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Project Name	Improving the performance of the fruit industry in Tien Giang and Tra Vinh provinces
Code: 2.12	
Australian Personnel	Dr Sherrie Wei
Australian Institution	The School of Natural and Rural Systems Management, The University of Queensland
Vietnam Institution	SOFRI
Project Duration	July 2001 to June 2003

Project Description

The rapid growth of the fruit industry in the Mekong Delta area of Vietnam has seen the emergence of many problems, including a shortage of planting material, inadequate nursery and orchard management, lack of agribusiness and marketing skills. These problems could not be improved with existing level of government extension service. This activity will focus on the mango industry in Tien Giang and Tra Vinh provinces where good varieties of mango are produced. The major development objective of this activity will be to enhance agribusiness capacity in the fruit industry for research, teaching and extension in Vietnam. This will be achieved through a series of inter-related programs: training of agribusiness marketing of participating Vietnamese institutions; strengthening the functions of farmer associations in their service delivery and group marketing; and training participating institutions in fruit tree propagation and production, including expanded capacity for certifying planting material to meet market demand. Major outputs will be the improvement in the extension service of SOFRI, two provincial centres, two strengthened farmer associations in Tien Giang and Tra Vinh. Cantho University's teaching capacity in agribusiness, extension and agricultural marketing will be improved through curriculum development with the University of Queensland.

Aim

The major development objective will be to enhance agribusiness capacity in the fruit industry for research, teaching and extension in Vietnam. This will be achieved through a series of inter-related programs involving SOFRI, Cantho University and Agricultural and Rural Development Service in Tra Vinh and Tien Giang provinces.

Objectives

- a) To enhance the capacity of agribusiness marketing of SOFRI, Cantho University, provincial agricultural services, selected farmer associations and farmers
- b) To strengthen the capacity of farmer associations in service delivery, quality assurance management and group marketing. This will be achieved through a participatory approach of adult learning and through QFVG's involvement.

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- c) To upgrade the capacity of SOFRI and provincial agricultural services in fruit tree propagation, production and protection, including expanded capacity for certifying planting material to meet market demand.

Outputs and Performance indicators

Outputs	Performance Indicators
<p>Staff from SOFRI, Cantho University, Tien Giang and Tra Vinh provincial agricultural services will be introduced to the principals of agribusiness marketing including:</p> <ul style="list-style-type: none"> ◆ seasonality of supply and demand ◆ pricing in agricultural markets ◆ establishing product quality standards and quality management ◆ industrial buyer behaviour ◆ consumer purchasing behaviour ◆ researching and analysing export markets <p>To provide the desired learning environment, course participants will participate in an organised study tour to Hong Kong to meet with market wholesalers, retailers, exporters (to China) and supermarket buyers. Hong Kong is selected for its ease of entry of fruit. This format was used very successfully by Curtin University in the administration of seven training programs under the DPIE Marketing Skills Program and by the University of Queensland's 'Thinking of Asia' program.</p>	<p>i) Performance indicators will be the number of SOFRI, Cantho University, provincial staff trained in the 'train the trainers' workshops; the number of participants in the subsequent workshops conducted by trained Vietnamese participants; an ability to build networks; and ability to position the product and to articulate strategies regarding price; and improved ability for conducting market research.</p>

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PROJECT COMPLETION REPORT

Executive Summary

The major development objective of the project was to enhance agribusiness capacity in the fruit industry for research, teaching and extension in Vietnam through a series of inter-related activities involving SOFRI, Cantho University and the Agricultural and Rural Development Service in Tra Vinh and Tieng Giang Provinces.

The specific objectives of the project were:

Objective 1: To enhance the capacity of agribusiness marketing of SOFRI, Cantho University, provincial agricultural services, selected farmer associations and farmers.

Objective 2: To strengthen the capacity of farmer associations in service delivery, quality assurance management and group marketing. This was achieved through a participatory approach of adult learning and through QFVG's involvement.

Objective 3: To upgrade the capacity of SOFRI and provincial agricultural services in fruit tree propagation, production and protection, including expanded capacity for certifying planting material to meet market demand.

The key outcomes for the project lie in the formation of four functioning farmers associations; the training of trainers and the delivery of training at village level; the improvement of farm livelihood for mango farmers; and the enhancement of research and extension capabilities for the Australian institutions involved.

The project achievements have impacted beyond the particular villages and agencies involved in the project, through the national coverage given to the formation of the cooperatives and their marketing ventures.

The direct involvement of farmers' group has been one of the strengths of the project. At the community level there has been an increase in understanding of market arrangements and the potential benefits of cooperative action. However, the development of leadership and management skills for the cooperative management committees could be further developed, so as to strengthen the institutions underpinning the functioning of farmer cooperatives in a transitional economy.

This project had a high degree of complexity in its implementation due to its highly participative nature. The process of engagement of these farmer groups did not lend itself to prescriptive project design. The project's intended impact directly affected participants' livelihoods and therefore placed a responsibility on the project team to be responsive to their needs.

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The lead and partner institutions contributed effectively to the project, despite the limited funds available for Vietnamese agencies and the time limitations for Australian involvement in Vietnam. The incorporation of an Australian Youth Ambassador for Development (funded by AusAID) contributed markedly to success.

1.0 Project Description

1.1 Background and preparation

The original idea for the project arose from a discussion between Dr Sherrie Wei from The University of Queensland (UQ) and Dr Nguyen Minh Chau, director of the Southern Fruit Research Institute (SOFRI) at an ACIAR conference in 2000. SOFRI is one of the leading horticultural institutions in Vietnam. Over the past seven years, it has been involved in many international projects, including ACIAR funded projects on citrus, durian, integrated pest management and an AusAID funded project on low cost heat disinfestation for fruit fly. While SOFRI has been involved in many projects, the majority have dealt in plant science. SOFRI identified a need to further its expertise in the area of extension and marketing services to the industry in accordance with Vietnam's development objectives.

Dr Wei and Ms Russell travelled to Vietnam in February 2001 to further investigate the needs of the fruit industry in collaboration with SOFRI staff. During that visit the UQ and SOFRI representatives visited fruit markets and trading venues, met with Department of Agriculture and Rural Development (DARD) personnel, including extension staff and representatives from grower organisations, from the Provinces of Tra Vinh and Tien Giang, and staff from Cantho University.

One of the objectives of the recent Improved Water Management Program initiated by the National Government of Vietnam is to improve the soil salinity problem caused by the intrusion of seawater in coastal areas of Vietnam. As a result of this program, a range of diverse tropical and subtropical fruits have been planted in different parts of the improved area, including Tien Giang and Tra Vinh provinces. Because of the high profit derived from growing fruit and the increased demand for fruit trees, many farmers have become nursery managers. Basically, the fruit industry in Vietnam is deregulated. With little knowledge and skill in propagation techniques and nursery practice, many problems have since become evident in the fruit industry. At the nursery level, these problems include:

(a) *Authenticity of variety.* Various trees are often claimed to be a particularly desirable variety by nursery managers when in fact they are not. Farmers developing their orchards can not be sure of the authenticity of the varieties that they are planting. For each crop, there are confusingly too many varieties/selections to provide consistent quality of product to the market. This has inhibited farmers from engaging in larger scale marketing.

