liquid of the shell (CNSL). Before the 1960s, the cashew tree was a wild plant in the region, due mainly to the dispersion of territories under cultivation and to the lack of cultivation methods.

The specialized cultivation of the cashew tree, at a large scale, was introduced in Latin America in the 1960s, but the conditions of cultivation still vary from one country to another. This phenomenon coincides with the possibilities offered by the international cashew market. In fact, the industrialization of the cashew caused a renewed interest in making changes in the commercial networks for this type of product.

The internal consumption of the cashew kernel and the use of the cashew apple as a fresh fruit have become marginal products today in Latin America. The CNSL is now included in the category of by-products (in Brazil it was the principal product until the 1950s), while the industrial production of fresh and toasted nuts has become the most important product for export.

The specialized cashew crops are grown mainly in the northeast region of Brazil, some areas of Venezuela, El Salvador, Guatemala and the Dominican Republic, where they are favored for agricultural development and economic growth. This is the reason that cashew cultivation has become successful in Latin America. Cashew cultivation is having, at this time, a great influence in local cultivations; in the cultivated area and dynamic production; in the markets that have developed for several derived products; and due to the role that the crop plays in this region, where environmental con-

ditions help its development. This crop could mitigate social tensions and should provide an alternative to other products that do not have as promising a future as cashew cultivation. In this context, the development of specialized cooperatives in the cultivation, processing and commercialization of the cashew have been an excellent model of social organization, given the high possibility of the redistribution of wealth that this type of organization has, as we will see in chapter 6.

In the last twenty years, cashew production in Latin America has developed as much in absolute terms as relative ones, exceeding the growth in countries of Africa and Asia. This tendency has become a reality mainly in Brazil, a country that has nearly 90% of the production of the subcontinent and that has seen cashew cultivation revitalized during the last twenty years, with a direct intervention by the State in its development.

The conditions of cashew cultivation in Latin America reflect the differences in the reality of the agricultural scene of the region, where, on the one hand, its cultivation is semi-spontaneous, principally on small family properties, and frequently with poor ecological conditions. A second model exists where the cultivation takes place at a medium-to-large scale, on specialized plantations, covering areas with a favorable environment, which uses good infrastructure and processing plants.

On nearly 40% of the area used for cashew cultivation in Brazil, modern and rational methods and techniques are now used, which represent nearly 240,000 hectares in these conditions, with an expected growth of some 1,000 hectares. This helps to explain the rapid growth in cashew production in this country.

In a similar manner, some countries of Latin America have become specialized in the cultivation of the cashew, which has expanded since the 1970s. Although cashew producers have relied on many State initiatives, unfortunately the same results have not always been obtained in the various countries.

4.6.1. Brazil

Production is concentrated principally in the northeastern region of Brazil. The states of Ceará, Piauí and Rio Grande do Norte contributed 21%, 41% and 33% (respectively) of the national production (95% of the country's total production). Although the last production data are from 1991, we have made an estimate based on the current figures, as shown in the following table.

TABLE

Table 4.6
Brazil: Area, Production and Yield of Cashew Nut by State
(Area in hectares, production in MT and yield in Kg/hectare)

State	1988	1989	1990	1991	1996 (est)
Piauí					
Area	121.052	159.519	168.155	192.155	306.000
Production	24.816	30.117	23.897	42.964	55.998
Yield	205	189	142	224	183
Ceará					
Area	261.51	263221	267.151	295.719	397.000
Production	65.516	58.685	52.224	75.888	89.722
Yield	250	222	195	257	226
Río Grande do Norte					
Area	66 444	91.940	116.536	128.800	294.000
Production	37.748	47.275	23.246	56.776	94.080
Yield	568	514	199	441	320
Others					
Area	12.610	19.499	16.532	31.000	70.000
Production	5.239	7.588	4.133	8.688	17.780
Yield	415	389	228	280	254
Northeast Total					
Area	461.617	534.179	269.974	647.647	1.056.330
Production	133.319	143.665	103.500	184.316	255.000
Yield	289	269	181	284	241
Brazil Total					
Area	461.650	534.879	570.674	650.000	1.067.000
Production	133.355	143.965	103.800	184.800	257.580
Yield	289	269	182	284	241

Source: Nomisma 'The world cashew economy' Oltremare SpA, Bologna, Italy, 1994, Page [illegible] Estimate for 1996

4.6.2. Costa Rica

In this country, the first attempts at cashew cultivation with modern methods coincide with the efforts to set up government-sponsored programs during the 1970s. In that period, the Institute of Agrarian Development (IDA) encouraged cashew cultivation on the Pacific Coast, while the Ministry of Agriculture (MAG) sent some technicians abroad to be trained and to collect fresh samples of the variety "Trinitario," which they spread along the Central Pacific zone. Now more than 2/3 of the cultivated area and more than 3/4 of the total number of plants are found in this zone.

This activity began in 1984, with the opening of a processing plant for fresh fruits in Cóbano of Puntarenas, thanks to aid from the European Economic Community that facilitated a loan to develop cashew processing in four different areas of the county of Orotina. This project benefitted 27 of the 52 producers that now exist in that zone, and also attracting foreign investment for the development of plantations in the Peninsula of Nicoya, near Bagaces, in the province of Guanacaste. During the last few years, the cultivated area has grown by 128%.

Table 4.7

Costa Rica: Cashew Production (1984 real and 1996 estimated)

	1984	1996 (est)
Total planted areas (Hectares)	371.1	1.150.0
Productive	211.0	1.150.0
Inproductive	160.1	
No. Trees	46.812	
Total Production in Kg*	132.659	412.000
Internal Yield Kg.	34.847	100.000
Total sales Kg	97.812	312.000

* False nut and fruit. Source: Nomisma. The world cashew economy. Oltremare SpA, Bologna, Italy 1994. Page. 131 Estimate for 1996

A project exists to reach 3,150 hectares of cashew cultivation, of which 2,000 would be new areas of cultivation; 750 hectares would be improvements in the area already seeded, and 400 hectares would be totally replanted. The production of these plantations will provide the raw material for a new processing plant in Barranca, province of Puntarenas, about 100 km from the capital city of San José. The new plant is strategically near the zones with the larger plantations under cultivation, namely in the provinces of Puntarenas and Guanacaste. The project includes a program of seed selection, the use of protected plants, and vocational training for obtaining yields in the order of 0.3 MT per hectare in four-year-old plants and 1.5 MT per hectare in 15-year-old trees. The plant will have a capacity of processing annually 1,175 to 2,350 MT.

4.6.3. Honduras

The promotion of cashew production began in Honduras in 1962, with the "Project of the development of cashew cultivation." Based on this project, in 1974 the National Bank of Agrarian Development (BANADESA) financed the cultivation of 1,500 hectares, supervised by the National Agrarian Institute (INA) for the Secretariat of Natural Resources (SRM). Although only 300 hectares were actually planted in the southern region of the country, in that same year 1,100 hectares were reported to be under cultivation. In 1979 this activity was revitalized with financing from the Central American Bank of Economical Integration (BCIE), which developed the "Program of Cultivation and Industrialization of the Cashew." Although the objective was to reach 7,000 hectares, the actual cultivation was only 5,580 hectares by 1983.

By 1991, only about 40% of the initial figure of 5,580 hectares was active (2,183), and most of the planted area required rehabilitation, which is now in

process. It is estimated that some 300 additional hectares belong to property owners who began cashew cultivation in the 1970s.

Presently, the plantations are found in the southern Honduras, near the Pacific Coast and the city of Choluteca, along the Cholutecha River, about 150 km from the capital, Tegucigalpa: in Nacaome (355 hect.); San Bernardo (1.285 hect.); El Triunfo (363 hect.) and Namasigue (180 hect.)

The total production of the country is processed by eight small plants operated manually, with a yield of 18-19% of the whole nut. From this, only 40% is converted to whole kernels. About 75% of the raw material is exported to El Salvador and Guatemala, countries with higher processing capacities.

Another project exists to recover the older plantations and to sow 2,500 additional hectares, in order to reach a total surface of some 5,000 hectares. They hope to construct an advanced processing plant, which will also be used by El Salvador. This project includes a component of investigation and training which will be carried out by the well-known Tropical Agricultural Center of Investigation and Teaching (CATIE), located in Costa Rica.

TABLE 4.8

Table 4.8
Honduras: Tendencies of planted areas (in hectares) and Production of Cashews (in MT)

Year	Planted Areas (hectares)	Production Area (hectares)	Nut Production (MT)
1988	1.800	1.255	602
1991	2.183	N.D.	730
1996 (est)	2.633	N.D.	881

Source: Nomisma. The world cashew economy. Oltremare SpA, Bologna, Italy. 1994. Page. 133. Estimate for 1996.

4.6.4. El Salvador

In this country cashew production dates to the 1960s. Although in 1977, there were nearly 1,500 hectares of cashew cultivation, by 1979 only a total of 1,260 hectares was devoted to industrial production. Several problems caused a reduction of the planted area, which is now about 900 hectares. During the 1970s only about 200 MT of whole nuts were produced yearly, while during the early 1980s the FAO reported about 2,000 MT per year. In 1990, on the contrary, the 900 hectares produced some 545 MT of raw nuts.

