CHAPTER XIII

THE PARTICIPATION OF THE POOR IN VEGETABLE CHAINS TO HO CHI MINH CITY

Phan Thi Giac Tam – Le Thanh Loan
Nong Lam University

SUMMARY

The study aims to assess conditions for increased involvement of the poor in the vegetable value chains driven by supermarkets and other value-adding outlets. It focuses on safe water convolvulus produced in Cu Chi District, Ho Chi Minh City (HCMC) and tomatoes produced in Lam Dong province. These products are among the most common vegetables in Ho Chi Minh City and they reach the final consumers through both traditional and modern value chains. In-depth interviews of various stakeholders along each of the coexisting chains have been conducted to assess their supply and distribution strategies, advantages and drawbacks of each chain and generation of benefits. In addition, a survey of 120 horticultural farmers in Dalat, Don Duong and Duc Trong was conducted to gain insight into their selling practices and their preferences for different marketing outlets.

For the three commodities, farmers can only link to modern value chains (i.e., chains driven by supermarkets, Metro Cash-and-Carry and safe vegetable companies) through a farmers' organization, a consolidator or a wholesale trader. Semi-formal farming contracts have been developed along the chains. How much farmers can benefit from supplying these modern chains depend upon the type of business relationship that supermarkets and Metro offer.

The case of water convolvulus in HCMC shows that farmers get a higher price as a premium for the better produce they select for the modern chains. They also have a relatively stable income thanks to the loyal business relationship that supermarkets have maintained with their organization over time. This derives from the advantages of certified safe production areas and government supports with IPM and safe technology training. Not surprisingly farmers are thankful to wet markets for their absorption of the remaining products. Few poor farmers have been found to have successfully joined the modern chain. Tomatoes present two different cases. Baby tomatoes – a new variety that is planted in greenhouses in Dalat – are a case of high-value produce supplied to a niche market. Farmers can enjoy a high and stable price in both modern and traditional chains as long as the supply is limited due to high investment costs for greenhouses. The poor are definitely excluded from this chain due to their inability to invest in greenhouses.

Unlike safe water convolvulus and baby tomatoes, ordinary tomatoes come to modern chains in an up-and-down pricing rhythm like in the wet market system. Metro and supermarkets reportedly select their suppliers based upon their low prices – a practice that is less common in the business relationship between long-term collectors and wholesale traders. As a result, this produce goes to supermarkets and Metro through collectors who assemble, grade and select the best-looking tomatoes. Farmers cannot gain such benefits as better access to safe vegetable technology, taking part in grading, and getting better prices and more regular income when supplying modern chains. This poses problems of actual safety in the produce.

All interviewed modern-chain suppliers indeed express their plans or desires to expand the outlets for their safe vegetable supplies. The study demonstrates the crucial role of government support for the formation and operation of farmers' associations, as well as farmers' training and control relative to vegetable safety.

INTRODUCTION

Changes in vegetable consumption

Vegetables represent the second most consumed foodstuff (6 million tons per year) after rice in Vietnam (13 million tons per year) (Figuié, 2003). The consumption per capita of leafy vegetables increased from 48.4 kg/year in 1987 to 71.2kgs in 2000 (FAO data quoted by Figuié, 2003). In 2004, about 97% of the population frequently consume vegetables both in urban and rural areas. However, urban consumers use vegetables more frequently than rural ones (90% and 61% urban and rural consumers respectively eating vegetables daily) (Tam, Phan T.G. 2005). This result coincides with other literature sources: the urban vegetable consumption was noticeably higher than the rural one in 1998: 43kg and 37 kg/capita/year respectively (GSO, 1998).

Ho Chi Minh City (HCMC) in South Vietnam is a big market for many types of vegetables from various origins. It was estimated that HCMC vegetable requirement is about 400,000 tons per year and more than 70% of this volume comes from distant provinces such as Lam Dong, VND Nai, Tien Giang, and Long An. The remaining 30% comes from HCMC peri-urban areas. Dalat – a resort city of Lam Dong province, about 250 km from HCMC, supplies about 240 tons of vegetables annually to HCMC (DOSTE, Research Report 2001).

Nowadays, vegetables are supplied to HCMC consumers through both traditional and modern distribution chains that are in fierce competition. Vegetables from distant areas like Dalat reach their urban consumers mainly through traditional market systems, i.e., a long chain with various actors including producers, collectors, assemblers, wholesalers, retailers and hawkers. The safety of vegetables has been a public concern. A survey in North Vietnam showed that vegetables are considered as the most dangerous foodstuff for consumer's health by 88.5 % interviewees (Figuie, 2003) while in the South more than 90% respondents either in rural or urban areas believe that vegetables can poison consumers if they are not prepared well by them (Tam, Phan T.G. 2005). With consumers becoming more concerned with vegetable safety, modern distribution chains that include supermarkets, Metro and safe vegetable stores have focused on the supply of safe vegetables. Most supermarkets carry vegetable safety signs. In addition some supermarkets and Metro have been aiming to reduce prices to compete with wet markets.

Literature review on supermarket strategies

Building long-term business relationships has been reported as a common practice in traditional market systems in South Vietnam (Cadilhon et al, 2004). Vegetable markets are characterized by many risks due to the high perishability of the produce, the absence of cold storage in markets and seasonal patterns of unbalanced demand and supply. Without written contracts, the operations of traditional markets are based upon the trust that has been built over time between city wholesale traders and collectors; and between collectors and their preferred suppliers who can provide them with high quality produce.

Procurement practices of supermarkets (SM) have major impact on supermarket performance and on farm suppliers. The change of SM procurement system in developing countries has been documented by Reardon et al (2003). The path of change is (i) a shift toward centralized distribution; (ii) a shift toward regional procurement systems; (iii) a shift toward new specialized/dedicated wholesalers and away from traditional brokers/ collectors; (iv) a shift toward private standards of quality (and an incipient use of private safety standards); and (v) an emergent but definite shift toward preferred supplier systems, often working with farmer groups. The worldwide tendency of SM was to shift from the procurement of individual SM to a central buying office in order to reduce coordination costs and grasp economies of scale. Moreover, SM chains may make a shift toward regional procurement systems that adopt international private standards of European or US chains. This in turn requires farmers to upgrade the quality and safety of their products. A farmer who gets involved in such a regional procurement system of a chain is also a de facto exporter.

The tendency to shift procurement from wholesale markets to dedicated/ specialized wholesalers and preferred suppliers is parallel to the development of a long-term relation -

ship between SMs and some suppliers in order to assure top-quality produce and low coordination costs. When analyzing the impacts of SM on horticultural farmers, Shepherd found the same pattern of SM procurement change in Asia (Shepherd, 2004). While many chains in Asia (The Philippines, Thailand) maintained their procurement from traditional wholesalers, some supermarket chains have gradually shifted to specialized/dedicated wholesalers who specialize in certain products and supply only one supermarket chain. Some supermarkets have even formed joint ventures with wholesale firms. Evidence outside Asia shows that some dedicated wholesalers have shifted from purchases to contracts with farmers in order to meet specific grades and standards of modern chains. Preferred supplier systems have been also promoted. Preferred suppliers are selected producers or wholesalers who are capable of meeting quality and safety standards. This system enables rapid movement of produce from farms to stores and traceability be constent all along book tracability or traceability. It has replaced the old method of procurement from various suppliers at TOPS supermarket, as the old method had caused difficulties in terms of quality consistency and stock controls.

Individual farmers find it impossible to directly supply SM and meet a consistent quality and quantity supply. There are several ways in which small farmers can be linked to modern distribution chains: through wholesalers, or a farmer organization like a cooperative an NGO-supported project or a government program such as the National Association of Co-operative Federation in Malaysia. In the context of Vietnam, farmers' organizations such as farmers' groups and agricultural cooperatives are formal forms of linkage with SM.

OBJECTIVES AND METHODOLOGY

This study examines both traditional and modern distribution chains that coexist in HCMC. In particular, it examines how and what type of farmers have access to traditional and supermarket chains, focusing on two cases: water convolvulus that comes from peri-urban areas of HCMC and tomatoes that come from Lam Dong province. These two products are the most common vegetables consumed in HCMC and they are displayed in both wet markets and supermarkets. In addition, the assessment of benefits and constraints accruing to farmers of each chain is based on the buyers' procurement practices alongside the business relationships they have developed with their suppliers and the ways producers are linked to a distribution chain.

In-depth interviews of various stakeholders along a chain have been undertaken, with a special focus on purchase and supply strategies, constraints and opportunities presented by the different existing value chains, relationships between buyers and purchasers as regards distribution of information, commitments, risk sharing, input and service supply, advantages and drawbacks of entering a farmer's group, quality control, costs and benefits, and prospects. For the case of water convolvulus that comes from the peri-urban area of HCMC, we selected Ap Dinh Association – a well-known safe vegetable production area since 1996. For the case of tomatoes, we examined three agricultural cooperatives that produce safe vegetables in Dalat (Phuoc Thanh, Xuan Huong and Anh Dao co-operatives),seven tomato farmers and two tomato traders in Duc Trong plus three farmers and Duong Thao Company in Don Duong district, Lam Dong Province. In addition, a survey of 120 horticultural farmers in Dalat, Don Duong and Duc Trong was conducted to gain insight on their selling practices and their preference of marketing outlets.

SURVEY RESULTS

I. Fierce competition between traditional and modern chains

Vegetables are displayed in most supermarkets (except specialized SM) in Ho Chi Minh City in variable quantities. Price variation observed across supermarkets (see Table 191) seems related to location. Supermarkets that are near expatriates' residential areas or at the heart of the city center usually have relatively higher prices and smaller volumes of vegetables.

Some supermarkets, such as those of the CoopMart domestic chain, have a strategy of developing a vegetable section to meet the customers' demand for safety and to make the SM a "one-stop shop," as vegetables are essential ingredients in Vietnamese meals and usually consumed on a daily basis. Vegetables offered by these supermarkets are of rich diversity just as in wet markets. In addition, they are displayed in such a way that customers can select and buy at any quantity, as in wet markets.

Table 191 - Prices in different supermarkets of HCMC

STT	Name of supermarket	Tomato		Water convolvulus	
		Ordinary	Safe	Ordinary	Safe
01	COOP MART TRAN HUNG DAO	7200	-		3500
02	BIG C AN LAC	7000	-	4000	5400
03	COOP MART PHU LAM	6500	-		3500
04	COOP MART HAU GIANG	7200	-		3500
05	COOP MART DAM SEN	6700	-		3500
06	BIG C MIEN VND	7500	-	39 00	5400
07	MAXIMARK 3 THANG 2	-	12000	-	6000
08	CITI MARK MINH CHAU	8000	-	4000	-
09	MAXIMARK CONG HOA		8000	-	6000
10	SIEU THI MIEN VND - HOANG VAN THU	-	6000	-	6000
11	DIAMOND	12000	-	-	-
12	SAIGONTOURIST PLAZA	10000	-	-	-
13	SIEU THI TAX	10000	-	-	-
14	CITI MARK	10000	-	-	-
15	LUCKY PLAZA	-	-	-	-

Source: Nong Lam University surveys, MALICA/MMWB4P, 2005

Vegetable prices offered by supermarkets located near large traditional markets are very competitive. A comparison on vegetable prices (collected during eight days) between Dinh Tien Hoang CoopMart and the large traditional market of Ba Chieu in Binh Thanh district shows that about half of the products sold in this supermarket have lower or equal prices to those of the traditional market, and half have higher prices (see Table 192 and also Part II). And yet the display condition is quite different: vegetables in the supermarket are displayed on shelves and in refrigerated sections while vegetables in traditional markets are displayed on tables or even on the ground and exposed to sunshine and dust. As reported by Saigon-Coop, the fresh food project that started in June 2002 has resulted in an increase of 352% in vegetable and fruit sales after two years, or seven tons per day, accounting for 3.5% of total sales (Presentation by CoopMart at FAMA-FAO workshop, 2004).

Table 192- Retail price differential of vegetables in a supermarket and a formal market

	Vegetables	Dinh Tien Hoang Co-op Supermarket	Ba Chieu Market
1	Tomatoes	100	12.50
2	Dalat Beans	100	1.66
3	Headed Cabbage	100	-5.38
4	Chinese cabbage	100	-11.69
5	Bitter Melon	100	-29.93
6	Water Lily	100	39.13
7	Choysum	100	0.00
8	Potato Dalat	100	-22.58
9	Cucumbers	1 00	-15.04
10	Eggplant	100	-11.93
11	Quarts	100	5.49
12	Carrots	100	-4.76
13	White Onion (Dalat)	100	10.34
14	Sweet potato (Dalat)	100	20.75
15	(Red) Watermelon	100	9.09
16	(Yellow) Watermelon	100	-10.34

Source: Nong Lam University surveys, MALICA/MMWB4P, 2005

II. Institutional factors explaining the market development of water convolvulus and tomato

Institutional factors relate not only to policy strategies but also to the implementation of these policies. While policy strategies are identified and prepared within the organs of the Party, these strategies are then standardized, legislated and presented in legal documents through the working of the National Assembly, the Prime Minister's office, the Government Ministries and other organs of the state Farmers' organizations, collectors, and traders in retail markets, wholesale markets and supermarkets presently participate in the market chain of water convolvulus and tomatoes in HCMC. More prominent among policy implementations effecting the market development of water convovulus and tomatoes are policies on market restructuring, including the relocation of traders in vegetable wholesale markets and the development of safe vegetable stalls in some traditional markets, as well as the formation and operation of farmers' organization (see also Part 1 on policy aspects).

