



THE CALIDENA METHODOLOGY HANDBOOK

Participative Analysis of Quality and Value Chains

Imprint

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As of: September 2009

Note

This handbook is a “work in progress” and all our readers are invited to enrich the methodology with their comments and suggestions. The main authors of this handbook are Ulrich Harmes-Liedtke and Helmuth Bublatzky. It was supported by contributions from a number of people including Alexis Valqui, Beatriz Paniagua Valverde, Frank Waltring, Haydee Ayerdi, Jörg Meyer-Stamer (†), Shawn Cunningham, Ligia Orantes, Orlando Muñoz, Reinhard Schiel and Ulf Hillner. The English translation was carried out by the translation service of PTB and Lynne Bolton; design support was provided by Ute D. Mayer.

This handbook is especially addressed to people in charge of programs and projects aimed at developing value chains or quality infrastructure, as well as facilitators of Calidena projects. The word Calidena is composed of the Spanish word for chain = cadena and the word for quality = calidad.

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Contents

1. Context	5
1.1. Small and Medium Enterprises (SMEs) and international trade	5
1.2. SMEs in the local market	6
1.3. Quality Infrastructure	6
1.4. Global Value Chains	8
2. What is Calidena?	10
3. Preparation for the Calidena exercise	11
3.1. Selection of a chain	11
3.2. Host and Participants in Calidena	13
3.3. Lessons learned from the preparation	15
4. How to perform the initial Calidena exercise	16
4.1. Kick-off workshop agenda	16
4.2. Details of each sequence	16
4.3. Action plan and commitments	27
4.4. Documentation	30
4.5. Lessons learned from the kick-off workshop	31
5. Follow-up	32
5.1. Follow-up workshop	32
5.3. Lessons learned from the follow-up	37
6. Calidena cases	38
6.1. Cacao	38
6.2. Marmalades and jellies	39
6.3. Moulds and dies	41
6.4. Wood and furniture	42
6.5. Shrimp	42
7. Appendixes	44
7.1. Letter of invitation and registration	44
7.2. Preparation plan	46
7.3. Detailed facilitation instructions	50
7.4. Form for recording internet research results	56
7.5. Form for interview information	57
7.6. Final evaluation of the workshop	58
7.7. The stupid cow syndrome	60
7.8. Facilitators of Calidena	61
8. Glossary	62

Abbreviations

ASA	National Service for Animal Health of Costa Rica
CAB	Conformity Assessment Body
CIG	Guatemalan Chamber of Industry
CITA	National Centre for Food Science and Technology of Costa Rica
EU	European Union
FTA	Free Trade Agreement
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GTZ	German Agency for Development Co-operation (Gesellschaft für Technische Zusammenarbeit)
GVC	Global Value Chains
HACCP	Hazard Analysis and Critical Control Points
IC	International Cooperation
ISO	International Organization for Standardization
LACOMET	National Metrology Laboratory of Costa Rica
MAGA	Guatemalan Ministry of Agriculture and Livestock
MEIC	Costa Rican Ministry of Economy, Industry and Commerce
MSTQ	Metrology, Standards, Testing and Quality
NQS	National Quality System
OECD	Organization for Economic Cooperation and Development
PPP	Public Private Partnership
PTB	National Metrology Institute of Germany (Physikalisch-Technische Bundesanstalt)
QI	Quality Infrastructure
R&D	Research and Development
SMEs	Small and Medium Enterprises
SPS	Sanitary and Phytosanitary Standards
TDMs	Tools, Die and Mould makers
TR	Technical Regulations
TRIPs	Trade-Related Aspects of Intellectual Property Rights
WTO	World Trade Organization

1. Context

1.1. SMEs and International Trade

SMEs face multiple obstacles when trying to access international markets. A recent survey carried out in OECD member countries identified the following main barriers [OECD, 2008: Removing barriers to SME access to international markets p. 13]:

- Inadequate personnel in quality and/or training for internationalization
- Shortage of work capital to finance exports
- Limited information on locating/analyzing markets
- Identifying business opportunities abroad
- Lack of management time for dealing with internationalization
- Lack of ability to contact overseas clients
- Developing new products for foreign markets
- Lack of experience in dealing with foreign business practices
- Lack of familiarity with exports procedures and paperwork
- Compliance with product and quality standards, specifications and requirements for exports

If these obstacles make internationalization of SMEs difficult in industrial countries, they are even more serious for SMEs – and almost insurmountable for micro enterprises – in developing countries.

We are currently witnessing a good deal of trade negotiation activity on various levels. The World Trade Organization (WTO) manages several multilateral agreements; namely, the General Agreement on Tariffs and Trade (GATT), the General Agreement on Trade in Services (GATS) and the Trade-Related Aspects of Intellectual Property Rights Agreement (TRIPs), it is also the main forum for multilateral trade negotiations and administers the procedures for resolving trade disagreements (disputes between countries). At the same time, due to the difficulties in making progress on global agreements, we are seeing a growing number of bilateral agreements between countries and regions.

All these agreements facilitate trade exchange through the reduction of tariffs and *technical barriers to trade*. The effect of opening up national markets is more intense competition among companies from different countries, and ultimately it is expected to benefit both consumers, by offering more economical and better quality products and services, and economic development in general. It should be taken into account that this expectation is based on an efficient functioning of the market, which in the real world due to market failure does not in actual fact exist.

SMEs do not compete in the *globalized market* under the same conditions as large and transnational companies. Large companies benefit many times over from a significant international presence, from economies of scale and from the possibility of choosing among the best providers (*global sourcing*). They also bypass several market inefficiencies by using their organizational structure (for instance, internal transfers, using internal service providers, and through specialization).

Therefore, in order to ensure that all kinds of companies can benefit from trade liberalization, it is necessary to provide support on three levels:

- The principles of the WTO take into account the asymmetries between countries and give developing economies more time to adapt, more flexibility and special privileges. In addition, bilateral and regional agreements seek to make up for the inequality of opportunities between countries. In spite of these efforts, they are still widely criticized (see for instance <http://www.bilaterals.org>).
- The development of policies to encourage exports by SMEs, which represent the vast majority of sources of employment and family income in all countries.
- Access to national budgetary or international cooperation funds. International Cooperation (IC) is a very important supporting actor for SMEs in developing countries.

1.2. SMEs in the local market

The relevance of the issue of quality is not only limited to export opportunities, *SMEs* – and consumers – are also affected by growing international trade in their own countries. Increasing amounts of merchandise originate from far off countries, such as China, and if the destination countries do not have a quality system in place, this may lead to unfair competition and threaten local *SMEs*.

Another issue is the growing importance of supermarkets in retail and wholesale trade. For instance, one study revealed that supermarkets in Latin America buy 2.5 times more fruit and vegetables from local producers than all exports from the continent to the rest of the world (Reardon, Thomas (2005): *Retail Companies as Integrators of Value Chains in Developing Countries: Diffusion, Procurement System Change, and Trade and Development Effects*. Eschborn: GTZ p. 5). Superstores (Wal-Mart, Carrefour, Metro, etc.) have their own quality requirements and the supplier *SMEs* are forced to comply with them. These large commercial chains are the key stakeholders in a number of value chains and they are the ones that increasingly establish the ground rules for *SMEs* in the local market.

1.3. Quality Infrastructure

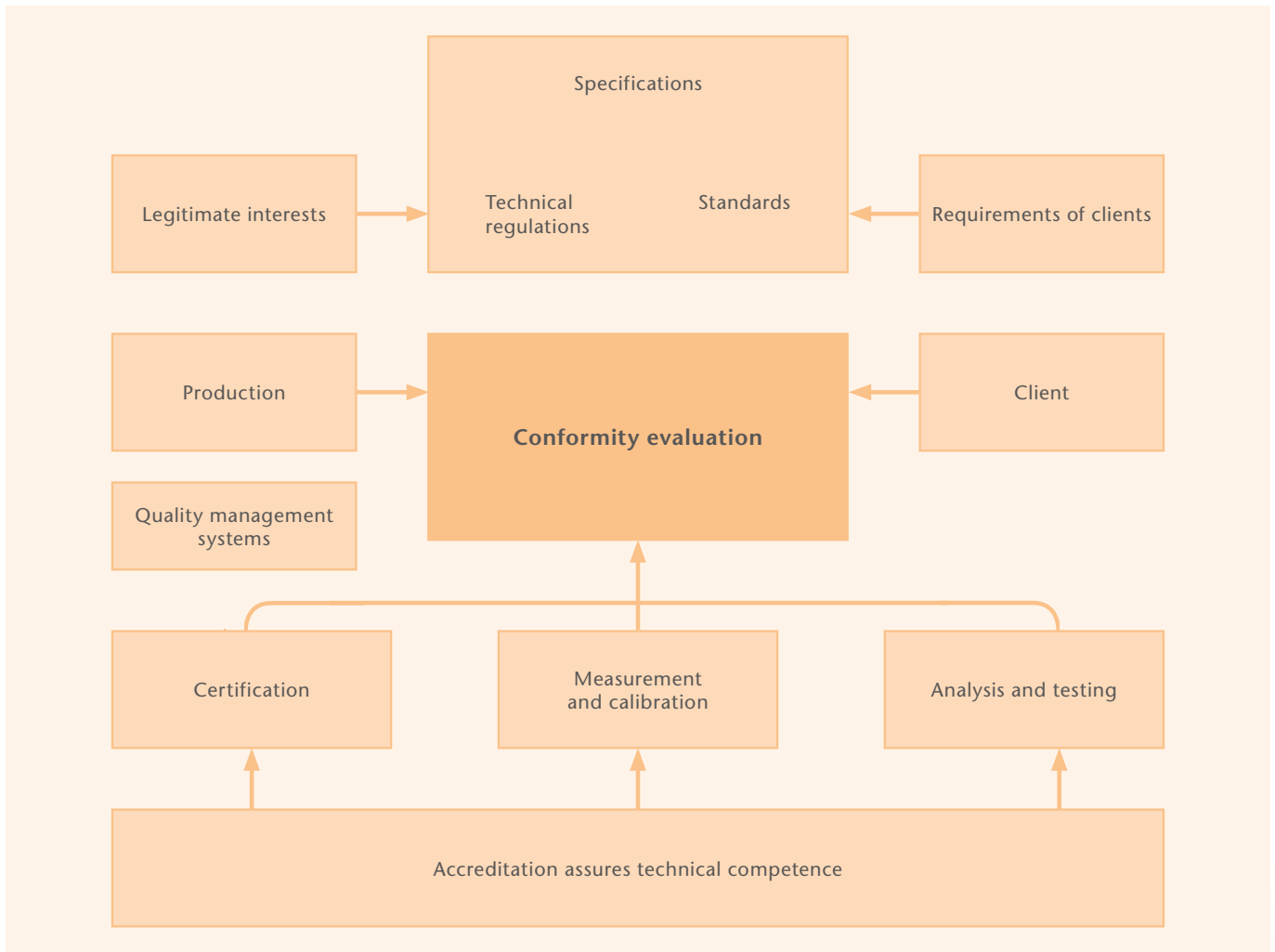
The National Metrology Institute of Germany (PTB) with its department for International Technical Cooperation specializes in *fostering Quality Infrastructure (QI)* in developing countries. QI refers to all the institutions that ensure exported products and services comply with the quality requirements of the destination countries. At the same time, they make sure that consumers from the country receive products that comply with current regulations and quality standards.