The program to develop cashew production, presented in 1991, seeks to increase the area under cultivation to some 4,000 hectares that will allow the utilization of the great agro-processing potential of the country. In the Department of San Miguel a processing plant exists with a capacity of 4,500 MT per year, which is not operating in spite of the fact that raw material is available from Guatemala. In 1990 the average size of cashew farming properties fluctuated between seven and 25 hectares. There is now a cooperative project of agriculturists and cashew processors (Cooperative CORALAMA) which will be described in chapter 6.

4.6.5. Guatemala

Although the first cashew plantation in Guatemala dates from the 1960s, in 1980 there were only 929 hectares in cultivation, of which only 593 were in production. The Ministry of Agriculture began a project of planting 100 hectares in 1981 and 1,071 during the following years, with a goal of reaching 3,000 hectares in 1990.

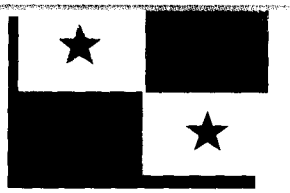
The production in 1980 totaled 186 MT of whole nuts and 2,068 MT of cashew apples. By 1990 the production of whole nuts reached 14,781 MT, with 47,729 MT of "false fruit."

Guatemala exports to the United States of America the largest amount of cashew products of any country of Central America. In 1987, Guatemala exported US$45,000 in nuts. During the early 1980s, Guatemala installed an automated processing plant, which gave the country a capacity of processing about 1,500 MT yearly.

TABLE 4.9

Table 4.9
Guatemala: Production of Cashew Nuts (en MT)

Year	Old Plantations (Hectares)	New Plantations (Hectares)	Total Production (MT)
1980	186	-	186
1981	289	-	289
1982	489	-	489
1983	775	102	877
1984	1.113	347	1.460
1985	1.156	700	1.856
1986	1.255	1.256	2.511
1987	1.325	1.898	3.223
1988	1.330	2.323	3.653
1989	1.330	2.745	4.076
1990	1.330	2.964	4.295



4.6.6. Panamá

In the Republic of Panama, the cashew continues to be a wild variety, mainly utilized for reforestation in the canal zone. However, it is estimated that 589,727 plants existed in 1980, with a production of 2,860 MT.

In 1988 the Ministry of Agrarian Development (MIDA) and the Inter-American Institute of Cooperation for Agriculture (IICA) carried out a joint study. They established some 52 hectares of specialized cultivation, 42 in the region of Veraguas and 10 in the region of Coclé divided between just two producers. Starting from this experiment, they prepared a program for cashew cultivation hoping to reach 902 hectares, with a production of some 1,000 MT of nuts for export.

By mid-1980, they reached nearly 500 MT per year, partially from dispersed plants and partially from the small farms established for the research project. In 1988 a small processing plant was established to produce nuts for internal consumption with a capacity of 50 MT per year. The export of raw nuts also was increased.

4.6.7. Venezuela

In Venezuela the cashew tree grows in areas with several environmental conditions. Most of the plantations are concentrated throughout the northwestern region (plains) in small plantations. Recent data shows a total surface area of about 15,000 hectares, of which fewer than 6,000 hectares are specialized. About 2,150 MT of raw nuts are produced yearly, with an average estimated at 500-700 kg/hectare. The whole nuts produced in Venezuela come from two processing plants, one with a capacity of 100 MT per year and the other of 50 MT per year, with a yield of about 20%.

One principal problem for the cashew industry in Venezuela is the difficulty of finding raw material at low cost, together with the high cost of processing, mainly due to the high cost of manual labor. During 1984-85, Venezuela imported 61 and 53 tons of raw nuts, respectively, from Brazil, for their processing industry. In 1988, only nine tons of raw nuts were exported.

5. Worlwide Demand for Cashew Derived Products

5.1 The Market for Cashew Nut Shell Liquid (CNSL)

This by-product of cashew cultivation is a natural phenol (90% anacardic acid), found within the shell, and is a product derived from processing. The volume of CNSL contained in the shell can vary, but in practice between 8% and 10% can be recovered depending on the quality of the whole nut and the processing method.

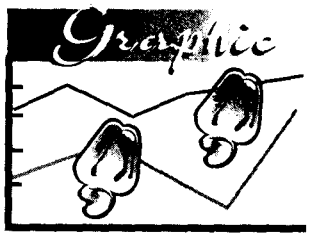
About 90% of recovered CNSL is processed to make resins used in the manufacture of brakes and clutches. Other minor uses are in paints and marine varnishes. There are products that compete with CNSL in the automotive industry, such as synthetic phenols that function better than CNSL. However, manufacturers prefer to use CNSL when the price is competitive.

The principal markets for CNSL are in the USA, England, Japan and South Korea. The principal providers of these markets are seen in the following table:

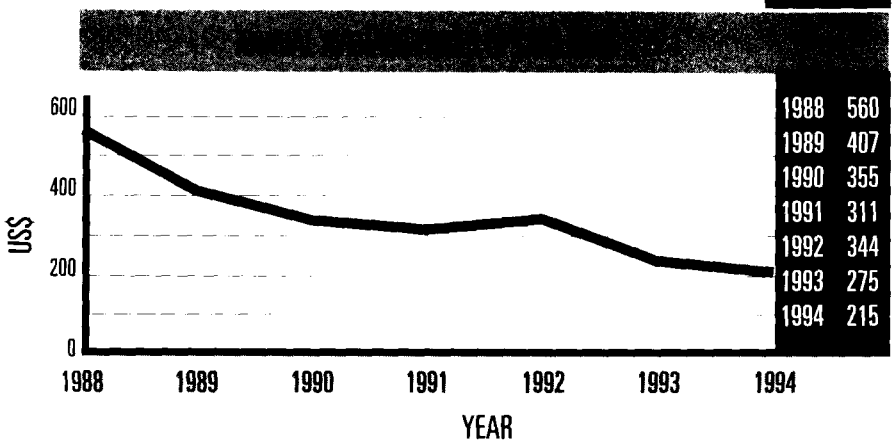
TABLE 5.1

Table 5.1
Average Annual Price of CNSL (MT)

Year	Brazil(MT)	India (MT)	Mozambique (MT)	Total(MT)	US$/MT(Annual Average)
1988	-	2.591	593	3.184	560
1989	20.504	2.559	538	23.601	407
1990	26.304	4.422	408	31.134	355
1991	17.045	4.990	923	22.958	311
1992	ND	3.757	437	ND	344
1993	ND	3.868	77	ND	275
1994	ND	4.245	72	ND	215
1995	ND	ND	306	ND	ND



GRAPHIC **5.1**



It is estimated that the worldwide supply of CNSL is about 45,000 MT. Brazil, the major provider, extracts CNSL automatically in their mechanized processing plants, which principally use the method of toasting the whole nut in a bath of hot oil.

In India, however, only a small fraction of CNSL is recovered. This is due to traditional processing methods (toasting in a drum) that burn the CNSL, and because the method of cooking by steam is a substitute for the system of toasting in a hot oil bath. In the factories using steam cooking, the CNSL is not extracted automatically, as occurs in the hot oil bath. If the price of CNSL increases high enough, the factory operators that use steam have the option of acquiring equipment that allows them to recover the CNSL from the shell.

The capacity of the Indian factories to increase the production of CNSL could act as a self-regulating brake on future price increases.

5.2. The market for products derived from the cashew apple (false fruit)

The production of cashew apples is 5 to 10 times the volume of the nuts produced. However, in most countries, producers make little economic use of this by-product. Its most common use is the consumption of the apple as a fresh fruit, and even there only a small fraction of the potential crop is used.

The cashew apple is a highly perishable fruit that is 85% water, and it has a high content of Vitamins B and C in comparison to most other fruits.

TABLE 5.2

Table 5.2
Vitamins contained per 100 grams

	Cashew	Pineapple	Orange	Lime	Toronja
Vitamin C (mg)	186-249	80	49	45	40
Riboflavine (ug)	100-124	20	30	oligoelement	20

In tests done in India, 17 different varieties of cashew apples were analyzed with the following results:

TABLE 5.3

Table 5.3

General characteristics of the Cashew Apple

	Apple weight (g)	Juice Recuperation (%)	pH of the juice	Sugars totals(%)	Vitamine C (mg/100g)
Maximun	87.3	74.3	4.8	15.1	314.3
Minimun	11.7	64.2	3.9	6.6	ND

Producers in India and Brazil have made significant commercial use of the cashew apple. The Central Institute of Technological Investigation of Foods of India has identified the potential products that could use the cashew apple:

- Cashew juice, mellow, seasoned or carbonated
- Mixtures of cashew juice (for example, with pineapple)
- Cordial
- Concentrated
- Syrup
- Wine
- Vinegar
- Candy

- Jellies/Blended
- Spicy sauce
- Pickled
- Whisky

In Brazil the following products of the cashew apple have been identified in the literature:

- Juice with pulp
- Clear juice
- Nectar
- Syrup
- Pudding
- Jelly
- Flour
- Liquor/brandy

In Brazil, the industry is dominated by companies that have large plantations, which have installations for processing cashew apples within their normal operations for processing the whole nut. These producers manufacture the juice (the most common product) supplied to the national retail market in competition with other juices. Information about the volume of cashew apple products is not available. However, it is estimated that in Brazil about 30,000 MT of juice are consumed annually.