Policies on market restructuring

Policies on markets, supermarkets, traffic and architecture have promoted a new type of distribution for vegetables, particularly for water convolvulus and tomatoes. Under the Decision 1549/QD-UB dated April 21, 2003 by the HCMC People Committee, ten wholesale markets including the three vegetable wholesale markets (Cau Muoi, Mai Xuan Thuong and Tan Xuan) are being moved from the city center to new facilities at the city outskirts. The impact of wholesale market relocation is case-specific and controversial, as it needs to be balanced between long-term objective and short-term performance. Though the temporary impact of wholesale market relocation and its socio-economic impact are controversial; the upgrading of current trading infrastructure and facilities, e.g., through modern storage facilities, more clean trading space and equipment for keeping food in good condition are obviously provided. Policies on traffic and architecture have prohibited trading operations by cart or hawkers, improved trading order, removed most informal and spontaneous markets and oriented customers toward formal markets and supermarkets. On the negative side, operation costs have increased due to newly invested facilities and services such as electricity, water and security. In addition, the number of buyers who come to new wholesale markets has reportedly decreased because of longer distances. The removal of hawkers and on-ground stalls in city markets has reduced the number of retailers and increased the retailers' cost of renting a stall. High investments in wholesale markets, increased transport and rental costs in city retail markets have together pushed up vegetable retail prices.

On the supply side, some relatively small-scale assemblers at rural areas have lost their business because their buyers who were traders in the removed wholesale markets have scattered. For example, Ms. Le Thi Quyen, a trader in Tung Nghia wholesale market in Lam Dong province and formerly a supplier of Cau Muoi market, has not shifted her sales to any of the newly established wholesale markets in HCMC, but rather to other retail markets in Dong Xoai town. As a large-scale assembler, Mr. T., the director of Duong Thao Co., has changed his outlets from old to new wholesale markets. However, he has been disappointed with the level of equipment and promotion of safe vegetables in these wholesale markets.

While the impact of this market restructuring on the poor appears to be adverse at the first stage, it has more or less contributed to commercial development in suburbs and expressed the government's direction toward more modernized and civilized vegetable trading.

Other policies have oriented participants towards more efficient operation in the vegetable market, including the water convolvulus and tomato markets. After more than ten years of operation, supermarket business has been legally directed towards more fairness and efficiency under Decision 1371/2004/QĐ-BTM dated Sep. 24th 2004 by the Ministry Of Trade. Apart from what happens in supermarket-driven chains, the trading promotion of safe vegetables has recently increased owing to the extension of safe vegetable stalls in certain traditional markets such as Ben Thanh market in District 01, Vuon Chuoi market in District 03, and vegetable shops along Hai Ba Trung, Nguyen Thai Hoc and Hung Vuong streets among others. While these outlets mainly serve the small-scale demand of non-poor customers, such operations have expectedly better met the demand for safe vegetables, and possibly induced an improvement in the income of poor farmers through their safe production. Moreover, under the policy on safe vegetables, the HCMC People Committee has planned not only to support safe vegetable production in three suburban districts, namely Cu Chi, Binh Chanh, Hoc Mon, but also to promote trading and to enhance consumers' awareness of food safety issues. The encouragement of farming contracts under Decision 80/2002/QĐ-TTG has adjusted the relationship between traders and farmers in an effective way. The government's scheme on the improvement of management capacity and operation efficiency of co-operatives is

Table 193 – Government programs supporting farming organizations

Association/Company	Government's program implementation
Ap Dinh, Tan Phu Trung (HCMC)	Training; bank loan with supporting interest rate from 4 to 7% per year; vegetable fair; tax exemption in the first three years
Xuan Huong, Phuoc Thanh, Anh Dao (Dalat)	Training; bank loan with supporting interest rate of 0.5% per month from the Vietnam Bank for Social Policies; vegetable fair; tax exemption in the first three years
Duong Thao Ltd. Co.,	Encouragement for the company's investment in contract farming from the Decision 80/2002/QĐ -TTg

Source: Interview with the heads of organizations in January 2005 and December 2004, Nong Lam University surveys, MALICA/MMWB4P, 2005 presented in Decision No.291/2003/QĐ-UB dated 12th Dec.2003 by the HCMC People's Committee.

Policy on farming organizations

Institutional factors have played an important role in the formation and operation of farming organizations , which act as farmers' representatives to market their vegetables, including water convolvulus in HCMC and tomatoes in Lam Dong province (see Table 193, Box 9, Box 10). The formation and successful operation of these organizations can be considered as an achievement of the government and local authorities. To some extent, these organizations have enjoyed supportive policies in the encouragement of cooperative formation; the government's commercial promotion for agri-products particularly safe vegetables; the promotion of contract farming and policies on safe vegetable development.

Contributing to these achievements are the DARD, the DoT, financial institutions, the Co-operative Alliance, the DoH, other mass organizations like the Women's Union and the Farmer's Union. The survey indicated that five out of six farmers' organizations have received the government's training program for both farmers and managers in these organizations. While the DARD in HCMC and Lam Dong province are mainly in charge of training farmers on pesticide and fertilizer use and farming techniques, the Co-operative Alliance has provided management training for the associations' heads. The DARD has not only provided technical training courses but also co-coordinated with companies trading pesticides, seeds and other inputs to direct the choice of the best inputs and to support

Box 9- Formation process of Ap Dinh farmers' organization

In the early 1980s, a cooperative with 1500 households and 10 hectares of upland existed in Ap Dinh, Tan Phu Trung village, Cu Chi District, HCMC. This cooperative was getting subsidies from the government. Farmers were selling their vegetables to the Vegetables and Fruits Corporation of HCMC – a state-owned company. They could in turn buy rice at a cheaper price. When participating in this cooperative, farmers were granted land for production. In 1986, the cooperative was dissolved. Farmers continued to produce vegetables on their own land. In 1997, the HCMC People's Committee has implemented the safe vegetable program that first came into effect in the area of Ap Dinh. In the period 1997-2000, Ap Dinh Association's membership increased from five members to 40 and they were trained on safe vegetable production. The association was cultivating only five to seven categories of vegetables before 1997 and with the direction of HCMC authority; this association was able to sell to CoopMart with a trading volume of 30 kg/day. After the city's fair on vegetables in Sep. 2000 in HCMC, the Ap Dinh Association received many orders from vegetable companies and city caterers. To meet the increase in demand, the association has gradually included more members, up to 200 households divided into four smaller groups based on the farmers' location in four villages, namely Ap Dinh, Ben Do 01, Cay Da and Song Dong. In 2001, the HCMC DARD in cooperation with local authorities officially established Ap Dinh Association (Lien To Ap Dinh). From then on, its activities have included not only vegetable marketing but also supply of production inputs.

Source: Int erview with Mr. H., head of Ap Dinh association, December 2004, Universitysurveys, MALICA/MMWB4P

Box 10-Formation process of Duong Thao Co.

From 1978 to 1997, Mr. T., now the Director of Duong Thao Co., was a driver. He transported vegetables from Don Duong district, Lam Dong province to Cau Muoi wholesale market, HCMC. Since 1995, the vegetable business has developed and become more profitable. In 1997, Mr. T. started his vegetable trading by purchasing vegetables from farmers in Don Duong and selling at Cau Muoi market. In seeking higher-quality vegetables, Mr. T. has carried out his own investment in household farming. At the beginning of the crop, farmers were receiving production inputs from him. At the end of the crop, they had to sell him their vegetables and were paid the difference between revenues and production cost invested. From 1999 to 2002, he invested in 40 households up to 10 million VND per household, accounting for 20% of total capital required in each crop. He was running the business as a private trader at that time. In 2003 he established Duong Thao Co., and expanded his own business in seeking for higher quality and stable quantity of vegetable from farmers. He has enlarged his supply basis by 100 households with the investment of 10-20 million VND per household, in total amounting to 2-3 billion VND. The Decision 80/2002/QĐ-TTg dated June 24th 2002 has encouraged him to expand his investment and to potentially receive support from the government. However, more than two years after this decision, he has not received any support from the government for his involvement in vegetable farming and his investment in household production as in the farming contract scheme. Unfortunately, his investment in 2004 was destroyed by the disaster of flooding from Da Nhim hydroelectric plant. Farmers lost everything and were unable to return Mr. Thu's investment. As a result, he has ceased providing cash/inputs to farmers since September 2004 but has continued trading and processing fruits and vegetables.

Source: Interview with Mr. T., director of Duong Thao Co., Nong Lam University surveys, MALICA/MMWB4P.

farmer trials of new varieties. The DARD has also played an important role in quality control of safe vegetables in both production and trading. Financial institutions have provided credit for farmers' investment in agricultural production, particularly in vegetable production.

While techniques and credit for investment in production have mostly relied on the DARD and financial institutions, vegetable trading promotion has been carried out by the HCM DoT and the Co-operative Alliance in Lam Dong province. These two institutions have organized vegetable trading fairs and created the linkage between farmers' organizations and trading outlets, especially vegetable companies and supermarkets. The DoH in HCMC and Lam Dong province has actually played an important role in enhancement of consumer consciousness of safe vegetables and thus on the rise of safe vegetable demand.

Other organizations like the Women's Union, the Farmer's Union and the Extension Organization, to some extent, have contributed to market development through extension services, creating the linkage between farmers' needs and support programs from government authorities, e.g., in credit services. It should be noted that these institutions have not operated independently, but there has always been a comprehensive coordination among several institutions to carry out a program (see Box 11).

Box 11- Assistance for farmers' bank loans under Legal document No. 419/UB-CNN dated Feb. 5th 2002 by the HCMC People's Committee

The program is aimed at subsidizing farming households' interest rates to implement agricultural structural change under the direction of the GoV. This program has provided credit at supporting interest rate of 4% to 7% per year for households in agriculture, aquatic production and the salt industry. Households belonging to the Hunger Elimination and Poverty Reduction Program enjoy the supporting interest rate of 7% per year, while others have a rate of 4% per year. Annually, farmers have to pay the difference between the actual interest rate in the capital market and this supporting interest rate. At Ben Do village, households belonging to the program have received the supporting interest rate of 4% on the allowed amount of 5 - 10 million without collateral. In 2004, when the actual interest rate in the city bank providing credit was 10% per year, farmers in the scheme paid the difference of 6% per year on their credit amounts.

The program's implementation has been under the responsibility of many HCMC professional authorities including the DARD, DoF, DPI, MIDF in HCMC (Quy Dau Tu Phat Trien Thanh Pho), and the State Bank in HCMC Branch, the People's Committee in districts having agricultural, aquatic production and salt industry such as Cu Chi, Binh Chanh, Nha Be and Hoc Mon.

To create the co-operation among these bodies, the HCMC People's Committee has established a Municipal project appraisal board under Decision No. 46 /2002/QĐ-UB dated May 06th 2002. The board has been assigned to appraise and monitor farm household projects and to make progress reports to the HCMC People's Committee in pursuit of the program goals. The process of examining farm household projects is organized as follows:

- The district People's Committees preliminarily examines farm household projects, makes a list of proposed projects and then submits it to the Municipal project appraisal board.
- The list is simultaneously examined by DPI, the DARD, the DoF, the MIDF in HCMC, and the State Bank concerning relevant fields
- The final consideration is then organized through the board meeting under the organization of the DoF – as the standing body in the board.

Source: Legal document N° 419/UB-CNN dated Feb. 5th 2002 by the HCMC People's committee and interview with Mr. S., collector of Ben Do village, Ap Dinh association, in Dec. 2004, Nong Lam University surveys, MALICA/MMWB4P.

As for the case of Xuan Huong and Phuoc Thanh cooperatives in Dalat, apart from bank loans with supportive interest rate to members, the associations' heads have received government investment of 80-100 million VND to implement the safe vegetable program. Duong Thao Co. is a particular case participating both in vegetable production and supplying to supermarket (see Box 10). According to Mr. T., the company's director, the company hasn't received any support from the government apart from the tax exemption in the first two years of establishment like any other company. However, Decision 80/2002/QĐ-TTg dated June 24th 2002 by the Prime Minister has given great incentive to his previous investment in households' farming production. After this Decision promulgated, he bravely increased his investment and waited in vain for more support from the government under this Decision.