The PTB's work with value chains is relatively recent. The first recorded instance was a study on the shrimp chain in Thailand in 2004. At that time, the PTB developed an approach to explain the relevance of quality criteria to the stakeholders of the chain in order to generate added value.

This approach was later consolidated in the publication *"The answer to the global quality challenge – A national quality infrastructure"*, which explains the minimum requirement of *standardization, metrology and accreditation bodies* (Sanetra, Clemens/Marbán, Rocío M. 2007, 18).

The following chart shows the complex interrelation of *conformity evaluation* within the system that governs product quality: the starting point is the specifications, which are divided into two sources:

- First, there are the *standards established* by the private sector. These may be created by a large company (such as the Starbucks standard for coffee), by an organization representing specific interests (i.e. for Kosher or Halal ethnic-religious food or Fair Trade Standards) or by the International Organization for Standardization (ISO), which is the organization responsible for promoting the development of international standards for manufacturing, trade and communications for all branches of industry except for electricity and electronics. Although these standards are in principle voluntary, the buyers will expect suppliers to comply with these standards. Therefore, standards might be an important obstacle for *SMEs*.
- Secondly, there are the *legitimate interests* of states, that is to say their right to protect the health and safety of their citizens and the environment of the country. The corresponding specifications are called *technical regulations* and they are *mandatory*; in other words, each company is obliged to respect these guidelines. The WTO allows this type of regulation as long as it does not create any unnecessary obstacles to trade. In the event of a dispute arising, it is dealt with by a conflict resolution mechanism established by the WTO.



There are various quality services for evaluating whether manufacturers produce and deliver their products in accordance with the corresponding specifications. These include *testing laboratories*, *equipment calibration laboratories*, and *certification and inspection bodies*. There are other specific standards to ensure the technical competence of these services and their correct implementation is confirmed by an accreditation (see previous chart).

The good functioning of a country's quality infrastructure makes it easier for companies to comply with product and quality standards, specifications and requirements for exports; consequently, this influences one of the main obstacles that hinder SMEs' access to international markets. What is more, while Free Trade Agreements (FTA) have basically reduced customs fees, the technical barriers related to certifications, standards and regulations have become the "main obstacle to trade" (Martin Doherty on the SPS of the European Union). In WTO terminology we refer not only to Technical Barriers to Trade but also to Sanitary and Phytosanitary Standards (see Sanetra/Marbán, 16 following).

Large companies are less affected by deficiencies in the national quality infrastructure, since due to their greater economic capability they are able to substitute national services by purchasing services from abroad: calibration of equipment, laboratory analysis, certification or accreditation. On the other hand, for a small business with limited production it is usually impossible to access these more expensive services. Therefore fostering the national quality infrastructure is a fundamental concern for exporting *SMEs*.

Of course, a good national quality infrastructure is of use to all kinds of companies. For instance, having a laboratory service accredited by an internationally recognized accreditation body usually significantly reduces conformity assessment costs. At the same time, the quality infrastructure bodies require a certain demand (“Critical Mass”) to be able to refinance themselves. It is often the demand from large companies that make a quality infrastructure service feasible. Therefore, it is important to take into account the needs of large, medium and small enterprises whenever a national quality system is to be developed.

A quality infrastructure cannot be established overnight and is a process requiring concerted efforts on the part of both the supply side and the demand side. This infrastructure – in particular in its initial phase – is a kind of *public good*, which consumption contrary to a private good does not diminish anybody else’s access to the good. For the purpose of this study a public good is defined as something that is non-rivalrous and non-excludable. That is to say, it needs to be financed by the state. On the other hand, the existence of a national quality system does not guarantee that it responds to the demands of companies. Moreover, many *SMEs* do not know about this provision and are thus excluded from competing in a globalized market. This is where information and awareness-raising comes in.

1.4. Global Value Chains

Value Chains, and specifically *Global Value Chains* (GVC, see www.globalvaluechains.org) is a new phenomenon in international trade.

The main idea behind the value chain approach is that the value of a product is created in several stages. We are referring to both the internal activities of a company (primary: physical creation of the product, its sale and post-sales assistance, and secondary: organization, human resources, R&D, etc.) as well as to the relationship between various companies involved in producing a specific product or service.

Global Value Chains is a way of organizing production that makes use of resources and involves providers on a global scale. About a 40% of parts and components production is carried out within the framework of GVC (see OECD Business for Development 2007). The international division of labor is associated with the growing participation of companies from developing countries in GVC.

Several different types of chains can be identified, above all, by their *governance model*. These chains are often dominated by a *global buyer*, who sets the ground rules for other members. For instance, large supermarket chains require specific certification (in the case of fresh products, European supermarkets require GlobalGap) and many industrial enterprises specify the whole production process. For big brands in particular it is important for the entire supply chain to meet the requirements of the most demanding clients. This may refer to the product being healthy and not having negative consequences for health, even including the effects of the production environment (work conditions, environmental impact and fair trade).

These clients are interested in establishing a more stable relationship with their suppliers and they usually pay a higher price for these certified products. Insertion into such global value chains may open up new markets for an SME but at the same time it requires continuous improvement of processes and products. A risk of this insertion is the dependence of *SMEs* on one single *global buyer*.

In addition to chains based on the production and trade of tangible products, a Calidena process may equally be applied to a chain of services. Tourism is one example of the relevance of global chaining with great significance for developing countries.

2. What is Calidena?

The Calidena method is oriented towards identifying and promoting concrete actions to foster quality services for a value chain in order to increase *competitiveness* by complying with certain quality criteria required by markets, destinations and end clients, as well as with technical regulations and private standards.

The basic idea behind Calidena is to perform a value chain analysis in a rapid and participative manner, which includes observations on the current quality of processes and products in each one of the links, and the provision or lack of quality services on the part of inspection and certification bodies, laboratories and the regulatory system.

Calidena is a participative learning process of quality and chain analysis. It begins with a workshop that combines training with an initial diagnostic of a specific productive chain, which provides a snapshot of the chain and serves to develop an action plan to tackle the situation encountered.

It is attended by all the key stakeholders of the value chain, from the private sector as well as supporting institutions, with an emphasis on quality infrastructure bodies. The beneficiaries of a Calidena process are associations, chambers and business groups and, in particular, subgroups organized by sectors as well as companies and institutions linked to certification and performance of quality testing. Representatives of consumers and end users, exporters, retailers and wholesalers are also involved in the Calidena exercise.

Once the Calidena process has been initiated, follow-up of the workshop results is implemented including consultation from specific experts supported by the activities of PTB projects. The utility of Calidena is to identify opportunities for improvement in specific productive chains in such a way that shared actions and responsibilities can help to find a solution.

Calidena is a tool for influencing economic growth, competitiveness, the international market, the culture of quality, consumer protection and other areas relevant to development.

Calidena is complementary to other methodologies for working with value chains (for example the Global Value Chain Approach of the Institute of Development Studies in Sussex, England or the GTZ methodology, Value Links) and specifically emphasizes quality issues. However, Calidena is useful for beginning a joint project between the stakeholders of a value chain.

So far, Calidena has been applied in several countries in Central and South America, namely:

- Costa Rica: where work was carried out with the marmalades, jellies and sauces, moulds and dies and shrimp value chains.
- Guatemala: the methodology was applied with the marmalades and jellies value chain.
- Nicaragua: where activities were carried out with the cacao and chocolate chains, as well as with the wood and furniture chain.
- Colombia and Ecuador: during 2010 cocoa and chocolate chains.

Summaries of these case studies can be found in chapter 6.

3. Preparation of the Calidena exercise

3.1. Selection of a Chain

The Calidena exercise focuses on key issues or problems of quality within the chain and identifies them from the perspective of the end customers with their requirements in relation to compliance with standards and other criteria. It is a focused and programmatic view of the chain.

Within the context of cooperation with developing countries there are many projects and programs that work with different value chains in a complete and thorough manner. Selection of chains in this context requires prior diagnostic work, identification of the stakeholders, analysis, activities and preparation of technical bodies (regarding standardization, technical regulation, metrology and accreditation), with the objective of providing services tailored to the requirements of the sector.

We take a pragmatic and flexible approach to selecting a value chain for the application of the Calidena method. The ideal scenario in order to focus on issues of quality, and the shortcomings or lack of quality services in a country, would be to find a chain that is already well articulated and has clearly defined its products for export. Our exercise is a plus, a complement to the work others do with the chain. We know this situation does not occur so readily; therefore, we have reduced the selection criteria and we manage them in a way that is adapted to the real situation of each country.

We apply the following criteria:

- *Real opportunities for export* – In order to carry out the exercise it is advisable to previously analyze which market has real export potential. The requirements of the North American market are very different from the European or Japanese markets, for instance, to mention only the most demanding ones in terms of quality. The goal is to improve quality in order to be able to export; therefore what is required are products with proven potential for export to Europe as demonstrated by the experience of other countries, and in the best case scenario, with clients who have already been identified and/or contacted.
- *Experience and advances in chaining* – In fact, productive chains exist naturally, regardless of the degree of articulation among the different business stakeholders. There are chains with a certain existing articulation and others where only the market regulates the relations within the chain up to a certain point. A minimum level of development or experience in linking the different parts of the chain is required in order to participate in a Calidena exercise.
- *Diverse quality services required* – In order to identify the necessary quality services for a specific value chain, it is essential that the initial product is going through a process of transformation that generates added value. There is no rule about the number of links or the complexity of the processing that requires quality, and therefore quality services, but there is an overriding need for good quality systems.
- *Participation of SMEs within the chain* – From the approach of supporting economic development and helping to combat poverty, it is important that in the chain worked with in the exercise there is significant participation by rural and/or urban SMEs in the different links. At the same time, we must be realistic and ask ourselves whether the selected companies have a real opportunity of joining an export chain. This is why it is also important to know whether it is a product or service that complies with the demands and requirements of the market.

- *Conscious need to improve quality* – It is important that the motivation for concentrating on the issue of improving the quality of products comes from private stakeholders themselves and it does not appear to be an imposition from a project or program. If there is awareness on the part of the business community with regard to the implementation of the quality criteria necessary for them to stay in the market, or be positioned in other sectors or niche markets, it is easier to identify bottlenecks with regard to quality and to think about the future.
- *Motivation of stakeholders for dedicating time and resources* – We know that for businesspeople time is money and they often feel that participating in workshops is a waste of time. If they are aware of the need to improve the quality of their products, it is also necessary to convince them that participating in a Calidena project is an investment aimed at improving the quality of their products which results in better prices, higher income and an increase in competitiveness.

Below is an example of the assessment based on the process of selection of value chains in a Central American country:

Products / Criteria	Wood pieces and parts	Food packaging	Polyvinyl Chloride (PVC) Piping	Non-alcoholic beverages
Real opportunities to export to Europe	2	1	1	2
Experience and advances in chaining	2	1	2	1
Diverse quality services required	2	2	3	2
Participation of SMEs in the chain	3	1	1	2
Conscious need for quality improvement	3	3	3	3
Motivation of stakeholders for dedicating time and resources	3	1	1	2
Total	15	9	11	12

For selection we suggest the application of the criteria in a matrix to evaluate those interested in carrying out a Calidena project (Representatives from manufacturers, processors and traders associations, representatives from bodies supporting exports, representatives from cooperation programs and representatives from the quality system), giving a value from 0 to 3 for each criteria (0 = not applicable, 1 = applies a little, 2 = applies regularly, 3 = good conditions).

In this case, scoring 15 points leads to the selection of this chain.

3.2. Calidena Host and Participants

Host

The key actor in the success of the Calidena process is the host. Its role is to be the leader of the preparation and follow-up processes. It should preferably be a trade organization with recognition in the chain or an important company within it. The important thing is for it to be accepted in the chain at the level of the companies, because their participation in the process is essential.

If the host of the process is convinced of the importance of the issue of quality for improving products and developing the value chain, and has really internalized the Calidena process, it will ensure that all members of the chain participate in the workshop, that the preparation for the event is optimal, that the process is carried through and that the implementation of the action plan in the follow-up phase is a success.

The host might be a private sector association or a public body that actively promotes SMEs and/or Quality Infrastructure. It might even be a leader company that needs to improve its links with the SME supply chain. It is also feasible that two institutions, one from the private and the other from the public sector, create a partnership and thus share the role of host.

It is important to identify the most appropriate and strategic host for extending the invitations to the workshop seminar. For instance, it may be that companies do not attend meetings if they are invited by government institutions or vice versa.

Preparatory meeting

Once the host institution has been identified, it is important to hold a meeting to obtain a prior mini diagnostic. This meeting should not last more than three hours and covers the following topics:

- Management and leveling of expectations
- Clarifications on the role of the host
- Quick screening of the chain to identify companies and institutions that must participate
- Drawing up a work plan to prepare for the first Calidena exercise.

An important point of the preparation must be to guarantee the compilation of all national standards and technical regulations relevant for the chain. These documents should be made available for the research carried out during the workshop.

Another topic of prior research should be economic data on the corresponding chain (number of companies, employment, volume of sales, exports, etc.).

This meeting marks the start of the preparation process.

Financing

A Calidena workshop requires human and financial resources. The exact amount will depend on the specific situation in each case. To calculate the price it is necessary to take into account: the facilitators' fees, the hiring of the venue, hospitality during the event, costs for local transportation (for example for interviews), and materials needed.

Possible sponsors include national organizations linked to supporting SMEs or Quality Infrastructure, private companies, projects and international cooperation programs (including those of PTB).

PPP (Public Private Partnerships) of the German Cooperation might be an additional source for mobilizing complementary resources. PPP projects are designed within a dialogue between public and private associates and carried out jointly. A PPP offers a private company the vast infrastructure of the German Technical Cooperation GTZ, specific knowledge and contacts with governments, associations and local companies (see www.gtz.de/ppp/english).

In any case it is very important that the participating companies and institutions also contribute resources themselves. If they provide a room or pay for food for the participants during the workshop, they are more likely to identify with and commit to the Calidena project.

Participants

Some basic criteria to take into account for the selection of the participants of the exercise are:

- Four to five representatives from the different stakeholders in the production link are medium or large companies/producers, and representatives of small producers such as cooperatives and/or business associations.
- Four to five representatives from the different stakeholders in the processing link(s) be they medium or large companies/producers and representatives of small producers such as cooperatives and/or business associations.
- Four to five representatives from the different stakeholders in the internal and external trade link, preferably with representatives of end customers abroad.
- Four to five representatives from the different suppliers of quality services, for example: certification bodies, laboratories or inspection bodies.
- Four to five representatives from the National Quality System, that is to say Metrology, Standardization, Technical Regulation and Accreditation.

Integrating big and important stakeholders within the chain into the workshop is not an easy task; since working in a value chain is a fairly new approach, it is necessary to explain to the stakeholders the appeal and benefits of their participation. In the case of large companies, a convenient strategy might be to convince the owner or the manager to support the initiative and to send qualified technical staff to the workshop. It might also be useful if they themselves as well as high profile members of the public sector participate in the opening and closure of the workshop. This differentiation should be taken into account when it comes to the workshop invitations and follow-up.

The total number of participants should not exceed 25 for methodological reasons.

Given that the participants in the kick-off workshop are so important for the initial exercise as well as during the follow-up of the action plan that is developed, it is extremely important to guarantee the participation of stakeholders from each link in the value chain including companies, quality services and regulation bodies.

The full time availability of the participants during the entire Calidena exercise should be taken into account as a criterion.

If someone has to frequently leave the team activities, he or she will not be able to share the joint learning process and this will affect the entire team's ability to perform a good quality diagnostic of the value chain.

In order to ensure the participation of companies, it is advisable to allow businesspeople to participate for a certain amount of time at the beginning of the exercise and then leave a technician or delegate to represent them for the remainder of the time.

3.3. Lessons learned from preparation

Critical factors of success	What we must do	What we must NOT do
Selecting a chain with real potential for export and development at the right time	Take advantage of changes within the business environment, for example free trade agreement negotiations	Work with chains with little potential for development
Companies see their participation as a business opportunity	Focus on the economic aspects of quality in the invitation and during the exercise	Limit ourselves only to strictly technical issues of quality
Creating interest in the topic among key stakeholders from each link before invitation	Awareness activity with key stakeholders in good time	Trust that participation is guaranteed through written communications
Hosts have leadership in the chain	Select hosts with greater representation in the chain	Rely on just one cooperation project and/or one actor from one single link
Representation of each one of the links and different levels (companies, quality services and quality system)	Directly invite stakeholders from the different links and levels	Trust in the relationships expressed between the different links
Guaranteeing a critical mass of participants with good technical knowledge	Invite quality managers from companies, certification technicians and representatives of institutions from the quality system	Limit ourselves to just micro and small enterprises

4. How to perform the initial Calidena exercise

4.1. Kick-off workshop agenda

Day 1	Day 2	Day 3
<ul style="list-style-type: none">• Welcome• Introduction of participants and expectations• Leveling of expectations, introduction of objectives and agenda• Basic concepts: value chain and quality• Screening: the chain, its links and stakeholders• Identification of the sequence of activities in each link• Quality requirements• Online research on quality requirements	<ul style="list-style-type: none">• Golden thread• Preparation and performance of field work – interviews with the key stakeholders not present, visits to companies and institutions• Presentation on the quality system in the country• Processing and application of information gathered	<ul style="list-style-type: none">• Golden thread• Identification of important issues in each link• Creation of the action plan for the chain• Selection of the Follow-up Committee• Final evaluation of the event

4.2. Details in each sequence

Beginning

To get an idea of the participants' perception of the chain, it is helpful to use the figure of a thermometer or meter to visualize their impressions; given that in many cases this may be the first time that the stakeholders from the different links of the chain have found themselves in the same room, it also helps them to get to know each other and to introduce the topic.

Facilitation sequence

- Ask a trigger question that provokes a wide range of answers
- Explain the scale, in particular the meaning of the extremes
- Ask each participant to vote with round stickers according to their point of view
- Collect written comments on workshop cards (see <http://tinyurl.com/286gsh3>)
- The facilitator summarizes the final result.

Opening

Presentation of the participants

The participants are asked to fill out cards with their names, the institution they belong to, their expectations of the event and any negative aspects they would like to avoid. These cards are put up on a board. This helps us to:

- Introduce the participants
- Find out where they are from
- Find out what their expectations are regarding the training event
- Gather input for the rules during the event.