In India, the processing of the cashew apple is a small, home industry with few exceptions. In Goa, the state government operates a factory that produces Fenni, a local whisky with high sales in that country.

All the cashew apple products are sold in internal markets. There is no registration of exports of these products.

5.3. The kernel market

The cashew kernel is used in the manufacture of snacks, candies and bakery products. Nearly 60% of the world's cashew nuts are consumed as snacks. The residual percentage is consumed in the other two industries — mostly in making chocolate candies and another types of candies.

Cashew nuts or kernels compete in the market with other types of nuts, such as almonds, Brazil nuts, walnuts, macadamia nuts, pecans, peanuts and others. These products can be offered separately or mixed, according to use, packaging and availability. The peanut has several packaging and marketing difficulties, depending on the annual harvest, but it has been included within the group of edible nuts.

The demand for better quality nuts has recently increased. This sector has increased its sales due to new product presentations, such as honey-roasted peanuts, spicy peanuts and mixtures of tropical nuts that give the consumer a variety of new flavors.

Also, the consumption of nuts has grown due to their nutritional value and to being considered a health food, rich in vitamins and minerals, with a high content of healthy oils. New sectors have developed, offering these products in so-called "health-food" stores, together with other foods such as wheat, corn flakes, chocolate, salads and pastries, all enriched with nuts.

Today, the USA is the country that predominantly consumes cashew kernels, accounting for 60% of the world's exports, followed by the old Soviet Union (9.7%); Great Britain (6.2%); Canada (5.1%); Japan (5.0%); Germany and Holland (4.3%). Below, we present a table of imports and per capita consumption of the principal countries using this product:

Table 5.4
Worldwide imports of Cashew Nuts by Principal Countries (MT)

	Imports (MT)			Consumption per cápita (grams)			
	1988	1989	1990	1962-67	1972	1988	1990
Australia	2.014	2.720	2.808				
Belgica	362	295	363				
Canada	3.299	4.377	4.730	91	263	127	177
Francia	1.176	1.065	1.202				
Alemania	3.380	3.261	3.737	23	41	50	50
Japan	3.718	3.783	4.303	5	18	32	36
New Zelandia	324	0		0			
Holand	2.883	3.058	3.873	41	160	177	186
Suiza	65	0	0				
United Kindom	4.212	4.855	5.100	60	54	73	86
United States	38.010	41.336	54.600	163	227	160	217
Ex Sovietic Union	3.151	5.849	9.807	46	64	9	32
Total	**62.594**	**70.599**	**90.523**				

Source: Nomisma. The world cashew economy. Oltremare SpA, Bologna, Italy. 1994

5.4. The market for Organic Cashew Kernels

The commercialization of organic cashews is a very recent phenomenon, and there are few precise data available to measure its parameters. Presently, the total world market is very small — probably not more than 500 MT per year (200 MT in Europe, 200 MT in North America and about 100 MT

in other places). This only represents about 0.3% of the total consumption of cashew products worldwide. However, according to an important European importer, the market is growing between 10% and 15% annually. The market appears to be very concentrated in the western countries, and the current demand comes mainly from clients who are worried about their health. There is little information available about this market in Japan, which is the principal Asian importer of cashews. Three important aspects should be considered in this market:

- What is the inherent demand for organic products?

- What prime rate above regular market prices will clients pay for organic products? Will the product be approved by OCIA — the world organization that certifies organic products — at a greater prime rate than other organic products?

- What is the difference in comparative market position of organic products approved by OCIA or other regulators compared with other organic products that do not rely on such approvals?

Presently, there seems to be only a few producers that are cultivating organic cashews. Except for the CORALAMA cooperative (see more details in chapter 6) in El Salvador, we only have information about two farms in Sri Lanka, one in India and one in Brazil. Nothing is known about the certification of these projects.

The CORALAMA cooperative has succeeded in developing a good market for their organic cashew kernels in Canada and the USA. They have relied on the support of the firm Ports West International of Victoria, British Columbia.

Although sales of only 16 MT have been reported, new clients have been identified with interest in purchasing 100 MT annually in North America and Europe.

The importation of organic cashews in Europe has been dominated by three organizations (Horizon Natuurvoeding of Holland and Rupunzel & Care of Germany) that import 75% of the European consumption of this product (200 MT). It is estimated that the demand for organic products will increase considerably in the next few years, but this will be influenced by the price. Next we present an estimate of the current and future market for organic cashew nuts:

TABLE 5.5

Table 5.5
Estimate of the Current and future Market of Organic Cashew nuts (in MT)

	Current Market	Market in 3 years
North America	250	1.000
Europe	200	300
Australia/New Zeland	10	50
Asia (Japan)	Unknown	Unknown
Total	**460**	**1.350**

The prices now offered for organic cashews certificated by OCIA are nearly 50% to 100% higher than the levels of conventional products. These prices are sustained because the worldwide supply still is very small. Probably, long-term, these prices will fall to a lower prime rate, once the supply increases.

Ports West International now is paying nearly 50% more than current world prices for products of CORALAMA. In Europe, Horizon Natuurvoeding notified that they are willing to pay 10% to 20% above world trading prices. In Australia, the offered prime rate will be about 50% higher, as the market there is very new. It is hoped that the overpricing will settle down to not more than 20% of conventional world prices, once some measure of stability is achieved between supply and demand.

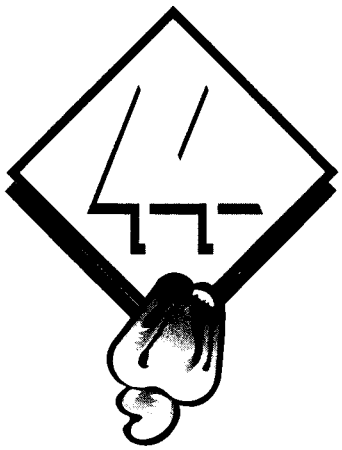
The matter of the process of organic certification is also very pertinent. OCIA is considered by many to be the most respected organization at the worldwide level, and their stamp of approval provides an advantage of organic authenticity to an organization accepted by the European Union. There are another ten certifying organizations in this category. No information is available about whether or not the companies certified by OCIA have the potential of collecting higher prices for their products than for those certified by other recognized organizations. The importation and distribution of organic cashews seem to be in the hands of small and medium-sized companies, which are supplying the larger stores with organic food products in the USA. In Europe, retail sales are mainly through small stores of natural foods.

The future prospect of organic cashews produced by CORALAMA is that there is a window of opportunity for their commercialization, and that this cooperative will capture a good portion of this emerging market, especially in North America.

This opportunity could last for a maximum of two years, as the possibility exists that Brazilian producers will increase their supply of organic cashews very quickly. The large plantations in that country, attracted by higher prices,

are in a good position to receive their certification in about a year. If the processing plants of CORALAMA cannot process their entire organic crop in those two years, they could lose their market to the competition.

6. The Cooperative Producers of Products derived from the Cashew Cultivation in Latin America



Cashew cultivation in Latin America has permitted the development of an emerging activity that offers the agricultural sector the possibility of benefitting from a market with a very promising future. This deals with a cultivation that until now has not seen a limit in the horizon of supply and demand. Also, it has maintained quite attractive prices, if we compare it with other agricultural products.

The qualities of cashew planting and the processing of the derived products permit us to understand this cultivation as one of high interest for all governments, which permits the financing of tentative projects to impel its cultivation and processing.

Other qualities, such as the fact that it is considered a product of high nutritious value, whose cultivation greatly benefits the protection of the environment, allows those who undertake its commercial exploitation to have enormous positive value.

Consequently, the cooperatives have not allowed the opportunity to pass them by. Several cooperatives have already been formed in the Latin American region to exploit this cultivation, and attracting, for their associates and for the communities in which they develop their activities, many benefits — economic, social and environmental.

In this chapter, we present some examples of how the cooperatives and organizations that support this sector have already developed their activities in Latin America for cashew cultivation and processing.

6.1. Brazil

The impulse for the development of cooperatives in Brazil has taken place in the northeast region of the country, as we saw in chapter 4, where most of the cashew cultivation and processing take place.

ASSOCENE

The best entity devoted to the promotion of cooperative development in this region is ASSOCENE — Association for the Orientation of Cooperatives of the Northeast.

This organization has as its priority to offer support for agricultural cooperatives linked with family agriculture, especially in areas "asentamientos" of the agrarian reform, and with those who are part of the florist industry or who work with non-traditional agricultural products.

This model of rural development, centered in family agriculture, shows:
- Greater use of manual labor in the fields
- Generation of revenue for the rural family
- Increase of agricultural production
- Invigoration of the local economic base (municipalities)
- Natural use of the natural resources

The cultivation of the cashew allows farmers successfully to face the challenge of establishing the new paradigms of cooperative association.

ASSOCENE has prepared itself to offer services and to attend to training needs, both in the dynamics of cooperativism and also in the area of technical knowledge, that permit the beneficiaries to be more efficient in their areas of work.

In technological aspects, ASSOCENE attempts to maintain an open channel with companies and centers of investigation, for putting the latest technological knowledge at the service of the people who form the cooperatives that are under their jurisdiction.