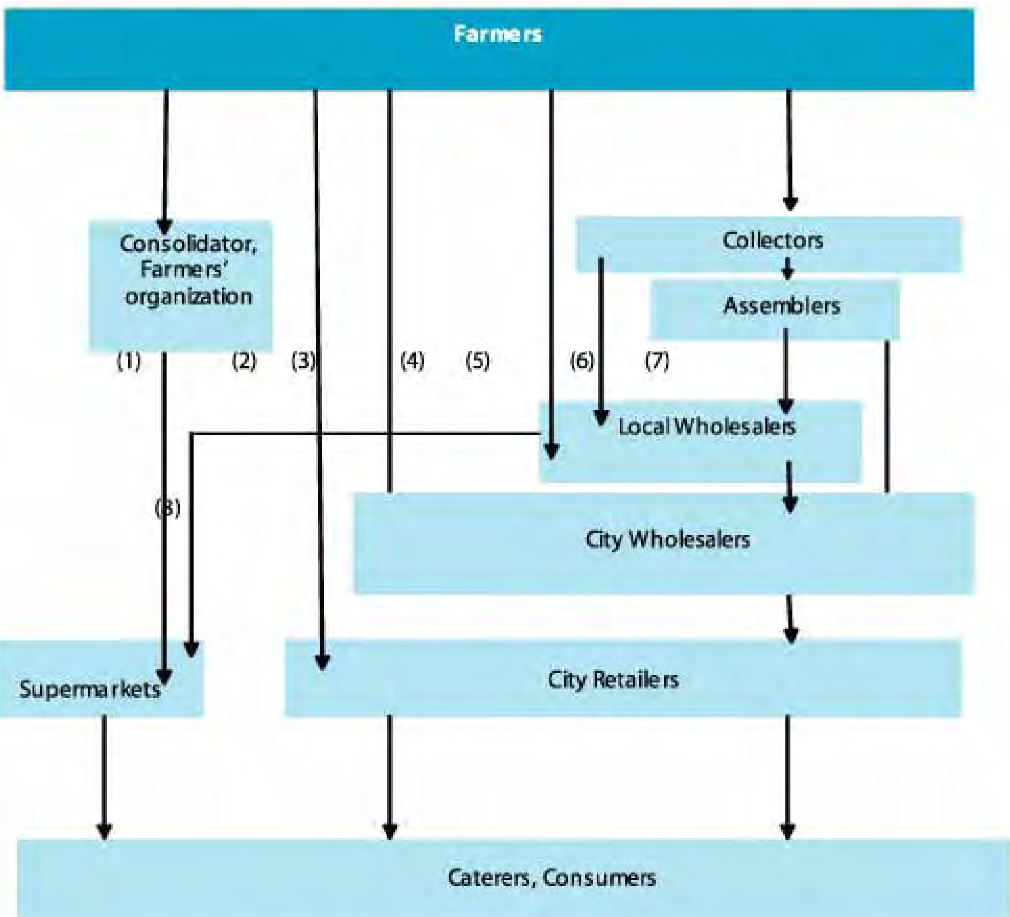
III. The organisation of commodity chains

Vegetables are supplied to HCMC consumers through both traditional and modern distribution chains, i.e., chains driven by Metro, supermarkets and safe vegetable stores (see Figure 53). The modern chain is mostly been driven by supermarkets, which play a decisive role in modern outlets including supermarkets and specialized shops organized by vegetable companies. To supply vegetables to caterers or end-consumers, supermarkets or shops procure safe and/or high quality vegetables either directly from farmers' organizations or indirectly from assemblers. After selecting the best vegetables to supply modern outlets, farmers always have to deal with their remaining vegetables of lower grade. Traditional chains are useful for absorbing the remaining vegetables either through wholesale markets with a large volume or through retail markets.

Only the first grade of safe water convolvulus produced by Ap Dinh association in HCMC is eligible to supply supermarkets, at a nearly stable price over nine years (Chain 1 in the figure). The remaining product has to find its way to a nearby wet market or a further wholesale market in the area (Chains 2 and 3). In general, this association can only sell 700 kg/day of all vegetables to supermarkets, while their daily supply is around 30 tons per day (that means that 23% of water convolvulus is sold to supermarkets). While committed to their contract with supermarkets, these farmers appreciate the role of wet markets for their absorption of remaining vegetables.

Ordinary tomatoes are mainly produced in Don Duong and Duc Trong Districts in Lam Dong Province, about 250km from HCMC. Most tomatoes in Duc Trong are produced at Lien Nghia Town and the communes of Hiep An, Liên Hiep and Phú Hoi. Most farmers sell to local collectors who then deliver commodities to either local wholesalers or to assemblers who gather produce, grade and deliver directly to other markets (Chains 5,6 and 7). Some farmers who are located in Lien Nghia can sell directly to either the local retail market or the local wholesale market (Chain 4). Most farmers in Duc Trong receive none or only a portion of inputs/cash from traders.

Figure 53- Marketing chains of water convolvulus and tomatoes in HCMC



Source: Nong Lam University surveys, MALICA/MMWB4P, 2005

Therefore they have freedom to sell to any trader at harvest time. However, farmers are used to selling to a few traders whom they trust. In Don Duong district, agricultural development has accelerated recently. Most farmers are poor as they are ethnic minorities or new immigrants; some are even landless. These farmers receive inputs and cash from traders. In return, they have to sell all their produce to the traders at a price lower than the prevailing price in the local market. If traders provide all inputs, farmers may have to follow all traders' instructions on how to cultivate their crop.

Baby tomatoes are cultivated in greenhouses in Dalat and are mostly delivered to supermarkets or vegetable companies by contract. The surplus goes to wholesale markets, e.g., Mai Xuan Thuong market in HCMC. The increasing demand for this product has been met by both modern and traditional channels.

In a fiercely competitive manner, Metro and some supermarkets have recently called for assemblers' participation in their procurement process so as to make their purchases as cheap as possible without any care for loyal business relations or safety of vegetables, according to some interviewed farmers. These assemblers are often wholesalers who have their own stalls in vegetable wholesale markets. They do not ultimately appreciate such a procurement manner and consider it indecisive and dispensable. Explaining this, Ms. K., a collector and wholesaler in Dalat wholesale market interviewed on 12/04/05, declared that she had problems with her remaining vegetables, unsold to supermarkets, which are obviously hard to sell in traditional markets, with fluctuations in SM's purchasing price, and breaking-off of contract by SM if agreements on purchase prices are not reached. The delay of payment of 15 days after delivery is also considered too long for some collectors to manage their working capital, according to Ms. C., a wholesaler in Dalat wholesale market (interviewed on 26/01/05).

Concerning the poor's participation in the chains, the poor participate in the chains neither as collectors nor traders (wholesalers or retailers) because of operational capital requirements. Most of them are producers supplying their vegetables either to traditional or modern chains. When taking part in modern chains, farmers do not directly sell to supermarkets or vegetable companies, but through farmers' organizations, which will now be presented.

IV. Horizonatal and Vertical Coordination

1. The role of farmers' organisations

This section explores the way in which poor farmers are linked to DVCs. As regards horizontal coordination, farmers' organizations have appeared to market their vegetables. As regards vertical coordination, we will present the relationships between farmers and their purchasers regarding the exchange of marketing and technical information; supply of credit, inputs and training; quality control pricing strategies and possible conflicts and sanctions.

Apart from the government support as previously presented, the formation and operation of farmers' organizations have also derived from the farmers' need for an organization to act as a representative to market their commodities, so that they can gain access to many potential orders in large quantity and/or with high quality requirements, especially by the modern distribution chains. Interviews with heads of associations proved that they have been able to obtain valuable contracts in trading fairs through their association, a result that could not have been reached by individual action. Farmers derive legal status to make transactions by belonging to associations. Through these organizations, the product labels have also been established and continuously promoted in the market. In most cases, one farmer himself is unable to meet an order of a wide range of vegetables everyday. If able, he stands in an unfavorable position in making transactions, as all organizations prefer doing business with a legal entity rather than dealing with one individual person. Rarely have any companies entered into contracts with one individual farmer (interview with Mr. T., the head of Tan Phu Trung cooperative). Without any previous reliable relationship such a contract seems unattainable to one individual farmer and thus turns more risky to the buyer.

Prominent among several differences between a legal entity and either legal person or legal merchant is the fact that benefits from doing business are in the name of the former, not the latter. The former is responsible for loss within its own registered assets whereas the two latter have to put up with the loss with all his/her assets. Besides this, a legal entity finds it easier to get a bank loan or have access to the government supporting program, which often requires a leader like a farmers' representative to participate in the process and then disseminate the scheme to farmers.

Other than these common concerns, however, there have remained some differences concerning the form of legal entity, the organization's operation, and member characteristics as required by the association manager, i.e., their land, high quality produce, capital and reputation. Among six organizations in the sample, Tan Phu Trung, Xuan Huong, Anh Dao and Phuoc Thanh are in form of cooperatives; Ap Dinh is an association – a group of farmers; and Duong Thao is a private company. The differences in establishment and operation also result in differences in the members' characteristics.

a. Characteristics of commodities and members

The characteristics of the studied organizations are summarized in Table 194 and Table 195.

Commodities

The nature of the crop depends on each area. As for the case of Tan Phu Trung and Ap Dinh in Cu Chi district, farmers have currently provided 13 categories of vegetables including six leafy vegetables and seven fruit-vegetables.Leafy vegetables are water convolvulus (rau muông), leaf mustard (*cải xanh*), choysum (*cải ngọt*), basella alba (*mồng tơi*), amaranth (*rau dền*) and flagrant knotweed *(rau râm)*. Fruit-vegetables are cucumber *(d?a leo)*, bitter melon (*khổ qua*), yard-long bean *(đậu đũa)*, okra (*đậu bắp*), gourd (*bầu*), wax gourd *(bí)*, pepper (*ớt)* and smooth loofah (*mướp hương*). It takes 25-30 days per crop for leafy vegetables and 40-45 days per crop for fruit-vegetables. Thus, farmers can annually plant seven or eight crops for leafy vegetables and three crops for fruit-vegetables.Farmers rotate these crops in their fields during a year.

In Lam Dong district, Xuan Huong association is currently providing 14 types of vegetables including eight kinds of vegetables grown in greenhouses: lettuce *(xà lách)*, spring onion *(hành tây)*, hot pepper *(ot)*, fragrant herbs *(rau thom)*, cauliflower *(lo xanh)*, green peas *(dau hòa lan)*, baby tomatoes *(cà chua sori)*, củ hôi; and five in open fields: headed cabbage (*bắp cải*), Chinese cabbage (*cải thảo*), potato *(khoai tây)*, carrot *(cà rot)* and *(củ dền)*. Farmers annually plant four temperate vegetables: headed cabbage, Chinese cabbage, carrot and potato, and seven leafy vegetables such as lettuce and fragrant herbs. In the same area, Anh Dao and Phuoc Thanh associations have relatively a similar range of vegetables except for some kinds of fragrant herbs.

Vegetables in Cu Chi are of common varieties and their economic values are not as high as those in Dalat. Leafy vegetables are, on average, sold at only 1,800-2,500 VND per kg (farmgate). By contrast, vegetables in Dalat are of special varieties and have higher economic value, in particular baby tomatoes and fragrant herbs. Among four organizations, Xuan Huong mainly supplies high-value vegetables to a niche market such as green coral and fragrant herbs: parsley, celery and capsicum. These vegetables require greenhouse production in small or medium fields as well as certain farming techniques. In return for this investment, his members can receive high and, more importantly, stable price in both traditional and modern chains during the year and meet a limited demand of well-off consumers. Phuoc Thanh's and Duong Thao's members provide a smaller range of vegetables, in larger quantity. Anh Dao's members serve a wide range of vegetables under their medium production scale.

Members

Ap Dinh, Tan Phu Trung and Anh Dao associations' members are diverse in terms of income and production size (see Table 194). Entry into these organizations is either free or in the case of Anh Dao cooperative subject to a limited subscription fee. A wide range of high-quality vegetables is what the organizations' managers need from their members' participation. By contrast, Xuan Huong and Phuoc Thanh associations seem to be restrictive concerning the number of members and requirements for their entry. According Mr. Q., the head of Xuan Huong cooperative, his cooperative's members have close relationship with him, have experience in safe production and can afford greenhouse investment for high-value vegetables. Mr. H., the Phuoc Thanh cooperative manager, keeps an eye on potential members' capital contribution so as to expand the cooperatives' activities not only in farm production but also in trading and services. The members' entry fees are used for raising operational capital; he disclosed to us that the cooperative's subscription fee would be increased from 3 million to 10 million VND in the coming years.

Number of persons working for the association and their responsibility

Farmers' associations, in the survey, have from five to 11 employees (see Appendix 1) who receive monthly salaries from 700,000 to 1,400,000 VND. They are responsible for such jobs as accountant, cashier, warehouse-keeper,technical worker, driver, collector, distributor, and preliminary vegetable treatment. Some occasional employees get salaries lower than 800,000 VND/month.

b. Activities of the association

Non farm activities

While Xuan Huong, Tan Phu Trung, Ap Dinh associations have only been involved in the vegetable sector, Anh Dao and Phuoc Thanh associations and Duong Thao company have expanded their operational scope. Anh Dao cooperative is involved in the distribution of several kinds of consumption products like milk, soap and washing powder in Lam Dong province; Phuoc Thanh is a trader of produc-

Table 194- Characteristics of members of farmers' organizations

	Ap Dinh	Tan Phu Trung	Xuan Huong	Phuoc Thanh	Anh Dao	Duong Thao Co.
Number of farm members	200	50	21	15	11	100
Production scale (m2) (min-average-max)	300-1000-3000	500-1500-6000	100 - 240 - 500	100 - 600 - 20000	100 - 500 - 30000	Over 2000 m2
Nature of crops	• Leafy vegetables: water convolvulus, leaf mustard, choysum, basella alba, amaranth, flagrant knotweed • Fruit-vegetables are cucumber, bitter melon, yard-long bean, okras, wax gourd, pepper, smooth loofah		• Headed cabbage, Chinese cabbage, potato, carrot, cu den • Vegetables grown in greenhouse including lettuce, cu hoi, spring onion, hot pepper, fragrant herbs, cauliflower, green peas, baby tomatoes, green coral, lollo rossa green and red	• Spinach, headed cabbage, cauliflower, potato, carrot	• lettuce, wax gourd, cauliflower, lollo rossa green	• tomatoes, carrot, spring onion, headed cabbage, Chinese cabbage and so on.
Number of crops per year	• 7-8 crops for leafy vegetables, 3 crops for fruit-vegetables		• 4 crops for temperate vegetables such as headed cabbage, Chinese cabbage, carrot, potato; seven crops for leafy vegetables such as lettuce, fragrant herbs			
Members' characteristics	• a wide range of income production and size, open to everyone • no subscription fee		• close relationship, experience, and ability to invest in greenhouse for high value vegetables • subscription fee: 1 million VND	• close relationship, experience, subscrip-tion fee: 3 million VND	• joinable to everyone • subscription fee: 1 million VND • either involved in vegetables or trading other products	• Production size over 2000 m2, hard-working • No subscription fee

Source: Interviews with the heads of farmers' organization, Nong Lam University surveys, MALICA/MMWB4P, 2005.

tion inputs; and Duong Thao has expanded its operations in vegetable and fruit processing.

