

The fruit sector in Vietnam

Great ambitions

Fruit is grown throughout Vietnam. The distribution of varieties varies according to climatic conditions, economic importance in the light of Vietnamese guidelines concerning agricultural development and also to the private initiatives of farmers attracted by the prospect of higher incomes.

Fruit crops generally earn two to eight times as much as the same area under rice. The Vietnamese government is keen to improve economic conditions in rural areas (concerning some 75 percent of the population) and wishes to double the area under fruits by 2010, with stress laid on zones other than the large deltas. This desire also encompasses the development of fruit exports. In early 2000, the total area under fruit crops in Vietnam could be estimated at 500 000 ha with production of approximately 3 500 000 tonnes. Today, most of the production is sold on the domestic market where demand is greater than supply, resulting in relatively high prices.

Fruit crops in Vietnam by region

The Mekong Delta, in the south, remains the large fruit production zone in Vietnam, with about 65% of total national volume. Its geographical position means that tropical fruits can be grown all the year round (bananas, pineapples, citrus fruits, mangoes, longans, rambutans, etc.). Fruit production began to increase in the early 1990s following the launching of the new agricultural policy (1988), when the country became an exporter rather than an importer of rice. In this region—the rice granary of Vietnam—rice growers rapidly sought to improve their incomes by reinvesting profits from rice growing in more profitable diversification crops. When natural conditions were favourable (no upward movements of salts), fruit crops have been widely established. Nevertheless, they are still both physically and economically fragile.

Some species suffer from health problems; the permanent presence of ground water at a very shallow depth affects the rooting of the trees and increases the risk of flooding (the floods in September–November 2000 caused the destruction of numerous orchards as a result of root asphyxia; the proportion was estimated to be 60% in Tien Giang and Dong Thap provinces, 40% in Vinh Long and 20% in Can Tho). Economic fragility results from the considerable biodiversity (absence of crop standardisation), quality that is still markedly heterogeneous and comparatively inefficient structuring of the sector (average holding size about 0.4 ha, very strong individualism, a host of middlemen working on a traditional basis, weak industrial facilities, etc.). The last two remarks apply at a national scale.

The eastern plain (Tay Ninh, Binh Duong, Binh Phuoc, Dong Nai, Ba Ria-Vung Tau and Ho Chi Minh provinces) north of Ho Chi Minh City is currently experiencing a very strong development of fruit crops. In addition to small farms (0.5–2 ha), larger orchards covering up to several hundred hectares are becoming established in some areas. The main constraint is the water supply for supplemental irrigation during the long dry season. The zone is also specialised in tropical fruits (mango, longan, rambutan, durian, mangosteen and banana). The presence of large orchards means that the importance of the region should increase rapidly for the fruit sector.

In the central highlands, there is practically no fruit production since the emphasis on rubber and coffee growing is very marked. The disturbing situation for robusta

coffee (price collapse) may lead to a partial reorientation of farming that would be favourable for fruit crops. The climatic and soil conditions are suitable. Avocado performs particularly well.

The central southern coastal zone is particularly dry. The main crops grown are dragon fruit (Binh Thuan province), grapes (Phan Rang area) and mango.

The central northern coastal zone is an intermediate region with regard to climate. Fruit crops are grown but not to a very great extent, except in a few citrus and pineapple zones. More could be made of the agri-climatic potential.

In the Red River delta, the subtropical climate provides very favourable conditions for litchi and longan, which have therefore developed considerably. Litchi is grown on an estimated 20 000 ha.

In the mountainous zone in the north, subtropical crops (litchi, longan, kaki, citrus fruits and banana) are grown in the valleys and in the lower areas. Temperate fruits (plum, peach and apricot) are grown in mid-elevation areas (above 700 m). They are grown mainly by ethnic minorities. It was estimated that fruit crops were grown on 32 000 ha in this region in 1995.

The main species grown

An overview of the main species grown that are of importance at national or regional scale is provided below. The list is not exhaustive.