Other important issues to take into account:

- Leveling of expectations
- Clarification of the context
- Avoiding misunderstandings
- Avoiding frustrations during the event
- Presenting objectives and agenda
- Orienting the participants with regard to the unfolding of the event
- Clarifying any doubts
- Picking up again on the objectives and the agenda during the event
- Letter of commitment
- Setting the ground rules: display them and bear them in mind.

It is recommended that participating companies take samples of their products to the seminar, so they can show them to other members of the chain. They may for example also be used as prizes for different exercises.

“Living chain” exercise

One exercise that can be used in the context of value chains is called “The Chain”, based on the participants’ age, number of children or height etc. The facilitator asks them to form a chain according to one of the criteria and the participants position themselves according to their characteristics.

When everyone is in place, the participants are asked to hold hands and push the chain in one direction. No doubt this will not be possible and the chain will break and become distorted. Next they are instructed to pull the chain in one direction, which will likely work.

In this way, the dynamics of the chain are explained to them; it has to be pulled from the end customer and must not be pushed forward from the production of raw materials. The discussion is then taken to a more abstract level and the topic of quality is introduced.

The answers are written down on cards, which are pinned up on a board to create a chart like the one below.

Key Messages

- The value chain approach begins with clients’ requirements and analyzes the interrelationship back along the chain (unlike “production chains”).
- The competitiveness of a company does not depend on it alone, but on the interrelationship with its suppliers and customers.
- It also requires an adequate regulatory framework and supporting institutions that provide the services required by the companies in the chain.
- Quality problems that appear in a chain often originate from action in the links at the beginning of the chain (see the story “It’s the cow’s fault” In appendix 7.7).

Quality

Before beginning to work specifically on quality and value chains it is important to find out what the participants know about the subject and bring their knowledge up to the same level, by beginning with a definition of quality.

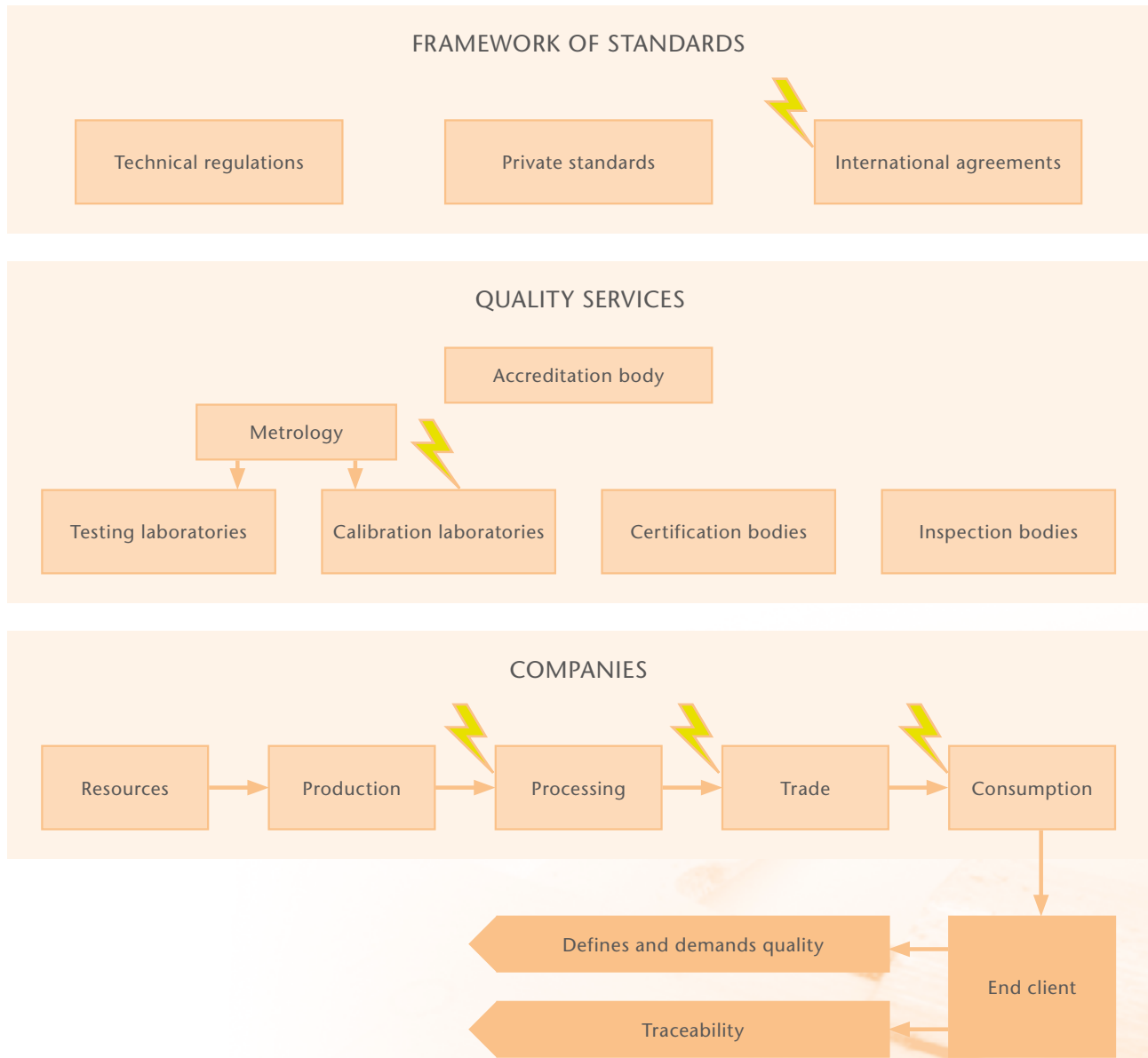
A brain storming session is carried out using the guiding question: “What do you understand by the concept of quality?”

One of the facilitators writes down the answers on workshop cards and puts them up on a board. The answers tend to be very heterogeneous.

It is important to emphasize that quality is a set of properties inherent to an object that enable it to satisfy implicit or explicit needs. The quality of a product or a service is the perception that a customer has of it; it is a mental judgment by the consumer denoting approval of the product or service and its ability to satisfy their needs.

The standard ISO 9000 defines quality as the “degree to which a set of inherent characteristics fulfils requirements”. These requirements are defined for each product or process as standards, and conformity is assessed within the framework of a National Quality System made up of certification bodies, inspection bodies and laboratories duly accredited by independent organizations.

Diagnostic of the chain



Stakeholder mapping

The introduction of the main concepts of quality and the value chain is followed by a stakeholder mapping exercise for the value chain that is the subject of the Calidena workshop. It is important that this does not involve simply talking about and discussing the issue but actually performing a practical exercise that helps the participants to learn in an experiential situation and later put that experience into a conceptual framework.

Beforehand, the links are drawn with masking tape on the floor and boards with the same titles are placed nearby. From experience we know that many institutions and supporting bodies participate without having any direct relationship with the chain and the quality system. A space is also drawn for them on the floor and a board is reserved for them. They are placed according to their role in the value chain.

Next the participants are asked to write on a card the name of their company or institution and position themselves within the chain according to the link that corresponds to them. They find their own place. The participants are then asked to define what direction they are looking in (since they will no doubt look in different directions), and on what basis. Some participants will probably look in the same direction while others stand shoulder to shoulder. This is pointed out to the participants and they are asked what it means in real life, with regard to the real links within the chain.

Then, the cards are pinned up on the ready prepared boards.

Once the cards have been pinned up on the boards, working groups are created for each link to complete the stakeholders of the chain, taking into account any missing stakeholders that are not present at the seminar for which the respective cards are placed in the visual display of the value chain. At this stage the location of stakeholders in their levels should be respected: Companies, Quality Services, Regulating and Standards Bodies etc. The cards will later be put up on a wall where they will be visible during the entire Calidena workshop. In this way they serve as a reference for a deeper analysis of the key issues for the value chain with regard to quality requirements.

Stakeholders must be included in the group analyzing the marketing link, but it is also important to emphasize the type of customers and their requirements. We have already explained with regard to the selection of the chain that the criteria create awareness about the need for improvement with a view to possible trade with a foreign market. To approach the subject, it is helpful to briefly reflect on the different prices of own products in various markets or segments of the market, which businesspeople usually know. For instance, the following table may be used and the facilitators should have prior information about foreign prices to carry out this exercise.

Type of client/ Distribution channel	Product characteristic/ Client's requirement	Price in the market (USD/kg)
Popular market	Cheap	0,75 – 1,25
Supermarket	Uniformity, cleanliness, guaranteed supply...	2
Gourmet	Taste, originality	7
Fair trade	Labor conditions, sustainability, certification, etc.	3,5 – 5

**price examples during 2008*

This exercise helps participants to understand the incentives for supplying clients who are more demanding with regard to quality.

Activities for getting into groups

Fruit Salad:

Groups are created with the number of people necessary for group work, not by counting with numbers but by naming different fruits, for example: Mango, Banana, Lemon and Orange. Each person is assigned the name of a fruit. The group sits in a circle and the participants change places in response to the instructions given. If “Mango” is called, all Mango participants should change seats, and so on with other fruits. The facilitator will also participate, so there is always one person left standing who gives the following instruction. When “fruit salad” is called all the participants must change seats at the same time. Finally, groups are created according to the corresponding fruit.

Sequence of activities in each link

In order to analyze key issues related to product and process quality in greater depth it is necessary to identify the sequence of the activities in each link. For this purpose groups are created based on these links, which should try to include the actual stakeholders corresponding to each link since they have greater knowledge of the work it does. The groups then brainstorm on the links’ activities, noting down their ideas on cards which are placed in order in rows on the corresponding board. If there is not enough space for them on one board, use as many as necessary. At a later stage, following the analysis of quality requirements, the boards will be looked at again and completed.

Standards and regulations important for the chain

Using the brainstorming technique, the participants are asked what the relevant standards and regulations are for the value chain. Their answers are written down on cards and may be structured for example as follows: national and international mandatory standards (market conformity), those that are mandatory by law, international standards both in general and those of the destination country, as well as voluntary standards, which are “private” business to business standards such as GlobalGap for instance.