In the area of technologies of product processing, industrialization, packing, storage and transport, ASSOCENE provides consulting services, elaboration of projects and technical assistance for the cooperatives.

In the area of marketing, ASSOCENE supports the cooperatives that want to improve their performance in the national market and enter successfully the external market, through a policy of direct and appropriate marketing for each of those markets that can be carried out gradually.

ASSOCENE acts through strategically established alliances at diverse levels of action. As such, it relies on technical and administrative institutional policies, signing accords, agreements, contracts and other terms that can be established with specialized organizations.

ASSOCENE highlights, among others, the following programs and projects, established for achieving their institutional mission:

a) A program of support for cooperativism, with the support of SDR/DENACOOP
b) A program CONTACAP, with the support of INCRA/BNB/DENACOOP
c) A program of support in areas "asentamientos" of the Agrarian Reform, with the support of INCAR/PNUD
d) A program of support for the cooperatives involved in cashew cultivation

e) A network of auditing of the cooperatives
f) A network of data transmission "telemática" in support of the cooperatives
g) A project ASSOCENE/ CCA — phase 3
h) A project ACDI/ABC — bilateral cooperation

ASSOCENE will prepare, for the current fiscal year, six studies of product marketing for cooperatives of the Northeast, according to the following categories: coconut oil, guava candy, grapes, melons and cashew nuts. These reports are for the environment of the Central American, Colombian and Canadian markets.
ASSOCENE maintains an agreement with the ICA, which is in its third phase. By means of this agreement, projects of bilateral cooperation between Brazil/Canada are developed. Also, business contacts are established between the cooperatives of Northeastern Brazil and Canada, by means of which they seek to increase the exportation of agricultural products (in which is highlighted the derivatives of the cashew) and the importation of agricultural ingredients/ materials [insumos].

ASSOCENE maintains an institutional agreement with EMBRAPA for supporting the cooperatives that exploit the agriculture of the cashew, especially in the areas of the diffusion of agricultural technology, agro-industrial processing and marketing. EMBRAPA — a Brazilian company dependent on the Ministry of Agriculture — is an organization with a solid national and international reputation in the field of agricultural investigation.

Contacts with ASSOCENE can be made via telephone (5581) 231-2666 with Mr. José Humberto Oliveira, the Executive Director.

COONAP

The "Cooperative of Multiple Work of Support to Self-governing Organizations" was founded in January of 1994. Its fundamental objective is to provide specialized, technical consultancy services in several areas related to rural and urban development, in particular those related to associations, cooperatives, relationships with NGO's, pre-billing [prefacturas], micro and medium-sized companies.

COONAP performs a variety of activities and counts on a team of 78 associates capable of finding solutions according to the expectations and necessities of its clientele.

COONAP has its headquarters in Recife, the capital of the state of Pernambuco, and has representatives in Salvador, the capital of the state of Bahía, having a field of action at the national and international levels, although their area of specialization is fundamentally the region of northeastern Brazil.

At the operational level, their activities are programmed as long, medium or short-term, depending on the execution and volume of the financial resources designated for each activity.

COONAP is structured in strategic units of businesses in the following manner:

- Marketing and technology
- Elaboration and analysis of projects
- Generation of income
- Administration

The technical activities of COONAP are concentrated in:

- Training and development of human resources
- Local development and administration of public policies
- Elaboration, analysis and evaluation of projects and programs
- Strategic planning
- Marketing, technology and business opportunities
- Studies and profiles of markets
- Communication and computer science

At this time CONAPO is in the process of elaborating and negotiating financial proposals destined to promote the development of the organizations of economy solidarity in the northeast, among which is the "Program of support for cashew industrialization." This program has the objective of encouraging cashew processing and the revitalization of the fruit industry [reflorecimiento frutícula] of northeastern Brazil. The following organizations are participating in this project: Gard-Brazil, Gard-France, Schmitz Foundation, COONAP and the EU — the European Union.

A project of marketing studies of fruit products and non-traditional agricultural products also exists. This project is directed to cooperatives, associations, NGO's and Brazilian state governments.

Concerning COONAP's experience, specifically with cooperatives that produce products derived from cashew cultivation, the following characterizes their current situation.

The cooperatives of this sector, in the majority, are doing very little with the processing of whole nuts. For those who do this, their production is for the

internal market as the prices are more interesting than those of the external market (US$10 per kg).

The cooperatives sell the whole nuts to the large processing industry in the county of Ceará, the principal Brazilian exporter. The average price is US$0.25 per kg of whole nuts.

All the cooperatives that produce cashews are found in northeastern Brazil, as this region has the climate and soils adequate for cashew cultivation.

The existent cultivations are mostly of common trees, but the cooperatives are also introducing the "enano precoce" (early dwarf), a variety of high productivity. Regarding this, we present the following:

- Productivity of the early dwarf: 1,200 kg of whole nuts per hectare.
- Productivity of the common variety: 250 kg of whole nuts per hectare.

Most of the cooperatives that produce cashews use semi-mechanized technology, which guarantees a high level of whole kernels, nearly 80%.

There are cooperatives (COOPERCAJU) that export their products to Switzerland (about one cargo container per month), at the price of US$7.50/kg (FOB).

The principal difficulties of the cashew cooperatives are the following: little working capital; small stock; lack of marketing to stimulate an increase of consumption of cashew kernels; and loss of 80% of the pulp (which could produce juices, candies, flour, drinks, etc.).

The existent technology in the cooperatives and that available in the institutes of technology are adequate to reach the required productivity, in case an investor wants to contact one or more of the cooperatives that are mentioned later.

COONAP has a project that is being analyzed by the European Community, along with the cashew cooperatives of the northeast, to invest in technical assistance, to improve cultivations and to increase the capacity to process the fruit. However, COONAP is also interested in finding other international associates to form alliances with them in this endeavor.

Below is a list of the cooperatives associated with COONAP, which have a high level of interest in linking with other organizations, whether cooperatives or not, in business ventures:

- ***COONAP – COOPERATIVA DE TRABAJO MULTIPLE DE APOYO A LAS ORGANIZACIONES DE AUTOGESTION***

Rua Leão Coroado, 20
Boa Vista – Recife – PE
Tel: (5581) 423 8729
Fax: (5581) 423 5621
Contact: Sr. Mário Gomes, Technical Director

- ***COOPARP***

Rua Miguel Calmon, s/n – Q12 – lote 55 – zona Leste
48400-000 Ribeira do Pombal - Bahia
Tel: (55-75) 276 1946
Contact: Oswaldo Gonçalves dos Santos

- ***COOPERA***

Av. Clériston Andrade s/n
48490-000 – Inhambupe – Bahia
Tel (55-75) 431 2263 – 431 6434
Fax (55-75) 431 2300
Contact: José Aloisio de Araújo

- ***COOPERTUCANO***

Rua Barão do Rio Branco, 52 - Centro
48790-000 – Tucano – Bahia
Tel (55-75) 272- 2173
Fax (55-75) 272 2164
Contact: Alfredo Jorge Costa Freitas

- ***COOPI***

Av. Enoque Carneiro, s/n - Cajuais
62810-000 - Icapui – Ceará
Tel: (55-88) 432 1079
Fax: (55-88) 432 1143
Contact: Raimundo José

- ***COOPERAI***

Av. Governador Cesar Cals, s/n
62900-000 – Trairi – Ceará
Tel: (55-85) 351 1233
Contact: Sr. Paes

- ***ASFRUTA***

Sitio Agua Azul BR 110 Km 01
58735-000 – Serra do Teixeira – Paraíba
Tel: (55-83) 472 2207
Contact: Sr. Roberto Branco

- ***COOERCAJU***

Rua Projetada s/n Vila RN
59630-000 – Serra do Mel – Rio Grande do Norte
Tel: (55-84) 317 3465
Contact: Marcos Victor

- ***COMTROL***

Rua João Pessoa, 19
55745-000 – Orobó – Pernambuco
Tel: (55-81) 656 1124
Contact: Conceição Arruda

- ***COMASUL***

Av. Geúlio Vargas, 248
64600-000 – Picos – Piauí
Tel: (55-86) 422 1122
Contact: Sr. Galileu

6.2. Honduras

In the southern zone of Honduras there exist 74 groups of rural farmers (campesinos) and 33 private producers that together possess an area in active cashew cultivation of 1,455 hectares.

Besides these campesino groups, organized as rural, cooperatives or companies of associates that total 1,500 affiliates, there are 33 private parties, which make a total of 1,533 people who represent about 10,000 beneficiaries, if we count their families. These groups are found in the departments of Valle and Choluteca. This is an ideal ecological zone for cashew cultivation, given the conditions of precipitation, climate and temperature.

Table 6.1
Landholding Patterns by sector

No.	Sector	Municiple	Department	No. of groups	Others	Given area
1	Nacaome Center	Choluteca, El Corpus, San Lorenzo, Coray, Orowina, Nacaome	Choluteca and Valle	20	2	2.508 Has.
2	Apazuru	San Bernardo	Namasigue	Choluteca	26	2 4.792 Has
3	Santa Rosa,	San Bernardo	El Triunfo	Choluteca	28	29 3.798.5 Has
		Total		74	33	11.098.5 Has.

