HORTIN II Co Innovation Programme

Towards cost effective, high quality value chains

Mission report 9

Co innovation in supply chains

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The purpose of the HORTIN II programme is to contribute to the development of cost effective high quality value chains for the selected commodities hot pepper, shallot and sweet pepper. Among others this can be achieved when technology development takes place in close collaboration between public institutions, farmers and private companies.

In Indonesia, the programme is carried out by the Indonesian Vegetable Research Institute (**IVEGRI**) in Lembang. In the Netherlands Applied Plant Research (**APR**), WUR-Greenhouse Horticulture (**GH**) and Agricultural Economics Research Institute (**AEI**), all part of Wageningen University and Researchcentre, are the principal partners.

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1. Executive Summary

In November 2007 a joint LEI/IVEGRI team conducted a stakeholder and value analysis by interviewing actors of sweet pepper and hot pepper supply chains: policymakers, researchers, seed suppliers, producers, exporters and retailers. Based on stakeholders' interests, ambitions, visions and strategies the team developed a framework for co-innovation in supply chains.

Discussions with hot pepper growers revealed, that reduction of input costs is their first priority. Producers highly depend on traders and brokers to get their crops financed. This situation hampers the introduction of innovative technologies developed in the technical component of the HORTIN program. Interventions in supply chain development (direct sourcing) and in governance (e.g. market regulation, micro credit) are needed to pave the way for the introduction of new technologies at growers' level.

The mission team recommends to give ample attention to the priorities of supply chain partners, retailers and policymakers. Development of production technology should be focused at the demands of down stream supply chain partners (retailers, distribution centres, traders) which are amongst others, direct sourcing, new product concepts, cost effective and secure supply chains, continuity in supply and improved service levels.

The mission distinguished different stages, tasks and roles in supply chain development: from stakeholder analysis, strategy development, implementation of supply chain projects, socio-economic analysis, monitoring & impact evaluation and institutional aspects. These stages should be properly addressed in the envisaged follow up activities.

The mission team also strongly recommends to let specialised supply chain facilitators and private parties implement the (pilot) supply chain projects themselves. Evaluation and monitoring and some other relevant tasks as specified in the report can be done by researchers. In particular the issue of upscaling (from 'pilot to main stream') should be given ample attention.

The mission team, together with the HORTIN programme management, selected two pilot projects for implementation in 2008:

- Development of direct sourcing and adding value to hot peppers
- Technical and institutional support for export of sweet peppers

2. Introduction

Experiments have been geared up under farmers' field or greenhouse conditions, flowing the (crop) priorities, that were jointly set by private companies, producers and researchers in April, 2007. These HORTIN II agronomic experiments, mainly focus on quality and production problems, up stream in the supply chain.

According to the HORTIN approach, and the comments made by the DLO programme leader on behalf of the Ministry of LNV, these HORTIN experiments still need to transformed into supply chain (SC) projects. Incorporation of these projects into a comprehensive Supply Chain program with public and private partners [1] will be considered.

Co innovation is another feature which was introduced in the HORTIN programme, which yet needs to be realized with private and public stakeholders in the coming period. In fact one of the pre conditions of HORTIN II is that co innovation between upstream and down stream partners of the supply chain will be a leading principle [2]

2.1. Terms of reference

The objectives of the joint LEI / IVEGRI mission early November 2007 are:

1. Identify partners / stakeholders per commodity / supply chain [3] included in HORTIN II who could take an interest to work together with the HORTIN team and using experimental results for improving their specific supply chain;
2. Elaborate strategic opportunities for supply chain (SC) projects, including the application of HORTIN results, with private parties downstream in the supply chain (as identified under 1),
3. Discuss with all partners, including researchers, the mode of cooperation, contribution, contents and funding of these potential SC projects;
4. Develop tentative work plans for two SC projects (sweet and hot pepper) to be fine tuned, formalized and submitted for funding in 2007 / early 2008;
5. Discuss the concept of co innovation within supply chains and the involvement of Directorate General Horticultural Production of the MoA in Jakarta;

The discussions on the institutional aspects of the HORTIN approach will be of an exploratory nature, due to lack of tangible results of the proposed approach at this stage.

The mission was jointly implemented by LEI and IVEGRI by the following team:
LEI: Jan Buurma and Marcel Stallen and MarieJose Schouten (external Fresh Studio consultants);
IVEGRI: Witono Adiyoga, Rofik Sinung Basuki and Nikardi Gunadi

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[1] A supply chain project includes at least two or three links of the supply chain who work together to achieve pre set joint objectives. For example producers and their associations who formally work together with traders and retailers. Or producers, input supplier and a retailer

[2] Co innovation is a process of cooperation of key actors (private sector, universities, research institutes and government) – considering their specific roles and responsibilities – who jointly define objectives and activities for attaining a joint development goal in order to achieve mutual and complementary benefits. Co-innovation facilitates market and business oriented research in which private companies (entrepreneurs) are in the drivers' seat to find innovative solutions for their problems and opportunities faced in supply chains together with researchers.

[3] Focus was on hot pepper and sweet pepper mainly.

2.2. Methodology

Consultants have studied previous HORTIN mission reports, relevant literature and the description of ongoing HORTIN experiments as well as results that can be expected in 2008 and later.

In Indonesia local staff of Fresh Studio Innovations Asia has contacted representatives of retailers and request for their cooperation. This has resulted in a visit and discussion schedule with fresh managers of leading retailers plus traders and operators of distribution and packaging centers.

To learn about constraints and opportunities in current supply chains of hot pepper, shallots and sweet pepper catering for either the retail, wholesale or export markets we have consulted traders, operators of wholesale markets, and distribution centers. Retailers' representatives have been interviewed (individually or in small groups) systematically and in depth using semi structured questionnaire and check lists (Annex IV). We have asked respondents what type of support and what type of innovation projects they need most urgently to reap perceived opportunities or to solve constraints. These project ideas are summarized and ranked according to relevant criteria

Three months before the start of this mission the (Dutch co funded) World Bank (WB) report 'horticultural producers and supermarket developments in Indonesia' was completed and published, This report makes a straightforward analysis of retail supply chains in Indonesia. Conclusions and recommendations of this report and the urgent request from retailers for a follow up on this report have influenced this mission to a certain extent. To avoid '…….the WB report ending in the cupboard in between the other world bank reports…' as one of the respondents stated action is required. This might clarify consultants' bias towards retail markets as an emerging market opportunity in this mission report.

Although not included in the Terms of Reference we also visited HORTIN experiments in farmers' fields in Tanjung and Cisarua. We discussed the experimental set up, tentative results – as far as available at this stage – and the socio economic constraints for up scaling and introduction of results.

2.3. Supply chains and value chains

There are subtle differences between production and value chains. In the table below (2.1) major characteristics of value and production chains have been summarized. In general value chains are more profitable for all supply chains partners and are more sustainable and development oriented. However value chains are also more demanding in terms of knowledge, inputs etc. One of the challenges of HORTIN II is to transform conventional production chains into value chains.

Factors	Production Chain	Value Chain
Information flow & exchange	Little or absent	Extensive & continually
Principal focus	Cost / price	Value / quality
Strategy	Basic product (commodity)	Unique, specialty product
Orientation	Supply driven (push)	Demand driven (pull)
Organizational structure	Independent actors (no coordination)	Independent actor (coordinated)
Philosophy	Profitability of individual enterprises	Whole chain profitability & competiveness

Figure 2.1 Some characteristic differences between a supply chain and a value chain

2.4. This mission report

In May Indonesian HORTIN staff has made a study tour on co innovation in supply chains in the Netherlands as part of the HORTIN II program. Institutional aspects of supply chain development and the roles of public and private actors were discussed. This November 2007 mission is therefore also used to capture the learning experiences of this study tour and to translate lessons into the Indonesian circumstances.