In tonnes	EU imports from Vietnam	EU exports to Vietnam
Fresh and dried fruit and vegetables, including	4 106	444
Coconut	31	0
Common nuts	80	0
Cashew	1 272	0
Almonds	0	1
Other tree nuts	19	0
Banana and plantain	183	4
Dates	16	0
Pineapple	17	0
Mango, guava and mangosteen	61	0
Avocado	13	0
Grapes	10	5
Papaya	1	0
Apples	0	434
Kiwis, tamarinds, cashew apples, jackfruit, litchis, sapodilla plums, etc.	314	0
Various frozen fruits	2 038	0
Dried papayas, tamarinds, peaches, pears, etc.	15	0
Citrus and melon peel	37	0

Source : Eurostat

Bananas

Bananas are the largest fruit crop in Vietnam (grown on some 90 000 ha), but the technical level is still very low. Cultivation consists just of a gathering operation in most cases. Considerable varietal diversity is observed from the south to the north. Serious diseases are present, and especially Black Sigatoka and Banana Bunchy Top.

Citrus fruits

The main fruits grown are grapefruit, oranges, mandarins and limes. This important crop category (60 000 ha in 1995) is found from the south to the north. It is seriously affected by a bacterial disease, Greening or Huanglongbing, that causes a deterioration in fruit quality and then the rapid withering of the trees. Citrus is particularly important in the Mekong Delta, with over 70% of national production in 1995. Incidence of Greening is particularly marked there too, with trees in the most seriously affected zones withering before they start producing. The area under citrus in Can Tho province (the most important with regard to citrus growing) is decreasing steadily (16 500 ha in 1995, 13 700 ha in 1997, 10 000 ha in 2000). A

scientific support programme has been conducted by CIRAD since 1995.

Longan

Subtropical longan is found in the northern regions of Vietnam (with production in July and August) and the tropical varieties are grown in the south, mainly in the Mekong Delta and the eastern plain. The crop developed very strongly in the south from 1996-97 onwards as a diversification crop and also as a replacement for citrus affected by Greening. From 1996 to 1997, the area under longan increased from 12 500 ha to 28 000 ha in the Mekong Delta region alone. This trend is related to ease and mastery of the crop: multiplication by layering is handled competently by most farmers, who can thus obtain seedlings cheaply, fruit production starts rapidly in less than two years and the knowledge gained by Vietnamese farmers means that fruit production is possible all the year round. Finally, China is an important market for both fresh and dried fruits.

Mango

Mango is grown from the south to the centre of the country and in certain zones in the north, where the

microclimate is suitable. About a hundred cultivars have been listed in Vietnam, and for the past three years a selection of 8 cultivars is recommended for farmers in the south. Vietnamese mangoes are medium-sized to large, fibre-less but not coloured externally. The production period of a cultivar lasts for four about four months. With successive flowerings, mangoes are available overall from February to September. The quantity of mangoes exported from Vietnam is still very small.

Rambutan, sapodilla and durian

These three fruits have also been selected in the past four years and it is now possible to establish orchards with greater homogeneity. Several Thai varieties have also been introduced and are the subject of significant development.

Dragon fruit

This species belongs to the Cactaceae family and is found from the Mekong Delta to the coastal plain in the central-southern part of the country. Substantial high-quality production and export packing stations are found in the latter region, in particular in Binh Thuan province.

Pineapple

Pineapple is now grown throughout the country. In spite of a decrease after 1989, the total area would now seem to be stable at about 25 000 ha. The 'Queen' group is clearly dominant, resulting in certain problems for the processing industry as only 'baby' slices can be supplied. The Vietnamese government would like to develop the cultivation of 'Smooth Cayenne' varieties and intensify pineapple growing in the lowland areas in the north. In the south, the crop is grown mainly on acid sulphate soils (unsuitable for other crops except for sugar cane). Pineapple wilt is spreading steadily.

