

FOOD PRODUCTION IN VIETNAM

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Over the past decade, government policies in Vietnam have encouraged farmers to invest in agricultural production, especially food production, to meet domestic demand and for export. These policies have been so successful that Vietnam no longer has a food shortage, and instead has a rice surplus for export (Table 1). In 1989, Vietnam was able to export 1.4 million mt of rice. By 1992, this had risen to 1.9 mt, plus 100,000 mt of corn and cassava. Important food crops in Vietnam include rice, corn, sweet potato, cassava and several kinds of bean.

Vietnam is located in the tropics, and if there is enough soil moisture, crops can be grown all year round. Out of Vietnam's 9 million ha of arable land, only 4.2 million ha (47%) is planted in rice.

The area planted in rice may fluctuate from year to year. New agricultural land is still being cleared, especially in the Mekong Delta where there are about 183 thousand ha of newly cultivated land.

Facilities for water supply and drainage are also being developed, in order to extend the cultivated area. This includes 496 large water works, and 2420 medium sized ones. In 1987, 1.84 million ha of winter and spring rice could be irrigated, and it is estimated that with improved irrigation, 1.28 million ha of arable land could be intensively farmed. Irrigation has meant a substantial increase in yield. For example, yields of the spring rice crop in Nam Ha province rose from 1.8 mt/ha to 3.5 mt/ha when irrigation was introduced, while main-season rice yields rose from 1.6 mt/ha to 2.3 mt. There is still inadequate drainage for 50% of cultivated land in

the Mekong Delta, parts of which are still affected by flooding and the intrusion of salt water.

Technical Improvements

Rice Varieties

High-yielding, early maturing varieties which are resistant to pests and drought are widely grown in Vietnam, most of them released by the International Rice Research Institute. In fully irrigated areas, it is possible to grow three crops of such varieties in one year. Thirty percent of the rice varieties are traditional ones. These produce a fragrant, tasty rice for which there is a good export market.

Fertilizers

The combined use of chemical and organic fertilizers has a positive effect on plants, in terms of growth and yield. Some problems, however, reduce the effective use of fertilizers. Since the government does not control the importation of fertilizer, there are frequent fluctuations in the price. Furthermore, it does not provide low-interest bank loans for fertilizer. The fertilizer delivery system is so weak that private businessmen take most of the profit.

Farm Machinery

Formerly, under the subsidy of the government, most tractors were large ones operated

Table 1. Production, yield and per capita consumption of food in Vietnam

	Annual average		
	1976-1980	1981-1988	1989-1992
Total production (million mt) (Rice and rice equivalence)	13.30	17.60	22.20
- Rice	11.00	15.20	19.70
- Average yield (mt/ha)	2.02	2.66	3.22
- Per capita food consumption (kg/head)	254	294	330

by state-owned machinery stations which were supported by government subsidy. Recently, in the new market-oriented economy, small tractors, which are highly appropriate for the existing production conditions, have been distributed to individual cooperatives or farmers. Farm machinery not only helps maintain production schedules, but also increases the quality of the soil preparation, making possible a greater tilling depth and helping preserve the soil structure.

Reduction of Post-harvest Losses

Postharvest losses due to careless harvesting, decay in storage, pests etc. are estimated to take about 20% of the total production.

There are several effective measures which help reduce these losses, including the use of appropriate farm machinery such as grain dryers, and good storage facilities, which can reduce losses to 1-2%.

Circulation and Export of Food Products

These factors have a considerable effect on total production. In a market-oriented economy, rice becomes merchandise. The control of production and demand is an important factor in promoting rice production.

The effective circulation of rice in recent years has contributed to a production increase. Rice exportation brought substantial benefits for producers. It also made foreign currency available for imports of pesticides, fertilizers, and farm machinery, which in turn benefitted production. All this gave farmers an incentive to exploit fully their existing land, and to enlarge their farm holdings and cultivate new land if this was available.

However, the export prices for Vietnamese rice in recent years have been only 85-90% (even 70% in some cases) of those of the same rice categories from other countries in the region (Table 3). The reasons were: simple packaging and low product standards, delays in shipping, an unstable market, and competition between traders which pushed the price down. In some cases, the surplus was too large to find a market (e.g. in February 1992 there was a surplus of 2 million mt of rice). Since rice has become a commercial product in international markets, production is very attractive to farmers. They are investing in their land in order to produce more. The government has launched several measures to stabilize the rice market,

including a price stabilization fund, thus creating appropriate conditions for increased production.

CONSTRAINTS TO FOOD PRODUCTION IN VIETNAM

Natural Disasters and Adverse Weather

Vietnam is located in an area where there are frequent typhoons, and sometimes drought, either of which can result in severe crop damage. For example, in October 1992 after a destructive typhoon (the sixth that year) and heavy rain, 20,000 ha of rice were inundated, and in some areas the rice crop was completely destroyed. The government has invested heavily in water management facilities in order to control droughts and flooding, but it is very difficult to control the adverse effects from storms.