Training

Five co-operatives among six farmers' organizations have benefited from training activities (see Table 195). The training course is on pesticide and fertilizer use, farming technique, and managerial skills for the organizations' managers only. Though harvesting technique is one of the topics that farmers look for, it is not currently in the training scheme. In HCMC, farm training is organized by the Division of Plant Protection, the HCMC Center of Agricultural Extension, and the HCMC DARD. The training course commonly takes three to five days and is presently organized once a month, instead of every quarter as it was five years ago. In Dalat, monthly farm training is for all farmers, but cooperative farmers have priority over others because the training scheme favors cooperatives.

Cooperative farmers attain training information earlier, and thus successfully register their participation. This training activity is organized by the province's DARD and the city Agricultural Center. The heads of associations always get ahead of their members in acquiring techniques and then update along with their members. Apart from technical training for farmers, they have enjoyed training on management from the Co-operative Alliance in HCMC and Lam Dong province. The organizations have not actually organized training activities but have played an active, although variable, role in drawing farmers into participation. As the head of Xuan Huong cooperative is simultaneously the head of the Farmers' Association in the area, his members have more chances to enjoy training. Unlike the case of Xuan Huong, Phuoc Thanh has disseminated techniques and farming processes to farmers on the basis of the vegetable company's requirements. Ap Dinh and Tan Phu Trung associations benefit from the HCMC DARD's program on safe vegetable development. Lastly, Duong Thao Co. and Ap Dinh association are not on the list for preferential treatment in management training since their legal entities are not cooperatives.

Table 195- Activities of the associations

Name of association	Training	Credit	Activities input supply	Other activities
Ap Dinh	available		Available (seed)	
Tan Phu Trung	available		Available (seed)	
Xuan Huong	available	available		
Phuoc Thanh	available	available	Available (seed, pesticide, fertilizer)	farm input trading
Anh Dao	available			Sole distribution agency of manufactured products such as Dumex milk, beverages, soap
Duong Thao Co.			Available (seed, pesticides, fertilizers)	

Source: Interviews with the heads of farmers' organizations, Nong Lam University, MALICA/MMWB4P, 2005.

Input supply

Regarding water convolvulus, nearly 100% of households receive seeds from the two associations. Pesticides and fertilizers are supplied by the Section of Plant Protection in Cu Chi district. In Dalat city and Lam Dong province, Xuan Huong does not provide inputs since one of its members is an input supplier. In Phuoc Thanh, input supply, one of the business activities of the association, is provided to both outside farmers and members, with a possible delay of 40 days (a crop period) for its members' payment. Input supply in Duong Thao Co. is performed under the company's investment scheme. Accordingly, the company provides agricultural inputs as an investment in farmers' production to reach high quality and large volume. Though owned by the same farmer, a separate vegetable field for other outlets than Duong Thao Co. does not benefit from the company's input supply. The company's investment scheme has, in some special cases, funded not only production inputs but also other livelihood necessities of farmers and their families.

Credit supply

Credit supply in Xuan Huong and Phuoc

Thanh is offered by the Vietnam Bank for Social Policies (VBSP) through the Farm Association. It channels credit to farmers under the province's supporting program to enhance farm cooperatives' operational efficiency. The credit amount is 5-7 million VND for each farmer, with an interest rate of 0.5% per month within two years. In HCMC, farmers also enjoy a supporting interest rate on bank loans from 4 to 7% per year during two years on a credit amount of 5-10 million without collateral/asset security (see Box 11).

The association is not involved in credit supply since the district People's Committee directly examines the farm household's projects, and then submits them to the Municipal project appraisal board for final approval.

Quality specifications and control

Farmers have to follow procedures for farming techniques, especially pesticide and fertilizer use identified by the department of agriculture of HCMC. As it is controlled in the whole area, the source of water is a less important parameter to be checked at the farmer's level. Quality control is carried out on both production and marketing. The Division of Plant Protection of the DARD is in charge of quality control at the production stage in HCMC. The inspection is freely performed one or two times per month for each association. The association, as an intermediary, then considers and appoints farmers to be inspected, one or two for each inspection time. Sometimes, the Division of Plant Protection performs inspection without notice at the farmers' organization premise when farmers deliver vegetables.

In Dalat, the quality control is performed by the City Agricultural Center of DARD. Annually, the association has to send 10 samples to the city Agricultural Center for inspection to renew its certificate of safe vegetable production.

As regards marketing, the point of control depends on the marketing outlets. As the main customers of Ap Dinh and Tan Phu Trung, Coop Mart and Metro inspect at the point of delivery. However, such inspections are neither regular nor frequent. CoopMart and Metro are the only retailers performing quality control at the stage of product delivery. The DoH carries out inspection at trading or catering points.

Certification of safe production

In HCMC, before 2002, the certificate of safe production was individually issued to households. To obtain this certificate, the farmer, during one year, had to attend a training course organized by the DARD and go through the incidental inspection from the Division of Plant Protection, HCMC DARD. Since 2002, the certificate has been issued to the commune as a whole and the individual certificate is no longer provided.

In Dalat, there are two kinds of certificates, one for production and one for trading, which are provided to the organization at the beginning of its operation, relating either to production or trading activities. As mentioned earlier, the certificate of safe production is renewed annually on the basis of the results of 10 sample inspections. The time of inspection is known in advance, so it is a formality rather than an actual control procedure.

In HCMC, the association members have to respect their commitments to safe vegetable production. This commitment was officially made between individual farmers and the government authority through the Division of Plant Protection, the DARD and the People's Committee in Tan Phu Trung commune, Cu Chi District through the individual certificate before 2002 and the commune certificate since 2002.

Vegetable selling activities

Some characteristics of the outlets of farmers' organizations are presented in Table 196.

Production plans

Mr. H., head of Ap Dinh association, says that he can estimate the demand for each category of vegetables on the basis of his statistics of previous years. Mr. H. monthly assigns farmers with the quantity of vegetables to be collected. The association receives weekly order from customers. Two to three days before the delivery time, farmers inform Mr. H. on the kinds of vegetables available for selling. Each farmer's quantity to be collected is then adjusted based on this information. Each individual farmer does not have to grow a certain type of crops in a given area. They can make arrangements with other farmers provided that the total quantity is

Table 196- Outlets of farmers' organisations

Association/Company	in 2004 Supply capacity (Tonnes)	Turnover (million VND)	Vegetable outlets
Ap Dinh association	630	1575	Saigon Coop supermarket chains and Vegetable Company: FRESCO Company, Trieu Duong Company, and VEGEFOODS
Tan Phu Trung Cooperative	na	na	Metro Cash&Carry
Xuan Huong Cooperative	100	600	Golden Garden
Phuoc Thanh Cooperative	250	500	Vegetable companies, its retail stall in Dalat market, supermarket and safe vegetable stall in Vung Tau, Nha Trang, Quy Nhon
Anh Dao Cooperative	720	2400	Big C, Coop Mart, Binh Duong Mark, whole-sale market
Duong Thao Co.	na	na	Wholesale markets in HCMC

Note: na: not available

guaranteed. Phuoc Thanh cooperative's production plan is designed strictly to supply vegetable companies, usually in large volume; besides, it also has regular production for its retail stall at Dalat market. Anh Dao and Xuan Huong cooperatives perform no production plans, these cooperatives simply collect produce from farm members whose vegetables are available.

Prices paid to farmers and terms of payment

Prices paid to farmers are calculated on the basis of the selling price. As a representative of farmers, Mr. H. negotiates with his customers the selling prices for each season. Normally, the selling price is higher in the rainy season than in the dry season. When he is not satisfied with the current selling price, he can suggest higher prices. The prices paid to farmers are selling prices less 700 VND per kg, including 200 VND per kg for administration cost and 500 VND per kg for delivery cost. Farmers receive payment 15 days after the time of delivery. The associations' raw margins, the difference between purchase prices and sales prices, are relatively identical in both HCMC and Lam Dong province, especially the administrative expense of 200 VND per kg. Among associations, the variance of delivery cost is about 200 VND per kg, depending on each organization and how large each farmer's delivery is.

C. Vertical coordination and governance

Contracts between association and supermarkets

There is an annual written contract between the association and either the supermarket or the vegetable company. It is renegotiated on a yearly basis. The clauses of contracts refer to specifications of safe vegetable production procedures and estimated quantities. For the association's daily delivery, the actual quantity is based on weekly orders from customers. When there is any change in ordered quantities, the partner has to inform his counterpart at least four to five hours before delivery time. In practice, the yearly written contract looks formal and both suppliers and customers find it not easily enforceable, especially the terms of vegetables pricing. In the case of water convolvulus, its price is relatively stable, and any price adjustment can be agreeably reached between supermarkets and farmers' associations without any business disruption. On the contrary, re-negotiation is more frequent in Lam Dong province, and this situation has now turned problematic for suppliers because they may lose their current supply contracts due to other competitors' lower prices.

Market reciprocity in traditional chains

The traditional chain is operated through collectors, wholesalers and retailers as intermediaries between farmers and consumers. Organized under the same competitive climate as the modern chain, the traditional chain ranks loyal business relations before pricing. Though changeable everyday, prices are negotiated to match all traders in each kind of market whether wholesale or retail (interview with Ms. C., a wholesaler in Dalat wholesale market, on 26/01/05). Accordingly, the wholesaler's price margin is daily identical for every participant. Prices change smoothly in cascade between the intermediaries. While an increase in wholesalers' purchasing price is required by collectors who previously experience an increase in the purchasing price as a demand of farmers, a decrease is raised by wholesalers who then have to reduce their selling price to retailers. The practice is so popular and reliable that wholesalers and their suppliers in Dalat wholesale markets do not often know their selling prices until the wholesalers in HCMC inform them of their purchasing prices (interview with Ms. Chi on 26/01/05). Market efficiency can be observed by the fact that the price difference between HCMC wholesale markets and those in Can Tho province, for example, are equal to transport costs.

Compared with the traditional chain, the modern distribution chain has more or less reduced intermediate actors. Supermarkets themselves always try to attain their direct procurement from farmers (interview with Ms. L., purchasing manager of CoopMart). The fewer middlemen appear in transactions, the higher the price farmers expect. Investment in modern equipment for transportation, storage and inspection in distribution chains facilitates the keeping of farmers' produce in good condition and thus achieves a higher price. Higher quality requirement induces farmers to perform their job better. When the destination of their produce is supermarkets, farmers proudly take great care of their production. This new style of vegetable distribution is favored by the government's direction towards a more civilized and modernized society. Yet the fact that supermarkets demand higher quality vegetables should be matched with a loyal long term business and firm farming contract, as stable prices are prerequisites for farmers' investment in production. Along with price fluctuation, the traditional chain attains long-term relationships, which the modern chain, in many cases, cannot reach (see also part VI on the problems of loyalty in the modern chains).

V. Social and economic impact in the different value chains

A. Impact of selling to supermarkets on income growth

As regards water convolvulus, there has been an increase in farmers' incomes since their participation in the supply of modern chains in 2002. Farmers owning land area of 1,000 m2, have almost doubled their vegetable income to about 950,000 VND compared to 500,000 VND before 2002. This achievement has derived from a small increase in price and, more importantly, an increase in their supply capacity of vegetables that previously they could produce but would sell with difficulties (see Box 12 for an illustration). Planned and stable SM demand also helps farmers to manage more easily their remaining water convolvulus in the traditional market, while before, their remaining vegetable frequently turned into waste after meeting an unpredictable daily demand in the traditional market (interview with Mr. Ngo Xuan Hau, member of Ap Dinh association at Ben Do village on 29/01/05).

As regards baby tomatoes in Lam Dong province, like other high-value vegetables, their price has relatively decreased from about 10-15,000 VND/kg before 2002 to 7-12,000 VND/kg. This decrease in price is due to wider dissemination of production in response to the increase in demand of various outlets, including supermarkets. However, farmers involved in baby tomato growing finally attain an increase in income thanks to achievement of economies of scale in production and more crucially, a growing demand of many outlets, not only in restaurants and hotels for upper-class customers but in supermarkets and other modern stalls for middle-class consumers.

On the contrary, the impact of selling to supermarkets is case-specific and equivocal for farmers involved in ordinary tomato production. Though they may gain the highest

monthly income among the farmers dealing-with three selected kinds of vegetables (see Table 146), there has not been a complete encouragement to take part in modern distribution chains because of price fluctuations (which is also characteristic of traditional markets) and also the unstable demand resulting from disloyal business relations (see part VI). Farmgate price in modern chains is almost as variable as in traditional chains, while purchasing capacity has not increased, in contrast with the case of baby tomatoes.
Farmers in Cu Chi district have gained benefits such as stable prices and a planned and sustainable demand capacity through a long-term business relationship, a result which has still not been attained by farmers in Lam Dong province. As baby tomatoes have their own market segment, the impact of a decrease in price can be balanced by the achievement of economies of scale in production, and the increasing demand of supermarkets. This compensation is not observed in the case of ordinary tomatoes.