(b) *Inadequate nursery skills and Prevalence of diseases.* As most nursery managers have little knowledge on pathological aspects of plant propagation and nursery practice,

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diseases are widespread in the fruit industry through seedling distribution and poor hygiene practices.

(c) *Shortage of planting material.* The propagation and multiplication of new and potential varieties introduced by SOFRI and other institutions are relatively small in relation to market demand.

At the orchard level, evident problems included:

(a) *Poor agronomic conditions.* Previously, fruit orchards in the targeted provinces were established on natural terraces (river bank, highlands) where soil conditions are favourable for tree growth. Recently, due to high profits from fruit cultivation, farmers are turning paddy fields into fruit orchards. As a result, the new orchards often have the problems of heavy clay soils, poor drainage and a high water table.

(b) *Poor planning.* The basic infrastructure required for establishing orchards is often poorly planned, including crop and site selection, orchard layout, planting density, windbreaks, water supply and post-harvest handling facilities.

(c) *Lack of cultural skills.* Farmers generally grow fruit according to their limited experience. They lack knowledge and skills in varietal selection, plant nutrition, pruning, integrated crop management and post-harvest handling.

Furthermore, at the industry level, there were the problems of:

(a) *Lack of effective farmer organisations.* Farmer associations were poorly organised in achieving group objectives and delivering potential services such as market information, sharing of equipment and establishing quality standards. At the commencement of the project, farmers were selling their own products individually and were subject to price setting by first level fruit collectors.

(b) *Poor post-harvest handling.* Poor packaging and improper storage result in deteriorated fruit quality and lower price.

(c) *Inadequate agribusiness skills.* Stakeholders in the industry (i.e., farmers, traders, extension personnel, researchers and educators) had not embraced a market oriented production system. This was due to lack of agribusiness skills and various institutional impediments.

With the range of complexity of the problems that exist in the industry, government extension officers were unable to deal with them adequately, given their level of professional expertise. An approach that combines production techniques, enhancing agribusiness knowledge and skills and strengthening existing farmer associations was required to make a substantial improvement in the fruit industry in Tien Giang and Tra Vinh provinces.

Selection of project sites: Tien Giang and Tra Vinh

This project focused on mangoes in two southern provinces of Vietnam, Tien Giang and Tra Vinh. This choice of the two provinces was a deliberate decision, representing two levels of development, thereby creating an opportunity for knowledge and skills transfer.

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In both provinces, over 80% of the population rely on agriculture as their main source of income. Both provinces produce good varieties of mango, such as Cat Hoa Loc (considered as the best in taste), Cat Chu (high yield), Cat Trang and Cat Den.

The industry in Tien Giang Province, particularly in Cai Be District, is relatively developed. Their mangoes are exported to China, Hong Kong and Taiwan (can be through the backdoor in some instances). Their production capacity is expected to expand further as a result of the ADB production project operating in this province over the next three years. However, the fruit is perceived to be of low quality and achieves a low price in the overseas market.

In contrast, Tra Vinh is one of the poorest provinces in Vietnam. It has 30% percent (compared with the national average of 15%) of Khmer minority and about 30% of the population are under poverty line. The fruit industry in the province is underdeveloped in comparison with Tien Giang. This province has received little international agricultural aid.

Current capacity

The current capacity for research, training and extension in the fruit sector in Vietnam is relatively poor to address the wide range of problems identified. Personnel who are well trained in agribusiness management and extension are in short supply throughout the country. MARD has recently emphasised the necessity to enhance the agribusiness and marketing skills of research scientists and extension staff. It has clearly directed more resources to encourage aid projects to focus on these priority issues.

Existing needs for further development

This activity addressed three of the existing needs of the fruit industry in Tien Giang and Tra Vinh provinces of south Vietnam.

1. *A need for agribusiness skills.* To link farmers to the market, there is the need to introduce the principles of agribusiness marketing for key people in the industry, including agricultural scientists, extension officers, farmers and traders. Such knowledge and skills include business-to-business and business-to-consumer marketing, product positioning, pricing strategies, supply chain relationships, market research, etc. With the expected increase in fruit production in south Vietnam, such agribusiness skills are essential to couple with technical improvement.
2. *A need for strengthening the functions of farmer associations.* In order to capitalise on the improvements made from a wider spread of quality planting material, there is a need for improved collaboration among farmers and industry stakeholders (i.e., farmers, traders, extension personnel, researchers and educators). At project commencement, farmer associations in Vietnam were loosely organised in achieving group objectives. This was due to various reasons such as:

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- (i) loose recognition of common objectives;
 - (ii) lack of a business plan;
 - (iii) lack of a heightened awareness of the constraints of smaller producers in a changing economic environment;
 - (iv) over reliance on a top-down approach resulting in little ownership and group autonomy; and
 - (v) insufficient facilitation from third parties such as aid agencies, teaching/research institutions or government bodies.
3. *A need for more trained extension staff in production skills and certification of planting material.* Whilst some earlier efforts on seed production, vegetative propagation and plant protection have progressed well in collaboration with international aid agencies, the existing capacity of SOFRI to train more provincial extension staff on production skills and certification of planting material (free from diseases and true of type) was insufficient to meet the demand at the industry level. An extension program was required to develop the techniques for fruit production and relatively large-scale certification of planting materials among SOFRI and provincial staff.

1.2 Context and rationale

The project context and rationale have been summarised in the information presented above in Section 1.1. The project brought together an Australian team designed to harness the expertise of UQ in agribusiness, fruit production, extension training and participatory processes; Curtin University through prior marketing experience in Vietnam; and QFVG with further production experience and cooperative management experience. The Vietnamese collaborators contributed project identification, fruit production and marketing, and local networks for engagement of the rural communities. Cantho University was selected as the avenue for consolidating experience in the agricultural education system. MARD and the provincial DARD were involved to link the researchers work with agricultural extension and other development agencies.

During the project and in the planning activities, there was consideration of relevant projects and contact with staff from these projects. The projects of particular interest included a Canadian funded, farmer group project (MEPP) operating in Tra Vinh that was concluded shortly after this project commenced. The MEPP project spent considerable sums of money and directed a large volume of support for the formation of a few groups and their support over the life of the project. Because this project had been concluded an active relationship was not possible, although we were able to consider the lessons learned in that project in planning this project. Some of the government staff who worked on the MEPP project were hired to benefit the CARD project through transfer of experience as group coordinators. The main consideration arising from this experience was the need to encourage farmer groups to form mechanisms for self sustainment as early as possible. SOFRI was directly involved in an ADB funded fruit project operating in Tien Giang, although the project did not include mangoes. Generally speaking it was difficult to interact with other projects because of the gatekeeping mentality prevalent in

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many aid agencies and local organisations. There was no mechanism for interaction between CARD projects until information from the review was circulated.

This project specifically included Peter Batt from Curtin University as part of the team, so as to bring his project experience from vegetable marketing in the Red River Delta Project into the project.

Institution based training activities were considered and rejected by the project team on the grounds that the project sought to directly interact with and impact upon farming communities. The institution based approach had the advantages of providing for greater security of outcomes but lacked assurances of community adoption and subsequent ownership. The main strength to be taken from this approach and implemented in our chosen strategies was a train the trainer emphasis.

The chosen project approach involved the farming communities and other participants in planning activities from the outset. This approach was chosen as the only means by which communities could make decisions about the formation of farmer groups and cooperatives affecting their livelihoods.

1.3 Project objectives and scope at design

The major development objective was to enhance agribusiness capacity in the fruit industry for research, teaching and extension in Vietnam. This will be achieved through a series of inter-related programs involving SOFRI, Cantho University and the Agricultural and Rural Development Service in Tra Vinh and Tieng Giang.

Objective 1: To enhance the capacity of agribusiness marketing of SOFRI, Cantho University, provincial agricultural services, selected farmer associations and farmers.

Objective 2: To strengthen the capacity of farmer associations in service delivery, quality assurance management and group marketing. This was achieved through a participatory approach of adult learning and through QFVG's involvement.

Objective 3: To upgrade the capacity of SOFRI and provincial agricultural services in fruit tree propagation, production and protection, including expanded capacity for certifying planting material to meet market demand.

Major activity outputs and performance indicator

The major outputs from the project will be:

- 1) Enhanced agribusiness marketing knowledge and skills for the fruit industry in south Vietnam.

Staff from SOFRI, Cantho University, Tien Giang and Tra Vinh provincial agricultural services will be introduced to the principles of agribusiness marketing including:

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- (i) seasonality of supply and demand;
- (ii) pricing in agricultural markets;
- (iii) establishing product quality standards and quality management;
- (iv) industrial buyer behaviour;
- (v) consumer purchasing behaviour; and
- (vi) researching and analysing export markets.

To provide the desired learning environment, course participants will participate in an organised study to another ASEAN country to meet with market wholesalers, retailers, exporters and supermarket buyers. This format was used very successfully by Curtin University in the administration of seven training programs under the DPIE Marketing Skills Program and by the University of Queensland's Thinking of Asia' program.

Performance indicators will be the number of SOFRI, Cantho University, provincial staff trained in the 'train-the-trainers' workshop. The number of participants in the subsequent workshops conducted by trained Vietnamese participants; an ability to build networks; an ability to position the product and to articulate strategies regarding price; and improved ability for conducting market research.

2) More effective farmer associations.

At least two mango farmer associations in Tien Giang and Tra Vinh will be included for a series of participatory workshops to improve their capacity in group behaviour. Such workshops will draw from the experience of QFVG as well as local expertise. Performance indicators will be the number of meetings that are facilitated, and for the farmers, their interest and extent of participation in facilitated meetings. Other indicators are the quality of interaction, recognition of common problems and collective behaviour, agreement on membership rules (eg. Compulsory saving) and decision rules; and the number of incidences of problems being acted on.

3) Upgraded capacity of SOFRI and provincial agricultural services in fruit tree propagation and production.

The major output will be expanded extension capacity by participating Vietnamese institutions in fruit tree production and protection skills, and in certifying planting material in meeting market demand. Performance indicators will be number of participants attending workshops and demonstrations from SOFRI, provincial centres, key farmers and nursery managers, the number of derived workshops and demonstrations to local extension officers, farmers and nursery managers, the number of farmer participating in derived workshops and the number of farmers involved in the field day programs.

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1.4 Implementation arrangements

The project was designed to be managed from Australia by UQ, for coordination of Australian visits and oversight of on-going activities in-country. Implementation arrangements, including funding, were channelled through SOFRI as the Partner Institution in Vietnam. SOFRI provided the major inputs to the project in Vietnam through the direct guidance and involvement of the Director of the institution.

2.0 Appropriateness of Project Design and Objectives

2.1 Appropriateness of Objectives

Table 1: Project objectives and appropriateness.

Objective No.	Objective description	Appropriateness Rating
Objective 1	To enhance the capacity of agribusiness marketing of SOFRI, Cantho University, provincial agricultural services, selected farmer associations and farmers.	4 Cantho University chose to concentrate more on extension and curriculum development (approved variation from 6 monthly report July – December 2001).
Objective 2	To strengthen the capacity of farmer associations in service delivery, quality assurance management and group marketing.	5 The ultimate success of the project is at the farmer level. Workshops in production, group skills and agribusiness contributed to the successful formation of farmer groups. The presence of an Australian Youth Ambassador at SOFRI from September 2002 greatly assisted the maintenance of the associations.
Objective 3	To upgrade the capacity of SOFRI, provincial agricultural services, nursery managers and farmers in fruit tree propagation, production and protection, including expanded capacity for certifying planting material to meet market demand.	5 Having a marketable product is a pre-requisite for improved production margins.

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2.2 Appropriateness of Design

Table 2: Key features of the project design and appropriateness.

Description of design feature	Appropriateness Rating
The development of and use of a Project Logical Farmework Matrix (Appendix 1). The project activities and outputs have been designed to achieve the objectives. The matrix is regarded as a working document throughout the life of the project as alterations may be required according to changing circumstances.	5
Interviews with stakeholders (Objectives 1, 2, 3,) have been conducted by the Team Leader during September and Novemeber 2001 field trips to gain a greater understanding of the local needs and current situation	5
Mapping of supply chain (Objective 1) using interviews with market supply chain members implemented jointly by the Vietnamese and Australian team members.	5
Workshops (Objectives 1, 2, 3) are the major method of training delivery using participatory methods (small group discussion, brainstorming etc.), enhance practical skills and gain feedback from participants. All trainers have been provided with a briefing on the conduct of workshops and there is an expectation of the trainers to conduct an evaluation of all training activities.	5
On-farm demonstrations/meetings (Objectives 2, 3) to reinforce the relevance of production training and group maintenance to the local situation..	5

5- Best Practice; 4- Fully Satisfactory; 3- Satisfactory overall; 2- Marginally Satisfactory; 1- Weak

3.0 Implementation Performance

3.1 Project Components and Outputs

Table 3: Performance rating against project components and outputs.

Component No.	Component Description	Outputs	Performance Indicators	Performance Rating
1	To enhance the capacity of agribusiness marketing of	1.1 Deliver training programs in agribusiness marketing that are	Content of training includes topics covering: supply and demand pricing;	5

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	SOFRI, provincial agricultural services, selected farmer associations and farmers.	production oriented and build upon the participants' current knowledge.	functional/technical quality; supply chain management; logistics and distribution; market research; and strategic marketing. Content meets the participants' expectations and enhances current knowledge.	
		1.2 Participants in the project are introduced to international benchmarks	Through information gained from the Taiwan tour, QA workshop, participants are aware of the process of competitive analysis and best practice in QA	4
		1.3 Production of a domestic mango production supply chain map.	Training delivered in supply chain mapping.	3
2	To upgrade the capacity of SOFRI, provincial agricultural services, nursery managers and farmers in fruit tree propagation, production and protection, including expanded capacity for certifying planting material to meet market demand.	2.1 Establish four mango farmer groups in Tien Giang and Tra Vinh (one group in Tra Vinh to include Khmer farmers) and each group to have a group coordinator.	Project reports Group membership records Cross-reference the group coordinators to the selection criteria Group coordinators' monthly reports.	5
		2.2 Farmer group members receive training in agribusiness marketing and mango production.	Key farmers are selected to attend workshops and disseminate learnings to other group members.	4

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		<p>2.3 Key project personnel are selected to participate in tour to Taiwan to visit successful farmer association groups.</p> <p>Information is disseminated to farmer group members.</p>	<p>Tour reports</p> <p>Group coordinators' monthly reports.</p>	5
3	To upgrade the capacity of SOFRI, provincial agricultural services, nursery managers and farmers in fruit tree propagation, production and protection, including expanded capacity for certifying planting material to meet market demand.	<p>3.1 Provide a source of material available for SOFRI, provincial agricultural services, nursery managers and farmers to assist the improvement of mango propagation.</p>	Material is produced in Vietnamese and is relevant to the local situation.	5
		<p>3.2 Conduct production team training (train the trainer) for SOFRI and DARD technical staff.</p>	<p>Key technical staff are selected for the production team.</p> <p>Content of training meets the participants' expectations and enhances current knowledge.</p> <p>Team members are aware of their role in the production team.</p>	4
		<p>3.3 Conduct mango farmer training for</p>	Content of training includes topics covering production, protection and	5

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		selected farmers from Tien Giang and Tra Vinh Provinces.	harvesting. Content meets the participants' expectations and enhances current knowledge.	
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5: Exceeding time and quality targets, 4: Achieving time and quality targets and on budget; 3: Moderate progress towards targets, some issues about quality, budgets or costs but these are being adequately addressed; 2: Some progress towards targets, but slippage in schedule and cost overruns; & 1: Significant problems in achieving targets, quality outputs unlikely to be achieved and substantial cost increases affecting overall budget.

This project had a high degree of complexity in its implementation due to its highly participative nature. The process of engagement with the communities participating in this project is costly and time consuming and was unrealistic to conduct prior to project design. Prior to project design, the Vietnamese partners nominated the two target provinces for the project, but not the villages as further discussion with the provincial organisation and farmer associations needed to be completed. The process of engagement of these farmer groups does not lend itself to prescriptive project design. The project's intended impact directly affected participants' livelihoods and therefore placed a great burden on the project team to be responsive to their needs.

The ultimate success for this project was to be judged on the operation of the farmer groups themselves. As such the project inputs needed to be adapted to suit the situation at hand. Approved changes to the original proposal are as follows:

1. Outputs and performance indicators

A project planning workshop was held between the Australian team members and Vietnamese participants (including farmers) in September/October 2001 to work through and develop a logical framework (Appendix 1). The components of the framework differed slightly from the original, however as a practice of participatory approach it was approved that the outputs and indicators be adopted for the rest of the project period.

2. Establishing demonstration sites in Tien Giang and Tra Vinh and certified seedling nursery in Tra Vinh

It was recognised during the project planning meeting that, given the short project period, it would be more efficient and economical that demonstration sites may be established from improving existing farms in the four selected villages. Similarly a certified seedling nursery would be established from improving existing government or private nurseries. To this end Tra Vinh DARD Fruit Growers Association personnel were trained at SOFRI in nursery methods and seedlings were provided, seedlings were also provided directly to farmers and assistance given to farmer groups to establish their own small nursery sites.

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Demonstration sites were established in each of the project villages with the seedlings and necessary inputs (fertiliser and chemicals) provided for the establishment of the trees.

3. Study tour to Taiwan

The original plan under Objective 1 of Agribusiness was to take five local fruit marketers to Hong Kong to learn about competitor's products, export supply chain management in an open market and conducting in-market research. It was felt that insufficient relationships had been formed with local fruit traders to see real benefit from this activity. To enhance Objective 2, establishing farmer groups, and cooperative marketing, the Vietnamese participants suggested a study tour (one farmer from each farmer group and one SOFRI staff member) to Taiwan to learn from its successful experience in organising farmers and cooperative marketing. The Hong Kong marketing trip was not entirely cancelled as Peter Batt (agribusiness team member) was going to Hong Kong for other business and the project funded him for a few days to investigate the Hong Kong fruit markets in terms of supply relationships, post-harvest practices as well as pricing and marketing strategies, reporting back to the project participants during the May workshop.

4. Role of Cantho University

The role of Cantho University in the project was to integrate project experience in agribusiness and cooperative formation into the agricultural education system. Contact with Cantho University was through Mme. Nguyen Thi Kim Nguyet who participated in the project identification and design phases. Mme Kim also participated in marketing training. Efforts to work with Mme Kim directly were limited by her availability and by opportunity costs for her time (she stated that she was earning up to \$US100 per day for work in Cambodai for DANIDA). In curriculum discussions with Mme Kim in Cantho, Mr Russell found that her priorities had changed to the preparation of a course for senior extension staff to help overcome a lack of understanding of modern extension approaches at a senior level. Various alternative approaches for integrating project experience into the curriculum at Cantho were discussed and each of these entailed costs beyond that which the project was designed to meet. It was apparent that the gatekeeping role of a single contact limited opportunities for collaboration.

To overcome the various obstacles to involvement of Mme Kim, other staff or students in project activities, the project team sought an approved change to the project to bring Mme Kim to Australia for a training course in the Philosophies of Extension conducted by the Rural Extension Centre located at UQ. This course of action had the advantage that it would provide her with a novel pattern of training and could be tied to further work in Vietnam assisting the formation of the farmer groups. Mme Kim undertook the training course at UQ, progressed plans for a training course for senior extension officers and returned to Vietnam to participate in workshops for each of the farmer groups in conjunction with Associate Professor Chamala and Mr Truyen of SOFRI. This course of action was deemed successful in involving Cantho University, within the means provided by the project budget.

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3.2 Project Outcomes

Even if my wife wants to divorce me, I will trim the trees!

(A Vietnamese farmer speaking of his commitment to new pruning techniques, 2002).

Key outcomes:

3.2.1. Formation of four functioning Farmer Associations. The establishment of the farmer associations took longer than anticipated due to the requirement of compliance to local government regulations and protocols. There is a requirement that all associations (termed as ‘cooperatives’) be registered and that they have a fixed meeting venue. In each province (Tien Giang and Tra Vinh), two farmer associations were formed specifically for this project. It was a deliberate decision that one association in each province be based in a village that has established mango orchards, whereas the other be a village that is at the stage of developing orchards. This was implemented to encourage knowledge transfer and trade relationship development among the farmers. In addition, the second association in Tra Vinh mainly comprised farmers of Khmer ethnicity.

Three of four farmer associations are now registered cooperatives according to Vietnamese Cooperative Law. A summary of each association’s formation and activities and the situation report for each association is included at Appendix 2. A summary is given below:

Tien Giang

(i). Hoa Hung Village, Cai Be District

Official name of farmer association: Cat Hoa Loc Mango Cooperative.

Total number of members: 46

Current Capital: 51. 8mill VND

Current costs: office-12mill VND, phone – 1mill VND, shop – 3mill VND

Total mango area: 104.8ha (74.3ha – established orchards; 30.5ha – new plantation)

This group has the largest area of established orchards and in terms of returns from the functioning cooperative, this group has achieved the most success to date. Under project guidance, they established a shop to sell directly to the public and paying suppliers on average 500 - 1000VND per kg more than what they would have achieved from selling to a collector agent. They also entered into a contract with Saigon Import-Export company to supply 30t of mangoes, making a substantial profit (35 000 000 VND) for the cooperative. The contract has been renewed for next season.

The group was represented by five members at the final farmer meeting held at SOFRI on July 10 2003 (see Appendix 3). The representatives listed the benefits received from participating in the project training activities (see summary list of training activities below) including benefits received from collaborative selling and sharing of market and production knowledge and information.

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(ii) Cam Son Village, Cai Lay District

Official name of farmer association: Cam Tanh Cooperative.

Total number of members: 34

Total mango area: 31.6ha (0.4ha – established orchards; 11.2ha – new plantation; 20ha – planned plantation area)

Although this group has no produce to sell at this stage, significant gains have been made in production knowledge and assistance has been provided in terms of planting material. A nursery has been established under the project and with guidance from SOFRI. To date the group has sowed 11000 seeds in the hope of producing 20 000 seedlings. Once the seedlings have been established, the cooperative will pay members with grafting knowledge to graft the seedlings with certified varieties and care for the plants until ready for sale. Once ready for planting, the seedlings will be offered to cooperative members at a greatly reduced rate compared to the price of seedlings from a commercial nursery. A number of separate training activities were initiated by this group with three field trips and training activities at SOFRI in combination with local DARD officers. Their future plan at this stage is to set up a technical support group to assist other less experienced members, and once the orchard are producing, to sell through the Cat Hoa Loc cooperative.

(iii) Nhi Long, Tra Vinh Province

Official name of farmer association: Tan Tien Cooperative

Total number of members: 31

Total mango area: 26.23ha (22.93ha – established orchards; 3.3 – new plantation)

Current capital: 30million VND

The Nhi Long group reports that they have received good support from SOFRI, DARD officers and the Mr Be from the DARD Fruit Growers Association (Mr Be). Project funds were used to buy earthworms for one farmer to multiply for others. A number of separate training activities were initiated by the group with the support from DARD officers who had received training at SOFRI workshops and other specifically designed training activities.

Activity over the last harvest season saw the cooperative members establishing a market information network, relating prices from various dealers in Cai Be (Cam Son farmers helped them in this activity). If the opportunity arose, they combined their produce to secure deals with larger agents, but largely remained selling individually. After the last project meeting, the group reported back to SOFRI that they have learnt a lot from the project and from seeing how the Hoa Hung group have progressed. They remain committed to the cooperative and now have the land to build an office which will contribute greatly to their plans for cooperative selling next season.

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(iv) Binh Phu, Tra Vinh Province

Official name of Farmer Association: Tien Thanh Farmer Group

Total number of members: 13 (down from 30 in November 2002)

Total mango area: 7.5ha (1.1ha – established orchards; 3.5ha – new plantation)

Current Capital: 1million VND

Binh Phu is the most disadvantaged of the farmer groups in terms of production capacity, knowledge and skills. All members remaining in this group are of Khmer ethnicity. Communication with this group was difficult due to distance (3.5 hours from SOIFRI and 1 hour from Tra Vinh) and the lack of a telephone. Mr Be (Tra Vinh DARD Fruit Growers Association) made regular trips out to the village to keep the group informed of activities, provided assistance in crop husbandry techniques and facilitation of meetings. To date the group has planted 550 certified seedlings provided by SOFRI. The group also purchased an additional 1240 seedlings which were used as root stock and the members trained in the grafting procedure assisted others to graft the seedlings with the Cat Hoa Loc variety. All plants have been established using the production techniques demonstrated in the production workshops. Aside from the benefits directly associated with the project, the group also reported that they had better communication within their own community and thought they had better chances of qualifying for loan funds. Through participation in project activities and under the coordination of Mr Be, they have developed a relationship with the Nhi Long group, joining in local training activities and they will continue this relationship, learning from the other more developed group.

There is consensus that there is continuing need for cooperative support and the evolution of mechanisms to sustain cooperative function. Priorities of national and provincial governments we have had a clear indication of their wish to form other groups.

3.2.2.. Training

Table 4: Details of training provided and attendance

Project Training Activities	Farmer Associations				DARD		Industry	SOFRI	CU	TOTAL
	H H	CS	NL	BP	TG	TV				
Planning W'shop 1-5 Oct '01	1		1		3	2	5	5	1	16
Agribus. W'shop 20-21 Nov '01	1	2	1	2	1		4	6		16
Grp Skills W'shop 23-24 Nov '01	3	2	2	1	1	1	2	7	1	20

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Agribus. W'shop 22-23 Jan '02	2					2	1	4	3		10
Prod 1 W'shop Feb 26 '02		21	17			8		3	1		49
Feb 28 '02				7	21		3	1	1		33
Agribus. 3 & Prod W'shop 6-9 May '02	3	3	3	3	3	1	1	3	4		21
BP Prod W'shop 10 May '03					16		2	1			19
Taiwan Study Trip 7-13 Jul '02	1	1	1	1					1		5
Prod 2 W'shop (in villages) Sep 23-27 '02	34	40	16	40		4	4	4	1		143
Action Plan W'shop Oct 7 '02	2	2	2	2		3	2		2	1	16
Village W'shops 8-11 Oct '02	32	44	48	16		4	3	4	1	1	153
Coop M'ment W'shop Jan 7 '03	3	3	3			2	2		2		15
QA W'shop 7-9 May '03	2	4	3	2		2	2	7	2		24
Village W'shops 12-15 May '03	32	45	35	22		2	2		1		139
SOFRI & DARD conducted Prod. W'shops	16	68	32	13		16	12				154

3.2.3. Improved Livelihoods for farming communities

The project has brought selected communities into direct contact with agricultural research and extension agencies and the communities have benefited from the technical

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advice and some resources provided. The communities have increased mango plantings, improved tree quality and orchard management, and increased sales revenue from their crop. The cooperatives have also enabled members to obtain cheaper inputs and so increase profitability. The cooperatives have obtained varying facilities for improved production and marketing of fruit, depending upon their expressed needs.

3.2.4. Australian partner institution outcomes

The UQ staff have ongoing research into marketing of mangoes and the formation and development of farmer cooperatives in Vietnam. In-country experience is valuable for UQ staff, particularly given the major scholarship program conducted by UQ for Vietnamese students, and the Asian marketing emphasis entailed in the international experience programs conducted by UQ.

3.3 Sectoral Impact

Few women in the farming communities interacted directly with the project through training or as cooperative members. The project team anticipated and discussed these issues and specifically requested women be involved. However, it was the communities themselves that sent representatives for project activities and the selection of group leaders was a local political matter. The interaction of the project team with the local community was constrained by local procedures and institutions and the team accepted that contact with the communities would be on local terms. Women were always represented in meetings and workshops in acknowledgment of the project team request, but the proportion of women was low (eg. 1/56, 16/134, 6/45, 2/35, 3/22). Generally the Khmer minority group had slightly better representation by women. Women were relatively well represented amongst the traders surveyed (9/28) and participants in the QA workshop (2/7). One extension worker involved with the project was a woman (1/4). Direct involvement with the project by women was monitored, both for reporting purposes and to raise awareness of the importance of women's involvement in research and development.

The Vietnamese project had one female member only, although a number of women working at SOFRI contributed to activities through data collection and translation.

The Australian project team had two women members including the Project Director and Project Coordinator. Their contribution to the project has served as an effective model of leadership and management. The Australian Youth Ambassador attached to SOFRI provided an in-country role model for young women particularly, in terms of her independence, education and effective performance as a project member.

The project specifically included a Khmer minority group in the farming communities involved. This community was located at Binh Phu in Tra Vinh Province. The community faces difficulties in terms of language, education and remoteness. The group formed in this location had no bearing mango trees so they have difficulties in sustaining

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group interest in market related activities. Their interests centered on obtaining quality stock, planting and care of young trees. A core group of committed farmers sustains the group. Despite the limitations, the group benefitted from supply of quality fruit trees, husbandry training, group development and through sharing the experience of other more advanced groups. Although the group was difficult to contact, the Extension Officer involved, Mr Be was very effective in his role as Tra Vinh Fruit Growers' Association representative. Aside from the benefits directly associated with the project, the group also reported that they had better communication within their own community and thought they had better chances of qualifying for loan funds.

3.4 Costs and Financing

A detailed acquittal is attached as Appendix 4. The cost estimates and distribution of funds projected in the project design have been adhered to by both Australian and Vietnamese partners.

3.5 Monitoring of project

Table 5: Monitoring arrangements and their strengths and weaknesses.

Monitoring Arrangement	Strengths	Weaknesses
Development of a project logframe	Participatory process used the development of the logframe and used to monitor the adherence to objectives.	Seen as a blueprint rather than a living document by some.
Trip reports	Accounting for activities, people present, evaluation of activities, assessment of future needs, reports distributed among team members.	Tends to emphasise the role of fly-in-fly-out experts rather than develop a picture of on-going activity.
Collection of participants' comments regarding project activities, issues and problems.	Participatory evaluation of activities followed directly on from the collection of comments.	
Attendance at Farmer Association meetings	Accurate picture of activities and progress of associations.	Translation burden on Vietnamese institution. Irregular attendance at Tra Vinh meetings due to time and distance constraints (eliviated problem with appointment of local coordinator)
Australian Youth	Consistent presence for	Translation burden on

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Ambassador (AYA) based at SOFRI	Australian project team with partner Vietnamese institution. Written progress reports (an item that was lacking prior to AYA placement)	Vietnamese institution for any reports in Vietnamese eg. Farmer group coordinator reports (minor weakness only)
Farmer Group Coordinator reports	Strengthened the institutional links in the project as DARD extension officers fulfilled these roles. Worked very well in Tra Vinh where interaction was limited due to distance constraints.	As no reports were translated, the Australian team relied on English reports from AYA.
Financial	Thorough financial control and auditing by UQ financial services and SOFRI administration.	Difficulties in moving funds to other collaborating agencies in Vietnam.

3.6 Technical Assistance, Training and Capacity Building

The major development objective of the project was to enhance agribusiness capacity in the fruit industry for research, teaching and extension in Vietnam. The project effort has been directed through SOFRI in two provinces and targeted at mango production and marketing. SOFRI has seen the importance of marketing, agribusiness and social issues for an active agricultural research agency. They have also gained experience in direct involvement in development processes. This experience is likely to enhance development impacts in other areas of fruit research conducted by the agency.

All training was conducted in cooperation with SOFRI, whose guidance as to locally relevant material and techniques was an invaluable contribution. Emphasis was given to a train the trainers approach, even to the level of involving farmers as trainers of their fellows. Provincial extension officers in both Tra Vinh and Tien Giang attended all training workshops as well as additional derived workshops facilitated by the SOFRI technical officer as needs were identified. Three production workshops were conducted in the participating villages and key farmers were selected to join the DARD officers in additional training. The skills gained in this training was transferred back to the farmer groups via small group, training facilitated by the more experienced farmers and DARD officers. This system appeared to function very well and increased the communication and trust among farmer group participants.

At the community level there has been an increase in understanding of market arrangements and the potential benefits of cooperative action. However, the development of leadership and management skills for the cooperative management committees could

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be much further developed, so as to strengthen the institutions underpinning the functioning of farmer cooperatives in a transitional economy.

The integration of project experience into the agricultural education system is dependent upon the learnings of a single project participant from Cantho University. However, her interest in the subject area and her senior role in the university indicate that that lessons will be drawn into the extension curriculum.

The project benefited from the mix of experience and inputs on the part of the Australian team although there were few opportunities to bring the team together aside from the initial visit. Further opportunities for team members to discuss issues and learnings would have been beneficial. The costs of such exercises were prohibitive, particularly within the short time frame over which the project ran.

The Lead Institution and Vietnamese Partner Institution enjoyed a good relationship overall as has been evident in expressed mutual desire to continue to collaborate in project work. Individual relationships were sometimes strained over financial issues and workload but these issues tended to be short lived in the light of subsequent success with activities. Care should be taken in future to avoid a narrow relationship with Vietnamese agencies based on only one or two persons. Care should also be taken to ensure that the full extent of monetary expectations and pecuniary arrangements be resolved through frank discussion of the issues with Vietnamese partners, down to the level of the staff expected to cooperate in a project.

3.7 Management of Constraints, Issues, Risks and Change

The scientific, research oriented institution SOFRI, despite identifying the need to extend its extension role in the agribusiness area, found the implementation of this project challenging and the in-country maintenance of the project largely fell to one technical officer at SOFRI (Vo The Truyen). This was a problem to Truyen as the requirements of this project simply added to his already heavy workload. Vo The Truyen is a well known and well regarded technical expert in mango production, his presence on the team was invaluable given his knowledge of the production issues and greatly enhanced the development of trust among the participants and the project team. The maintenance of the groups was crucial to the project's success. To lessen Truyen's responsibility in this area, strategies were proposed by the Australian team such as paid farmer group coordinators, then when that did not appear to work, payment for local DARD extension officers to fulfill that role. This appeared to work to some degree, however reporting remained limited to when Australian team members went in. The relationship problems, or distrust Vietnamese government organisations have for one another is regarded as the underlying problem in securing harmonious working relationships. The project was constrained by design policy not to pay Vietnamese personnel directly for their input. An Australian Youth Ambassador (Marlo Rankin) was secured to act as the Project Liaison Officer, as a strategy to improve the reporting coming from Vietnam, to support the SOFRI staff working on the project, and to improve the maintenance of the groups. This

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strategy was largely successful although her perspective was limited by her immersion in the SOFRI environment. It was not possible for us to fund substantial travel, nor could SOFRI support independent activity on her part. Despite these problems, significant gains have been made with all four farmer groups both in crop husbandry practices and cooperative marketing.

Some of the changes recognised and dealt with by the project team under adaptive project management, were not recognised and understood by the CARD Project Review Team. The changes were not followed through the reporting process by the Review Team. These changes included an altered role for Cantho University in the project and replacement of the Hong Kong marketing tour with a Taiwan study tour dealing with markets and farmer cooperatives. Review Teams have difficulty in understanding dynamic arrangements, given limited time to familiarise themselves with original plans, progress reports and the current situation.

3.8 Project Management

The performance of the lead institution has been rated in the CARD Review. Table 6 shows the ratings given to the project by the CARD Project review in late 2002, in terms of two basic quality attributes:

- 'Has appropriate objectives and design' and
- 'Is the project managed in a professional manner?'

The quality attributes were addressed under a number of criteria and relevant criteria relating to the performance of UQ have been selected and presented together with ratings awarded by the review team and their associated comments. The Reviewers ratings have been augmented by self –assessment comments and ratings on the same scale.

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Table 6: Performance assessment for the UQ as the lead Institution

Cirteria	Review rating	Reviewers Comments	Self-assessment	Self-Rating
Adequacy of the design process	3	Criticisms of lack of base line data, lack of financial analysis in project reports, and change in Cantho University involvement	Base line data established for market conditions. No financial analysis planned, nor was this required as a developmental analysis. Cantho University problems resolved effectively within project constraints, difficulty was reported and variation approved within 6 months.	4
Standard of design	3	Further analysis of other project activities, could be more specific however needs to see the log frame in six monthly report, initial analysis of returns to mango production would be useful, new arrangements required for Cantho University, risk analysis weak particularly of institutional risk, self monitoring erred in favour of the contractor, other aspects rated as satisfactory.	Judgement appears to have been made without reference to key project documents. Response to problems with Cantho University did result in new arrangements. Comments regarding self-monitoring presumably relate to self evaluation.	4
Standards of contract and performance of the contractor	4	Contractor's contribution very satisfactory, team optimistic and motivated, project has a training of trainers approach. Hong Kong market tour inappropriate	Comments regarding Hong Kong marketing misplaced, variation in 6 monthly report approved for study tour of Taiwan cooperatives and market in place of Hong Kong.	4
Project	4	Satisfactory	Risk management	4

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monitoring and communications		communications between AMC and ATL, limited approach to risk management, project working closely with farmers.	strategies incorporate basic flexibility in approach. Variations to overcome problems and constraints not well reported to AMC as a risk management strategy.	
Timeliness of preparation and implementation	4	Start up satisfactory, delay in market study and arrangements with Cantho University changed.	The project was started on very short notice to comply with CARD requirements for start up. Delay in market study caused by external interests diverting SOFRI staff and later by the lack of reliable data collection by these staff. Involvement of Curtin University limited to one year. Alternative means of achieving task were adopted.	4
Risk management strategies regularly reviewed and updated	2	Limited approach to risk management	Risks were identified in the participatory process of developing the log frame. Risks were continuously monitored and action taken to minimise impact, however, the actions could have been better communicated to AMC.	4

In Table 7 the performance and inputs from SOFRI the partner agency in Vietnam have been rated by the Lead Institution. In making such judgements, due recognition must be made of the institutional constraints surrounding agency and individual performance and contributions in Vietnam.

Table 7: SOFRI performance and input ratings.

Performance and Inputs	Rating	Comments
Technical training	5	Well respected technical and training abilities.
Marketing	1	Limited by lack of English speaking ability, but also by lack of proficiency, internal tensions, and unreliability of

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		information gathering
Community involvement	4	Good entry to farming communities and respect from community members.
Publicity	4	The high profile of farmer cooperatives under Vietnamese Government policies and the SOFRI staff involved enabled local and national media coverage in print and broadcast media.
Translation	3	The burden of translation was fully accommodated by the partner institution. Payment was made for translation and this may have been a cause for these duties to be placed on the key figure representing that institution. This task exacerbated the narrow interface between the project and the partner institution and heightened the responsibilities and workload of the central figure. The translations provided were generally of high standard.
Relationships with other VN agencies	3	Generally, SOFRI has a good relationship with other agencies. Some of the relationships planned in the initial phases of the project did not evolve into strong working arrangements. Limited by financial considerations and individual attitudes. This matter was largely outside the control of SOFRI.
Support for visiting team members	5	SOFRI provided transport and accommodation arrangements and other matters for visiting team members and made a significant contribution in the form of accommodation for the Youth Ambassador.

Rating Scale: 5: Best Practice; 4: Fully Satisfactory; 3: Satisfactory Overall; 2: Marginally Satisfactory; 1: Weak.

4.0 Performance and Outcomes

4.1 Assessment of Performance Against Objectives and Design

The project was designed with sufficient flexibility to cope with anticipated risks and an uncertain legal, political and economic environment. The project substantively achieved the intended outcomes. The operation of the project and the extent of attainment of expected outcomes is presented in Table 8. Accelerating and hindering factors are also summarised in table 8.

Table 8: Extent of attainment of project outcomes.

Component Description	Outcomes	Performance Indicators	Attainment	Accelerating or hindering factors
To enhance the capacity of agribusiness	1.1 Participants trained in	Content of training includes topics covering: supply and	All topics covered at a basic level	Limited capacity of SOFRI

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marketing of SOFRI, Cantho University, provincial agricultural services, selected farmer associations and farmers.	agribusiness marketing.	demand pricing; functional/technical quality; supply chain management; logistics and distribution; market research; and strategic marketing. Content meets the participants' expectations and enhances current knowledge.	in three successive workshops and study tour. Verified through evaluations.	marketing team. No marketing or agribusiness staff from Cantho University involved.
	1.2 Participants were introduced to international benchmarks and developed and applied locally relevant QA procedures.	Through information gained from the Taiwan tour, QA workshops, participants are aware of the process of competitive analysis and best practice in QA	Fully realised and evident in the development and application of mango QA standards.	Initial lack of appreciation of the relevance of QA.
	1.3 Production of a domestic mango production supply chain map.	Training delivered in supply chain mapping.	Completed	
To upgrade the capacity of SOFRI, provincial agricultural services, nursery managers and farmers in fruit tree propagation, production and protection,	2.1 Four mango farmer groups in Tien Giang and Tra Vinh (one group in Tra Vinh to include Khmer farmers) with group coordinators.	Project reports Group membership records Cross-reference the group coordinators to the selection criteria Group coordinators'	Limited to visits. Maintained. Not achieved, although groups formulated	Group formation assisted by SOFRI's high standing and government endorsement. Contribution of extension specialists from UQ and Cantho

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<p>including expanded capacity for certifying planting material to meet market demand.</p>		<p>monthly reports.</p>	<p>criteria. Not regular and not translated.</p>	<p>Universities. Selection and performance of coordinators largely outside project control and influenced by changing Cooperative Law. Valuable reporting by AYAD.</p>
	<p>2.2 Farmer group members received training in agribusiness marketing and mango production.</p>	<p>Key farmers are selected to attend workshops and disseminate learnings to other group members. Production and QA workshops conducted at village level.</p>	<p>Achieved. Information disseminated through village meetings.</p>	<p>Unstable membership of groups initially.</p>
	<p>2.3 Key project personnel were selected to participate in tour to Taiwan to visit successful farmer association groups. Information is disseminated to farmer group members.</p>	<p>Tour reports Group coordinators' monthly reports.</p>	<p>Achieved. Follow up activities were conducted in each village.</p>	<p>Loss of some key personnel from groups.</p>
<p>To upgrade the</p>	<p>3.1 Material</p>	<p>Material is produced in</p>	<p>Pamphlets,</p>	<p>High</p>

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capacity of SOFRI, provincial agricultural services, nursery managers and farmers in fruit tree propagation, production and protection, including expanded capacity for certifying planting material to meet market demand.	available for SOFRI, provincial agricultural services, nursery managers and farmers to assist the improvement of mango propagation.	Vietnamese and is relevant to the local situation.	QA standards and workshop notes produced.	standard of English and technical competence on part of SOFRI Project Officer. Practical orientation of Australian team members.
	3.2 Production team training (train the trainer) for SOFRI and DARD technical staff.	Key technical staff are selected for the production team. Content of training meets the participants' expectations and enhances current knowledge. Team members are aware of their role in the production team.	Achieved. Verified by evaluation. Limited number.	Loss of some DARD personnel.
	3.3 Mango farmers trained for selected farmers from Tien Giang and Tra Vinh Provinces.	Content of training includes topics covering production, protection and harvesting. Content meets the participants' expectations and enhances current knowledge.	Achieved. Additional training run at SOFRI for key farmers. Verified by evaluation.	SOFRI, UQ and QFVG team members technically competent.

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4.2 Sustainability

Three of the four groups are registered cooperatives and have accumulated a pool of funds. The farmer groups were only operational over one full production season. The Hoa Hung group have made a substantial profit from their first season.

Table 9: Rating of sustainability and associated strengths and weaknesses

Sustainability Issue	Strengths	Weaknesses	Rating
Financial	3 of the 4 groups are registered cooperatives, all have accumulated funds. One group has made a substantial profit from the first season trading, the contract has been renewed for next season. Three groups have contributed funds towards infrastructure development, therefore commitment is evident.	Farmer groups operational over one season only, therefore it is difficult to accurately gauge sustainability.	3
Institutional	A good working relationship has developed between the DARD technical advisors and SOFRI and will continue through working together under other programs. The basic elements of sustainable groups have been established through the formal creation of cooperatives.	DARD has limited funding to support the technical officers. The leadership and management skills of coordinators and the farmer boards of management are limited.	4
Technical	6 mango production pamphlets were produced and distributed to all participants. Train the trainer workshops have been completed and derived workshops in villages conducted. As a group, the farmers have greater opportunities for accessing training in the future. All groups have reported activities where the more experienced group members have shared their expertise and provided help to other group members. The QA standards chart has been produced and distributed to groups and industry participants for trialling over the next season. SOFRI is committed to developing this QA tool. All workshop notes were translated and distributed to participants.	Whilst SOFRI has very strong technical capacity, DARD has very limited funding available to provide technical training on an on-going basis. The contribution to curriculum development is dependent upon a single representative from Cantho University involved.	4

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Environmental	Training in the safe use of agricultural chemicals was delivered to all farmer groups involved. SOFRI have a commitment to research involving low input agriculture and organic production in recognition of export requirements.		5
Social/ Community	The project has greatly contributed to the development of trust among the farmer group members. All have reported activities where information and technical knowledge was shared.		5
Gender	Indirect benefits.	Women's representation in project activities has been relatively low.	2

5: Best Practice; 4: Fully Satisfactory; 3: Satisfactory Overall; 2: Marginally Satisfactory; 1: Weak.

4.3 Development Impact

The major development impact of the project will lie in the extent that the example provided by the farmer cooperatives is taken up and their experience serves as a guide to others. The high profile given to these cooperatives and the endorsement of the activity by Government bode well for wider adoption of the process. The involvement of SOFRI and DARD have provided a basis for Government to support cooperatives through technical and management inputs and focused agency attention on critical marketing and social issues. Discussions with other Government agencies have widened the network of interest and potential support for the cooperatives.

Farmer cooperatives can serve as a mechanism for farmers to attract agency support, gain loan funds, strengthen market power and to educate and activate the community. All of these aspects have been demonstrated by the experience of the cooperatives formed under this project. It is likely that this experience will be taken up and that other groups will be formed in new areas and for other forms of agricultural production.

The cooperatives can help small farmers to boost profitability and cope with economic transition. It is likely that the existing cooperatives will contribute to economic improvement for the communities concerned and that other communities will follow their example. Within three years the existing cooperatives should be self sustaining and generating profits for distribution to shareholders. The level of commercial interest in the cooperatives indicates that there is strong potential for improving the efficiency of the marketing chain. Other growers may benefit from these changes. The wider community should also benefit from more efficient market operations. There may be some

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redistribution of profit margins and existing fruit collectors may suffer loss of income as a result of these changes.

The major development objective of the project was to enhance agribusiness capacity in the fruit industry for research, teaching and extension in Vietnam. The project effort has been directed through SOFRI in two provinces and targeted at mango production and marketing. SOFRI has seen the importance of marketing, agribusiness and social issues for an active agricultural research agency. They have also gained experience in direct involvement in development processes. This experience is likely to enhance development impacts in other areas of fruit research conducted by the agency.

5.0 Conclusions

5.1. Overall assessment

The project has substantively achieved its objectives and enhanced agribusiness capacity for research, teaching and extension in the mango industry in selected villages in Tra Vinh and Tien Giang Provinces. The project achievements have impacted beyond the particular villages and agencies involved in the project through the national coverage given to the formation of the most successful cooperative and its marketing ventures.

The project has resulted in the formulation of a road map for cooperative formation in Vietnam, drawing on the experience of the four groups and the various agencies involved in the process. This information has been presented at an international conference and will be further developed for publication. The project was concluded by the formulation of a plan for the provision of continued support for existing cooperatives, the scaling up of project results and the strengthening of the mechanisms for sustainability for farmer cooperatives in Vietnam.

The plan provided may be suitable for inclusion in any further extension of the CARD program. Project team members participated in the review of the CARD program and comments from the review have been considered in this report. Possible areas for the improvement of the CARD program are highlighted in the lessons learnt. Other aspects of suggested improvement lie in the possibility of extended project timeframes, the incorporation of volunteer or funded long term placement of team members to promote relationship building and enhance communication and flexibility in the assessment of participatory processes for adaptive management in projects.

5.2 Lessons Learned

A full-time in-country project liaison officer was a significant benefit in terms of relationship building and project continuity. This was achieved by securing an Australian Youth Ambassador for the final year of the project. This was a high maintenance project in terms of the continuous demands of establishing and guiding farmer groups through the challenging circumstances of production and marketing. The processes involved were participatory and needed to be responsive to continuous change. Project progress was stimulated by periodic visits by Australian team members, but reporting between

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visits was limited by the workload created for the Vietnamese Project Officer. The insertion of the Youth Ambassador alleviated this burden and allowed for on-going development and reporting. Provision for a salary for a local project officer and farmer group coordinators would alleviate this problem.

The experience in dealing with Cantho University showed that care should be taken in future to avoid a narrow relationship with Vietnamese agencies based on only one or two persons. Care should also be taken to ensure that the full extent of monetary expectations and pecuniary arrangements be resolved through frank discussion of the issues with Vietnamese partners, down to the level of the individual staff expected to cooperate in a project.

It was not sufficient simply to ask that women be involved in the project activities. Specific activities are required to engage women in the project under culturally determined arrangements. The active involvement of local agencies representing women (Village Women's Union) may result in greater direct participation by women. Similarly, the Khmer minority require a higher level of maintenance to sustain their involvement. The Khmer were reluctant to contribute in project meetings (when other farmer groups were present), the distances involved in reaching them were greater, Vietnamese literacy was lower and they lacked effective telecommunications. In village level activities there was no problem in terms of enthusiasm for the project. However, this group did not proceed to the formal establishment of a cooperative under Cooperative Law.

Technical training should be the first emphasis in the process of forming farmers' groups, followed by enhancement of group leadership and management skills and agribusiness training.

The project demonstrated that the institutions involved could effectively interact with farming communities in development activities directly affecting farmers' livelihoods. SOFRI proved a capable research institution in terms of community engagement and responsiveness to farmers' needs.