In chapter 3 of this report the role of private Indonesian partners (companies) is discussed in supply chains. Pre conditions for supply chain formation and the roles of public actors such as Ministry of Agricultures, DG Horticultural Production, IAARD and others) are discussed. The mode of cooperation between Government agencies and companies in Indonesia is described and some ideas for improvement are launched. The relationship between researchers and supply chains' experts is also elaborated upon in chapter 3

In chapter 4 results and conclusions of interviews with retailers' representatives, traders, and Government officials are summarized. But also the opinions of senior ICHORD and IAARD officials are presented.

Chapter 5 contain the core issues of this mission report and includes a tentative selection of projects for inclusion in a comprehensive supply chain program. Criteria for in- or exclusion of project proposals are derived from the previous HORTIN missions and are used to select three projects for 2008.

Chapter 6 covers some operational aspects to implement selected project ideas into practices; how to get retailers maximally committed and to upscale activities from a pilot scale into main stream activities.

3. Institutional setting of HORTIN II

3.1. Linking research and supply chain development

During the mission we interviewed major stakeholders of the HORTIN program. Apart from technical aspects we also asked for their opinions on values, perceptions and strategies with regard to supply chain development. We summarized the outcomes of these interviews per stakeholder in a so called "belief system". These belief systems were used to create a "stakeholder map" (figure 3.1) of the HORTIN program, which shows the different positions of stakeholders. Individual, personal belief systems of all respondents were used to compose the consolidated stakeholder map. For reasons of privacy the individual maps are not attached to this document.

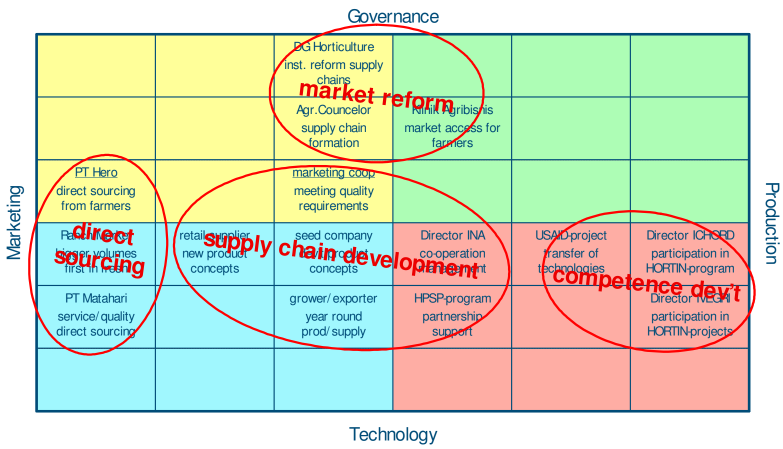

Figure 3.1 *Stakeholder map of HORTIN-II with four clusters of stakeholders*

The map in figure 3.1 shows four clusters of stakeholders in the 'playing field' governed by the polarities [Technology – Governance] and [Marketing – Production].

I. horticultural policy and governance, aiming at reforming structures and mechanisms in horticultural supply chains (*market reform)*:
II. horticultural research, aiming at strengthening of competences in supply chains (*competence dev't*);
III. horticultural industry, aiming at development of new product concepts and improvement of service levels (*supply chain development*);
IV. retail industry, aiming at direct sourcing of vegetables and improvement of product quality and service levels (*direct sourcing*).

This stakeholder map reflects the different opinions and attitudes of major public and private stakeholder towards supply chain development. Because of these very different attitudes it can be concluded that it is not easy to bridge these differences and to get public (including researchers) and private parties working together on the development and strengthening of supply chains. Incentives, goals and dynamics of public and private groups are different and parties hardly communicate which each other.

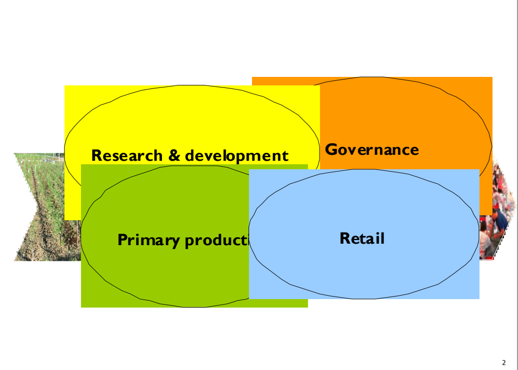	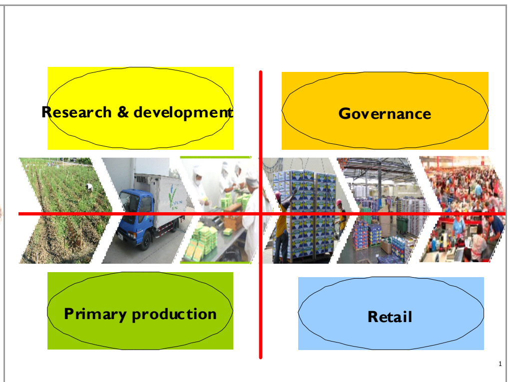
I Public and private parties jointly working on competitive supply chains	II Current sub optimal situation in Indonesia

Figure 3.2 Public Private cooperation in supply chains. Current situation in Indonesia (II) as compared with a situation more conducive for co innovation (I) in which private and public parties jointly support the improvement of value chains

Currently the research and extension system, including regional testing units (BPTP's), are unlikely to benefit farmers' groups and do not have the technologies or concepts to strengthen farmers' positions in supply chains in the short run. Researchers are not trained and equipped to facilitate supply chain development projects, which is also not their core business.

LEI- and IVEGRI researchers jointly concluded that researchers, policy makers and supply chain actors such as retailers have quite distinct dynamics, incentives and goals. In our opinion the integration of these systems, conducive for supply chain development, is a bridge too far at this stage.

In the early phases of the HORTIN II program a clear division of tasks between researchers, supply chain facilitators and private parties will be pursued. Exchange of views and results on a regular basis will probably provide a more sustainable framework for co-innovation. In figure 3.3 this situation with vivid interaction between parties has been depicted. Linking and integrating these activities could be considered at a later stage.

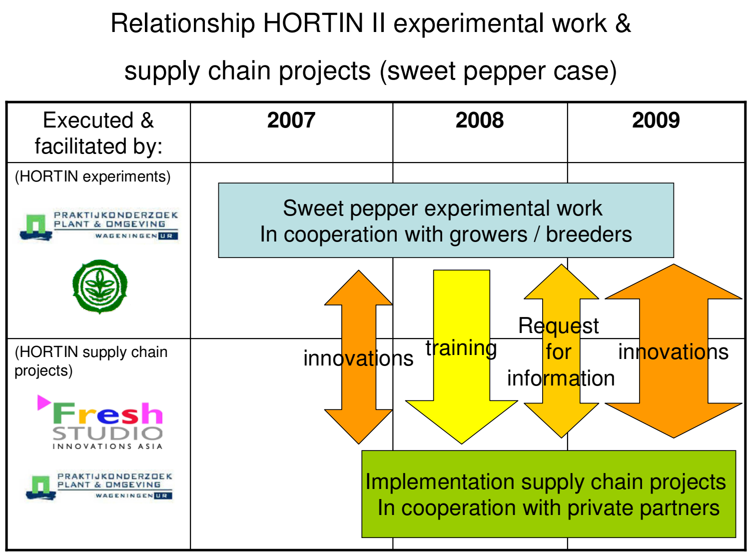

Figure 3.3. Potential interaction between HORTIN experimental work and supply chain development projects

3.2. Public support for private supply chains

Government and donor support to connect farmers with new or existing markets and to establish new SC configurations is justified because of the following reasons.
It was learnt from the Regoverning Markets Program [4] that for successful value chains benefitting all partners three conditions should be met:

- Attitude, willingness of retailers should be favourable;
- Specific skills and level for production technology should be met by farmers;
- Public (financial) support for training, reducing initial risks, credit and facilities are needed in the early phases of development.

In most of the successful cases analysed by the Regoverning Markets program these three conditions were met. Therefore it is assumed that in the HORTIN program too, private partners (retailers, traders, wholesalers) should take the lead and that their agendas are leading. However support from bilateral and / or multilateral donor organisations is needed to re organize their supply chains into a situation more favourable for small holder participation.

The role of pilot value chain projects within HORTIN II is to demonstrate partners in the supply chain and to let them learn about opportunities to transform supply or production chains into value chains. Pilots have a function to escape the current stalemate and to enter into new – publicly supported - value chain configurations. Pilots will be documented and discussed and used to capture the lessons learned. Monitoring and impact assessment of various value chain configurations is therefore an important aspects of HORTIN II.

What is a 'pilot' (definition):

- An experimental initiative lasting for a limited time…; all such experimental ventures are systematically evaluated;
- A pilot project serves as an advance or experimental version or sample of an operation. It provides a model for future development;
- A pilot reveals the aspects related to up scaling which is an endeavour of an experimental nature.

In the HORTIN II situation it should be largely left to private parties how to solve their problems such as direct sourcing, consistency in supply (in terms of quantities, qualities and safety). From the publicly supported pilot experiments with retailers and traders operating a particular supply chain it should become clear what could / should be the specific role of the Government and the input from the R& D system.

3.3. Observation on experimental work HORTIN II

The mission team made some observations and comments on the experimental work on the three target crops in the context of supply chain development.
In sweet peppers new varieties and new cropping systems (# stems/plant) are tested. In hot peppers seedling production is tested for different varieties and different growing media. A second experiment focuses at pest control methods in the nursery stage. In shallots a techno-economic comparison is made between a cropping system with seedlings from TSS and a cropping system with conventional planting material. All these experiments are implemented in growers' fields and managed by growers.

Up to now the hot pepper growers and the shallot growers are not very optimistic about the propagation systems for seedlings. The labour use for producing and

[4] The Regoverning Market Program analyses cases from all continents of farmers trying to connect with retail markets and become preferred suppliers. Unpublished data (publication is forthcoming)

transplanting seedlings and the additional costs for growing media and containers/trays are rather high in the perception of the farmers.
Furthermore the shallots produced from TSS differ in color and size from the conventional product. It is yet unclear whether traders and consumers are willing to pay good prices for this new type of product.

These observations indicate that reduction of input costs has a high priority for the growers. They highly depend on traders or brokers to get their crops financed. In such a situation additional expenses for labour or material problematic.
This conclusion underlines the need for a more socio-technical approach with regard to technology development. It also explains the stagnation of the crop intensification process in shallots and hot peppers. Farmers cannot bear the extra costs. The challenge for the private sector, policymakers and development agents how to change this situation into development opportunities generating income at producers' level.

For HORTIN this may imply an approach of intensification into horticultural supply chains chain development (direct sourcing) but also into improved governance (transparency, supportive regulations, etc.). The stakeholder assessment in section 3.1 of this report gives some suggestions on how retailers, supply chain partners, researchers and policymakers could make better use of each others competences.

3.4. Institutional or technical impediments

It was an important assumption to the development of the HORTIN II program that innovate R&D results will facilitate the transition from supply chains into value chains.
For example improved or innovative products, lower post harvest or production losses, lower production costs or higher outputs are supposed to benefit supply chain partners. However based on a limited number of interviews in Indonesia and evidence from cases described in the literature it can be concluded that this is not automatically the case. Based on our interviews it can be concluded that under Indonesian circumstances social economic and institutional impediments are severe obstacles for supply chain development and new value configurations.
Three examples:

- …….As long as hot pepper farmers in Tanjung (Brebes area) cannot obtain credit at favourable interest rates they are unlikely to invest in improved technologies even in case the cost / benefit ration is positive….
- …..As long as retailers are not prepared to conclude a contract with their suppliers which guarantees a certain price for a fixed period, farmers cannot easily go the bank for a commercial loan…..
- …..Competition which is sometimes assumed as a panacea to regulate the market and offering alternatives to suppliers is rather limited in Indonesia. New entrants; traders with modern or innovative sourcing strategies will not easily obtain a licence to start their (new) operations in an existing production centre or district. The market is tightly controlled by existing traders with vested interests…..

Therefore it is concluded that the HORTIN II supply chain (pilot) experiments should also deal with solving institutional and socio economic bottle necks and capturing learning experiences. Innovation in supply chains and successful introduction of new practices will only take place when supply chain partners trust each other and jointly define an innovation and development agenda. This will be covered at a later stage of HORTIN II (see also figure 3.3)

3.5. Co innovation and cooperation with private sector

The HORTIN-programme for 2007 was drafted in consultation with groups of growers (hot pepper, shallot and sweet pepper), traders, input suppliers and government representatives. This resulted in the experiments as mentioned in section 3.2. These experiments are implemented in growers' fields and are managed by growers. In the case of sweet pepper the growers involvement is further intensified through a connection with the HPSP programme.

An important issue is how to involve large groups of growers and other types of stakeholders in the innovation process. The stakeholder assessment in section 3.1 made clear that supply chain partners, retailers and policymakers have other agenda issues than researchers (e.g. packaging, post-harvest, sourcing, regulations versus product prices). In retrospection it is concluded that the inception workshop had somehow a producer bias. Topics as packaging, year-round supply and market regulation got less attention.

It is suggested to broaden the scope of co-innovation and co-operation to the interests of down stream supply chain partners (retailer, traders and distribution centres). The priorities of supply chain partners, retailers and policymakers should get ample attention from 2008 onwards.

An opportunity could be a joint HORTIN/USAID workshop on supply chain development in vegetables and fruit in 2008. The mission team got positive reactions on such a workshop from both IVEGRI and USAID. During the workshop both technical and institutional issues should be included. Such a joint workshop may result in ideas for innovation in marketing, production. technology and governance.

3.6. Contribution of researchers to supply chain development

Under conditions researchers can significantly contribute to the strengthening of supply chains and transforming product chains into value chains. Researchers can develop new technologies for more efficient or more competitive value chains (for example through improved packaging materials, better varieties, better storage conditions, etc.). But they can also contribute through training of supply chain actors and empowering farmers' groups.

At a later stage of supply chain development new technologies and results produced by the IVEGRI on farm R&D program are urgently needed. Obviously, for example the establishment and building of a producers' association is not a core task of IVEGRI and the HORTIN team. However the ultimate success of farmers producing a better and higher quality product depends largely on their ability to jointly market their products and negotiate on prices and delivery conditions with traders and retailers.

In line with the conclusions in paragraph 3.1 it is therefore recommended that researchers have a clear cut role in the strengthening of supply chains. We defined the following typical researchers' tasks: stakeholders' and value chain analysis, strategy development workshops, monitoring and evaluation.
The actual implementation and facilitation of supply chain partners should be left to specialized supply chain facilitators and private parties themselves. The continual presence of supply chain facilitators in Indonesia is another pre requisite for successful supply chain development within the early phases of the HORTIN II program. A major role in value chain development is set aside for an organization of supply or value chain facilitators operating on semi commercial basis. In Europe the Agri Chain Competence Centre (ACC) has fulfilled this role for more than 10 years. Nowadays

the concept of cooperation and innovation in supply chains has become common sense in the EU.

As was said before the documentation, analysis and monitoring the impact of new value chain configurations, in particular the analysis of socio economic and institutional aspects is a researchers' task. For this type of research in a dynamic and commercial environment 'action research with active researchers' involvement is recommended.

Action Research:
Action research is an interactive way of research: in interaction with his subject of study the researcher tries to find out which interventions produce the desired effect. Action research is frequently applied when institutional or organisational questions are at stake. The difference with conventional research is, that the researcher is not just observing his subject of research. He may also perform interventions in order to faster or better understand relationships or mechanisms. This implies, that the action researcher more or less takes the lead in the transition or development process. Action research is only research when the results obtained are adequately reported and evaluated. Reporting is a prerequisite for (scientific) knowledge build-up. Action research is a good approach in the context of co-innovation. However enough time and budget should be reserved for monitoring and evaluation of process results

It is recommended that supply chain facilitators are recruited and posted with an intermediate organization (compare the ACC organisation in Europe). After thorough discussions with researchers, MoA officials and private parties involved and based on the results of the stakeholder analysis (figure 3.2) it was decided to let the supply chain (SC) projects run parallel with the experimental HORTIN II work. (see also figure 3.3).

Links between the SC projects and field experiments could be established at a later stage and will also include training and advisory activities. The need for innovative concepts or improved production systems will also trigger researchers to come up with meaningful solutions to be tested under commercial (real life) supply chain conditions. Vice versa, questions raised by a particular supply chain and their actors can be answered by IVEGRI researchers based on their long term experience with these crops.

This has resulted into the following division of tasks and responsibilities within the supply chain component of HORTIN II.

Stages of supply chain development (HORTIN II) &
role of research and development

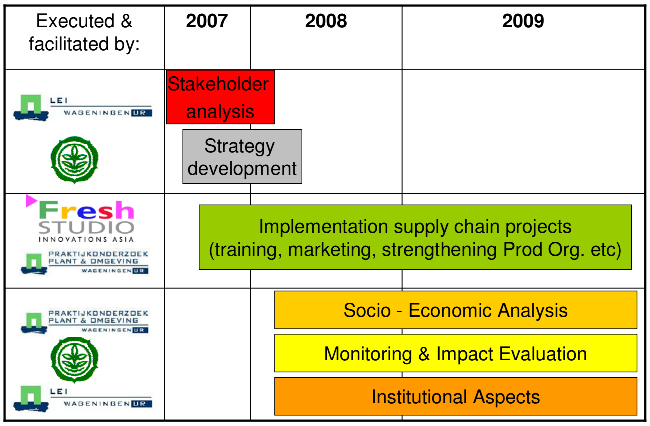

Table 3.4 Phases in supply chain development and division of tasks based on competences

Legend	
Socio economic aspects	Constraints of financial or economic origin, inherent to the production system
Monitoring & impact evaluation	Effects on income (distribution) and employment . Impact on development aspects such as improved (public) health, environmental pollution, sustainability of the initiative and the learning capacity of parties and empowerment.
Institutional aspects	Role of Government; what can be left to the private sector; who is supposed to do what, including the role of researchers. Leverage aspects / points for up scaling pilot value chains.

4. Opportunities for value chain (pilot) projects

During this mission the HORTIN team focussed mostly on the downstream actors of the supply chain and their perceived problems and business opportunities. During previous missions and studies mostly upstream actors were involved in the planning of the programme and were extensively interviewed and mapped. In table 4.1 an overview is presented of partners who have been involved (or interviewed) within the HORTIN II programme to date

Down- and upstream SC partners	**Sweet pepper**	**Hot pepper**	**Shallots**
Producers	About 10 – 15 producers per commodity were interviewed and involved in the planning process (April 2007)		
Service and input providers	Some service providers were involved in the HORTIN II planning workshop 2007		
Supply chain partners (traders, middle men, packers, transporters, exporters)	X (Nov 2007)	X (Nov 2007)	-
Wholesalers	X (November 2007)		
Retailers	Representatives of Hero, Matahari, Kemchicks & Kemfarm, Ranch market and Makro were interviewed in November 2007 [5]		
Researchers	X April – November 2007		
Government institutions	X (April – November 2007)		

4.1. Sweet pepper

In Cisarua interviews with an exporter and a sales cooperative revealed a high demand for sweet peppers in the export market. The demand for sweet peppers to Singapore amounts to about 20 tons per week. Consequently meeting minimum volume requirements for export (about 5 tons per week) and continuity in supply (12 months per year) are major constraints for the supply chain partners involved.

Meeting these requirements appeared to be a problem for two reasons. In the dry season (July/August) temperatures in the greenhouses mount to values higher than 30 °C. The crop gets problems with transpiration under such conditions, resulting in loss of productivity and fast senescense of the crop. The other reason is lack of loyalty or commitment to the export market in periods when domestic prices for sweet peppers are higher than export prices. For that reason the exporter interviewed was forced to suspend export to Singapore recently.

[5] The planned interview with Carrefour is postponed till January 2008

As a result creating commitment for the export market and recruitment of new growers are major attention-points for the exporter and the sales cooperative in Cisarua. For that reason they provide technical knowledge and support to their growers. Furthermore they try to strengthen their supply chains by supporting production in other provinces and by recruiting new farmers in periods when prices in the local market are high.

This picture makes clear, that continuity of supply is the major bottleneck for supply chain development in the sweet pepper sector in Java. The challenges are to increase the production level in the dry season and to improve the commitment of the growers for the export market. Increased production in the dry season may require better greenhouse technology or heat resistant varieties. More commitment of the growers may require institutional knowledge on cooperative management or other payment systems.

The supply chain partners in Cisarua are prudent in starting trade relationships with retailers in Jakarta or Bandung. They know that retailers wish a broad product assortments, which are difficult to supply by specialised growers. Moreover they find the demand of retailers too much fragmented. The export market suits them better in terms of volume and specialisation.

4.2. Hot pepper

The hot pepper production system in central java has been described in detail in the position paper of Witono (2007) and can be characterised as follows:

- Direct sowing or planting in between shallots is common practice (intercropping)
- Only few specialised hot pepper producers can be found in the Tanjung / Kersana / Brebes area (lowland hot pepper);
- Open pollinated varieties such as Tit segatiga are most popular in Central Java;
- There is a labour shortage in particular during preparation of raised beds; transplanting and sowing and manual plant protection;
- Hot pepper is labour intensive and mechanization is unknown in Central Java;
- Relatively low hot pepper yields (10 t/ha) as compared to yield data of hybrid varieties (claimed as much as 20-30 t/ha);
- Pesticide and fertilizer are excessively used to control a range of pests and diseases with a low degree of success;
- In general produce is of low quality; the supply is irregular and the production (harvest) planning is poor;
- Small farm size, the average farm is about 1,500 m^2
- Pesticide residues is no issue at all and no Government organization or private laboratory is checking whether products comply with residue limits. Maximum Residue Limits (MRL 's) are unknown in case of hot pepper;
- The prevailing informal marketing system is very complex. From producer to trader all partners appear to be inter dependent on each other;
- Transaction costs in the supply chain are rather high and the marketing system is in transparent;
- Price fluctuations at the whole sale market are considerable. Often these fluctuations are not translated back into producers prices. Intermediate traders act as a buffer in between markets and producers;
- Major market outlets are the Tasik Malaya and Bandung whole sale market; these markets request for specific varieties. For example: 'Tit Segitiga' is sold mainly at the Bandung and Tasik wholesale markets. 'Herang' (much smaller portion of total production) is sold at the Jakarta and Bogor wholesale markets;
- Traders are specialised in either the Bandung or the Tasik market which are the leading market outlets;

- Producers / suppliers have no direct contacts with the Bandung or Tasik whole sale market;
- Traders, especially at the Bandung market, speculate and have a poor payment discipline, sometimes leaving traders with unpaid bills;
- Collectors / traders provide credit to producers and they always buy the hot pepper at a set and agreed price. Traders fear losing business and producers moving to other traders. Sometimes they pay more than the actual market price.
- Trader / collectors pay their producers / supplier always in cash. Whereas he/ she does not know the market price (Bandung or Tasik) on beforehand. Intermediate traders bear most of the financial risks in the supply chain .

One of our conclusions, based on these observations is that not a single party in the supply chain is able to or has the opportunity or authority to introduce new products (varieties) or innovative (direct sourcing) procedures. Strong market incentives are needed for innovations and changes.

4.3. Retailers

The retail sector is a fast growing sector in Indonesia. Most retailers face somehow identical problems in the supply chain with the sourcing of their fresh produce, such as (in) consistency in supply and quality, price fluctuations etc. Fresh produce and in particular fruits and vegetable are considered as a traffic generator for the stores. There are ample opportunities for adding value to products or developing new product concepts as was discussed with representatives of retailers during our mission. The emerging retail sector might eventually restructure the fresh sector as is described in a recently published report of the WorldBank (2007).

There is a trend towards direct sourcing, because of high transaction costs and low transparency in conventional supply chains. Building networks of motivated farmers for direct sourcing appears to be difficult. Furthermore competent perishable staff is lacking in the retail industry. There is a need for training of staff and suppliers. The need for quality assurance systems is growing. Certification for food safety is not yet a priority, but most fresh produce category managers realize that this will become a necessity soon.

In short retailers can be characterized as follows (table 4.3). In general their agendas have a nearby horizon of not more than two or three years in which they want to realize their ambitions and to reap opportunities.

Supermarket	Format	Clients	Importance fresh produce
Ranch market	Shop in shop / club format	Expatriates and top income class Indonesians	++
Hero	supermarket	Middle income class Indonesians	+
Carrefour		Expatriates and top/middle income class Indonesians	++
Matahari		Middle income class Indonesians	+
Food mart		Middle income class Indonesians	+
Kemchicks	Shop in shop / club format	Expatriates and top income class Indonesians	++
Makro	Cash and carry	Small traders, food stall owners, hotels restaurants, institutions	+

Summaries of interviews with retailers are attached in Annex III

5. Gross list potential value chain development projects

Consultants have compiled a gross list of project opportunities which could be developed into full fledged supply chain projects. These ideas are based on interviews and discussions with representatives of retailers, wholesalers and traders. Their ideas have been combined with consultants' (HORTIN team) knowledge and understanding of the vegetable cropping systems in Indonesia. Each of the five mission team members has developed one or two project briefs (annex II).

Project ideas were summarized by means of the following key questions (Annex II):
1. What is the intervention;
2. For what market(s);
3. Type of intervention;
4. Parties involved;
5. Who are the beneficiaries.

Titles of potential value chain development projects HORTIN II
1. Introduction of GlobalGAP for sweet and hot pepper in Indonesia
2a. Opportunities for direct sourcing of shallots
2b Opportunities for direct sourcing of hot pepper
3. Sweet pepper for export
4. Sweet pepper production for the local market (supermarket)
5. New product / retail market concepts
6. Fresh Added value Distribution Centre linking farmers with new markets

Selection criteria for HORTIN II supply chain pilot projects:	
a.	Earliness and chances of tangible results (successes)
b.	Opportunities for up scaling (reproducibility and sustainability)
c.	Impact and potential / number of potential beneficiaries
d.	Effects / impact on public issues such as food safety, reduction of pesticide use, income security and creating transparent value chains with lower transaction costs
e.	Eagerness / willingness to cooperate and sense of urgency felt with supply chain partners
f.	Opportunities for deriving lesson learned for SC partners as well as public institutions.

All six criteria are considered equally important and have been given the same weight. LEI consultants have assessed project briefs individually and independently and this has resulted in the following matrix and ranking of potential supply chain projects (in order of importance for inclusion in the HORTIN II program)

Project title and keyword	Criteria						
	A	B	C	D	E	F	Overall ranking
1 Global GAP	To be combined with 3						-
2a Direct sourcing shallot	-	+	+	+	+/-	++	2a
2b Direct sourcing hot pepper	-	+	+	+	+/-	++	2b
3 Sweet pepper export	++	+	-	+/-	++	--	3
4 Sweet pepper local market	-	+/-	-	-	-	--	5
5 New product / market concepts	Depends largely on type of products / concepts						4
6 Fresh Distribution Centre	+/-	+	+	+	+	++	1

Table 5.1 Ranking of potential HORTIN II supply chain projects by means of relevant criteria. (1 means the best fit and 5 the lowest fit

6. Towards operational supply chain projects

Two high priority (pilot) projects have been selected in close collaboration with the HORTIN programme management:

2b. Direct sourcing hot pepper
3. Sweet pepper export

The following two projects have a high score and priority but they fall beyond the cope and the budget of the HORTIN program:

6. Fresh Distribution Centre
5. New product / market concepts

In the mean time all retailers who were interviewed have received feedback on the interviews in the form of a summary with conclusions of the meetings. (including 'to do' list). The two selected pilot supply chain projects (hot pepper and sweet pepper) will be discussed with retailers representatives and other relevant parties in February 2008 to get their commitment. These projects need to get a quick follow up because of the 'sense of urgency' with retailers and the momentum that has been created by interviewing retailers. There appear to be common grounds for supply chain development.
Budgets to make an early start with the implementation has been secured through the HORTIN II program and a local organization should be in place early 2008. Headlines of the operational plan need to be finalized by that time.

It could be necessary to conduct a concise stakeholder and value chain analysis before starting field activities. This appears to be the case with hot pepper. More information on the performance of the supply chain is needed and the actors involved to assess opportunities for direct sourcing. Researchers of IVEGRI, Wageningen UR and Fresh Studio experts could play a role in these activities.

The development of a joint strategy and setting a common goal with retailers, service providers and seed producers and producers is a crucial stage. Researchers have developed tools and games to facilitate the process of strategy development and agenda setting.

The exact mode of cooperation of researchers, local SC facilitators and private parties depends on the type of crop and the type of problems or opportunities that are tackled and the type of actors involved.

6.1. Implementation of SC projects

SC development activities (chronologically)	Lead and role of other parties			
	PPO	**LEI**	**IVEGRI**	**Fresh Studio**[6]
Partner selection	**X**	X	X	X
stakeholder analysis		**X**	X	
workshops agenda setting		X		**X**
protocol development				**X**
implementation				**X**
training / capacity building		**X**	X	
monitoring, evaluation & analysis		**X**		
reporting		X		**X**

Table 6.1. Overview of activities in the implementation phase and who is supposed to do what. (Bold printed indicates that this party is primary responsible)

6.2. Staffing and organization

A local supply chain support organization is key to successful pilot projects. Full time presence and availability of hands on qualified staff is essential to respond to traders, packers and retailers and their requests for information. A local 'hands on' consultancy group, comparable with Fresh Studio, Vietnam should play a pivotal supporting role.

[6] Fresh Studio is nominated as third party for local supply chain development and facilitation

Annexes

I. Mission itinerary and persons met
II. Summaries potential value chain projects
III. Minutes of meetings with retailers
IV. Check lists interviews traders / middle men and retailers

1. Mission Itinerary and persons met

Date and time	Meeting /visit
Sunday Oct. 28	
23.00	Arrival Buurma and Stallen Jakarta (overnight Kemang hotel)
Monday Oct. 29	
10.30	INA / HPSP programme, Elmar Bouman (Buurma and Stallen)
13.00	Dutch Embassy, Hans vd Zijden (Buurma and Stallen)
14.00	IVEGRI / HORTIN staff arrive in Jakarta
15.00	MoA ICHORD (Yusdar Hilman and staff) (Buurma, Stallen and IVEGRI team)
20.00	Marie Jose Schouten Jakarta (Stallen)
Tuesday Oct. 30	
09.00	MoA Klinik Agribisnis (Suwandi) (Buurma, Stallen and IVEGRI team)
14.00	MoA DG Hort Production, Dr. Dimyati
15.00	World Bank supply chain and retail development programme, (Dr. Shoba Shetty), conference call
18.00	Departure Lembang overnight
Wednesday Oct 31	
09.00	Briefing and discussion Kepala IVEGRI
10.00	IVEGRI / HORTIN team finalize programme and making appointments Briefing and discussion on all HORTIN experiments by IVEGRI staff
15.00	Shallots, Hot and sweet pepper (East West Seed), Rien Rodenburg,
Thursday Nov. 1	
09.00	Meetings with sweet pepper stakeholders in supply chain association Cisarua; (from breeder till trader) about their strategy, long and short term objectives and belief systems Nikardi and Buurma

Date and time	Meeting /visit
15.00	PT Bimandiri. Operator of Distribution Centres, packaging facilities in Bandung
09.00	Meetings with hot pepper stakeholders in supply chain Brebes; (from breeder till trader) Witono and Stallen
Friday Nov. 2	**continued**
08.00	Meetings with hot pepper stakeholders in supply chain Brebes; (from breeder till trader) Witono and Stallen
15.00	Team meeting in Bandung
	Transfer to Jakarta and overnight
Saturday Nov 3	
11.00	Asbindo presentation Stallen
Sunday Nov 4	
	Report writing and leisure in Jakarta
Monday Nov 5	
11.00	Meetings with supermarket representatives HERO
15.00	Meetings with supermarket representatives Matahari
18.30	Meeting with Abdul Latief, chairman Pasaraya group
Tuesday Nov 6	**continued**
08.00	Meeting with Kemchicks
11.00	Ranch market
14.00	USAID / DAI supply chain programme
Wednesday Nov 7	
09.00	Report writing Jakarta
17.00	Buurma dept. SIN-AMS
17.00	Stallen departure for Manado

II. Summaries of potential value chain projects

1. Introduction of GlobalGAP for sweet and hot pepper in Indonesia
Food safety certification is becoming an important issue for exporters and retailers in the near future. Especially for sweet pepper the need for certification to assure product quality and safety is a must but also an opportunity that can be reaped. It is therefore suggested to start a pilot on the introduction of GlobalGAP, together with advanced growers, exporters, public parties, certification body. Apart from the pilot project the objective is to find out what the technical and institutional constraints are for introducing Global GAP in Indonesia. The pilot may serve as an example on how food safety certification can be organized in the vegetable and fruit sector in Indonesia. In the end producers, supply chain partners and supermarkets, but also Government institutions will benefit.

2a. Opportunities for direct sourcing of shallots
Both supermarkets and policymakers are in favour of making supply chains more efficient. Up to now the experience learns, that it is quite difficult to get direct sourcing organised. Scale of production and commitment of farmers appears to be a bottleneck, especially in a conventional crop like shallots. The proposal is to make a stakeholder analysis in order to get understanding of the transaction mechanisms, the institutional constraints, the stakeholders pro and contra, etc. After understanding the mechanisms and constraints a better conclusion can be made were interventions are possible and promising. Parties to be involved are growers, collecting traders, local policymakers, DG Horticulture, Dinas Pertanian, etc. In the first instance DG Horticulture and other parties interested in decreasing transactions costs and transparency will benefit of the analysis. Depending on whether direct sourcing appears to be an option both growers and consumers are the beneficiaries.

2b. Opportunities for direct sourcing of hot pepper

3. Sweet pepper for export
In general the main problem in the export market is the exporter could not fulfill the demand of good quality product for a certain time. Another problem includes the continuity of supply either from the grower to the exporter and consequently also from the exporter to the buyer in the importing countries. Nowadays a maximum of 5 tons export quality sweet pepper can be produced, collected and exported per week, The actual demand from Singapore is 20 tons per week. These figures are based on one exporter and importer in business. Similar situations are recorded from the farmer cooperative in Lembang. So there is an opportunity to increase the volume for export market of sweet pepper from Indonesia. The intervention would be the formation of farmer group consisting of farmers who really committed to the group and their main objective in exporting products. The group, then make a plan in order to fulfil the export demand in a certain time. This will includes the technology for producing a certain volume of products continuously. Parties involved would be farmer group, researcher and exporter. Beneficiaries would be the actors in the SC of sweet pepper for export market

4. Sweet pepper production for the local market (supermarket)
Similar to the problem for export market, the problem in the local market that includes supermarket are the unstable supply and therefore it could not fulfill the target demand of the supermarket in a certain time. Although the demand of local market (supermarket) is not as high as export market, the continuity of supply is the important key factor for supermarket. The intervention would be the analysis of supply chain of local market. Type of intervention would include production technology in order to achieve stable production of the required standard quality of local or supermarket products. The parties involved would be the grower or farmer group, researcher, supplier and supermarket. The beneficiaries would be the actors in the SC of sweet pepper for local market (supermarket).

5. New product / market concepts
Closed and innovative chain concepts are new in Indonesia and could be used to generate extra margin for all supply chain partners. Examples, including new varieties, were discussed with retailers: • Tinkerbell (mini)sweet pepper • Salanova lettuce • Sealed sweet pepper (traffic lights) These pre packed vegetables are produced for the top end market segments and could fit in formats of Kemchicks and Ranch market. The innovation is the production (in an environmentally friendly way, with a minimum of pesticides used) of these particular new products The beneficiaries are producers, seed suppliers and supermarkets. We also discussed opportunities for • plaiting of shallots comparable what French producers do with their garlic • Pre packed (500 g) Brebes shallots for supermarkets, packaging in the Brebes area in stead of in Jakarta

6. Added value Distribution Centre linking farmers with new markets
Fresh Distribution Centres who perform category management on behalf of their retail clients are non existing in Indonesia. On the other hand retailers want to outsource all activities which do not belong to their core business. Retailers cooperate with a small number of independent DC's and some others operate their own warehouse cum distribution centre. The innovation is a Fresh DC concept, certified and catering for one or more retailers who assign their own quality control staff at the DC. The DC will be equipped wih washing and packaging facilities and fully air conditioned. The DC will be operated by a third party who look after sourcing, transport, packaging, cooling. We identified parties who are on the brink of starting these type of activities and they want to serve a gateway for smaller farmers to demanding supermarkets. Beneficiates are small and medium sized farmers, DC operating company, retailers

III. Minutes of meetings with retailers

Meeting with Matahari Jakarta, November 4, 2007
Mr. Budihajo, general manager Produce and Mr. Ong Thian You vice president fresh merchandise

1. Matahari operates two formats in Indonesia; Hypermart (32) and Foodmarkets (30); both formats position themselves with 'fresh'

2. Matahari staff briefly explain on the major sourcing issues of hot pepper, sweet pepper and shallots. They regrets that we focus our experimental and consultancy work on three important crops only. Matahari faces the same quality problems, inconsistency in supply and sourcing with may other corps as well.

3. Core values for Matahari are to supply their customers with a regular supply of fruits and vegetables at an acceptable price of a world class quality standard. (low prices and more…..)

4. Matahari operates a Distribution Centre of 5000 m2 and is looking for a location to construct a new one of at least 15000 m2. They have cooling, washing and processing facilities for the major products. The DC is operated under their own management . However third parties organize the sourcing of products, in particular when products have to be collected with smaller farmers. Large growers can deliver directly to the DC.

5. Some shallots (and onions) are produced locally but the majority is imported. All produce is handled by United Asia with facilities in Brebes which is having have packaging and added value activities as requested by Matahari.

6. Among others Matahari sources with Saung Mirwan and Kemfarms. Continually they look together with their suppliers into opportunities for new products and new marketing concepts to improve their competitive positions in the market. Matahari is in the process of becoming certified for all their activities including their suppliers.

7. Matahari Is not biased towards small or large farmers; low transaction costs and smooth business are leading

8. They are interested to getting connected with seed suppliers / breeders, traders and growers to test new product/ market concepts as commercial projects.

<u>We agreed upon the following:</u>

1. For more information we can contact Ibu Rhumahat or Bakap Subihanti

2. We will present some fact sheets / ideas of new product concepts such as
   - Salanova fresh cut salad;
   - Guaranteed Vegy safe products grown according to recognized standards;
   - Mini sweet pepper / Thinker bell;
   - Tomatoes on a vine

3. Marcel Stallen will send the presentation of his colleague Mr. Siebe van WIJk about the development of the (new) avocado value chain in Vietnam.

Meeting with Ranchmarket, Jakarta, November 5, 2007

Mrs Cara Guntoro, fresh produce manager

9. Ranch market operates 6 shops in Indonesia; mostly in Jakarta and are planning to open one more next year. Ranch market caters for the upper segment of consumers (A and B). Recently they have added another two reail shops to you portfolio under the name Food market catering for the B and Consumers. Best in Fresh is their (un official slogan) and they want to position themselves with a top quality fresh produce, including organic, hydroponic and imported goods

10. Mrs Cara Guntoro of Ranch market briefly explains on the major sourcing problems in general and we discussed the specific issues of hot pepper, sweet pepper and shallots. Ranch market buys from a mall number of suppliers who also deliver produce to other retailers. The best quality is kept apart and packed for Ranch market for which they also pay a premium price. Products of a lower quality but still safe and acceptable for Foodmarket consumers are sold via the Food market outlet and other outlets. In Ranch market they sell 500 g pre packed shallots (from Brebes) and unpacked shallots. In Food market they sell only unpacked shallots

11. Ranch market is ISO and HACCP certified but they admit that this does not automatically means that all their fresh supplies are fresh. For this purpose they have their own quality inspection system and take samples to make sure that products are pesticide free. Ranch markets stick to strict lead times, want to reduce shrinkage levels etc.

12. Ranch market believes in exclusivity and is concerned that when introducing a new product concept (we identified some) through their distribution centres (operated by their suppliers) that any concept will be copied easily.

13. We discussed cooperation in the field of operating a new, certified fresh logistics and distribution centre. Ranch market management is considering to set up such a DC but lacks the funds so far. A third party operated DC would suit them.

14. Previously Ranch market cooperated with the Government but the speed of development within the retail sector is rather high nowadays. As a matter of fact retailers and Government officials lost contact with each other.

15. Hot pepper and Shallots are in the top 10 vegetable sin terms of turn over. Tomato is their number on product. The turn over in paprika is modest.

<u>We agreed upon the following:</u>

4. Ibu Cara (Ranch market) is interested to cooperate on issues as mentioned above. For more information we can contact them any time (follow up by Marie Jose)

5. We will discuss some of our ideas of new product concepts with Ranch Market such as
   - Salanova fresh cut salad;
   - Introduction of Good Agricultural Practices and training;
   - Mini sweet pepper / Thinker bell;
   - Tomatoes on a vine

6. Marcel Stallen will send some information on establishment of DC's through Fresh Studio in China and Vietnam. Ibu Cara could organize a meeting with the director of Ranch market to discuss cooperation in this field at a later stage.

Summary of discussion with Mr. Ferry Rahman Saputra, Fresh Category Manager of PT Hero Supermarket Tbk. In Jakarta 6th November 2007,

1. Hero Supermarkets has various supermarket formulas; with together about 100 branches. The sourcing of the big volumes of good quality vegetables appears to be quite challenging.

2. Pricing and continuity in volumes and quality at wholesale markets does not meet the Hero standards. For that reason they recently adopted a direct sourcing strategy for vegetables. They aim at 2 – 3 suppliers for each category.

3. For 2008 a direct sourcing program has been developed, focusing at the 10 major products. The HORTIN-products shallots and hot peppers are among these 10 major products. Sweet peppers are a minor product in Hero's vegetable assortment.

4. The main target for Hero is to get good suppliers for the direct sourcing program. Therefore HORTIN and Fresh Studio are most welcome to contribute to this target. We explained that researchers and consultants are not the persons to become suppliers. We eventually could connect Hero with advanced vegetables growers from our networks.

5. Another consequence of the direct sourcing program is training of fresh handling staff and vegetable growers on good agricultural practices and related subjects.

For that reason we agreed that Marie José Schouten of Fresh Studio will contact Mr. Ferry and/or the Learning and Competence Development Centre (LCDC) of Hero to further discuss the possibilities for a training program good agricultural practices, supply chain development, etc.

Meeting with Makro, Jakarta, 23 November 2007

Elvirina Syahrial – Senior Merchandise Manager Fresh Food
Indra Budiana – Merchandise Manager
Frans Marganda Tambunan – Merchandise Manager Fresh Food
Nila Kencana - Assistant Merchandise Manager

1. Makro has 19 outlets in Indonesia of which 7 in Jakarta. Makro plans to open two more stores next year. Their format is cash and carry and their main customers are institutes and businesses such as caterers, hotels and restaurants. The concept of Makro is ´low price – low cost´. Fresh produce has a very important role in the Makro stores as these products are being used to attract customers. Of the total turn-over, 4,25% is coming from fresh vegetables and fruits.
2. Hot pepper and shallots are in the top 10 of fresh vegetable sales in volume. Tomatoes is their number one product, potato, garlic, onions and carrots other major products. Paprika is less important and only sold to a niche market.
3. Makro sources 60% of their volume straight from the producers whereas the other 40% comes from middlemen and is mainly being used to back up volume. Makro tries to limit imports and does not import themselves but also through middlemen. For each product Makro has 2 or 3 suppliers. These are mainly based in Garut, Lembang, Cipanas or Central Java.
4. Makro has a distribution centre in Jakarta which is operated under their own management. Producers are in charge of packing the products and transport to the DC. The packing material is being supplied by Makro. Delivery takes place at night and Makro transports the products further to their stores in Jakarta. The distribution center is not cooled and produce can only be stored a maximum of a few days. However, most produce will go the same night to the stores.
5. Makro has its own quality control but this does not include any control on pesticide use as this is not yet necessary for the Indonesian customers. Makro does not train their growers on the production side but hands out guidelines for the necessary qualifications of their products. The Makro stores are not certified.
6. Constraints in the supply of vegetables have been discussed. For hot pepper and shallots the irregular supply and poor quality are being mentioned specifically, especially in the rainy season. Currently shallots are being imported from Philippines. Training in order to improve the supply chain should focus on production planning, post harvest handling and packing.

We agreed that Fresh Studio will keep Makro posted about the pilot projects and any other value chain projects in Indonesia. For any further information we are very welcome to contact them again.

Meeting with Mr. Wahyudi Samdodra, Manager of Kemfarm, Jakarta, 22 November 2007

1. Currently Kemchicks supermarkets has two outlets in Jakarta. They position themselves as premium supermarket targeting middle and higher class Indonesians and expats. Kemchicks sells a wide range of quality fresh produce, both locally produced and imported.
2. For local produce, Kemchicks is being delivered mostly through Kemfarm. The latter works with contract farmers who grow for example paprika and hot pepper. Some products such as shallots are being bought directly by Kemchicks at the central wholesale market in Jakarta.
3. KemFarms has two distribution centra in West Java, one in Cipanas and one in Lembang. These have very limited cooling facilities and no cooling trucks. However, products are being collected late afternoon, repacked and supplied early next morning (before 6.00 AM) to Kemchicks but also to other super- and hypermarkets such as Ranch Market, Matahari, Makro and Carrefour. So within 24 hours the products are on the destination. Apart from the above, Kemfarm has a processing plant in Semarang for frozen products. These are being exported, mainly to Japan.
4. Regarding the three products of our interest (paprika, hot pepper and shallots) paprika is the most important in value turnover for Kemchicks supermarket. Hot pepper and shallots are regarded as mass products with a lower turnover.
5. General sourcing problems for Kemchicks have been discussed such as inconsistent supply, high pesticide use, poor post harvest handling, the lack of proper packing material, etc. Not many problems are encountered in the supply of paprika as these are being grown by contract farmers and sorted and packed by Kemfarm. Price and demand are fairly stable throughout the year. For hot pepper the inconsistent supply resulting in huge price fluctuations is a major issue. For shallots the poor post harvest treatment and poor storage is mentioned specifically.
6. Kemfarm guides their growers on the use of pesticides but cannot prevent the appliance of some pesticides. As the Indonesian consumer does not request the differentiation and as the regulation not well defined it is not a major issue yet for the domestic market. However for exports it is and KemFarms encounters difficulties in testing their produce as facilities and knowledge in Indonesia is very limited.
7. Kemchicks/Kemfarm is a little bit hesitant about the introduction of new products such as tomato on a vine, prepacked fresh cut salad and mini sweet pepper as local demand will probably be very limited. These products will only be destined for a small niche market and therefore it is not yet justified to grow these as costs are too high. Fresh cut salad might be interesting but the market must be defined first and can only be successful if cold storage and cold transport is guaranteed.
8. Discussed the vegetable chain project as well as the avocado project in Vietnam. Very positive response. This could work in Indonesia as well as long as the farmers are convinced about the marketing opportunities of their products. Post harvest handling and packing are also of major importance in such a project as currently these practices are very poor.

We agreed that Fresh Studio will keep Mr. Wahyudi informed about the activities of this project. Further possibilities for cooperation can be discussed once the ideas for the pilot projects are more defined.

IV Checklists interviews traders, middlemen & retailers

Checklist for traders / middlemen		
1. Background information	a.	Location
	b.	Years in business
	c.	Type commodities traded
	d.	Other activities / part time or full time trader
	e.	Number of employees if an
2. Volumes and production (sourcing) areas	a.	Volumes of hot pepper / Paprika purchased per week and month including seasonality
	b.	Volumes of hot en sweet pepper purchased per year
	c.	Areas from which hot pepper / paprika is purchased
	d.	Relative importance of different production areas
	e.	Differences between production areas with respect to quality
	f.	Advantages and disadvantages of various production areas
	g.	Type of hot pepper / paprika purchased
	h.	Preferences for particular varieties
	i.	Differences between varieties (paprika or hot pepper) with respect to quality
	j.	Major trends and changes in traded volumes and sourcing areas (over past 5 years)
3. Suppliers / producers	a.	Who are your suppliers (farmers, collectors etc)
	b.	Relative importance of different suppliers according to volumes and regularity of supply
	c.	Differences between suppliers with regard to quality and varieties
	d.	Advantages and disadvantages of various suppliers
4. Buyers	a.	Who are the buyers of your paprika (traders, retailers and consumers) and their locations
	b.	Relative importance (in terms of volume and regularity of purchasing) of different buyers
	c.	Product requirements of different buyers (volumes, quality, packaging etc)
	d.	Advantages and disadvantages of different buyers
5. Prices	a.	Current purchasing prices for paprika / hot pepper
	b.	Current selling price for Paprika / hot pepper
	c.	Factors influencing the current vegetable prices (buying and slling)

Checklist for traders / middlemen	
	d. price fluctuations within the season and reason e. price fluctuations between seasons and reasons f. Price trends over say the past three years and key factors influencing prices g. Expectations for future price trends and driving forces
6. Transactions	a. Place of purchase (farm gate, village, own store, market…. b. Places of sale c. Use of buying agents d. Payment procedures for selling and buying (cash, barter etc) e. Terms and conditions for selling and buying f. Negotiating process with suppliers and buyers (who determines price and conditions) g. Relation ship between buyers and suppliers (regularity, contracts, credit etc)
7. Post harvest activities	a. Harvesting practices b. Packaging practices c. Storage (type of and period etc) d. Sorting and grading procedures and why e. Indication of post harvest losses
8. Support services	a. Means of transport, ownership of transport vehicles b. Market information (sources, reliability etc) c. Credit (sources, relative importance etc) d. Harvesting e. Other support services (Transport, certification etc)
9. Marketing costs and risks	a. Main marketing costs (labour, transport, credit, communication etc) b. Marketing costs per unit (say 100 kg) hot pepper /paprika c. Major marketing risks (losses, availability, quality, contracts etc)
10. Policies and regulations	a. Key policies and regulations affecting the trading business (registration, licences b. Impact of regulations and policies on your business c. Recommended changes in policies and regulations
11. Key constraints & opportunities	a. Key constraints to further development of the paprika / hot pepper trading business b. Possible solutions for these problems / obstacles

<table>
<tr><th colspan="2">Checklist for traders / middlemen</th></tr>
<tr><td></td><td>c. Key opportunities to develop the Paprika / hot pepper trading business
d. Key factors decisive for capturing these opportunities</td></tr>
<tr><td colspan="2">• We would like to hear from you (and discuss) whether you face any problems or challenges in the supply and marketing of hot pepper / paprika (or that you see new marketing opportunities) and if so what type of problems. (Problems could be related to quality, packaging, irregular supply, food safety (residues) etc);
• Could we jointly identify opportunities for cooperation in solving any of these problems or capturing opportunities, thus benefiting all parties involved;
• Could our trained Indonesian chain facilitators, supported by Dutch and Indonesian experts collaborate with your staff on any of the above mentioned supply chain aspects to create improved or new market access opportunities for growers. This could be done for example by introducing innovations, new products or vegetable varieties, improved efficiency or more transparent supply chains. As long as it is economically beneficial for all supply chain partners.</td></tr>
</table>

Checklist for retailers	
1. Background information	a. Number of stores / outlets b. Format c. (Special) position of fresh produce d. Price and quality policy e. Turn over f. Company structure g. Do you currently cooperate with donors or development organizations
2. Volumes fresh vegetables	a. Top 5 products b. Seasonality c. Price and quality requirements
3. Suppliers and producers	a. How many producers per product b. Locations c. Are your growers organized or how do you organize them for efficient sourcing d. Logistics e. Selection of growers in order to deliver to you f. Do you provide training to your producers g. Do you require quality certificates
4. Buyers / Middlemen	
5. Prices & transaction costs	a. Payment conditions b. Fixed or fluctuating prices c. Premium prices d. Type of contracts
6. Distribution and logistics	a. Do you operate a distribution centre yourself; location b. Organization /ownership of DC c. Exclusive for you retail business only ? d. Food safety e. Certification f. Facilities and cold chain management
7. Post harvest and value adding activities	a. Packaging b. Mixing of products etc c. Frozen

<table>
<tr><th colspan="2">Checklist for retailers</th></tr>
<tr><td></td><td>d. Promotional activities</td></tr>
<tr><td>8. Trends and developments</td><td></td></tr>
<tr><td>9. Key constraints & opportunities</td><td>a. Key constraints and opportunities
b. Possible solutions for these problems / obstacles
c. Key factors decisive for capturing these opportunities</td></tr>
<tr><td colspan="2">• We would like to hear from you (and discuss) whether you face any problems or challenges in the supply and marketing of hot pepper / paprika / shallots (or that you see new marketing opportunities) and if so what type of problems. (Problems could be related to quality, packaging, irregular supply, food safety (residues) etc);
• Could we jointly identify opportunities for cooperation in solving any of these problems or capturing opportunities, thus benefiting all parties involved;
• Could our trained Indonesian chain facilitators, supported by Dutch and Indonesian experts collaborate with your staff on any of the above mentioned supply chain aspects to create improved or new market access opportunities for growers. This could be done for example by introducing innovations, new products or vegetable varieties, improved efficiency or more transparent supply chains. As long as it is economically beneficial for all supply chain partners</td></tr>
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