Litchi

Because of the climatic requirements of litchi, cultivation is

limited to the Red River delta and low areas in the north. Several cultivars exist, but 'Thieu' is the only one with true commercial potential. The fruits are appreciated for their sweetness, flavour and uniformly medium-sized stone. Unfortunately, the production period is limited to the first three weeks of June. Litchi is sold fresh or dried.

Kaki

This fruit grows in southern Vietnam in the Dalat area and in low zones in the north. No substantial development has yet occurred, but the Vietnamese varieties have the advantage of displaying low astringency.

Plums

The local plum species (*Prunus salicina*) is well-suited to Vietnamese cultivation conditions, unlike the European plum (*Prunus domestica*). Plums are grown successfully in the mid-elevation zones in the north (700-1 000 metres). The crop is practically mono-varietal as a result of the traditional selection and multiplication methods. This creates serious constraints such as a closely focused harvest (June), small fruits (20-30 mm) and limited keeping qualities. Plums are grown on an estimated 4 000 ha.

Apricot

This is the Japanese apricot (*Prunus mume*), which differs from the European apricot (*Prunus armeniaca*). The fruit is smaller than that of the European apricot but it grows spontaneously in Vietnam. Its hardiness has been used to contribute to the reforestation of certain zones. The areas under apricot have increased spectacularly and the total is now estimated at 2 500-3 000 ha. There are many outlets for the fresh or dried fruits, mainly on the Asian market.

Peach

This fruit species, which originated in South-East Asia, is grown in parts of north Vietnam from 700 metres

upwards. With the exception of 'Hmong' peach, whose fruits are a satisfactory size, the local varieties grown in Vietnam are small and ripen early and over a short period of time. A considerable effort should be envisaged to learn effective cultural techniques. For new introductions, stress should be laid on varieties with small cold requirements.

The main constraints in the fruit sector

Vietnamese fruit production has enormous potential in terms of both development at national scale (availability of land, agri-climatic suitability) and local and export markets for fresh and processed produce. Such production is a priority in Vietnam. However, sustainable, profitable use of this potential is only possible if considerable efforts are made with regard to quality. The quantitative aspects are often the only criterion considered in Vietnam. There are signs of change in this respect but a complete reversal in approach is necessary.

Plant material at the base of the development of fruit production

The development and extension of the sector cannot be envisaged without high quality plant material. Work on varietal selection has given results but requires further consolidation. Increasingly demanding markets require standardised production. The quality of plant material must therefore be expressed in terms of both varietal authenticity and sanitary quality. The development of a fruit certification plan in Vietnam would make it possible to define the basis for ensuring such quality. Efforts tending towards this should be encouraged.

Crop management

Although Vietnamese farmers possess fairly good mastery of techniques for the orientation of production (staggering, counter-

season), the situation is distinctly less rosy with regard to basic cultural practices such as crop density, fertilisation, crop protection, irrigation, pruning, erosion control, etc. Efforts should be promoted in these fields to ensure the development of quality crops. It is still difficult to implement information transfer and training, given the large number of small farmers.

An export plan

The Vietnamese Minister of Trade has presented a daring plan in which fruit and vegetable exports should generate US\$1.85 thousand million in 2010 through an increase in the quantities exported, responding to the marked growth of demand for fresh produce. Efforts will also concern improvement of the quality of processed fruits and vegetables (cabbage, sweet corn, aubergine, pineapple, banana, mango, litchi, mushrooms and beans).

Vietnam currently exports fruit and vegetables to some 50 countries, especially in Asia and Europe. In 2000, the two main purchasers were China (US\$100 million) and Japan (US\$10 million). However, vast potential markets for Vietnamese products exist in Africa, America and the Middle East.