Concerning farmers' income increases, farmers are all waiting for a higher and more stable market. At the moment supermarkets call at the same time for an increase in output and an enhanced diversity of their produces, which is difficult to achieve. Such difficulties call for the involvement of the government's supporting program and farmers' organizations (see VI).

B. Other Social and economic impact of the involvement in DVCs

a. Benefits from the government's supporting program

Box 12- An illustration of the benefits of participating in Ap Dinh association

Mrs. Hai Dan and her husband are retired civil servants with a monthly pension of 800,000 VND between them. Before participating in Ap Dinh association, with a land area of 1,000 m2, she mainly cultivated rice, planted a few vegetables and was, outside farming hours, hired to shell peanuts.
Since 2002, she has taken part in Ap Dinh association, planted only vegetables and joined in social work in her village. Mr. H., the head of Ap Dinh association, impartially allocates orders from supermarkets and vegetable companies to each household. According to her, most of members trust him for his enthusiasm and impartiality.
Concerning social and economic changes brought by this involvement, her income has nearly doubled: she used to be remunerated 15,000 VND per day for either shelling peanuts or selling vegetables herself, while she now earns 30,000 VND per day on average by selling vegetable to Mr. H. in addition to some retailers. In other words, she earns the equivalent of 20 bushels of rice in one month on average compared to her previous earnings of the same amount in three months.
She is also excited by this involvement because she is able to sell to Mr. H. 80% of her vegetables at high and stable prices, whereas before participating in Ap Dinh she had to hawk vegetables. Besides this, she has enjoyed training on safe production and the government's supporting fund of 50% investment capital for a nylon greenhouse. And now, she has more time to join in welfare work in her village.

Source: Interview with Mrs. Hai Dan, a member of Ap Dinh association, Nong Lam University surveys, MALICA/MMWB4P, 2005.

The government's supporting programs, i.e., credit supply, training, supporting fund for investment, and trading promotion have been implemented in HCMC and Lam Dong province in a slightly different manner. Training programs have brought very good achievements in either knowledge or application in the two areas. Credit supply, which has been slightly different in the two areas, have been offered to all farmers either inside or outside associations in HCMC, where vegetable production projects are approved by the municipal project appraisal board (see Box 11). In Lam Dong province, the credit supply has been restricted to cooperative members. However, as some cooperatives have no longer assured either a suitable purchasing capacity or stable prices, some farmers have left cooperatives after obtaining credit (Interview with Mr. Hien, head of Phuoc Thanh cooperative, on 12/04/05).
The government's supporting fund for safe vegetable production has varying characteristics in HCMC and Lam Dong province. In Cu Chi, farmers have been directly involved in this investment; they themselves are beneficiaries of the program as they have received the support fund of 50% investment capital for nylon greenhouses. In Lam Dong province, the support fund for greenhouse investment has only reached the heads of some vegetable cooperatives, e.g., Mr. Q and Mr. H, heads of Xuan Huong and Phuoc Thanh cooperatives. It has currently not reached farmers. Farmers in Lam Dong province have not received any government support funding for safe or greenhouse production.
Trade promotion has become a growing

concern in the government's support program to enhance safe vegetable production in both areas. The performance of the support programs is however uneven. The government's program in HCMC, held in coordination between the DARD, the DoT and the HCMC Co-operative Alliance, has created a strong linkage between farmers' associations and supermarkets. A similar linkage between farmers' associations in Lam Dong and supermarkets in HCMC has not been strong enough to ensure a loyal business relationship over time, possibly because of long-distance and previous relationships already established between supermarkets and suppliers.

b. Other social and economic impacts

Income growth has, more or less, affected farmers' social lives. Selling to supermarkets enable them to save time for social activities like taking care of their families, joining in welfare work and so on. As water convolvulus production gets more promising, some farmers also keep an eye on relevant business such as utilizing waste vegetables to feed goats or establishing their own retail vegetable stalls. Such an impetus has still to be reached in the case of tomatoes in Lam Dong province since farmers have to deal with daily price fluctuations. In some cases of Duong Thao's members, farmers have become indebted due to either low prices or natural risks (interview with Ms. Nguyet, a farmer of Duong Thao Co.,), so that they had to work for other farmers.

C. Distribution of benefits in the value chains

The presentation now moves on profit generation in each trading point in the distribution chains of tomatoes and water convolvulus, for traditional and supermarket-driven chains. The present distribution of costs, profits, margins in tables and graphs is displayed in Table 197, Table 198, Table 199, Table 200, Figures 54-57, and Appendix 2 and 3. The figures are reported for the dry season, and for favorable conditions of sale.

The lowest production cost among the three vegetables is that of water convolvulus, in both absolute and relative values, causing farmers in Cu Chi to earn the highest return on investment and profit portion in selling price and in total profit per kg, reported at 93.4%, 24.8% and 50.5% for the SM driven chain and 82.6%, 21.1% and 40.1% for the traditional chain. SMs and retailers are participants earning the highest share of profits after farmers among the participants of the distribution chains. However, supply capacity is another factor determining each participant's earnings (see Table 141). The higher profit portion of retailers compensates for their lower supply capacity relative to collectors, wholesalers and cooperatives. The higher the supply capacity, the larger the number of workers and the higher the operating capital required in business. As regards the number of workers, it amounts to one to three, two to four and two to five persons respectively for retailers', wholesalers' and consolidators' business, not including employment for loading, delivery and transport. The higher monthly earnings of collectors somehow compensate for a larger number of employees. As they buy standing crops for tomatoes, collectors have to make a large payment in advance.

The operating costs of premise and office rental is not included in the cost of farmers' associations whose heads use, in both cases of Anh Dao and Ap Dinh, their own houses for business operation. Except for Ap Dinh association, farmers' associations in Dalat revealed that most business expenses currently derive from other activities such as trading consumer goods or production inputs. Operating capital is a crucial factor in SM operations. CoopMart's profit is 12% and 20% on selling price respectively for leafy vegetables and fruit-vegetables, not accounting for waste and other overall investment like premises, trading space and so on. CoopMart itself recognizes that its vegetable trading operation is currently only for drawing customers towards SM to buy other more profitable products.

Table 197- Distribution of costs, prices, and profits in baby tomato supply chains

Actors/cost items in SM driven chain			Actors/cost items in traditional chain		
• Producers	VND/kg	(%)	• Producers	VND/kg	(%)
Producers' cost	2,977	42.53	Producers' cost	2,977	42.53
- depreciation of equipment	37		- depreciation of equipment	37	
- material cost	273		- material cost	273	
- labor cost	2,667		- labor cost	2,667	
Farmers' net profit margin	1,023	14.62	Farmers' margin	1,023	14.62
Farmgate price	4,000		Farmgate price	4,000	
• Consolidator			• Collector		
Total cost	500	7.14	Total cost	360	5.54
- transport cost	300		- transport cost	200	
- packaging cost	200		-packaging cost	160	
- labor cost					
Collector's net profit margin	500	7.14	Collector's net profit margin	500	7.69
Purchasing price of Cooperative	5,000		Purchasing price of wholesaler	4860	
• Cooperative (Anh Dao)			• Wholesaler		
Total cost	300	4.29	Total cost	200	3.08
Cooperative's net profit margin	200	2.86	Net profit margin	200	3.08
Purchasing price of Supermarket	5,500		Purchasing price of retailer	5260	
• Supermarket			• Retailer		
Total cost	100	1.43	Total cost	240	3.69
Supermarket's net profit margin	1,400	20.00	Net profit margin	1000	15.38
Selling price to consumers	7,000	100.00	Selling price to consumers	6,500	100

Source: Interview with farmer, collector (Ms. Thu Huong), Anh Dao cooperative, CoopMart manager; Nong Lam University surveys, MALICA/MMWB4P, 2005

Note - No land cost was considered for vegetable production in Cu Chi district and Lam Dong province. There is no tax on agricultural land use in Vietnam. If calculated, the opportunity cost of using land for vegetable production that could otherwise be rented should have been taken into account. However, this opportunity cost is currently not available because the case of renting land for vegetable production has not appeared in the survey. Related to land, the costs to make land more fertile for each crop such as phosphate, manure, and lime are taken into account in the fertilizer costs (see Appendix 2).

Table 198- Distribution of costs, prices, and profits in tomato supply chains

Actors/cost items in SM driven chain			Actors/cost items in traditional chain		
• Producers			• Producers		
Producers' cost	1,610	38.33	Producers' cost	1,324	31.52
- depreciation of equipment	50		- depreciation of equipment	50	
- material cost	654		- material cost	654	
- Pre-harvest labor cost	620		- labor cost	620	
- Harvest and post harvest costs*	286				
Farmers' net profit margin	890	21.19	Farmers' margin	176	5.18
Purchasing price of Cooperative	2500		Purchasing price of Collector	1500	
• Cooperative (Anh Dao)			• Collector/assembler		
Total cost per kg	300	7.14	Total cost	486	14.29
Cooperative's net profit margin	200	4.76	Net profit margin	200	5.88
Purchasing price of Supermarket	3000		Purchasing price of wholesaler	2186	
			• Wholesaler		
			Total cost	200	5.88
			Net profit margin	200	5.88
			Purchasing price of retailer	2586	
• Supermarket			• Retailer		
Total cost	360	8.57	Total cost	214	6.29
Supermarket's net profit margin	840	20.00	Net profit margin	600	17.65
Selling price to consumers	4200	100.00	Selling price to consumers	3400	100

Source: Interview with farmer, collector (Ms. Thu Huong), Anh Dao cooperative, CoopMart manager; Nong Lam University surveys, MALICA/MMWB4P, 2005

Note:* In the modern chain, farmers get additional income from postharvest activities (harvesting, grading, packaging and transport). The figures in the modern chain correspond to first grade tomatoes. The figures presented here for both modern and traditional chains reflect good prices, when demand is high, not the whole range of tomato prices in a year.

Actors/cost items in SM driven chain			Actors/cost items in traditional chain		
• Producer			• Producer		
Total cost	931	26.60	• Producer	931	25.50
- depreciation of equip.	126		Total cost	126	
- material cost	804		- depreciation of equip.	804	
- labor cost	0		- material cost	0	
			- labor cost	769	21.07
Farmers' net profit margin	869	24.83	Farmers' margin	1700	
Purchasing price of association	1800		Purchasing price of collector		
• Association (Ap Dinh)				200	5.48
Total cost	267	7.63	Total cost	400	10.96
Cooperative's net profit margin	433	12.37	Net profit margin	2300	
Purchasing price of SM	2500		Purchasing price of wholesaler		
			• Wholesaler	200	5.48
			Total cost	200	5.48
			Net profit margin	2700	
			Purchasing price of retailer		
• Supermarket			• Retailer		
Total cost	580	16.57	• Retailer	400	10.96
SM's net profit margin	420	12.00	Total cost	550	15.07
Selling price to consumers	3500	100.00	Retailer's net profit margin	3650	100.00
			Selling price to consumers		

Table 199- Distribution of costs, prices, and profits in water convolvulus supply chains

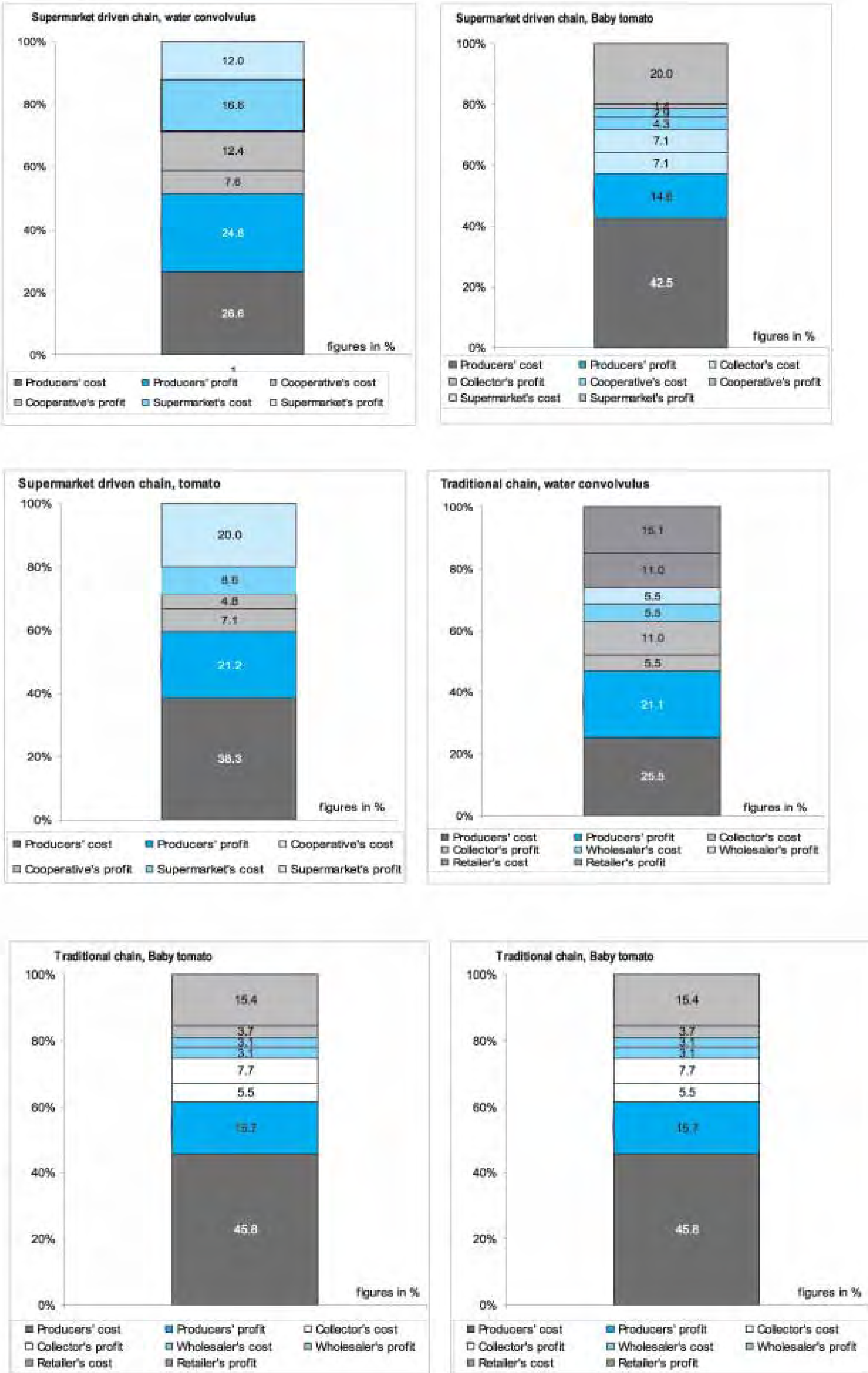
Source: Interview with farmers, Ap Dinh association, CoopMart manager; Nong Lam University surveys, MALICA/MMWB4P, 2005

	Water convolvulus			Tomatoes		
	NPM per kg (VND)	Monthly SC (kgs)	Monthly income (VND)	NPM per kg (VND)	Monthly SC (kgs)	Monthly income (VND)
Producer[1] in association	869	1,235	1,048,673	890	1,250	737,50C
Producer outside association	769	1,235	949,873	176	1,250	220,00C
Farmers' association [2]	433	52,500	22,729,167	200	60,000	12,000,00C
Supermarket[3]	420	175,500	73,710,000	840	94,500	79,380,000
Collector	400	90,000	36,000,000	200	90,000	18,000,000
Wholeseller	200	21,000	4,200,000	200	21,000	4,200,000
Retailer	550	6,000	3,300,000	600	6,000	3,600,000

Table 200- Estimation of participants' monthly earnings in distribution chains

Source: Interview with farmer, collector (Ms. Thu Huong), Anh Dao cooperative, CoopMart manager; Nong Lam University surveys, MALICA/MMWB4P, 2005
SC: Supply Capacity   NPM: Net Price Margin
Note:* In the modern chain, farmers get additional income from post-harvest activities (harvesting, grading, packaging and transport). The figures in the modern chain correspond to first grade tomatoes. The figures presented here for both modern and traditional chains reflect good prices, when demand is high, not the whole range of tomato prices in a year.

Figure 54- Breakout of costs, profits relative to final retail price (%) in HCMC vegetable chains.



Source: Nong Lam University surveys, MALICA/MMWB4P, 2005

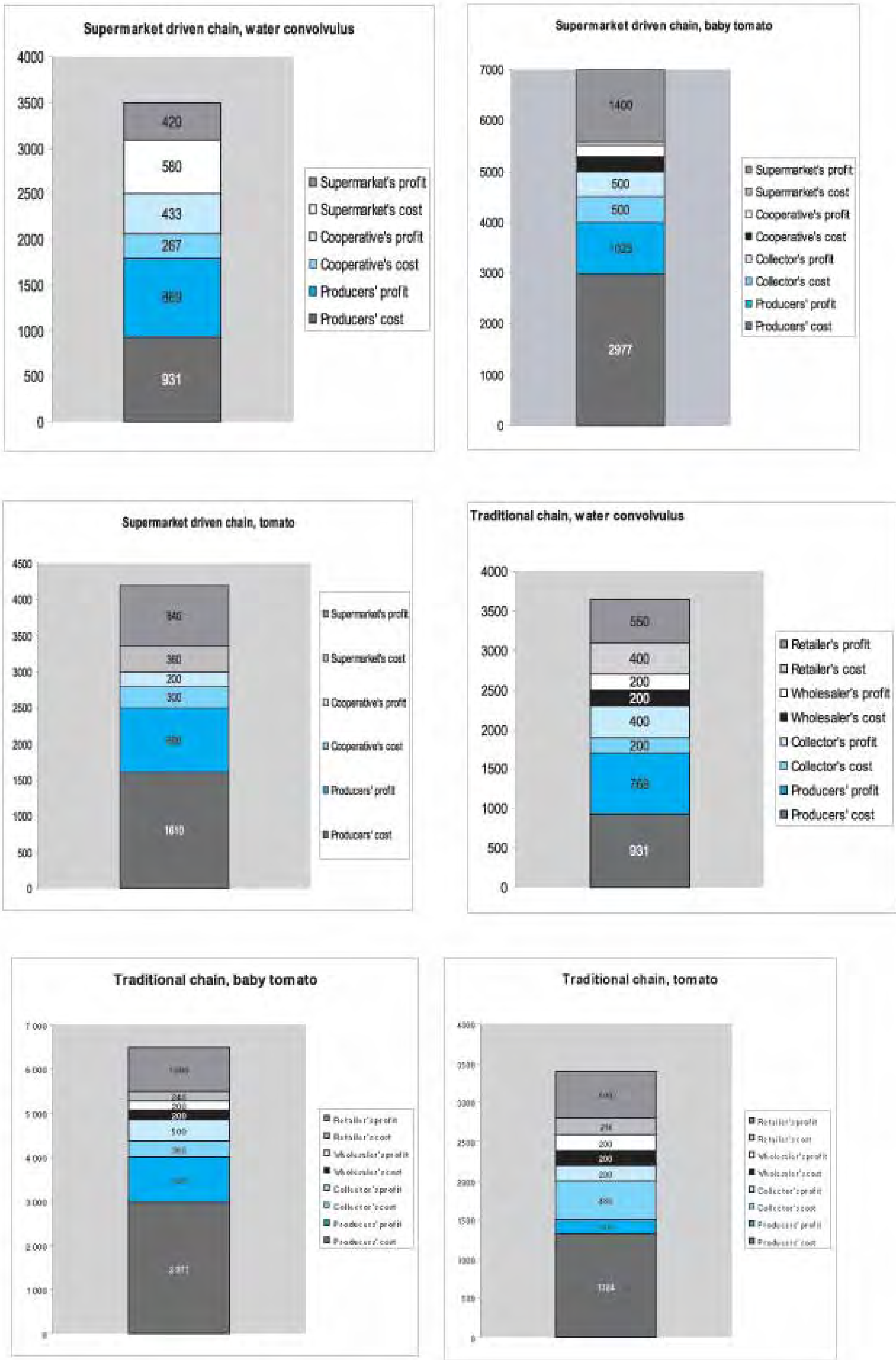
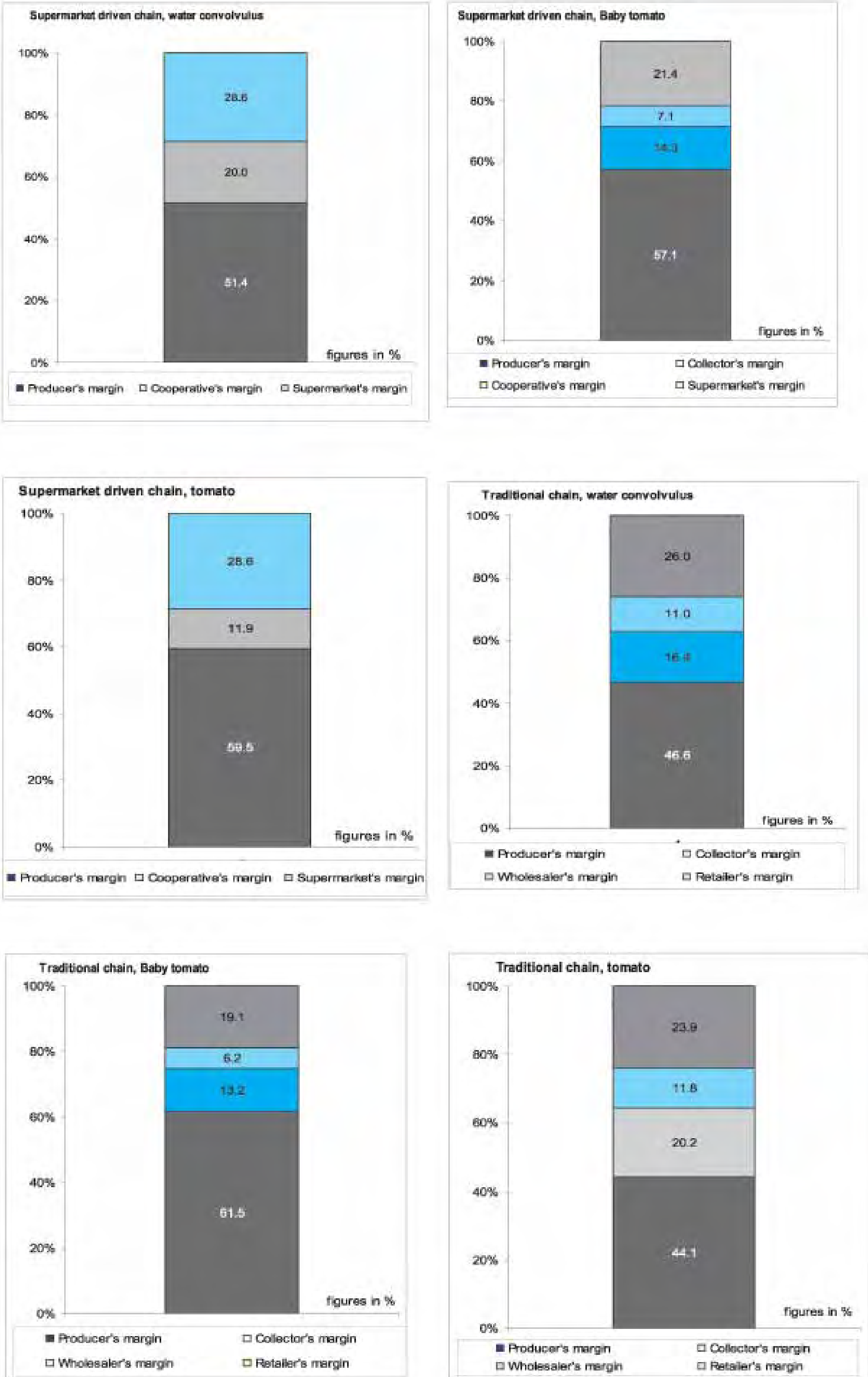


Figure 55- Breakout of costs, profits relative to final retail price (values) in HCMC vegetable chains.

Source: Nong Lam University surveys, MALICA/MMWB4P, 2005

Figure 56- Breakout of margins relative to final retail price in HCMC vegetable chains.



Source: Nong Lam University surveys, MALICA/MMWB4P, 2005

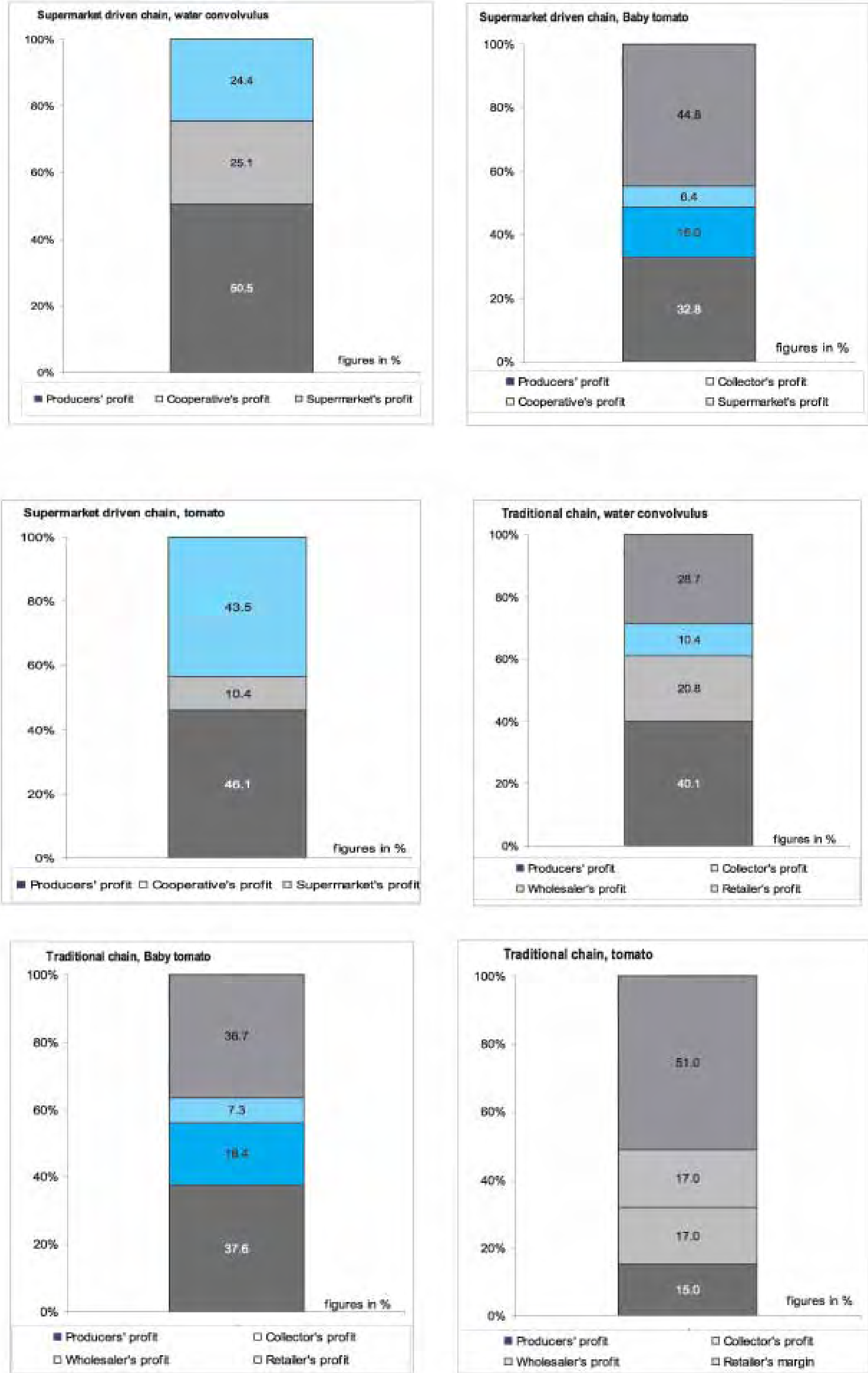


Figure 57- Distribution of actors' profits in HCMC vegetable chains.

Source: Nong Lam University surveys, MALICA/MMWB4P, 2005

While producers' profit portions in selling prices are little different between SM-driven chain and traditional chains for baby tomatoes, they are significantly different between the two chains for ordinary tomatoes: 15.7% in the SM driven chain, compared to 7.1% in the traditional chain, i.e. more than twice more. This demonstrates farmers' vulnerability in the tomato market, especially for farmers outside associations, and the benefits of farmers' associations that bring higher profits to its members by directly selling to SM at a higher price. As regards water convolvulus, farmers' profit margins are 13% higher in supermarket-driven chains than in traditional chains.

While farmers' production costs are relatively equal in the two chains (42.5% and 45.8% for baby tomatoes, 38.3% and 38.9% for tomatoes, 26.6% and 25.5% for water convolvulus), it is the technique applied in production and the way their products are marketed that crucially determines their earnings. This fact is clearly demonstrated in the case of tomatoes. In Lam Dong province a larger portion of farmers is not familiar with SM driven chains, in contrast with Cu Chi situation.

VI. Advantages and drawbacks of the different types of outlets

After having penetrated into supermarkets, suppliers face several difficulties in maintaining their transactions, including high quality requirements, supplying capacity for a wide range of vegetables, and competitive prices. These are respectively debated so as to draw out the prerequisites for a more efficient participation of the poor in the chains.

A. Quality requirements

Vegetable quality requirements concern safety, appearance and grading. The appearance is comprised of color, softness, toughness, size, and solidity. Supermarkets buy grade 1 vegetables. Water convolvulus of grade 1 is greenish, softer, and shorter than grade 2 or that in the second harvest. Tomatoes of grade 1 are solid, not limp or flaccid and of medium size.

Supermarket purchasers require safety, which is not the case with wholesale or retail purchasers. Supermarket controls on safety are not carried out on a daily basis. Metro Cash & Carry's safety inspection is performed once in a month on their different kinds of vegetables, and also when receiving any complaints from consumers.

Currently, the HCMC DARD implements its once-per-week free inspection for the whole Tan Phu Trung commune, which has two farmers' organizations, namely Tan Phu Trung cooperative and Ap Dinh association. On average, each organization receives two free inspections per month. In each inspection, all kinds of currently sold vegetables are taken into consideration, i.e. one sample is inspected for each kind of vegetable. For example, at each time of inspection, Ap Dinh has provided 12 samples, corresponding to about 12 kinds of vegetables. While cutting the inspection expenses, Metro Cash & Carry gets much benefit from this program and finds that it is rather enough to guarantee vegetables' safety. While Metro Cash & Carry has tried to reduce such expenses as much as possible, CoopMart has budgeted 50 to 70 million VND each month for inspection of fresh and processed food products. The cost of inspection is charged to suppliers if the vegetable is not safe, otherwise Saigon Coop itself pays the cost.

In addition to controlling vegetables sold by farmers' organizations, the DARD has deliberately performed inspection at special stalls in wholesale and retail markets in which safe vegetables are sold. However, neither wholesale markets nor retail ones are equipped with safety control systems. Safe vegetable stalls are operated by vegetable companies. Currently, there are 15 companies in HCMC involved in trading safe vegetables. None of them has undertaken production (see Chapter 4). Although they keep an eye on these outlets, no farmers' organizations have currently penetrated these market segments.

From the supply side, farmers in associations state that safety is almost the same between vegetables sold either to supermarkets or to ordinary retailers as vegetables are grown in the same field. The only difference is the appearance or grade. In some cases for tomatoes, farmers separate plots and exert stricter control on pesticide use and delay between spraying and harvesting for tomatoes supplied to supermarkets. However, we don't know whether this is really the case. From the collector's viewpoint (interview on 13/04/05 with Mrs. K., a trader in Dalat wholesale market and supplier of Metro Cash & Carry), after collecting vegetables from farmers, she selects the best vegetables for Metro Cash &

Carry; and the rest is sold to wholesale and retail markets. Besides, the fact that farmers know where their vegetables are sold encourages them to follow more strict quality procedures.

Vegetable safety is especially difficult for ordinary tomatoes, sold at the up-and-down pricing rhythm like in the wet market. Therefore, farmers have no incentive to invest in greenhouses. Tomatoes are very susceptible to pests during the wet season and excessive spraying is common during this time, which challenges the safety of this produce.

B. Diversity requirements

The requirements for diversity of vegetables are another problem posed to suppliers. Diversity of vegetables is a key factor for successful business. It was found that less diversity was one of the reasons why consumers in the Mekong River Delta did not want to visit safe vegetable outlets (Tam, P.T.G. 2005). This explains why Metro and most SM ask for diversity. Even a farmers' organization can hardly meet the diversity requirements. The head of Ap Dinh association admitted that his organization has failed to bring enough diversity to Co-op mart or answer the requests of Metro regarding products that are the best for packaging. Otherwise, he could supply more products to these modern chains. Anh Dao co-operative in Dalat, which successfully supplies Big C and CoopMart, has provided on average 32 varieties of vegetables, 10 to 25% of which sold less than 10 kg. Currently, vegetables produced by his farm members represent only 70% percent of total vegetable sales. To attain the remaining 30 percent of total sales, he has to buy from other farmers, not belonging to the cooperative, for his supply to SM. Co-operative members choose to produce only greenhouse, high-value vegetables. In addition, limited volume of high-quality produce leaves farmers with surpluses. This is particularly difficult for southern farmers, who commonly do not sell directly to markets but through local traders. Two common practical solutions are found: in the case of baby tomatoes, a SM-supplying consolidator or farmers' organization makes contracts and buys only quality produce at a negotiable price from some farmers. Products must be sorted, packed and transported to the gathering point by the suppliers. In order to supply a regular volume of high-quality products, these safe vegetable-contracted form a verbal contract with other selected farmers and have to buy all their products in the same manner as market traders, then selecting the best grade to deliver SM, selling the rest to wet markets. Only farmers with trading experience can do like this and this practice can ascertain safety to the extent that the farmers can control the technical procedure of their neighbors. In fact, informal contracts are made along the chain and become less stringent upstream. Another common practice is to combine production and buying from neighbors when needed for the same product, which is often the case with ordinary tomatoes.

Mr. T., the head of Anh Dao cooperative, contemplates further production investment in the missing vegetables.

C. Pricing conditions

The purchasing price is related to vegetable quality. Interviews with the two heads of Cu Chi associations indicate that supermarkets' purchasing price is equal or higher than those in other outlets including wholesale markets, retail markets, vegetable companies, shops and restaurants. Vegetables delivered to supermarkets have better appearance than those sold to other outlets (they are all of grade 1). For instance, the water convolvulus supplied to supermarkets must originate from the first harvest, as water convolvulus of the second harvest is harder, longer and darker. Compared to supermarkets' purchasing price, water convolvulus price sold to other outlets is 200-400VND/kg, i.e., 12-22% lower.

Suppliers of tomatoes in Lam Dong province declare that prices paid by supermarkets are more stable than the other outlets, less dependent on the seasonal variations. Sustained purchasing capacity and relatively stable price, ensuring a sustainable income for farmers, are the main advantages in the supermarket chain.

D. Variable loyalty in business

Co-op Mart has built a reliable and loyal business relation with Ap Dinh association with a view to long term business relation and price adjustment to variations of supply and demand. Nevertheless, such a strategy has not completely been achieved for tomato suppliers in Lam Dong province. Four organizations in Lam Dong province have complained that ome supermarkets (especially Metro) frequently change their suppliers to cut down prices without any consideration of vegetable safety and of their loyalty in dealing business. As a result, the associations' vegetables change prices everyday, and may be channeled to other distribution chains in the market. In fact, Anh Dao gains profit on certain kinds of vegetables only among a wide range of vegetables supplied. The unstable purchasing price and the uncertainty in the purchasing capacity of supermarkets have discouraged farmers and associations from investing in production to ensure a reliable supply.

Metro Cash and Carry's purchasing strategies are focused on competitive pricing, which prevents anyone from building a reliable and loyal business relationship with them. Recently, such strategies have clearly been shown in practice as the period of time for negotiating purchasing prices has been reduced from seven to three days. Metro Cash & Carry's purchasing managers used to negotiate with collectors for the agreed price of vegetables every seven days. This means that the collectors' selling price (or Metro Cash & Carry's purchasing price) used to be stable within a week. Currently, such period of time has been reduced from seven to three days. The shorter the bargaining period, the less stable the prices of vegetables are. Such a shorter period either enables collectors to obtain a highly competitive price or lose their supply contract due to other competitors' lower prices. Collectors and farmers themselves do prefer stable turnover and a loyal business relationship to such a venture. According to Mrs. K., a trader in Dalat wholesale market and supplier of Metro Cash & Carry interviewed on 13/04/05, supplying Metro Cash & Carry is not more profitable than selling vegetables to wholesale and retail markets without prior sorting. Therefore, supplying Metro is only one among a number of options and it has not been decisive in her business. Mr. Q., the head of Xuan Huong cooperative, told us that Metro Cash & Carry's strict quality requirement is focused on vegetable appearance rather than safety and that its concern for competitive pricing does not enable it to build loyal business relations, as it often changes suppliers among all types including collectors, traders in wholesale and retail markets, and cooperatives.

Each supermarket keeps a small number of suppliers so that they can maintain a competition among suppliers. Each supplier has to offer its prices before a SM makes a decision on purchasing. A SM may negotiate the prices with the supplier, may decide to buy at a small volume if the offered price is relatively high or may decide not to buy these products from this supplier at all. As volume and price are not predetermined by the written contract between SM and suppliers, this creates problems for farmers. Some suppliers such as Xuan Huong agricultural co-operative, which is well known for its safe produce in Dalat, have given up supplying SM. They sell to vegetable companies which agree to buy at a fixed price by contract. This price ascertains a specific margin for farmers even though it is usually lower than the market price at some points of time.

However associations suffering from loss of purchasers also occurs in the case of vegetable companies. This is the case of Phuoc Thanh cooperative. A contract between Phuoc Thanh and a vegetable company has ceased because the company bought vegetables directly from farmers. The cooperative has suffered a loss for its long training of farmers and other long-term investment in production. The company has offered the same prices to both the cooperative's members and outside farmers. Though this price was equal to the cooperative's purchasing price, farmers are in a more fragile position, as the government does not record the company's contract with farmers as it is with the cooperative.

Another drawback quoted by Duong Thao Co. in the case of processed products such as fried onions, freeze-dried persimmons and sweet potatoes, is that some companies repack the products of the cooperative and replace the trademark or product's label with their own.

E. Planning difficulties

Duong Thao Co. illustrates another case of drawbacks in doing business with supermarkets. Mr. T., the company's director, used to get large orders from Metro Cash & Carry without any contracts for production. As the company cannot store vegetables for a long time, he sometimes was not able to meet these large orders not because of his supply capacity but because of lack of production planning, which could have been avoided if Metro could make orders before the crop time.

F. Terms of delivery and payment

Cash payment on delivery is carried out in the traditional chain, or one to three days after delivery. When the market is short of vegetables, collectors have to pay in advance for their collection from farmers; hence they require a lot of capital. Few cases of collectors buying standing crops, which they harvest themselves, have been observed for tomatoes. In this case, payment is also in advance, based on the market value of the crop as estimated by the collector.

In the supermarket chains, farmers' organizations receive payment 15 days after delivery. So far the associations have accepted these conditions because they are the rule for all supermarket suppliers including vegetable companies. Some supermarkets have taken a 1-2% percent deduction on each payment to farmers' organizations for their promotion expenses.

While in traditional chains vegetable delivery takes place at the selling points (either wholesale or retail markets), except for collectors, supermarkets and vegetable companies in HCMC carry out delivery at their premises. As long as buyers take delivery cost into account in the purchasing price, farmers' organizations feel satisfied and try to make the best use of their trips to the city for various errands.

7. Prerequisites for the poor's participation in new market channels

A. Farmers' qualifications

To penetrate into modern distribution chains, farmers need to supply vegetables of high quality in terms of good appearance, uniform size and safety. To meet these criteria, greenhouses are required for baby tomatoes, but not for safe water convolvulus and normal tomatoes. Secondly, while farming techniques are not too complicated, harvesting techniques are decisive to meet market criteria. For example, farmers have not to spray any kind of pesticide in a given period before and during harvesting time, to not water during this period to control the level of moisture, to keep vegetables clean and prevent disease transmission from roots. Moisture makes vegetables easily infected from pestilent insects, which may possibly appear at the root. And vegetables are more easily damaged when packaged either with nylon instead of firm plastic baskets or in wet condition.

Thirdly, vegetable production needs labor efforts more than capital invested. Though farmers have to supply uniformly sized vegetables, their farming is not a mass production like manufacturing. A good farmer is often characterized by his cautiousness and diligence, especially for harvesting. As a result, small-scale production is preferred to large-scale Farmers who have small- to medium-sized production, from 800 m2 to 2,000 m2, commonly fit this criterion.

Apart from capital investment and harvesting techniques calling for external support, namely credit supply and training, the remaining conditions require farmers to move toward more suitable attitudes in farming. In addition, modern distribution chains demand not only high quality but also diverse varieties of vegetable. Such a demand is actually difficult for small farmers.

B. Development strategies of farmers' organisations

From the perspective of the heads of associations, they all need to penetrate into more outlets and invest in more reliable supply capacity regarding higher quality and increased stable quantity (see Table 201). Though each association has its own way to market vegetables, Ap Dinh, Anh Dao, and Phuoc Thanh associations have all kept an eye on expanding outlets. While Ap Dinh and Phuoc Thanh associations have preferred to set up their own retail outlets, Anh Dao has put its priority on wholesale markets, supermarkets, vegetable companies and large-scale consumers like Vietsov Petrol Company. These associations' production plans also include diversifying into a wider range of vegetables. Besides, an increasing demand for high-ranking vegetables and organic vegetables has been taken into account by Ap Dinh and Xuan Huong associations.

C. Need for government support

Apart from their own internal solutions, the heads of associations have recommendations for government intervention. According to Mr. H., the head of Ap Dinh association, and Mr. Q., the head of Xuan Huong association, the farmers' difficulty in marketing their vegetables is the seasonality, which may result in excess supply in the whole market. Such a supply capacity at the whole national scale has been

Table 201 - Marketing strategies of farmers' organizations

Ap Dinh	- To set up a direct retail outlet in HCMC to be able to directly promote trade name to consumer and to ensure a stable outlet. However, it has constraints on funds for investment - To expand production to other kinds of fragrant herbs - To change the association into a joint-stock company
An Phu Trung	- To widen its operations to dairy cow farming and girdle cake with 50% investment from HCMC DARD and the Institute of post-harvesting technology. Since 2005, it has promoted th investment project of refrigerated warehouses and trucks, with 70% support funds from HCMC DARD
Anh Dao	- To look for a retail outlet in Dalat market, Tam Binh wholesale market, other supermarkets li Binh Duong Mark and exporting vegetable companies - To undertake production of a wide range of vegetables to ensure a reliable supply capacity. It currently promotes a land -renting project with DARD in Lam Dong province at the rate of 7 million VND/hectare/year so that it may be possible to supply 100 percent of total sales from its members' production instead of its current level of 70 percent.
Xuan Huong	- To look for loans to build up greenhouses and refrigerated warehouses to invest in high-value vegetables
Phuoc Thanh	- To seek new outlets, e.g., in Tam Binh wholesale market, and vegetable companies in provinces - To diversify into a wider range of vegetables

Source: Interview with the heads of associations on 29/01/05, 12-16/04/05, Nong Lam University surveys, MALICA/MMWB4P.

beyond their control. However, the problem can be solved in the larger scope of production in the whole country. The government should pay more attention to the distribution of seeds among different areas so as to control the output of vegetables in each period. There should be a market consulting center playing a role of linkage between demand and supply. This center will update and provide market price information in both domestic and foreign markets. In addition, there should be a mechanism of price adjustment; the vegetable sales price should be increased in accordance with the increase in production inputs like pesticides and fertilizers.

Poor farmers have found it difficult to join associations due to certain entry conditions like subscription fees and vegetables of acceptable quality. The fact that they are poor often results in lack of money for subscription fees, poor access to training and investment in production input like greenhouses, even if they are made of nylon. Consequently their vegetables do not meet quality requirements. The poor themselves have been unable to engage in collective action. A farmers' organization may be in the form of a cooperative, a group of farmers or a company. The organization head should not be self-interested, but charitable and open-handed so as to work on behalf of all of the farmers. Such an organization itself does not possibly operate efficiently unless the two following risks are avoided: the marketing risk concerning the excess in supply resulting in a decrease in vegetables' selling price, and the natural risk and disease in farming production.

Therefore, the government's regulation and guidance is becoming crucial for better-working markets in the whole country concerning crop planning to adjust supply capacity in each area, market information, and scientific and technical support for more sustainable development.

CONCLUSION

Concerning poor farmers' participation in distribution chains for water convolvulus produced in Cuchi district and tomatoes in Lam Dong province, the study has addressed the necessity of farmers' organizations, the social and economic effects of the involvement of the poor in DVCs, the advantages and disadvantages of different chains and the prerequisites for better participation of the poor in modern distribution chains. Successfully supplying modern chains has increased farmers' access to market information with regard to produce standards. Farmers have also taken part in sorting and packaging, resulting in increased income. However, large capital in nets, greenhouses and safe vegetable technology are pre-requisites for farmers' access to supermarkets.

Prominent among other institutional factors, the government's support for the formation and operation of farmers' associations, which function as farmers' representatives to market their vegetables, is found to be directly beneficial for creating linkages between farmers and modern chains. The same linking role is performed by some consolidators and wholesalers in Lam Dong who unexpectedly become competitors of farmers' associations because of their competitive offered prices.

As for water convolvulus in Cuchi district, a rise in farmers' income has been derived from a stable price and supermarkets' sustained demand for a firm business relationship, a result that has yet to have been attained by farmers in Lam Dong province. In addition to enjoying training and credit supply, many farmers have directly invested under the government's support fund in safe vegetable production. An analysis of costs, profits and prices shows a slightly higher profitability in the modern chain compared with the traditional chain for water convolvulus, the reverse being observed for baby tomatoes grown in Lam Dong. As government support for greenhouses has still not been offered to farmers, most farmers, especially poor farmers, are involved in growing ordinary tomatoes, not baby tomatoes. The impact of supermarkets on farmers growing ordinary tomatoes is case-specific and equivocal. There has not been a complete encouragement to take part in modern distribution chains not only because of daily price fluctuations like in the traditional market but also because of the unstable demand of supermarkets as a result of disloyal business relationships.

Concerning farmers' better participation in modern distribution chains, sustainable agricultural techniques and further investment are required for farmers. Farmers' associations have to seek more outlets and ways to diversify their supply basis and improve quality under increasing demand for high-value and/or safe vegetables. The government's support is crucial to reduce farmers' vulnerability in the face of markets and create efficient coordination among farmers, farmers' associations or other participants in the market and scientists whose occupation is achieving higher quality, diversity and sustainability of vegetable production.

APPENDIX 1 - LIST OF INTERVIEWED HEADS OF FARMERS' ORGANISATIONS

Association /Co.,	Form of legal entity	Interviewee/head	No of persons*	Starting date	Address
Ap Dinh	Group of farmers	Mr. Nguyen Hoang	8	12/2003	Tan Phu Trung Commune, Cu Chi District, HCMC
Tan Phu Trung	Cooperative	Mr. Nguyen Quoc Toan	9	10/2003	Tan Phu Trung Commune, Cu Chi District, HCMC
Xuan Huong	Cooperative	Mr. Tran Duc Quang	5	April 2003	Ward 9, Dalat City, Lam Dong province
Phuoc Thanh	Cooperative	Mr. Lai Duy Hien	7	May 2003	Ward 7, Dalat City, Lam Dong province
Anh Dao	Cooperative	Mr. Nguyen Cong Thua	11	12/2003	Ward 8, Dalat City, Lam Dong province
Duong Thao	Company	Mr. Thu	7	9/2003	Dran Town, Don Duong District, Lam Dong province

** Number of persons involved in vegetable activities*
Source: Interviews with the heads of farmers' organization

APPENDIX 2 - EXPLANATORY CALCULATION OF VALUE ADDED IN THE DISTRIBUTION CHAINS – PRODUCER'S COST

Calculation with 1000 seeds planted on 250 m^2 in eight months ~ 3600 kg baby tomatoes, in VND (d)

Co st items	Cost		Note
	dry season	rainy season	
Depreciation nylon -made greenhous watering equipment	133,333	133,333	4000000d/1000m2/5 years
production input	983,450	1,133,450	
- seed	500,000	500,000	500d/seed x 1000seeds
- fertilizer	187,200	187,200	7800d/kg x 3kg/time x 8times
- pesticide	150,000	300,000	20000d/pack x 0.5pack/time x 5 months x (3 - 6 times/month (sunny - rainy season)
- bamboo, fibre	146,250	146,250	19500/02 beds x 15 beds
Labour cost	9,600,000	8,550,000	
- sowing seeds	50000	50000	50d/seed X1000 seeds
- watering, pruning	6,400,000	6,400,000	800000d/month x 6 months
- harvesting labour cost	3,150,000	2,100,000	(35000d/day*40kg/day)*out put (kgs)
Total pro duction cost	10,716,783	9,816,783	
Output (kg)	3600	2400	
Production cost per kg	2,977	4,090	

Source: interview with Mr. M. – member of Anh Dao cooperative

Producer's cost of tomatoes

Calculation with 3000 seeds planted on 1000 m2 in 04 months, ~ 6000 - 10000 kg tomatoes,

Cost items	Cost		Note
	Dry season	rainy season	
Production input	7,040,000	7,040,000	
- seed	450,000	450,000	150.000d/1000seeds x 3000seeds
- fertilizer	3,270 ,000	3,270,000	phosphate: 220,000, manure: 2,000,000, NPK: 5 packs x180.000/pack, lime: 150.000
- bamboo, fibre	320,000	320,000	2000 trees 16,000d/100trees
- pesticide	2,500,000	2,500,000	pesticide:2,500,000
Labor cost	6,200,000	6,200,000	
- sowing seeds	600,000	600,000	200,000d/1000 seeds x3,000 seeds
- watering, pruning	3,200,000	3,200,000	800,000d/month x 4 months
- harvesting labor cost	2,400,000	2,400,000	800,000d/month x1,5monthsx02 laborers
Depreciation of watering equipment	500,000	500,000	Watering can, water pump, water pipe
Total production cost	13,240,000	13,240,000	
Output (kg)	10,000	6,000	
Production cost per kg	1,324	2,206	

Source: Interview with Mrs. Dung, farmer of Duong Thao Co.,

Producer's cost of water convolvulus

Calculation with 8 kg of seed planted on 400 m2 in 30 days, 260 kg water convolvulus, in VND

Cost items	Dry season	Rainy season	Note
nylon greenhouse, watering equipment	65753	65753	4,000,000 d/400m 2/5 years
production input			
- seed	176000	176000	22000d/kg x8 kgs
- fertilizer	60150	60150	manure: 120000/800 kgx 100 kg; rice husk: 10000, NPK: 10kgx 5000 kg
- pesticide	16000	32000	
- electricity	90000	70000	
Total production cost	362 903	368903	
Output (kg)	260	234	(20kg - 18 kg)/bedx13 beds
Production cost	1396	1577	
For the second harvesting			
- fertilizer	60,150	60,150	
- pesticide	16,000	32,000	
- electricity	45,000	35,000	
Total production cost	121,150	127,150	
Output (kg)	260	234	
Production cost	466	543	
Production cost for two harvests	931	1060	995, on average

Source: Interview with Mrs. Hai Dan - member of Ap Dinh association

APPENDIX 03 - EXPLANATORY CALCULATION OF VALUE ADDED IN THE DISTRIBUTION CHAINS - OPERATION EXPENSE OF ASSOCIATIONS

Calculation in a month, for either tomatoes or water convolvulus only, in thousands of VND

	Ap Dinh		Anh Dao		
A. Employees					
No. of persons	8				
General manager	1		1		1000
Collector/supervisor	3	3937.5	1		1000
Driver	1	1400.0	2		2300
Deliverer, pre -treatment, warehouse -keeper	3	3600.0	5		3500
Accountant			1		1000
Cashier			1		600
Total salary		8937.5			6450
B. Quantity and price					
Quantity/ month		250		6000	400
Purchasing price		1.8		2.5	5.0
Selling price		2.5		3.0	5.5

C. Profit and loss account				
Revenue		18750		20200
Total cost		15503		18010
Cost of goods sold		13500		17000
Selling expense: packing, mission		1000.0		423
Other expense		13020.8		9681.7
Telephone, fax, stationery		1000		750
Electricity, water		1000		175
Salary		8938		6450
Depreciation cost (truck, computer, furniture)		2083		1333
Marketing				
- expending certificate				
- Member fee, card, website,				40
- Transaction cost				500
Rental cost: office, warehouse				
Tax: License fee, Interest cost				433
Net margin		3247.0		2189.5
Net margin per kg		0.4329		0.3649

Source: interviews with Mr. T., the head of Anh Dao cooperative, Mr. H., the head of Ap Dinh association

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Contact:

Making Markets Work Better for the Poor
Asian Development Bank
Unit 701-706, Sun Red River Building
23 Phan Chu Trinh, Hanoi
Tel: 844 - 933 1374
www.markets4poor.org