Fortunately, those areas which suffer most from typhoons are of minor importance in terms of rice production (i.e. the central region, and part of the northern plain). Some areas in the northern plain also suffer from fog, but the damage from this is negligible if pertinent measures are applied.

Pests

Pests are a major cause of crop losses, and in some years destroy thousands of hectares of food crops.

Vietnam is now applying new technologies to control pests. If the yearly amount of pesticides used for pest control is compared with the outcome of plant protection activities, it can be seen that positive results are being obtained.

Beginning in the 1990s, the Ministry of Agriculture and Food Engineering has launched the Integrated Pest Management program for rice and other crops. This has included training courses on the cultivation of pest resistant varieties; the protection of natural enemies of pests and recovery of the ecological balance by reducing pesticide use; and pest inventory, detection methods and evaluating of rice field conditions. More than 120 demonstration fields provided information to farmers between 1990 and 1992. Some positive results were obtained. Pesticide use has been reduced, and crop yields have improved. It is estimated that in 25 provinces, pesticide reduction was 60-65%; plant protection costs were reduced by 25-48%, and yields increased by 9-10%. Brown planthopper densities were low and populations of natural enemies were high in IPM fields.

Table 2. Food crop production in Vietnam: Area, productivity, yield

	Unit	1985	1990	1991	1992	1993
I Agricultural land	1000 ha	6492.2	6993.2	7007.8	7293.4	
1. Area planted in annual crops	"	5615.8	5339.0	5367.6	5506.3	
Rice only		4296.5	4108.8	4100.5	4211.2	
2. Area planted in perennial crops		804.8	1045.1	1057.5	1191.1	
3. Grassland for livestock production	"	328.7	342.4	326.4	328.3	
4. Fish farming	"	169.7	266.8	256.4	297.7	
II Unused land	"	14827.9	14924.9	14667.3	14214.1	
Food production (rice equivalence)	1,000 mt	18,200.0	21,488.6	21,989.5	24,214.6	24,500
1. Rice (whole year)	"	15,874.8	19,225.1	19,621.9	21,590.3	21,900
2. Rice equivalence (of other food crops)	"	2325.2	2263.5	2367.6	2624.3	2600
Yield (mt/ha)						
Rice	mt/ha	2.78	3.19	3.11	3.33	3.43
Corn	"	1.47	1.55	1.50	1.56	1.72
Sweet potato	"	5.55	6.01	6.00	6.40	6.20
Cassava	"	8.77	8.86	8.98	9.04	9.10
Potato	"	8.00	9.95	9.00	10.00	9.50

Table 3. Comparison of export prices for Thai and Vietnamese rice

Date	Price of Thai rice (US\$/mt)			
	% of broken rice			
	5%	10%	15%	35%
June 1993	184	174	167	161
Dec. 1993	329	313	299	267
Increment	145 (17.8%)	139 (17.9%)	132 (17.9%)	106 (16.5%)
Price of Vietnamese rice (US\$/mt)				
Oct. 1993	190	180	175	160
Nov. 1993	230	220	215	190
Increment	40 (12.1%)	40 (12.2%)	40 (12.2%)	30 (11.8%)

Population Increase

The present population of Vietnam is 68 million. By the application of strict family planning methods, the existing growth rate of 2.25% is expected to fall to 1.75% (1995 - 2000), by which time the Vietnamese population will be 80-81 million. If we assume a per capita food consumption of 300 kg, the total demand will be 24 million tons.

CONCLUSION

Policies and programs for food production in Vietnam have been successful, so that positive factors have outweighed the negative ones, and yields and productivity have improved. It is clear that food production can be increased further, not only to meet the needs of a rapidly growing population and for livestock feed, but also for a permanent national rice stock of 1 million mt/year. All factors such as

production area, level of intensive farming, yield, technology application, and product circulation and export, are below threshold levels. In 1990, the average rice yield from 133 million ha in 20 nations in the region was 3.6 mt/ha, while the same figure for Vietnam was 3.19 mt/ha. Average corn yield from 38.5 million hectares in 11 regional countries was 3.31 mt/ha, while the same figure in Vietnam was 1.55 tons/ha.

One Japanese expert, Mr. Kiyooki Katoh, who has been working for a long time in the Japanese Ministry of Agriculture and various United Nations organizations said.

"I have been conducting studies in different Asian countries and doing scientific research in several parts of the world, and I realize the potential of Vietnam agricultural production. With the Vietnamese farmers' hardworking habits, in future Vietnam will export 4 million tons of rice each year".

(Sai Gon Giai Phong newspaper, 12 June 1993).

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DISCUSSION

Dr. Mutert pointed out that Vietnamese farmers are applying 8-10 mt/ha of organic matter per crop, plus an increasing amount of chemical fertilizer, with the goal of increasing rice production to 30 million mt by the end of this decade. He asked about the expected future trends in fertilizer use. Dr. Doan Van Dien replied that at present, Vietnamese farmers are applying only small amounts of agricultural chemicals, and he expected a considerable future increase in chemical fertilizer use.