Production zones would specialise in export crops with state support for the providing of production technology and infrastructure such as transport and energy. Several zones of this type already exist and have proved their effectiveness. Nevertheless, lack of co-ordination between producers, distributors and exporters has hampered the efforts made in the exporting of fresh produce, which often rots before it is shipped. According to a report by the Vietnamese Ministry of Agriculture, 25% of the fresh produce intended for export is damaged as a result of poor transport quality, lack of cold storage facilities and poor post-harvest handling. Better post-harvest techniques would be particularly beneficial for the sector as a whole by reducing such losses.

Source: Fresh Produce Journal

Infrastructure and post-harvest logistics

These two aspects are essential for good sales of (high-quality) fruit production but must be substantially improved to meet increasingly strict market requirements.

As demand currently exceeds supply on the local market, quality does not yet receive its fair reward. Efforts to promote quality began recently with, in particular, the opening of shops specialising in high quality fruits. Such shops already exist in Ho Chi Minh City.

Several fruit collectors in the Mekong Delta have set up artisanal grading and packing facilities, but none are equipped for refrigerated storage. Fruit must therefore be treated as soon as it arrives and shipped immediately after summary treatment. These artisanal conditions are just sufficiently acceptable for little-demanding markets (local or export to China) and result in considerable losses that can attain 25 to 40%.

Marketing channels still include numerous middlemen, increasing fruit handling and losses. More efficient structuring is essential.

Refrigerated road transport is only just beginning. Generalisation is

essential in order to ensure the cold chain that must be developed from packing station to point of sale.

Air freight is still expensive and considerably increases the cost of Vietnamese fruits on export markets.

Sea transport for fruits has not yet developed because the quantities exported are too small for the moment and also because of the lack of specialised port infrastructure.

With a few exceptions, processing is still traditional and artisanal. Markets are changing and it seems desirable that Vietnam, a country in the developing phase, should move immediately (or as soon as possible) to a line of new products that meet the latest consumer expectations. If this is not achieved, competition with Thailand, which is already widely established on international markets, could be unfavourable for Vietnam.

Markets

Although the Vietnamese authorities wish to develop fruit exports, very little information is available concerning regional and more distant markets. The Asian markets attract attention because of their relative proximity, but their requirements and real potential are not well known. True market surveys

should therefore be undertaken to better define their requirements and to better target demand.

Conclusion

The fruit sector is gradually becoming established in Vietnam. Numerous efforts are to be promoted to generalise and standardise the quality of Vietnamese produce. International co-operation (Australia, Japan, Taiwan, etc.) is important in this respect. France has know-how in this field and is also contributing to the improvement of the sector. CIRAD provides scientific support and some regions in France participate through decentralised co-operation, especially post-harvest operations, and French companies established in Vietnam are already directly or indirectly involved in the sector. There is still considerable potential for different sub-sectors (nurseries, fertilisers, pesticides, agricultural equipment, post-harvest equipment, agri-industrial technology, marketing, etc.) ■

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Cropping calendar of the main fruit species grown in Vietnam

Fruit species	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Pineapple												
Banana												
Papaya												
Water melon												
Orange												
Mandarin												
Pumelo (<i>Citrus grandis</i>)												
Lime and lemon												
Mango												
Longan (<i>Euphoria longana</i>)												
Rambutan (<i>N. lappaceum</i>)												
Sapotilla (<i>Achras sapota</i>)												
Guava (<i>Psidium guajava</i>)												
Star apple (<i>Chrysophyllum cainito</i>)												
Durian (<i>Durio zibethinus</i>)												
Mangosteen (<i>G. mangostana</i>)												
Jackfruit (<i>Artocarpus integrifolia</i>)												
Sweetsop (<i>An. squamosa</i>)												
Soursop (<i>Annona muricata</i>)												
Avocado (<i>Persea americana</i>)												
Pitahaya (<i>Hylocereus undulatus</i>)												
Grape (<i>Vitis vinifera</i>)												
Litchi (<i>Litchi chinensis</i>)												
Kaki (<i>Diospyros kaki</i>)												
Plum												
Peach												
Source: Cirad-flhor Vietnam	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC