



HORTIN II Co Innovation Programme

Towards cost effective, high quality value chains

A report for attending the Value Chain Development Training
Bali, 13 - 17 October 2008

HORTIN-II Research Report nr. 5

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Indonesian Vegetable Research Institute, Lembang, Indonesia, December 2010.



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

On the Indonesian side the programme is carried out by the Indonesian Centre for Horticultural Research and Development (**ICHORD**), Jakarta, with the Indonesian Vegetable Research Institute (**IVEGRI**), Lembang, and the Indonesian Centre for Agricultural Postharvest Research and Development (**ICAPRD**) in Bogor.

In the Netherlands the Agricultural Economics Research Institute (**AEI**), Den Haag, the Agrotechnology and Food Sciences Group (**ASFG**), Wageningen, Applied Plant Research (**APR**), Lelystad, and WUR-Greenhouse Horticulture (**WUR-GH**), Bleiswijk, all partners in Wageningen University and Research centre, are involved in the programme.

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The HORTIN-II programme is sponsored by the Indonesian Agency for Agricultural Research and Development of the Ministry of Agriculture, Indonesia, and by the Ministry of Agriculture, Nature and Food Quality of the Netherlands (under project nr. BO-10-006-031.02).

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• Be able to analyze and visualize the dynamics in value chains and sub-sectors;	10
• Have enhanced their analytical skills to identify constraints and opportunities;	10
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Executive summary

Private Sector Development (PSD) is increasingly acknowledged by governments, Donors and development organizations as an important step towards alleviating poverty and creating healthy economies. Value Chain Development (VCD) is a participatory process that leads to comprehensive and coordinated interventions for pro-poor economic growth. Value chain actors, including resource poor producers, add value to and benefit from developed markets.

A value chain refers to the full range of activities necessary to bring a product from its conception to its end use. It includes design, production, marketing, distribution and support functions to bring the product to its end-user. Value chain analysis enables us to understand (international) competitive challenges, to identify relationships and vertical coordination mechanisms, to understand how chain actors deal with power, and to detect who governs the chain. In this context, developing value chains is often about improving access to (new) markets and about ensuring a more efficient product flow, while ensuring that all actors benefit in proportion to their contribution.

Participatory approach used during the course was very educational, beneficial, and refreshing. The trainers and the course delivery method had been quite successful to create an interactive situation and to encourage optimal participation among trainees. This had helped the participants to have a better understanding, not only about the value chain concept, but also its application in the real life case. Exchange of experiences among trainees also flowed very well, interesting and extensive, since the projects they were working on were quite heterogeneous.

From the two proposed value chain studies, the training group discussion concluded that the improvement of sweet pepper export value chain was considered realistically more workable as compared to the hot pepper value chain. Considering the resources limitation (time and budget), improved sweet pepper export value chain was expected to yield higher impacts to growers' welfare.

Despite a lack of preparation in conducting field work, the course had succeeded to balance better understanding not only the concept but also the practical use of value chain analysis.

1 Materials and methods

1.1 Location

The MDF Indochina Value Chain Development (VCD) training was held at the Mercure Resort Hotel, Sanur, Bali from 13 – 17 October 2008. The training was conducted jointly by the MDF Indo China – Training and Consultancy and the Fresh Studio Innovations Asia. Two instructors responsible to deliver training materials are Bart van Halteren (MDF Indo China) and Siebe van Wijk (Fresh Studio Innovations Asia).



The VCD training was attended by participants from different nationalities and different countries as following:

No	Name of Participant	Nationality	Company	Country
1	Andreas Lewke	German	Deutcher Entwicklungsdienst DED	Cambodia
2	Batmunkh Erdenebileg	Mongolian	VSO	Mongolia
3	Linn Wallerstat	Swedish	UNDP	Pakistan
4	Nguyen Lam Giang	Vietnamese	Helvetas	Vietnam
5	Asmus Eva	Geman	GTZ	Indonesia
6	Jeroen Pasman	Dutch	Fresh Studio Asia, Inc	Philippines
7	Hanneke Hermans	Dutch	Fresh Studio Asia, Inc	Philippines
8	Nguyen Hong Hanh	Vietnamese	Save the Children USA	Vietnam
9	Witono Adiyoga	Indonesian	IVEGRI	Indonesia
10	Nikardi Gunadi	Indonesian	IVEGRI	Indonesia
11	Mr. Otgochulu	Mongolian	XacBank	Mongolia
12	Felipe Ramiro	Philippines	Oxfarm	Philippines

1.2 Training methods

1.2.1 Course objectives and contents

At the end of the course participants were expected to:

- Understand the position of VCA and VCD among the various PSD approaches;
- Be able to analyze and visualize the dynamics in value chains and sub-sectors;
- Have enhanced their analytical skills to identify constraints and opportunities;
- Be able to develop and apply selection criteria and success factors for chains and sectors;
- Be familiar with some recent VCD initiatives and results;

The course present, discuss and practice the Value Chain Concept in a structured and participatory way. Due attention is given to the various techniques and tools that exist within Value Chain Analysis and Value Chain Development concepts, and the various roles that donors, development organizations, private sector organizations, governmental organizations and other stakeholders can play. Participants exchange experiences, practice tools and instruments to develop your skills and increase your understanding of the actual practices as well as the process and management thereof.

VCD - Course Outline

The course is delivered in association with Fresh Studio Innovations Asia, a professional services firm engaged in consulting, research and development (R&D) within the fresh produce industry.

Day 1

Introductions and definitions to VCD/A
Selection of a value chain: criteria, constraints and opportunities
Introduction to, and exercises on, Real Life Case-Studies

Day 2

Steps in a Value Chain Analysis.
Value Chain Analysis tools: identify actors
Value Chain Analysis tools: mapping the Chain
VCA Tools: business development services

Day 3

VCA Tools: participatory analysis
VCA Tools: chain history
VCA Tools: critical points analysis

Day 4

Interpreting and structuring your findings
Identification of strategic options/solutions
Identification of matching tools
Organization of a chain workshop

Day 5

Designing an intervention plan: follow-up activities
Measuring tools
Presentation of action plans and Closure

1.2.2 Course delivery methods

In-class training was mostly delivered through interactive discussions. Participants were divided into small groups of 3-4 persons. Case studies and applied examples of value chain concepts and theories were elaborated and discussed using participatory approach. Exercises were solved in each small group and each individual was encouraged to take turn presenting the results.



To have good understanding with regard to the flow of vegetable produce and its added value from grower to consumer, some field visits were arranged. Participants visited grower in Bedugul, packing house or distribution center, traditional markets, supermarkets and hotels in Denpasar. These visits provided some insights to the participants on what were really happening along the vegetable value chain. Participants had some opportunities to directly interact with chain actors to obtain useful information on how the chain operated. Based on the collected information, participants were able to carry out value chain analysis in identifying bottlenecks and designing/proposing market demand-driven interventions.





2 Results

2.1 Pre Training Resources Assessment

In order to fine tune the training course, participants were assigned to respond to some questions as pre-training assessment. The followings were questions and responses to the assessment:

Participant Information:		
Name	:	Witono Adiyoga
Title	:	Researcher

1. What are your expectations for attending this training? What knowledge and skills do you want to learn?
 - Better understanding of value chain approach and familiarizing the use of research tools in value chain analysis.
2. What knowledge (expertise), skills or experiences do you bring to the training that you think will contribute to the overall learning in this VCD training?
 - Experience in conducting socio-economic research on vegetables.
3. What experiences do you have in value chain analysis?
 - None
4. What experiences do you have in conducting interviews in general and participatory appraisal techniques (PRA, PLA, RRA etc.) in specific?
 - Surveys, interviews or PRA in:
 - Assessing the viability of virus-free potato seed small/medium enterprise
 - Ex Ante Assessment of Potential Benefits of Adopting Bt Potato with Resistance to Potato Tuber Moth in Indonesia
 - Ex Ante Assessment of Potential Benefits of Adopting Shallot High-yielding variety in Indonesia
 - Impact of Improved Vegetable Farming Technology on Farmer's Livelihoods in Tropical Asia and Strategy Development for the Global Horticultural Initiative: A case study in Indonesia
5. Which own value chain case(s) will bring to the training?
 - In case you are in the process of selecting a value chain, please explain briefly which one?
 - If you already have selected a value chain which you want to develop, please describe it briefly.
 - Value chain analysis of hot-pepper sub-sector in Indonesia
6. Please share one or two challenges you currently face when conducting value chain analysis and value chain development?
 - Identifying entry points and convincing small-scale participants along the supply chain to communicate and coordinate

-
7. Briefly list the different training courses you have attended in value chain development, rural development, and agricultural development over the past three years. What did you like most about those training courses?
 - None
 8. Imagine it October 2009, one year after the VCD training course. What would you have hoped to accomplish personally—in your work—as a result of participating in this course?
 - Better capacity and more confidence to work on vegetable value chain development

2.2 Presented Value Chain Analysis

Hot Pepper Value Chain Analysis

Marketing of hot pepper basically does not change much since 5-10 years ago. Here are some pointers of hot pepper marketing synthesized from observation and estimates in the 2007 survey:

- Hot pepper produce was mainly sold to local trader or commission agents (72%), wholesale market at district level (17%), local market at sub-district level (7%) and farmer associations (4%).
- From the local trader, 74% of the produce was directly sold to the wholesalers at the province level and the rest to the wholesalers at the district level.
- Meanwhile, farmer associations sold to wholesalers at the district level, wholesalers at the sub-district level, wholesalers based at Jakarta, local trader and directly to consumers.
- The local market at sub-district level sold 60% to retailer, 24% to wholesaler at district level and the remaining 16% to processors.

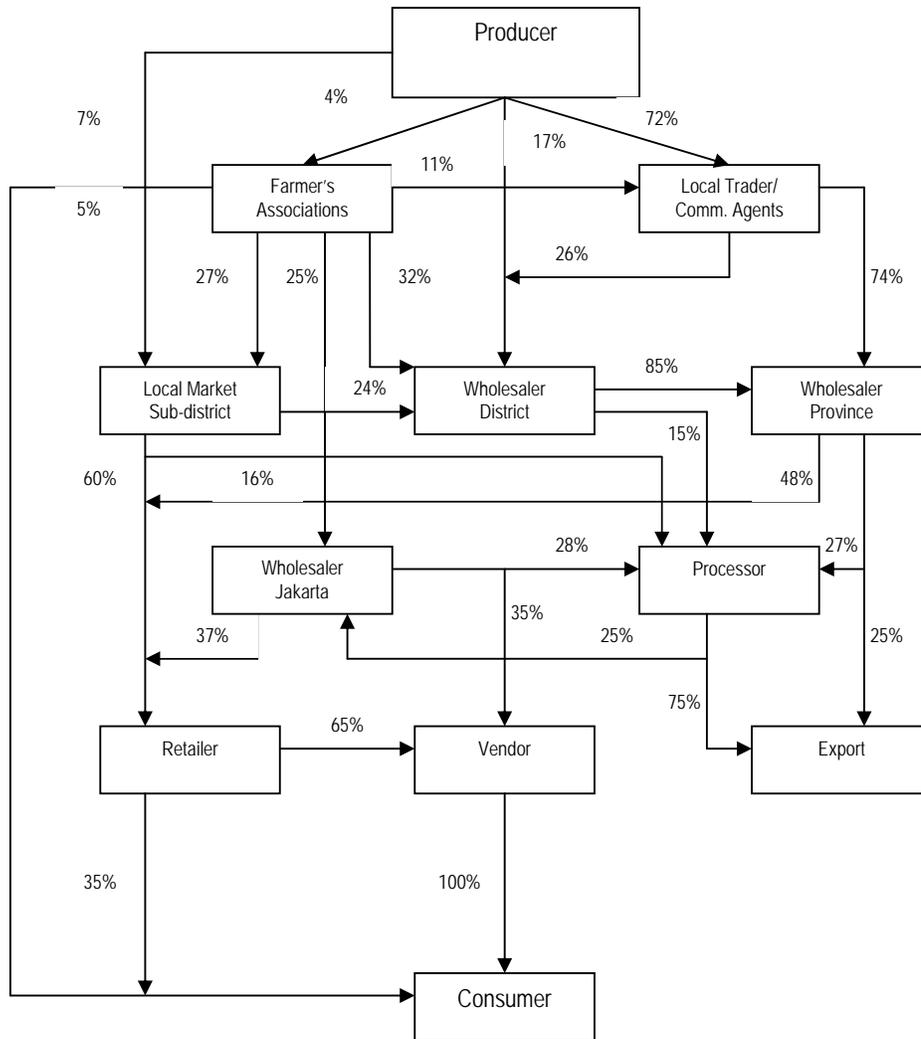


Figure 1 Hot pepper marketing channels in Indonesia

- The wholesaler at the district level sold 85% to the wholesaler at the province level and the rest to the processors.
- The wholesaler at the province level sold 48% to retailers, 27% to processors, and 25% to the exporters.
- The wholesalers in Jakarta sold 37% to retailers, 35% to vendors, and 28% to hot pepper processors.
- The processors sold the output mainly to exporters (75%) and the remaining 25% back in the wholesaler market.
- Retailers sold 65% to vendors and the rest directly to consumers
- The vendors sold all of the produce to the consumers.

All farmers were concerned about the competition in the supply of similar produce from other regions which tends to increase price uncertainty. Uncertain market prices were the major marketing constraints expressed by quite large number of farmers. Lack of price information and its unreliability and un-timeliness, even if there was any, were another important marketing constraint.

Most of the growers are small farmers with less than one hectare of mixed farming. The farmer must sell his produce to receive some income and accepts the price offered by the collectors and traders. There is limited knowledge of selling prices in markets or trader profit margins. Profit sharing is inequitable and there is no market

signals given to the farmers. There is a need to strengthen the farmer groups and to formalize a supply chain relationship between farmer and trader.

The value chain analysis of existing supply chains showed that supermarket gives the highest return to farmers because it contains value creation activities, such as applying efficient technology in cultivation and conducting post harvest handling. The analysis of the existing value chains shows that the highest value added chain is a channel to supermarket through supermarket wholesaler. Consistently, farmers received the highest return by supplying to the supermarket compared to other channels. However, it should be noted that the product flows through this channel is very small (less than 5% of total supply). The lowest value added chain is a channel to traditional markets. There is a need to assist farmers to link to more dynamic markets such as a channel to supermarket and food industry.

Hot Pepper Production in Kersana, Brebes

- Small farm size, in average is about 1 500 m²
- Intercropped with shallot and direct seeding
- Mostly grown local OP variety i.e. Tit Segitiga
- Excessive use of inputs, especially pesticides, but relatively low yield (10 t/ha) as compared to available hybrid varieties (claimed as many as 20-30 t/ha)

Hot Pepper Marketing in Kersana, Brebes

- High price fluctuation
- Atomistic traders
- Field assembly traders ----- Village assembly traders ----- Wholesale market
- Market outlets:
 - Tit Segitiga to Bandung and Tasik wholesale markets
 - Herang (much smaller portion of total production) to Jakarta and Bogor wholesale markets
- High uncertainty and speculation of traders

Objective of Strategic Interventions

- To create transparency and mutual trust among participants along the hot pepper supply chain from Brebes to Bandung.

The critical interventions in improving the hot pepper value chain from the production side are focusing at boosting the supply to higher quality levels and create a sustainable flow of hot pepper. Due to the perishability of the product the tight coordination among participants of the chain is going to be a crucial aspect. In practical terms, the wholesale traders have to guarantee the year-round absorption of hot pepper and the involved growers have to guarantee that there is sufficient hot pepper supply for a viable collection system. In order to achieve result the intervention program may act on the following

Micro Level Interventions:

- Improve technologies for increasing yield and produce quality
- Facilitate the revitalization of farmer groups
- Coordinate with all parties involved and responsible for improving hot pepper supply chain
- Conduct a thorough chain analysis for the most important market outlet

Meso Level Interventions:

- Training farmers and traders on management practices that can bring change in the business operations.
- Strengthening hot pepper collection centres with the necessary facilities.
- Organizing hot pepper suppliers marketing coops
- Setting up of agreements about targets (quantities, payments and qualities)

- Setting-up of quantity and quality assurance system for the entire chain

Macro Level Interventions:

- Promotion of hot pepper producer and marketing associations
- Setting-up control measures and monitoring for production and sales of hot pepper
- Reforming and restructuring the chain, especially in the wholesale market level.

Sweet Pepper Value Chain Analysis

Background

Sweet pepper is becoming one of the important vegetables in Indonesia, produced under protected cultivation. The formal data of the production area of sweet pepper in Indonesia is not available until recently. The sweet pepper cultivation in Indonesia is initiated in the 1990's and the largest production area of sweet pepper is known located in West Java. The total production area of sweet pepper in Indonesia is estimated about 70 ha, consisted of 26 ha in Pasirlangu and 5 ha in Cigugur, Lembang (West Java), 1 ha in Garut and 1 ha in Cianjur (West Java), 15 ha in Nongkojajar (East Java), 2 ha in Bali and 20 ha in Lombok.

Currently, there is an increase demand for sweet peppers, either for local market or for export market. The increase demand for local market is related to the urbanisation, which is commonly asked for commercially produced high quality products. The demand of sweet pepper for export market is also increasing from time to time. Indonesia has exported the sweet pepper to Taiwan since 2000 and in 2001, the export value of sweet pepper to Taiwan was Rp 970 million with the volume of 105,124 kg. In 2002, the volume was increase to as many as 190,055 kg with the export value of Rp 1.78 billion and in 2003 until the month of August, the export value as much as Rp 1.5 billion with the export value 156 ton. Unfortunately, the export to Taiwan was terminated due to the issue of the product from Indonesia was suspected to contain fruit fly which was not present in Taiwan before. At present, the sweet pepper products from Indonesia are exported mainly to Singapore. Some sweet pepper products are also exported to other countries such as Hongkong and Brunei. 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 exported per week, whereas the actual requirement of these export markets is 20 tons per week. The figure is only based on one grower/exporter. Similar situation is also occurred in the farmer cooperative in Lembang. Based on this figure, there is an opportunity to increase the volume for export market of sweet pepper.

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.

In general, the marketing channels of sweet pepper in Indonesia can be described as follows:

1	Farmer	→	Cooperative	→	Exporter	→	Importing countries
2	Farmer	→	Cooperative	→	Local trader (supplier)	→	Super-market/ Hotel/ Restaurant/ Catering
3	Farmer	→	Local trader	→	Wet or Traditional Market		

Pilot project sweet pepper

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.

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 endeavor of an experimental nature. Thus, the pilot needs to cover a new chain configuration; be a model for future development, and be up-scalable.

New chain configuration

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

For successful value chains, benefiting all partners' three conditions should be met:

- Attitude, willingness of retailers should be favorable;
- 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.

Co innovation

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.

Three forms of innovations were distinguished:

- Marketing innovation (new product / new market)
- Organizational innovation (new forms of collaboration and contracts between partners)
- Technical innovation

The marketing innovation is most likely to give added value in the chain, and create a shared objective and interest of a maximum number of market partners (from seed companies, input providers to retail).

Value chain

There are subtle differences between production and value chains. Partners in a value chain have a shared chain objective and coordinate activities for the development of a specialty product. Information flow is extensive and continuous and in function of the chain objective. Instead of the market actors striving at individual company profitability, the profitability and competitiveness of the whole chain is developed. 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.

Approach

Development of pilot project

During 2008, ample attention was given to the development of specific skills and production technology by producers, and all public actors. Nevertheless, no momentum could be build so market partners would take the lead in the pilot and form new forms of collaboration. The process of matchmaking so the market chain will take control of the development of a new value chain will require ample attention in the first months of 2009.

Looking at the position of the stakeholders that have been approached for possible participation in a pilot project, the assessments have shown that supermarkets have identified products for which a new market can be developed; and have shown interest in participating, but not in taking the lead in developing new chain

collaboration for the introduction of co-innovations. More than that, they have expressed that it should be a private party in the chain, not a public party (Hortin), functioning as a leading party in developing the pilot project, for the sake of sustainability. The farmers who have been participating in training on the other hand, are not in the position to be the leading party, as they lack the conditions to be direct suppliers to the supermarket. This makes that preferred suppliers to supermarkets play a key role for developing new value chains; thus will have a prominent say in deciding whom to involve in a pilot.

Monitoring

The HORTIN research team consisting of IVEGRI and LEI will get involved during the formulation and inclusion of the topics for action research. A plan for research activities will be developed and fine tuned in collaboration with partners; following the innovation and development agenda.

Research activities will focus on:

- Monitoring of the process of co-innovation and impact assessment (base line, performance indicators etc.)
- Institutional analysis (role for public institutions)

Harmonizing technical research with supply chain development

In the kick-off meeting for 2009, it was agreed that as soon as the pilot supply chain is up and running, more intensive integration between the agronomic and supply chain research component of HORTIN II will be sought. For instance a farmers-led monitoring of technical-economic performance of experiments (currently lacking) can be linked to a monitoring and evaluation program of supply chain performance. Capacity building on IPM practices will be executed in accordance with formed market alliance for supply chain innovation.

2.3 Lesson learned

- Participatory approach used during the course was very educational, beneficial, and refreshing. The trainers and the course delivery method had been quite successful to create an interactive situation and to encourage optimal participation among trainees. This had helped the participants to have a better understanding, not only about the value chain concept, but also its application in the real life case. Exchange of experiences among trainees also flowed very well, interesting and extensive, since the projects they were working on were quite heterogeneous.
- Participants were requested to bring an example of their own value chain program to work on as a real-life case during the course.
- Bali Fresh is a company that had been chosen for value chain analysis field work. There was an impression that the course had a difficulty in preparing the object for a quick one-day study. The team experienced some problems in interviewing supermarket managers (retailers) and traders in the wholesale market. However, the other team that visited the production site did not experience this problem. Lack of preparation had caused an incomplete market data for this field work. By the end of the course, study results were presented to the company owner. It was concluded that some improvements were required to make the chain worked more efficiently by considering some constraints and opportunities that had been identified by the team:
 - Constraints:
 - Supply shortage for some important crops
 - Market governance (transaction scheme is still unclear)
 - Poor database system
 - Lack of focus and quality control
 - Idle capacity of the company processing plant
 - Opportunities:
 - Potential to sell more because of increasing trend of demand
 - Land available in the production site has not been utilized optimally
 - Relatively low labor costs
 - Good access to production inputs

-
- From the two proposed value chain studies, the training group discussion concluded that the improvement of sweet pepper export value chain was considered realistically more workable as compared to the hot pepper value chain. Considering the resources limitation (time and budget), improved sweet pepper export value chain was expected to yield higher impacts to growers' welfare.
 - Despite a lack of preparation in conducting field work, the course had succeeded to balance better understanding not only the concept but also the practical use of value chain analysis.

Annex I. Training material presentation
(it's in .pdf – included in another folder)