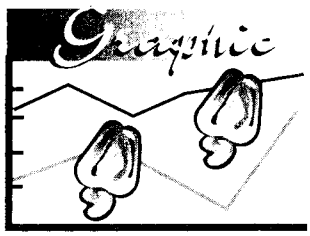
No.	Sector	Given area	No. of associates	Average extension/assoc.
1	Nacaome Center	2.508 Has.	240	10.45 Has.
2	Apazuru,, San Bernardo 1	4.792 Has.	793	6.04 Has.
3	Santa Rosa, San Bernardo 2	3.798.5 Has.	600	7.6 Has.
Total		11.098.50 Has	1.533	7.24 Has.

The production of whole nuts, or seed (kernel) with shell, in the crop of 1997 was 24,990 quintals (1,135.9 MT). This means a yield of 17.2 quintals per hectare. (See Table 6.2)

TABLE 6.2

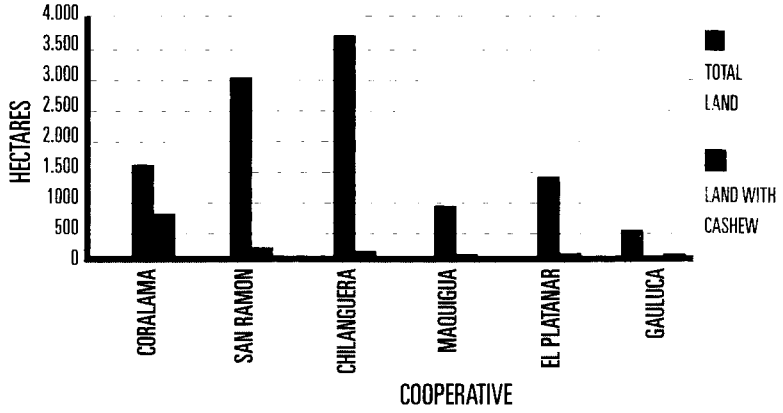
Table 6.2
Honduras: Production of Cashew kernels

No.	Municiple	Department	No. of Has. in prod.	Average Yield/Ha	Production(MT)
1	El Triunfo	Choluteca	575	16 qq	418.2
2	Namasigue	Choluteca	570	19 qq	492.3
3	San Lorenzo	Valle	157	16 qq	114.2
4	Choluteca	Choluteca	68	17 qq	52.6
5	Nacaome	Valle	64	15 qq	43.6
6	El Corpus	Choluteca	13	16 qq	9.5
7	Orowina	Choluteca	4	14 qq	2.6
8	Yusguare	Choluteca	4	17 qq	3.1
	Total		**1.455**	**17.2 qq**	**1.135.9**



GRAPHIC **6.2**

LAND USAGE IN COOPERATIVES ASSOCIATED WITH CORALAMA IN EL SALVADOR



This zone suffers from a lack of adequate control of plagues and diseases, nor do they use fertilizers. The maintenance provided for the plants is only the labor of cultivation, cleaning and pruning.

As for the production of false fruit or cashew apples, it is estimated that the annual production of January to May 1997 was 150 million units, the equivalent of 3,000 MT.

From the exploitation of cashew trees in the southern zone of Honduras, the following products are obtained:

Whole nuts. This product, after being gathered on the properties, is classified for density, naturally dried, separated (elimination of the remains of false fruit attached to the whole nut) and classified by size.

From the processing of the whole nut, the following by-products are obtained:

- Semi-crude or toasted kernels
- Cashew Nut Shell Liquid (CNSL)

In the community of El Triunfo, an anti-corrosive paint is made that is sold in the local market, which uses as a principal ingredient the cashew shell oil (CNSL) produced in the zone.

Local producers are searching for alternate uses for the CNSL and have carried out experiments that have created the following by-products:

- Solid and semi-solid Tapagotera (tar for patching ten roofs)
- Powder for use in automotive industry (lubricant for automobiles)
- A black glue similar to fiberglass
- A material used for floors of buses and in the coating of drain gutters (wood or metal)

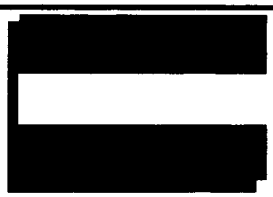
There also exists in this zone an interest in developing a project for the installation of a factory to make cashew butter (similar to peanut butter), generating a by-product that is a very fine cooking oil (similar to olive oil).

Regarding the false fruit, not much is being done in the zone. Some local producers have developed a dehydrated form of the fruit called "pasa de marañón," a sugary substance similar to "plum paste." Training courses have already been offered to develop wines, vinegars, jellies and marmalades, and to bottle cashew syrup. The possibility also exists of making a concentrated food for animals with the false fruit.

This group presents a very interesting opportunity of investment for those who want to enlarge their chain of commercialization of products derived of the cashew, now that agriculturists want to form strategic alliances with companies, cooperatives or similar organizations that are willing to offer them technical assistance, financing to improve their cultivations, access to markets and processing technology.

Contact with the group of cooperatives and organizations dedicated to the cultivation and commercialization of the cashew in Honduras can be made through Engineer Danilo Manzanares Guillén of EXPORTMAR S.A. de C.V., at (504) 82-2777 and 82-3930. Another organization that helps in cashew commercialization is "People to People." Contact Mr. Omar Reyes at (504) 37-7340 and 38-5076.

6.3. Nicaragua



In Nicaragua there is a cooperative of cashew producers in La Paz Centro. This cooperative is composed of 25 women, and they generate employment for another 30 women. They began with the support of the organization GTZ (Germany), along with another cooperative also composed of women, located near the northern border with Honduras. The cooperative that we want to consider is found 85 kilometers from Managua, in the municipality of La Paz Centro. It has the necessary infrastructure to process cashew nuts and make cashew paste from the false fruit. They have storage space and an adequate oven for this process. They receive some assistance from an agency called CIPRES, which specializes in agriculture and also helps a little in commercialization, although the results so far are not satisfactory.

This cooperative has been trained in Honduras by personnel with technical experience in this sector, and it could provide a quality product at a competitive price. The cooperative has some ideas on how to take advantage of the by-products (oil and other edible products), but to date it has not put this into practice. It could produce some 250,000 ounces annually (20,500 ounces monthly). Presently, it processes about 50,000 ounces, due to the limitations of working capital. During the harvesting of the fruit crop, there are only three months to the beginning of the new year, and the cooperative needs to buy up enough fruit to last [acopiar] for the whole year.

The cooperative is not the owner of the plantations. They buy the seed from small farmers (campesinos) of the area. They also travel to the northern department of Chinandega. The inhabitants of the sector are very hopeful concerning the possibilities of obtaining employment. They sell the cashew kernels in bags of three ounces for 3.6 Córdobas each (about US$1.97 per pound or US$4.3 per kg).

The process that they utilize for the production of the whole nut is the following:

- The false fruit is removed and is selected
- The fruit is soaked for 12 hours (14 women for 1 [qq=quintal?] in a day)
- It is fried in its own oil (the oil is a by-product)
- The whole nut is broken open (a woman produces three pounds per day)
- The whole nut is baked in an oven for four hours
- The shell is removed and the kernel is extracted (10 pounds per person per day)
- The kernels are disinfected in the oven for about 20 minutes
- The kernels are laid out to cool
- The kernels are returned to the oven for 1 _ hours for toasting

An intermediary distributes 65% of the production. The cooperative also sells its products in some stores. The ingredients used in the production are the cashew seed (whole nut) and firewood for fuel.

Finally, CIPRES collaborates some in the commercialization, although this organization does not have a financial nature. To process 750 [qq=quintals?] of whole nuts (seed), the cooperative needs C$91,000 (US$9,500). That quantity would represent some 170,000 ounces (four times the amount processed until now). In order to carry out productive and economical operations of this type, the cooperative would need technical assistance, which it is willing to receive. To contact this cooperative, one could go through CONAPI (National Chamber of Small and Medium Businesses of Nicaragua). This is an organization that works with small companies and with cooperatives.

Contact: Mrs. Sonia Cárcamo at CONAPI at (505) 314-2240

6.4. El Salvador

The most developed cooperative that can be found in this Central American country is called CORALAMA — Cooperativa de la Reforma Agraria La Marañonera de R.L.

CORALAMA is an agrarian cooperative located in the department of San Miguel that was created after the agrarian reform of 1976. CORALAMA is a member of UCRAPROBEX — Unión de Cooperativas de la Reforma Agraria Productores, Beneficiadores, y Exportadoras de Café. This organization comprises some 60 cooperatives of the agrarian reform, mainly of the coffee sector.

In 1980 CORALAMA received some 1,500 hectares of land that previously belonged to a large, private landowner. This land had been with cashew trees during the 1960s. The previous owner continued being the owner of a cashew processing plant, which had been constructed in 1975 and was located next to the land that had become the property of CORALAMA.

In the period 1980-87, CORALAMA harvested the cashew crop and sold whole nuts to India, at prices that varied between US$400-725 per MT. In 1988 CORALAMA bought the processing plant and the 20 hectares where it was located, for which they paid about US$250,000. However, the factory was in poor condition and a large great part of the processing machinery had been taken out by the previous owner before the sale, including the equipment for the extraction of the CNSL and of the cashew apple.

After 1988, CORALAMA began to operate the factory, but they could not process more than 25% of their crop. Due to their lack of management

experience and to the effects of the civil war that took place during the 1980s, CORALAMA did not have much success. During this period, the effective area that they really administered was reduced to some 1,000 hectares — the residual areas were abandoned.

Starting in 1993, they carried out major changes in the operation. The plantation was organized so that it could be operated based on organic cultivation, and they took steps to remedy the problems that previously existed on the plantation.

The change to organic agriculture has permitted to CORALAMA to be certified by the Association for the Improvement of Organic Cultivations (OCIA). The organic crops of CORALAMA now have a promissory Canadian market, with a premium price of about 40% over non-organic products through the commercial wholesaler.

In October of 1996, CORALAMA began new commercial arrangements with neighboring cooperatives and with UCRAPROBEX. This new arrangement required that CORALAMA unite with five neighboring cooperatives to establish the Cooperative Society of Cashew Products (SCPM).

These five neighboring cooperatives (Chilanguera, San Ramón, Maquigua, El Platanar and Gauluca) are formed by small cashew farmers, and as members of SCPM they will be the owners of the processing plant, along with CORALAMA. UCRAPROBEX will undertake the commercialization of the final products in the name of SCPM.

The total area under cashew cultivation by members of SCPM is 1,331 hectares, of which CORALAMA is the dominant partner with 800 hectares.

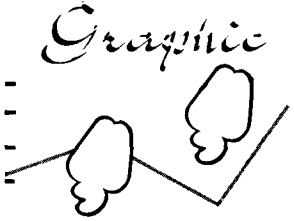
The Canadian Government (by means of their assistance agency) has offered a donation of C$1.0 million (one million Canadian dollars) so that SCPM can increase the development of their operations with the condition that they continue the organic production of cashews.

CORALAMA is located in Tierra Blanca, about 40 km to the southeast of San Miguel. The another five cooperatives are found within a perimeter of 30 km from CORALAMA. The cooperative has 107 members and a total population up close to 560 people. It is the owner of 1,673 hectares of land. Cashew cultivation occupies 50% of the total land area. The balance is used of the following manner: 32% natural forest; 12% cultivated with corn and beans; and the remainder for housing and installations.

Although the other cooperatives have a smaller participation in cashew cultivation, these also operate areas of great size and have other agrarian occupations. The following table synthesizes the information on landholding, land dedicated to cashew cultivation, and other businesses that the cooperatives operate:

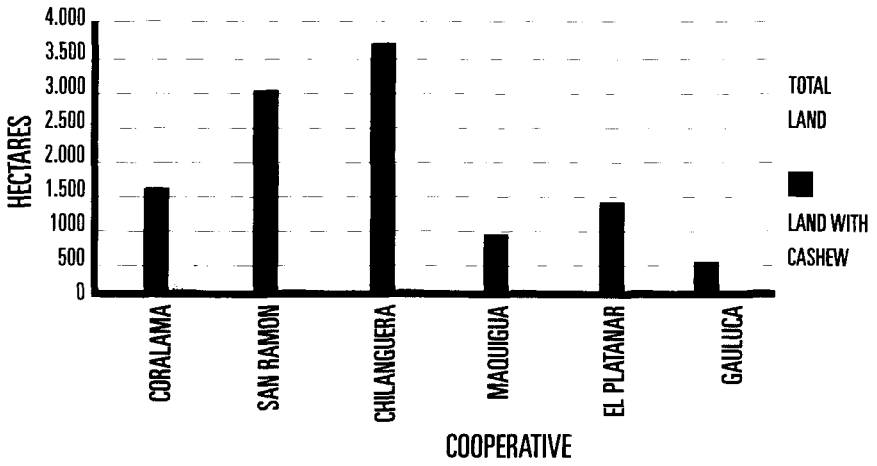
Table 6.3
Distribution of Lands Owned by Cooperatives Associated with CORALAMA

Cooperative	Total Land (Hectáreas)	Land with Cashew (Hectáreas)	Others business
CORALAMA	1.673	800	Corn, beans
San Ramón	3.057	231	Henequén
Chilanguera	3.720	167	Henequén
Maquigua	946	60	-
El Platanar	1.391	40	Henequén
Gauluca	596	33	-



GRAPHIC **6.2**

LAND USAGE IN COOPERATIVES ASSOCIATED WITH CORALAMA IN EL SALVADOR



Market of organic cashews

CORLAMA is considered the primary provider of the North American market of organic cashews. Presently, CORLAMA receives a prime rate of 50% above worldwide prices.

In response to the high prices obtained in this market, new initiatives are arising in other countries that seek to enter this new window of opportunities. This will mean that in about two years the prime rate will decline to about 10-20% above the normal prices of the world market.

CORALAMA plans to increase its current crop of 500 MT of whole nuts to more than 1,200 MT in the next five years. It also hopes to capture about 200 MT of organic cultivations of independent producers in the same area, which would benefit the population of the surrounding villages and would give it a total production of about 1,400 MT. With this plan, CORALAMA hopes to have a gross income of about US$1.7 million per year, between cultivation and processing.

Opportunities for investment

CORALAMA has identified opportunities for investment within their installations. These opportunities correspond to improvements that they should make in their industrial installations, which must be done soon and will be financed with their own resources, external financing or strategic alliances or co-investments with other organizations.

Capacity of processing. The current capacity of processing is, theoretically, about 800 MT of whole nuts per year, which would be insufficient for the volume of production that will be reached during the next five years. The real capacity is lower due to a lack of manual labor willing to operate the processing machines. This produces a bottleneck and lowers the real capacity. The cooperative is searching for new technologies that will permit them to overcome this problem. Also, the capacity of processing overall will be enlarged to keep up with the capacity of the programmed cultivation.

Increasing the quality of the gross crop. Sometimes some whole nuts are discarded — up to 35% of the final product — because they do not meet the norms established by the world market, which lowers the yield of the production process. This requires new technology to control the plagues and provide the nutrients of the cultivations to obtain better yields.

In order to receive a better utilization of the crop and to avoid losses of their potential production, they have evaluated the following alternates:

a) Modifying the existent factory. 72 processing machines would be needed and 144 operators, in order to have a capacity of processing annually 1,700 MT.

b) Buying an integrated mechanized factory. The type recommended in feasibility studies already prepared by the cooperative is a system of dry toasting (MDR) that has a capacity of shelling about 1,000 MT based on two shifts and operating 250 days per year. The mechanized factory would operate the process of preconditioning and shelling efficiently, requiring minimum use of manual labor and permitting the easy operation of two shifts, while the functions of

peeling and classification would continue to be done manually in large part and in a just one shift. The residual volume that could not be processed mechanically would be done by the previous manual methods or sold to the world market as an unprocessed product.

Recent studies have recommended the following measures to improve the existing conditions:

- **Concerning the plantation**

1. **Spacing of the trees.** A program for pruning has already begun to eliminate overcrowding. It is recommended that this practice be extended to all sites on the existing plantations.

2. **Nutrition.** Carry out a recommended program of nutrition in two stages: a) initial complete investigation to examine the current conditions and to obtain the diagnoses of experts on the subject; b) a follow-up study, which will involve an analysis of soils and nutrients of the leaf to detect if significant deficiencies exist according to the accepted norms of nutrition for the cashew. Based on these results, adjustments will be made in the compost used, if necessary.

3. **Genetic improvement.** In order to achieve long term benefits, about two years of work will be required to compile pertinent information and to accomplish the genetic improvement and could rehabilitate all the old trees of the existing plantations; produce trees with improved implants for the cooperatives with idle lands; provide training for the personnel of the cooperatives to learn nursery operations and the technical use of implants — a detailed program already exists for this purpose.

• Concerning processing plants

1. Drying and inspecting the harvested crop. Construct an area with a concrete floor for drying the raw materials in the sun. The concrete area should be large enough to hold a minimum harvested crop of three days.

2. Installations for storage of the harvested crop. Construct installations of storage large enough to hold the whole harvested crop. The storage installations should be constructed with a concrete floor that protects the crop from bad weather.

3. All the crop should be stored in sacks of jute of 50 kg.

4. Set up a factory of dry toasting (MDR) with the capacity of processing 250 kg per hour. This has the following advantages: the capacity of adequate long-term processing; a well-equipped factory, including a laboratory; a similar prototype factory in Zambia provided good processing, which means that experimenting should not be necessary; and the system was designed to operate simply and cheaply.

• Commercialization of the kernel. The cooperatives need to balance three objectives upon marketing their organic cultivation:

1. The initiatives of Ports West International have been responsible for the opportunities of marketing by CORALAMA. This company wants to buy everything possible from future crops.

2. There must be an equilibrium of clients so that one does not depend totally on one market.

3. The new markets can only be developed based on a guaranteed supply.

• Cashew apples

Although it seems that the marketing opportunities for this product are not very favorable right now because the commercial producers of juice in El Salvador have not displayed a great interest in this product. However, due to the high content of organic Vitamin C in the product of CORALAMA, international companies such as Ports West have expressed interest in its commercialization. Still, this requires additional technology that would require the realization of a new specific study for the industrialization and commercialization of this derived product.

Contact with CORALAMA can be made through UCRAPROBEX at (503) 278-0064, 278-6511 and 278-6522, or Fax (503) 278-1311. The people that should be contacted are: Mr. Mario Monroy, General Manager of UCRAPROBEX; and Mr. Mario Galdámez, General Manager of CORALAMA.

7. Models of possible investment for the cooperative sector of producers of cashew seed

In Latin America, a range of alternatives exists to conduct businesses or investments. It is possible to use different mechanisms, according to the type of commercial company with which the cooperatives want to be associated. The effective laws in most countries make it possible for the cooperatives to associate with persons of other juridical character.

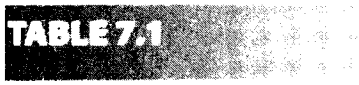
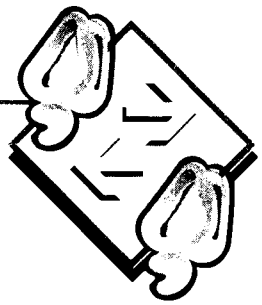


Table 7.1
Basic Types of investment and Businesses

Import/exportof goods and services
Strategic alliances
Constitution of anonymous societies, societies of limited responsability and societies of capital and industry
Cooperative integration
Cooperation between cooperatives of different countries
Transitory union of companies

Next a summary of each of these alternatives will be presented so that each investor, manager or cooperative can consider the most convenient form of association.

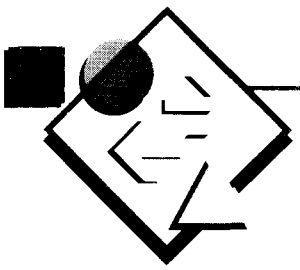


7.1. Import/Export of goods and services

To carry out transactions of goods and services, it is not necessary to establishment permanent juridical forms, but rather the operations should be subject to the rules of international commerce. In placing products in the internal market of countries of the region, the importer should be subject to internal laws governing standards of tariffs and quality. In most cases, the

relationship is based on a commission for the placed products, or sales carried out, or foreign service in the local market. The attraction is that many cooperatives possess important networks of distribution for foreign products.

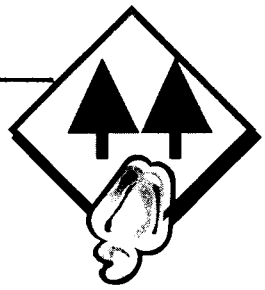
In exports of goods and services, it is worth noting that the cooperative companies have been involved in the processes of reconversion of their productive apparatuses during the last few years, which has given their products a high level of competitiveness.



7.2. Strategic Alliances

Strategic alliances are a type of economic organization whose objective is to benefit from their comparative advantages without giving up their legal status. These alliances could be continuous contracts of buying-selling, agreements of investigation and marketing, projects of co-production, contracts of association, co-investments and minority holdings.

These economic relationships do not need a particular organizational form. They are used to participate in foreign markets, increase the range and the quality of the products, diversify the risk that a new business venture acquires overcome governmental regulations and barriers of commerce, and utilize technology that otherwise would be outside their reach.



7.3. Constitution of Commercial Societies ("Sociedades Anónimas"), Societies of limited responsability and societies of capital and industry

Commercial Societies ("Sociedades Anónimas")

The Commercial Societies (or S.A. for "Sociedades Anónimas")are the legal form most commonly used in economic activities. As the Law of Cooperatives states, in most of the Latin American countries, this form facilitates the possibility of "association with people of another juridical character if it is convenient for their social objectives and does not detract them from their purpose of service." This alternative facilitates the participation of the cooperatives in a larger legal entity without compromising the principles and values of the cooperative movement.

The resulting entity should be inscribed legally in the several institutions of registry in the countries represented. The social capital with which the entity is formed constitutes the "shares," giving each a right to vote in the decisions of the company. The capital is composed of shares, and the responsibility of the shareholders is limited to the integration of the subscribed shares.

The basic requirements of the S.A. (objectives, duration, administration) are established initially in the "Constitution" or "Bylaws," which should be approved by the corresponding institutions in each country, published in the official newspapers and registered in the Public Registry of Commerce.

The maximal authority of these societies is the Assembly of Shareholders. The shareholders should have at least one meeting every year with the prin-

cipal object of approving the financial reports, the distribution of profits, the designation of the directors and statutory auditors.

The rules that govern the Assembly of Shareholders and the topics to be considered, the quorum, voting, etc., are contained in the laws of Commercial Societies that exist in each country.

Society of limited Responsability

The Society of Limited Responsibility is similar to the S.A., but it differs in that the individual patrimonies of the associates are not compromised in case of bankruptcy, with their responsibility being limited to the capital contributed upon constituting the society.

The capital in these juridical forms is divided in quotas; the right to vote of the associates is limited to the subscribed quota.

The characteristics as to objectives, duration, etc., are established in the "Constitution" or "Bylaws," which are registered in the Public Registry of Commerce of each country.

Society of capital and industry

In most countries of the region, this special form of organization of societies exists, where one or more associates contribute the capital (capital associates), while others contribute their personal services (industrial associates).

The capital associates face the subsidiary, actual and unlimited responsibilities of the obligations of the Society. The industrial associates respond according to the limits of the benefits not received.

The society is formed by a "Social Contract" that should establish the terms under which it will operate, since, usually, there are no legal norms to this effect. If such norms exist, the society will be governed fundamentally by those established in the Code of Commerce of the host country of the society.

Cooperative Integration

The laws of the Latin America countries allow, almost without exception, the cooperatives to form federations or cooperatives of a secondary level for the "execution of economic, cultural or social objectives." In economic terms, the possibility granted by this juridical framework makes it possible for cooperatives to gain access to economical niches of greater size, both national and foreign, and improve their possibilities of purchase.

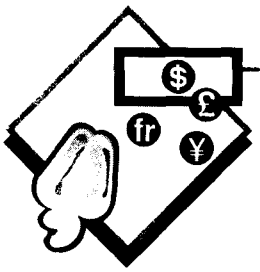
Cooperation between Cooperatives of different countries

In the framework of the process of economic globalization, cooperatives must deepen the possibilities that their respective constitutions offer them, whether by importing/exporting goods or produced services, or by beginning the decentralized production of goods, while taking advantage of the comparative benefits offered by each country of origin.

Transitory Union of companies

The object of these associations is to engage in work, provide a service or offer any concrete supply inside or outside the national territory. The bank failures or the liquidation of any member will not cause the extinction of the "Contract of Temporary Union," as it is called in some countries, which could

continue with the normal activities in the hands of their residual members. They do not constitute societies nor are they legal objects. The Contract and the designation of the representative should be registered in the Public Registry of Commerce of the host country.



Who and where invest

Next we present a summary of the people who are considered as potential investors in the countries of Latin America, and also the general requirements that they should meet. However, regarding the specific details of each country, it is recommended that one contact the services of a professional in the field of the commercial law:

* foreign investors, both physical persons and juridical, will be considered those that live outside the national territory in which they want to invest, and those local companies with foreign capital.
* The investments can be applied at the highest range of economic activities in the country, such as industrial, mining, agricultural, commercial, financial activities and services and others linked with the production or exchange of services.
* Investments are permitted also in sectors that tradicionally required previous authorization, such as defense, postal services, electricity, gas, communications, radio and TV stations, newspapers and magazines, financial entities and insurance, nationalization of companies without capital limitations, etc. In some countries, greater restrictions exist than in others, but usually this is the normal situation.
* Special laws have been approved so that the investor cannot begin to take steps without previous approval.

Norms of Investment

In most Latin American countries, the investments will materialize in the following manner:

- Foreign money of free convertibility

- Capital goods (technology, knowledge, machinery, patents, brands, exemptions, models and industrial designs)

- Utilities or Capital of foreign investments that meet the conditions for being transferred to the exterior

- Conversion in actions of debt titles or negotiable liability

- Reinvestments, only those will be considered that are utilities coming from approved balances

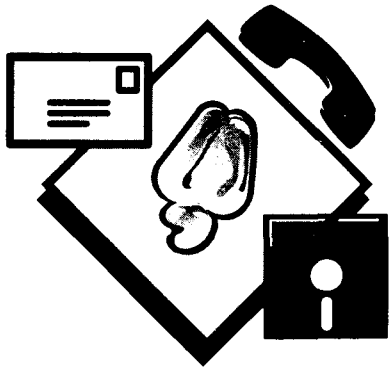
- Any another form of contributions

Transfer of Utilities and Repatriation of Capital

* By general principal, the foreign investor is guaranteed the free transfer of the utilities obtained by his investment, and also the right of the repatriation of his capital.

* The receiver companies can distribute liquid assets and carry out foreign investments with funds from their exports.

8. List of Key Contacts



Sponsoring Organizations

ACI - Alianza Cooperativa Internacional - Oficina Regional para las Américas
ICA - International Co-operative Alliance - Regional Office for the Americas

Telephone: (506) 231-4362, 231-5069 and 296-0981
Fax: (506) 231-5842
E-mail: alianza@sol.racsa.co.cr

CCA - Asociación de las Cooperativas Canadienses/ Canadian Co-operative Association

Canadian Office:
Telephone: (613) 238-6711
Costa Rican Office:
Tel: (506) 257-9903
Fax: (506) 256-2973
E-mail: ccaafosj@sol.racsa.co.cr

Brazil

ASSOCENE - Asociación de Orientación de las Cooperativas del Nordeste
Associação de Orientaçao às cooperativas do nordeste/Association of Orientation of Cooperatives of the Northeast

Telephone: (5581) 231-2666
Fax: (5581) 221-1380
E-mail: assocene@truenet.com.br

COONAP – COOPERATIVA DE TRABAJO MULTIPLE DE APOYO A LAS ORGANIZACIONES DE AUTOGESTION

Rua Leão Coroado, 20
Boa Vista – Recife – PE
Tel: (5581) 423 8729
Fax: (5581) 423 5621
Contact: Sr. Mário Gomes, Director Técnico

COOPARP

Rua Miguel Calmon, s/n – Q12 – lote 55 – zona Leste
48400-000 Ribeira do Pombal - Bahia
Tel: (55-75) 276 1946
Contact: Oswaldo Gonçalves dos Santos

COOPERA

Av. Clériston Andrade s/n
48490-000 – Inhambupe – Bahia
Tel (55-75) 431 2263 – 431 6434
Fax (55-75) 431 2300
Contact: José Aloisio de Araújo

COOPERTUCANO

Rua Barão do Rio Branco, 52 - Centro
48790-000 – Tucano – Bahia
Tel (55-75) 272- 2173
Fax (55-75) 272 2164
Contact: Alfredo Jorge Costa Freitas

COOPI
Av. Enoque Carneiro, s/n - Cajuais
62810-000 - Icapui – Ceará
Tel: (55-88) 432 1079
Fax: (55-88) 432 1143
Contact: Raimundo José

COOPERAI
Av. Governador Cesar Cals, s/n
62900-000 – Trairi – Ceará
Tel: (55-85) 351 1233
Contact: Sr. Paes

ASFRUTA
Sitio Agua Azul BR 110 Km 01
58735-000 – Serra do Teixeira – Paraíba
Tel: (55-83) 472 2207
Contact: Sr. Roberto Branco

COOERCAJU
Rua Projetada s/n Vila RN
59630-000 – Serra do Mel – Rio Grande do Norte
Tel: (55-84) 317 3465
Contact: Marcos Victor

COMTROL
Rua João Pessoa, 19
55745-000 – Orobó – Pernambuco
Tel: (55-81) 656 1124
Contact: Conceição Arruda

COMASUL
Av. Geúlio Vargas, 248
64600-000 – Picos – Piauí
Tel: (55-86) 422 1122
Contact: Sr. Galileu

OCB - Organización de las cooperativas del Brasil/Organization of the Cooperatives of Brazil
Tel (5561) 225 0275 - 225 0315
Fax (5561) 226 8766
E-mail: ocb@org.br

Banco do Nordeste/Bank of the Northeast
Area de Desenvolvimiento
Tel (5585) 255 4400 - 255 4407
Fax (5585) 2554401
E-mai: ffranca@bnb.gov.br

EMBRAPA - Empresa brasileña de investigación agropecuaria, Ministerio de agricultura y de abastecimiento/Brazilian Company of Agrarian Research, Ministry of Agriculture and Supply
Campus da Universidade Estadual de Campinas - UNICAMP (Campus of the State University of Campinas - UNICAMP)
Cidade Universitária "Zeferino Vaz" Barão Geraldo, Campinas, SP, Brazil
CEP: 13083-970 CAIXA POSTAL: 6041
Tel: (5519)239-9800
FAX: (5519)239-9594
E-mail: cps@cnptia .embrapa.br

COMMERCIAL CASHEW TRADERS IN BRAZIL

A. Ferreira Indústria Comércio Exportação Ltda	(5584) 318 2329
Cascaju Agroindustrial S.A.	(5585) 334 1500
CIPA - Companhia industrial de Produtos Alimentícios	(5585) 228 7455
Companhia de Exportação de Castanha	(5585) 293 1045
Companhia Docas do Ceará	(5585) 266 5220
Empesca Construções Navais Pesca e Exportações S.A.	(5585) 235 5038
Esplanada Confecções do Nordeste S.A.	(5585) 287 2127
Europa Indústria de Castanhas Ltda.	(5586) 222 8561
Finobrasa Fiação Nordeste Ltda.	(5585) 288 3166
Grupo Edson Queiroz	(5585)244 5824
Iracema Indústrias de Castanhas Ltda.	(5585) 281 4878
Irmãos Fonteneli S.A.	(5585) 229 1254
Usibrás Usina Brasileira de Óleos e Castanhas Ltda.	(5584) 321 5619

Nicaragua

Cooperativa de productores de marañón de la Paz Centro/ Cooperative of Cashew Producers of La Paz Centro

Contact c/o CONAPI in León: Mrs. Sonia Cárcamo
Telephones/Fax: (505) 311-3037 and 314-2240

CONAPI

Central offices in Managua
Telephones: (505) 278-4892 - 275-910 - 278-1499

Honduras

FINACOOP
Financiera de cooperativas agropecuarias de Honduras/ Financer of Agricultural Cooperatives of Honduras

Telephones: (504) 31-3811 and 39-1024
Fax: (504) 39-0047

Exportmar S.A. de C.V.

(Represents cooperatives of cashew producers in Honduras)
Telephone: (504) 82-3930
Fax: (504) 82 2777

Fundación Pueblo a Pueblo/ People to People Fundation

Telephone: (504) 37-7340
Fax: (504) 38-5076

El Salvador

UCRAPRROBEX - Unión de cooperativas de la Reforma Agraria productoras, beneficiadoras y exportadoras de Café de R.L./Union of Cooperatives of the Agrarian Reform Producers, Beneficiaries and Exports of Coffee of R.L.

Telephone: (503) 278-0064
Fax: (503) 278-2899

CORALAMA

Telephone: (503) 278-0064
Fax: (503) 278-2899

CRECER - Crecimiento Económico Equitativo Rural/Rural Equitable Economic Growth

Telephone: (503) 263-2539
E-mail: creecer@es.com.sv

IICA - INSTITUTO INTERAMERICANO DE COOPERACION PARA LA AGRICULTURA

BELIZE

IICA National Office in Belize Agriculture & Trade Show Grounds
P.O. Box 448 Belmopán, Belize
Telephone: (501) (8) 20-222
Fax: (501) (8) 20-286
E-mail: iica@btl.net
Fax (501) (8) 20286
E-mail: iica@btl.net

COSTA RICA

Physical Address:	IICA COSTA RICA Del Cruce Ipís, 400 mts. noreste, Carretera a Coronado San Isidro de Coronado San José, Costa Rica
Mailing Address:	Apartado 6742-1100 San José, Costa Rica
Telephone:	(506) 229-0222
Fax:	(506) 229-4689
E-mail:	iicacr@iica.ac.cr

EL SALVADOR

Physical Address:	IICA EL SALVADOR 1a. Calle Poniente y 61 Ave. Norte Edificio Bukele, 2da. Planta San Salvador, El Salvador
Mailing Address:	Apartado (01) 78 San Salvador, El Salvador
Telephones:	(503) 223-2561, 223-5249 and 298-3071 (279-3205
Representative)	
Fax:	(503) 298-3282
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GUATEMALA

Address:	IICA GUATEMALA Primera Avenida 8-00, Zona 9 01009 Guatemala, Guatemala
Mailing Address:	Apartado 1815 Código Postal 01901 Guatemala, Guatemala
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Fax:	(502) (3) 232-6795
Fax:	(502) (3) 234-7603 (PROMECAFE); 234-6903 (PRIAG)
E-mail:	iica@uvalle.edu.gt

HONDURAS

Physical Address:	IICA HONDURAS Edificio Palmira, 2do. Piso (Frente Hotel Honduras Maya) Tegucigalpa, Honduras
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Fax:	(504) 32-8195
E-mail:	inicoop@hondutel.hn

NICARAGUA

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PANAMA

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VITAMINS CONTAINED PER 100 GRAMS

	Cashew	Pineapple	Orange	Lime	Grapefruit
Vitamin C (mg)	186-249	80	49	45	40
Riboflavine (ug)	100-124	20	30	oligoelement	20

THE AGRICULTURAL COMMITTEE OF THE INTERNATIONAL COOPERATIVE ALLIANCE FOR THE AMERICAS AND THE CANADIAN COOPERATIVE ASSOCIATION (CCA) PROPOSE, WITH THIS PUBLICATION, TO ELEVATE THE FLOW OF INVESTMENT AND BUSINESS TOWARD THE COOPERATIVES OF THE SECTOR OF CASHEW FARMERS IN LATIN AMERICA. THEY ARE SEEKING TO OPEN A WINDOW OF OPPORTUNITIES FOR LATIN AMERICAN COOPERATIVES THAT NEED GREATER INVESTMENTS, AND FOR THE COOPERATIVES OF DEVELOPED COUNTRIES THAT ARE SEARCHING FOR OPPORTUNITIES TO INVEST AND INTERCHANGE TECHNOLOGIES AND ENLARGE MARKETS, THEREBY CREATING A FAVORABLE FRAMEWORK TO FORM STRATEGIC ALLIANCES.

CCA
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