The particular requirements of specific clients may also be mentioned if they are known or a representative of the clients is participating in the workshop.

It is important to systematize the standards and procedures identified and structure them well. It should be emphasized that technical regulations must be complied with simply because they are export and import requirements, irrespective of the specific product.

The result of this exercise in the case of a cacao chain is shown below:

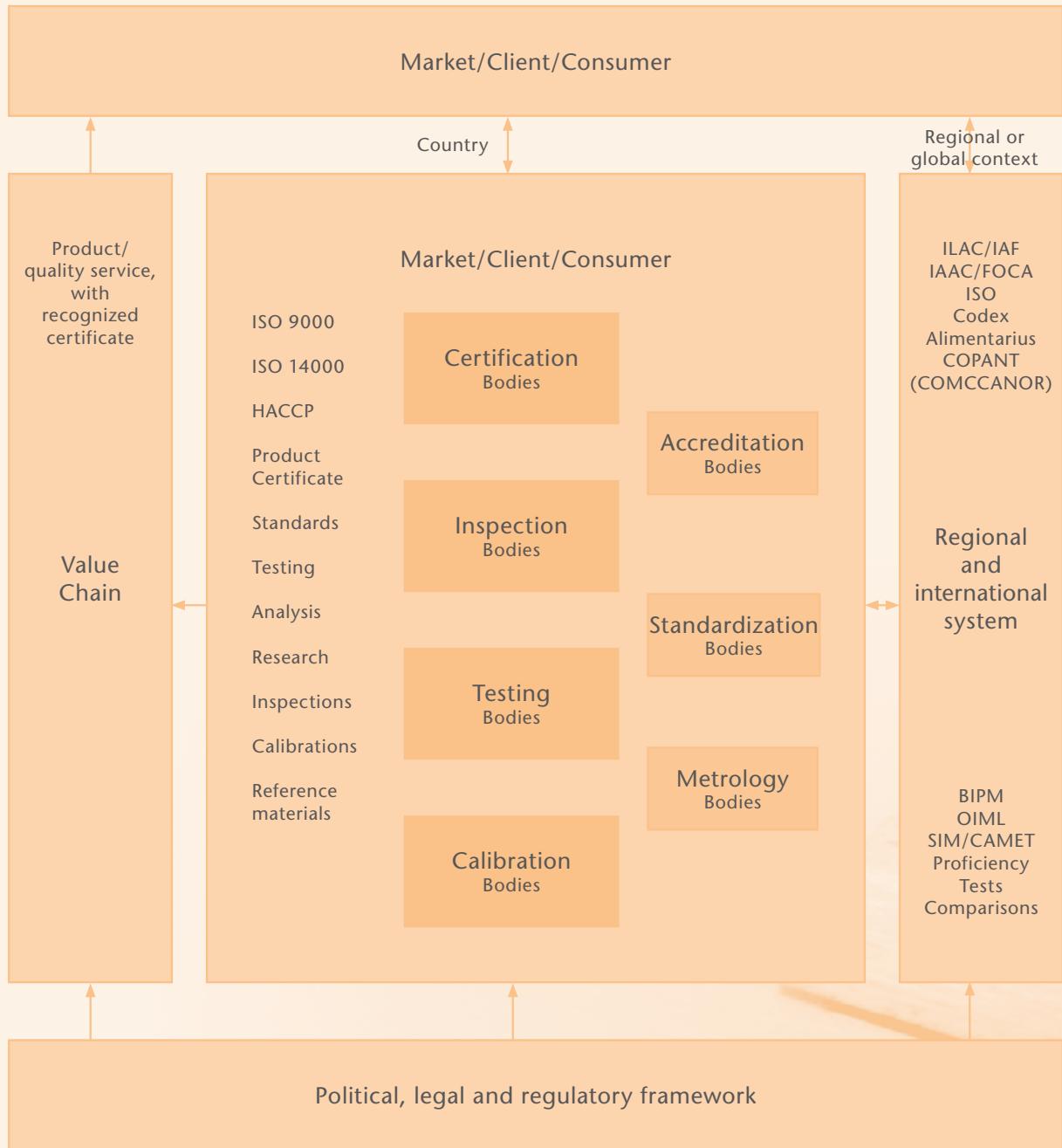
National	International	Specific, complementary or voluntary certifications
Law 291	European Regulations: 882/2004, 78/2002, 852/2004, 852/2004, 854/2004	Good Agricultural Practices (GAP)
Phytosanitary certification	Agrochemical EPO Regulation, HACCP	
Law 225 Metrology	Codex Alimentarius	RFA Rain Forrest Alliance
Law 219	ISO 65 Certification for organic products	Fair trade
National Organic Production Standards NTON	Accreditation for ISO 17025 Testing	Biolatina

The National Quality System

At this stage of the workshop the National Quality System should be introduced, so that all participants have a clear idea of it. In several cases it has been observed that the private sector has no idea about the system and this introduction helps to go through the entire framework of the quality system. It is preferable that a representative of the National Quality System gives the presentation based on the following chart, although adapted to the product of the chain under analysis. It is advisable to prepare the speakers for this task so that they can adapt their presentations to the specific characteristics of the particular chain.

It is important that the presentation covers the implications of the sanitary and phytosanitary inspections required in the case of products of agricultural and agro-industrial origin. In Central American countries this is the responsibility of the National Ministries of Agriculture, which at the same time are the Competent Authorities before the European Union (see example of shrimp export from Costa Rica in appendix 6.5).

Quality Infrastructure



Applied research

“Interview with the end client of the chain”

As we have explained, the focus of the exercise is the end client’s demands with regard to product quality. Therefore, it is extremely important to have access to information on the point of view and the requirements of end clients and key companies in the chain under analysis.

It would be ideal if a representative from the *global buyer* could participate in the workshop. That is no easy task given the journey from Europe for instance to Central America. However, it might be feasible to combine the workshop with a visit to a buyer in the country or find another way to make their participation possible.

It is also useful to invite representatives from large clients in the country or region. The first step: complying with requirements regarding product quality, in many cases means complying with the requirements of domestic clients. For instance, in the case of agricultural or agro-industrial products, satisfying the requirements of a supermarket chain with international integration, such as local supermarkets (*Pali, La Union, Mas por Menos, etc.*) that belong to the U.S. company Wal-Mart.

If the physical presence of representatives of this kind of client is possible, a collective interview can be arranged with them, moderated by the facilitators.

To justify the cost of bringing this person from Europe, it is advisable to also organize visits to companies and institutions in the country as well as neighboring countries. It is important to invite the person well in advance, after prior contact, because they are usually very busy. Interpretation services must be organized, if the person does not speak the local language.

A cheaper option might be a telephone interview via Skype during the event if the person in Europe agrees and is equipped with the same service. This also requires translation services where relevant and a precise programming of the schedule due to the time difference with Europe. In this case, the workshop participants should prepare their questions in advance.

Lastly, another option may be for the facilitators to conduct a written interview with the client’s representative in advance and present it during the event via video beam. Such an activity should be already scheduled in the preparation of the Calidena project.

“Review of documents and Internet research”

In preparation for the exercise it is necessary to check whether there are any documents that are not available on the Internet and must be searched for previously and taken to the exercise to be analyzed by a working group.

Information about the regulatory and standard framework can usually be found on the Internet, not only the requirements of the country of origin but also the country of destination, depending on the main client.

Several standards (all ISO ones and others private ones like the British Retail Consortium, see www.brc.org.uk) have to be purchased. Nonetheless, at this stage of research useful summaries can usually be found on the Internet. The relevant standards can be obtained at a later date from the national standards body or other organizations responsible for the sale of such materials.

The participants get into small groups to research the technical standards and regulations corresponding to the chain in their own country or the region and in the destination country. In Central America, where we carried out Calidena exercises within the framework of association agreement negotiations we asked about:

- Technical standards and regulations relevant for the respective country and for the Central American region
- Technical standards and regulations relevant for the European Union as the destination market
- Voluntary standards relevant for the chain.

The necessary information for the specific product of the value chain under consideration can be found in the corresponding pages.

It is recommended that the small groups do not have more than three or four members and that there are enough computers with Internet access in the room where the event is held.

"Interviews and/or visits to companies"

Interviews offer the possibility of completing the information about requirements and key issues – including stakeholders who are not present at the Calidena seminar. They also serve to provide the participants with more information about other stakeholders in the chain.

The field work is organized by dividing the participants into groups, defining their roles and explaining the form for gathering information (see Forms in appendix 7.5).

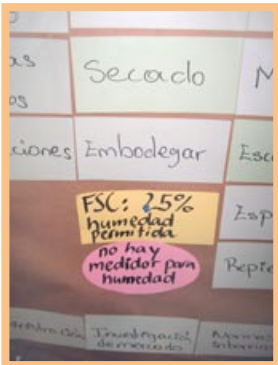
The groups proceed to the institutions, organizations or companies to carry out interviews with the people who have been contacted in advance and have agreed to take part in this activity. On their return to the seminar room the groups must analyze the information collected and transfer it to the digital file, which will later be incorporated into the workshop documentation.

During the interview at a company or laboratory, it is advisable to take advantage of the visit and ask the interviewee to give a tour around the facilities. These tours help to contextualize the information gathered during the interview and facilitate a deeper understanding of the topic.

When all the groups have returned, a quick plenary discussion is held to exchange opinions about the work carried out. This is an important step since interviews do not always go smoothly and the exchange is useful for offloading any emotions that may have emerged during the process. In addition, the groups must read over the information cards they prepared and inform the others of their findings. The information gathered is later added to the identification of the requirements for each activity.



Another option with regard to the interviews may be a visit to an important company from the chain or an institution within the quality system. The advantage is that quality aspects related to the link in which the company operates can be seen more clearly. It may also help provide a deeper understanding of the creation of added value when the producers of raw materials observe the different stages for processing their product, the result of which is the finished product on sale with its corresponding price.



Identification of key issues

The information gathered through Internet research and the field work is processed by completing the corresponding cards for each activity. Quality requirements are then applied and their importance for each activity is reviewed. The guiding question for identifying key issues is: What prevents us from complying with the requirements? It is important to make an example card so that the participants fully understand the procedure.

This is the way the cards are filled out for each link:

Link				
Requirements Activities	Locals and CA	Specifics	Europe	Key issues
1.				
2.				
3.				
4.				
5.				
6.				

This makes it possible to identify key issues for the chain in light of a concrete and well-defined requirement. This is the only way to identify concrete and applicable solutions to problems and, therefore, concrete actions.

When the work has been completed the result will be a complete matrix of key issues for each link. Each group may find different issues since the links are reviewed based on requirements relating to standards, technical regulations and voluntary standards.

Once this process is over, the groups go from board to board reviewing the key issues identified and clarifying any questions.

One of the facilitators takes notes on the key issues on cards and puts them aside to be placed on a separate board. The board with the key issue cards is presented and in the event that many key issues are identified, they are prioritized according to the Pareto Principle.



Method for prioritizing: Pareto Principle

If brain storming is used as a technique, the responses should be prioritized to give a manageable number, particularly if we are dealing with problems we have identified and wish to solve through solutions and actions.

With a marker each participant marks the cards he or she thinks are the most relevant. There can only be one mark per card. The score each participant can give is equal to 20 % of the total number of cards (*Pareto Principle*). The *Pareto Principle* states that 80 % of problems can be solved using 20 % of the solutions.

It is applied as follows: By dividing the number of cards by 5 (N cards/5). This is equivalent to 20 %. The rule is, if 20 % is not a whole number it should be rounded up. This number (the one rounded up) equals the number of votes or points given to each participant. The answers that obtain the highest scores provide the starting point for the following steps.

4.3. Action plan and commitments

It is important that the Calidena workshop culminates in an action plan so that the recommendations and suggestions are put into practice and do not just become scraps of paper. Before making a start on this task, it is necessary to form a follow-up committee to ensure the action plan is followed up, even if there are institutions or companies wishing to take charge. In this way the representation of the different links is also maintained and so is their cohesion as a chain. It is necessary to define the scope of the committee's functions and ask what it must do and what it must not do.

Activity: "The Fishbowl"

With large groups the *fishbowl* methodology can be used. Five chairs with 4 people are placed in front of a board. One chair is left free. The rest of the group sits in a circle around the chairs.

The facilitator asks the 4 members seated on the chairs to vote on each of the actions on a scale of 1 – 3, and the people on the chairs show the corresponding cards (previously prepared) with the score for their vote. The facilitator attempts to reach to a consensus in the event of wide variations.

The free chair allows the participation of a spokesperson from the outer circle as the advisor. This is the only person allowed to speak; the rest will remain silent, like fish.

The advantage of this instrument is that it increases the involvement of the participants by getting them to circulate. The team in front of the board can be changed after they have scored four proposals.

There are alternatives for the creation of the action plans:

In the case of groups larger than 16 participants, the exercise is carried out in work groups per link. This is a better use of time.

In groups of up to 16 participants, it is advisable to perform this exercise for all links as one group. This makes better use of the group members' knowledge.

The actions with the highest scores will be included and detailed in the action plan.

Action proposals	Available resources	Immediate implementation	Results visible in 100 days	Result of multiplication

The action proposals arising from a Calidena workshop may vary according to the situation of each specific chain. Nevertheless, at the beginning of a collaboration process it is important for the initiative to continue and to gain momentum.

We recommend applying the following criteria when it comes to selecting the actions:

1. Implementable with available resources
2. Immediately implementable
3. Visible results in the short term (within 100 days)

More ambitious proposals should be divided into manageable actions according to the three criteria.

Action proposals

Here are some examples to illustrate the type of proposals that usually come out of a Calidena exercise:

1. *Inter-comparison of measuring equipment* – To familiarize SMEs with the topic of metrology a comparison of the parameters of the machines used in the production process is arranged. This inter-comparison could be coordinated by the National Institute of Metrology. Metrology provides a “standard mass” that all the companies measure using their equipment. It then becomes clear which pieces of equipment have defects and need to be calibrated. Such a project has multiple benefits: SMEs are made aware of and trained in metrology issues; the reliability of the participant companies’ measurement instruments is improved; awareness is raised about the calibration of equipment.
2. *Business round table with suppliers* – In a workshop for a processed food product chain it was diagnosed that fruit suppliers had not applied Good Agricultural Practices (GAP) or other quality control techniques. In addition, the processing industry suffered from a short supply of fruit in certain seasons. On this basis a business round table with fruit producers and processing industries was organized in an important producing region. The event was combined with training activities on quality-related issues.
3. *Awareness-raising for logistics operators* – One central problem of quality control is transport. During transportation products may be damaged or contaminated. In order to raise the awareness of carriers, representatives of several companies from the food industry created a brochure illustrated with simple drawings explaining the requirements for quality transportation. This experience was the first joint initiative and led to more ambitious activities such as the creation of a national standard for good transportation practices.
4. *Raising SMEs’ awareness of standards, consulting* – Many manufacturing SMEs do not know about standards and national technical regulations, not to mention international ones. To rectify this situation, the body responsible for the national quality system holds specific meetings for each link to familiarize them with these requirements. After this initial introduction, a project aimed at fostering technological innovation takes charge of specifically advising different SMEs.

All these proposals address a key issue identified in the diagnostic of the corresponding chain; they are aimed at improving products and processes, and involve not only companies from various links in the chain but also institutions from the national quality infrastructure. They are usually small activities that foster trust and lay the ground for joint projects of greater scope.

4.4. Documentation

For the documentation during the event it is important to have pictures taken of all boards and live scenes during the workshop, interviews and visits to companies. These serve to identify the participants with the process and results.

It is useful to transcribe the boards with the contents of the diagnosis. For the workshop facilitation it is important to obtain a guided summary with the notes on the cards. It is not necessary to document all verbal interventions during the workshop, only those relevant to achieving results. The facilitator should guide the person in charge of this matter. This documentation material should be saved to CD and handed out to the participants or posted on the website.

For such purposes, it is necessary to put someone in charge of the documentation and have another person taking pictures.

We recommend creating a summary document for each workshop. The recipients of this document will be the workshop participants and other interested parties within the corresponding chain. This document should be brief and concise to facilitate quick reading.

4.5. Lessons learned from the kick-off workshop

Critical success factors	What we must do	What we must NOT do
Adapting the facilitation to the real level of the confirmed participants	Review the facilitation instructions before the workshop-seminar	Execute the plan in the handbook literally and mechanically
Basic knowledge of the requirements per chain on the part of the facilitators	Search for information during prior preparation	Limit ourselves to just the role of facilitator
Participation of important stakeholders in the workshop	Carry out interviews with them in the event that they are not able to attend	Limit interviews to a particular group of stakeholders
Taking into account the requirements of demanding end customers	Invite trading companies with good knowledge of the end market. There should be alternatives for replacement such as teleconference, etc.	Work without a good knowledge of the requirements and only with producers and processors; be limited to representatives from just one or two links
Keeping the participants actively involved during the entire exercise	Apply continuous variations during the exercise (blended learning)	De-motivate participants with long PowerPoint presentations
Guaranteeing different points of view on the chain	Continually change the composition of the work groups	Limit the point of view to the analysis of the same well-known link
Schedule with an adequate pace of learning and exchange and with flexibility, not over-loaded	Create the facilitation instructions with sufficient free time and additional exercises planned	Overload the schedule in order to force discussion of all topics
Permanent availability of high speed Internet access	Select a suitable venue and test the services in advance, as well as the equipment to be used	Trust explanations given by the venue management

5. Follow-up

The first Calidena workshop-seminar begins a process of collaboration between the stakeholders of the selected chain and representatives of the corresponding support institutions. The close of the workshop is followed by a phase of implementation of the proposals during which what was learned and agreed on is put into practice. It is necessary to form a Follow-up Committee to interact with the facilitators up until the Follow-up Workshop. This Committee should consist of representatives from the components of the chain, leaders of their links and supporting institutions, which also monitor those responsible for carrying out the actions identified within the agreed timeframe.

5.1. Follow-up Workshop

When the 100 days of the Work Plan are up, it is advisable to organize a second workshop. This one should be shorter in duration, for example a one-day intensive workshop. The same group of business stakeholders and representatives of supporting institutions participate, probably with the addition of a few new stakeholders who were contacted during the implementation stage of the proposals. The workshop will be organized, like the first one, by the host institution with the support of an experienced Calidena facilitator.

The second workshop may have the following objectives:

- Assessment and revision of the progress of actions
- Opportunity to broaden and deepen the diagnostic
- To carry out new joint activities.

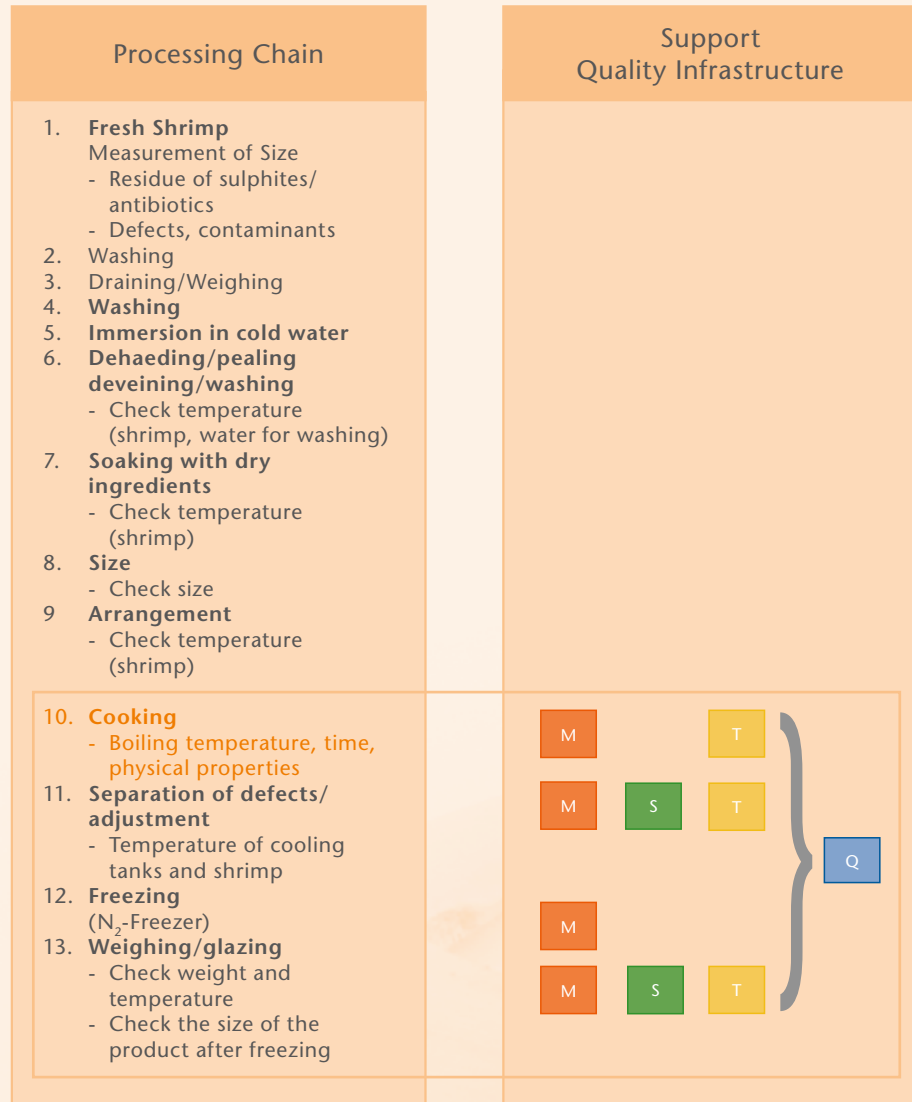
For a better analysis of the chain it is possible to review the key issues in depth on a more specific and detailed level, and apply the standards and regulations identified as critical up to the operations level of each link. This may be done in a work group on the indispensable condition that the stakeholders from each link participate.

For instance, an analysis may be carried out of the critical points according to the HACCP standard for the product, already practically required for export to Europe. Another possibility may be, in the case of agricultural products, the specific application of the standards of GlobalGap. This way, more specific orientations may be obtained regarding the need for improvement in each link of the chain under review.

Thus charts are obtained for each link/operation as shown below. Not only is the input defined in detail, the problems of the chain under analysis are also described in greater detail.

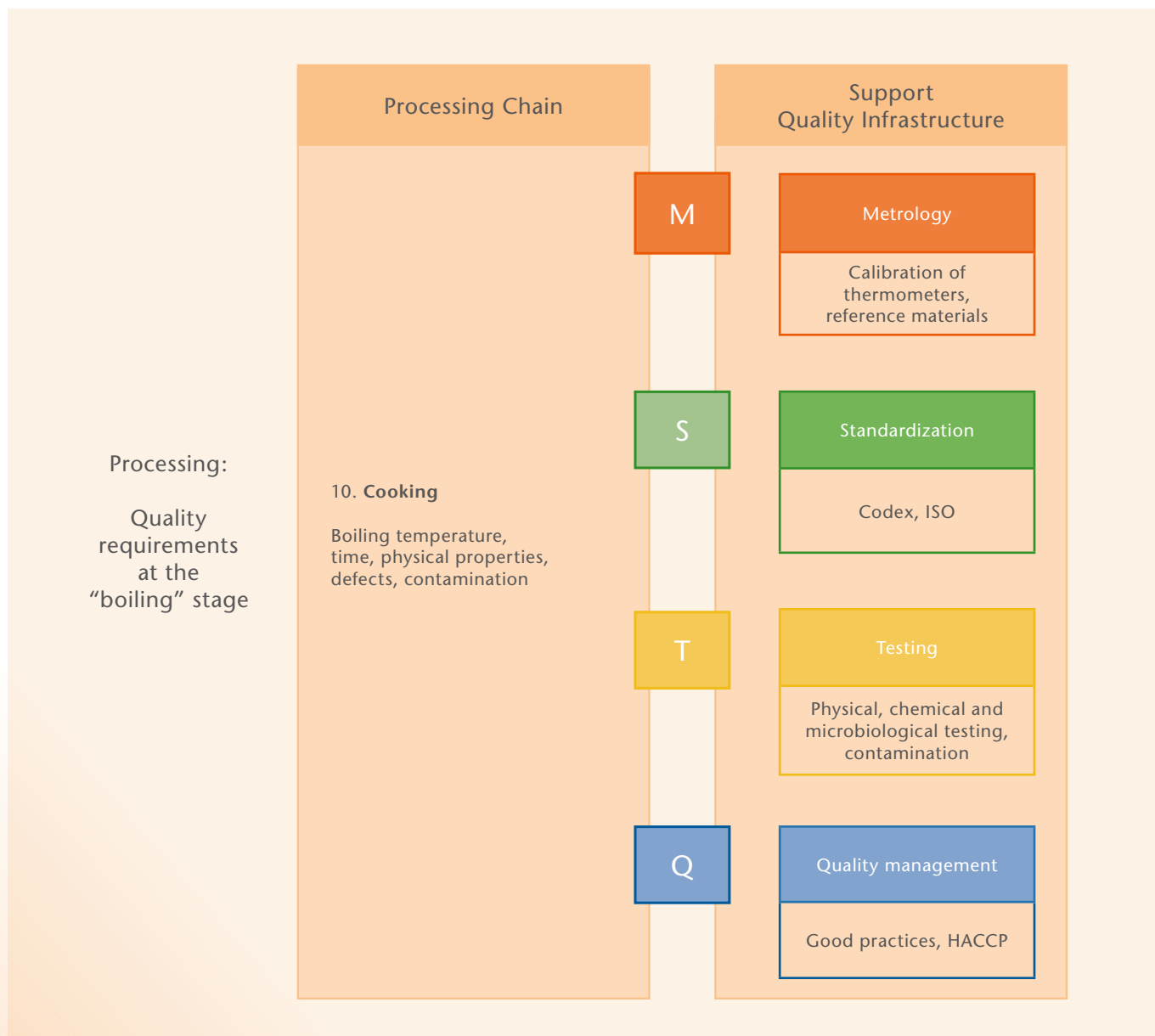
The charts are adapted from the book *A National Quality Infrastructure* by Clemens Sanetra and Rocío M. Marbán (2007) see www.ptb.de/de/org/q/q5/docs/OAS_SP07.pdf.

Processing:
Quality requirements at the "boiling" stage



Shrimp Processing

As a result it is necessary to identify actions that can help overcome any problems found, and which can be directly executed or incorporated into projects or programs to support development of the chain and/or the quality system.



Example of the shrimp value chain

Another activity for the follow-up workshop could be a detailed analysis of the profitability of certification. Using a practical example of the cacao value chain in Nicaragua, the difference in price can be shown to be over US\$ 900 per metric ton. In this context it is necessary to talk to the participants about the fact that certification does not constitute a cost, but rather an investment for achieving higher profits. The presentation may be prepared in advance.

At the end of a follow-up workshop a new action plan is agreed upon. This includes previous proposals that have been revised or expanded on. At the same time, more ambitious projects designed to foster the quality and competitiveness of the products of the chain *will emerge*. *Following the idea that continuous improvement follows a new circle of learning: Planning, doing, checking and acting*. It is recommended therefore that this type of follow-up workshop is instituted and repeated every so often.

5.2. Support from PTB

The main mission of PTB technical cooperation is to strengthen the quality infrastructure in developing countries. The Calidena methodology is a vehicle for contributing towards this aim by encouraging dialogue and cooperation between users, that is to say, business people and consumers, and the providers of services in the national quality system.

In economic terms, we could also talk about mediation between supply and demand in an imperfect market. The imperfection is mostly explained by the lack of information and the fact that the quality infrastructure is a public good.

On account of its specific mission and limited resources, in its work with Calidena the PTB Technical Cooperation looks to form alliances with other donors and institutions from the respective country. PTB will mainly support the launch of Calidena initiatives and will gradually reduce its support and let local institutions take charge.

For the follow-up workshops it is important to involve all the stakeholders, through the co-financing of the activities by the supporting institutions, business people and international cooperation.

At the same time, topics other than those related to the quality infrastructure also tend to come up in a Calidena workshop. This is another reason why we recommend it is supported by other institutions and donors. Calidena might also be useful within the framework of an initiative to promote a value chain in order to complement the work carried out with institutions from the quality infrastructure.

When issues arise that require specialized technical knowledge, it might be useful to involve an external expert. Here, the PTB may provide support by sending an international expert or one from the corresponding region. It could also support internships and study trips by the members of a Calidena team in order to expand their knowledge.

Finally, the Calidena methodology might equally be applied to diagnose a national quality system. The practical functioning of the entire system could be assessed by studying specific chains. A Calidena workshop gives rise to recommendations for specific improvements to the National Quality System.

In small countries, as in the case of Central America, it is interesting to include recommendations on a regional level. Since the countries are small, they often lack the critical mass to supply all services. Through mutual recognition, a certain degree of specialization and distribution of labor may be established that will benefit the entire region.

In spite of the small size of the countries, and the level of the SMEs, it is possible to enter into agreements that lead towards change in the productive sectors and the necessary increase in conformity assessment services, which is why the proposal is to gradually obtain a commitment on the part of the member companies of the chain to incorporating quality systems:

Stages involved in leading the SMEs in a Chain towards Quality Management

Stages/Stakeholders	Self-commitment	Good Practices	Certification of product	Implementation of a Quality System
	I Stage	II Stage	III Stage	IV Stage
Companies/SMEs	Definition of own criteria: "How do we define a quality product of ours?"	Introduction of good practices (i.e. implementation of the 5S methodology)	Certification of product	Implementation of a Quality Management System
Unions and business associations	Raising the awareness of their members regarding the importance of quality	Disclosure of good practices	Support for certification	Support for certification
Service providers: laboratories and certifiers	Raising awareness of companies regarding benefits of certification	Facilitating the introduction of good practices	Provision of certification and testing services	Provision of certification and testing services
National Quality System bodies	Information about the National Quality System	More detailed information about the services of the National Quality System	Provide support with information about the reliability of service providers	Provide support with information about the reliability of service providers

The objective of a Calidena project is achieved when the companies of a chain accept the advantages of a quality management system and take over leadership in collaboration with the services of the National Quality System. This ownership will be a gradual process.

On account of the lack of information among SMEs and due to the high initial costs of insertion into the world of quality, an initial impetus is required from the public sector and/or international cooperation. It is also important that from the beginning of the process donors define an exit strategy to facilitate the self-management and sustainability of the process. The logic of support from those involved might continue along the lines established in the following table:

Logic of support:

	I Stage	II Stage	III Stage	IV Stage
International Cooperation	Very high	High	Low	None
System bodies	Low	Medium	High	High
Companies involved	Very low	Low	Medium	High

5.3. Lessons learned from the follow-up

Critical success factors	What we must do	What we must NOT do
Participants continue with the initiative in the stage after the workshop-seminars	Take sufficient time to put together the follow-up team and create the concrete action plan	Trust that good will is a incentive for action
Clarity regarding the follow-up roles	Define who is responsible for following up the process in general and who is responsible for particular activities	Leave the responsibility for the process and all activities to one person
Having facilitators in the region for the Calidena exercise	Train facilitators in the Calidena methodology	Be limited to two or three people as Calidena facilitators
Topics related to the quality infrastructure remain on the agenda	Check that the action plan always includes activities in which companies cooperate with the bodies from the national quality system	Turn a Calidena into an initiative aimed only at cooperation among links, and ignore supporting institutions

6. Calidena Cases

6.1. Cacao

Nicaragua is a small cacao producer in Central America, with a total production of approximately 500 metric tons a year within an area of 3,000 hectares. There had been attempts to promote the cacao growing chain with export potential prior to the Calidena workshop-seminar but these initiatives had broken down by the time we began our activity: (see the study by Thelma Gaitan (2005) <http://appcacao.org/descargar/Cadena%20del%20cacao%20%20Nicaragua.pdf>).

The workshop-seminar took place in August 2007 with the broad participation of stakeholders from the links of the cacao value chain in Nicaragua, but with the significant participation of producers and very little participation on the part of the processing link since there are no major chocolate manufacturers in Nicaragua.

It was the first time stakeholders from the chain had met and recognized the different links in this way. The participants were amazed by the number of stakeholders needed for the different levels of the chain: producers and companies, quality and supporting services, the regulatory level. The lack of knowledge about the mandatory and voluntary standards governing the chain was also striking, in particular for the production and export of organic cacao.

The key issues identified in the cacao value chain in Nicaragua were the following:

- lack of technical regulations and standards for the production of cacao
- the absence of certification bodies
- the non-existence of laboratories able to provide the necessary services
- and the non-application of international measurements.

A follow-up committee was created to carry out the tasks identified: to create a data base with all stakeholders in the links of the chain and the existing information about the chain; to contact important stakeholders of the chain who did not participate in the workshop; to accompany the creation of cacao standards for Nicaragua; to conduct a survey on the installation and/or equipment of a specialized laboratory for cacao in Nicaragua.

In fact, the follow-up committee successfully completed their work and in December 2007 formed the National Cacao Board, which was a proposal that emerged from the workshop. The board is still operating and has expanded to the provinces, where provincial and municipal boards have been set up. The creation of the cacao standard for cacao is in the pipeline with the support of a European Union project.

6.2. Marmalades and jellies

In June 2008 two Calidena processes were initiated simultaneously in agro-industrial chains producing marmalades, jellies and sauces in Costa Rica and Guatemala.

Costa Rica

The first Calidena project was developed in Costa Rica with clear reference to the negotiation of the Agreement of Association between Central America and the European Union. Companies producing jellies, marmalades and fruit pastes showed themselves to be interested in taking advantage of the new export opportunities.

The host of the first workshop-seminar held on June 17, 18 and 19, 2008 was the Ministry of Economy, Industry and Trade (MEIC in Spanish), and a Food and Agriculture Consortium of SMEs called the "Costa Rica Food Group". All the jelly and marmalade producing companies in the country participated, along with the National Quality System bodies. It was not possible to obtain the participation of fruit suppliers and there was a low level of participation on the part of clients.

During the workshop-seminar, representatives of the companies studied new market trends and the formal requirements for insertion into the European market. Business people asked what the proper certification of a quality management system was: Was it enough to comply with HACCP or was it better to be certified under ISO 22000? In this context, the organizations from the National Quality System explained the importance of accreditation by of certification bodies. An illustrative way of learning about quality requirements was the visit to the pilot plant of the National Centre for Science and Food Technology (CITA) on the third day of the workshop-seminar.

A follow-up workshop of the project was held on September 18th. In the meantime the stakeholders met several times to research potential market niches and become better acquainted with the corresponding standard. The national standardization body, INTECO, offered a "sampling" of the standards and the companies also visited the national metrology laboratory LACOMET.

Fruit suppliers, a bottleneck of production detected during the previous diagnostic, were able to be included in the follow-up. It was discovered that there was no appropriate standard or technical regulation defining the quality of "second-rate" fruit for industrial processing. One of several initiatives to improve first-rate production was run by the Technical Regulation Body (ORT) and was designed to create the corresponding Technical Regulation.

In summary, the first Calidena exercise in Costa Rica generated a work plan that encouraged greater

interaction between the companies involved and introduced a new way for companies in the sector to work with the National Quality System. During 2009, attention continued to be focused on the commitments made in the Work Plan which included an analysis of competitiveness for primary producers and jelly and marmalade manufacturers, and it was also necessary to analyze in greater detail the requirements for entry of these products into the European market. The plan is to continue working in this way with other chains to encourage supply and demand of quality services.

Guatemala

In Guatemala with the marmalades and preserves agro-industry Chain, the Calidena project was organized in coordination with the CIG-Industry Chamber, Ministry of Economy, AGEXPORT and the GTZ/DESCA program. The exercise took place on June 23, 24 and 25, 2008, with the support of PTB.

Calidena enabled the following results to be achieved in the marmalade value chain in Guatemala:

- Get together and knowledge sharing of different stakeholders in the chain and the national quality system and other public and private stakeholders such as the Ministry of Economy, Ministry of Agriculture, etc.
- Sharing information (studies, problems and possible solutions) with stakeholders supporting the chain
- Developing joint proposals which include notably the updating of a diagnostic for preserves and marmalades, creating a plan of needs and possibilities prioritized by the stakeholders, and generating an information system on the stakeholders of the chain in Guatemala, which will be the starting point for the plan for strengthening the chain.

The Calidena workshop-seminar raised awareness in the marmalade companies associated to the Industry Chamber and several participating companies such as MONTESOL, which organized a workshop in the Industry Chamber of Guatemala with the in-house team from the CIG, other affiliated companies in the agricultural industry and other collaborators such as the European Union and governmental bodies such as MAGA. The manager of MONTESOL presented a proposal on how to strengthen the agro-industrial sector in Guatemala, using as part of that presentation the results of the diagnostic. The Industry Chamber is currently following up on the initiative.

The follow-up committee held a meeting on the issue of improving Good Agricultural and Transportation Practices. Information available on the Internet and in Good Agricultural and Transportation Practice Handbooks was compiled to create a handbook on good transportation practices required by processing companies. This handbook was delivered to the carriers involved and is used in their training.

With regard to the agreed topic of arranging meetings between suppliers and demanders of the Fair and Business Round Table, the process is being led by the Vice Ministry of Economy, and there were meetings with PROFRUTA and their tropical fruit chains in preparation for the event. It took place in February 2009 and made it possible to bring together the supply and demand of different stakeholders in the preserve and marmalade chain.

It was possible to arrange an awareness talk on the importance of Good Agricultural Practices and Good Manufacturing Practices coordinated by ICONTEC from Colombia.

As a follow-up to the process innovation plans for the German market are being developed for 12 products including tropical fruit preserves and marmalades.

A work meeting is being prepared to validate the needs that emerged from the Calidena workshop and give the process greater impetus. To date a diagnostic of the marmalade and preserve sector for Guatemala carried out in 2004 was able to be exchanged between CIG, MINECO and AGEXPORT. An update of the diagnostic of the preserves and marmalade chain Guatemala is currently being prepared along with a mapping of all stakeholders in the chain, which will serve as a basis for the continuation of the improvement plan.

In October 2008, full advantage was taken of a visit to the Jams and Foods sector by a Chilean expert, who lectured on the experience of the Business Platform from the Chilean Food Sector in Europe. In addition, appointments were arranged with companies such as Montesol, Conservas y Congelados Ya Esta S.A. and the Board of Directors of Food Manufacturing/AGEXPORT.

6.3. Moulds and dies

The Calidena project with the metal-mechanics sector originated from an initiative presented to MEIC by the ASOMETAL association to promote the sector. During the first meeting the sub sector of Tools, Die and Moldmakers (TDMs) was selected, which was made up of 17 companies within the association. This group of companies was interested in extending their market and qualifying as suppliers for multinational companies located in Free Trade Zones.

The workshop-seminar took place on September 18th, 2008. Various companies from the association attended, but there was little participation by their suppliers (only one machinery supplier participated) and none by clients. This was partially made up for by requesting that a large company provide written comments explaining their quality requirements and their evaluation of local workshops' ability to comply. In addition, during the workshop-seminar a representative of the foreign trade and investment promoter PROCOMER, presented the requirements of companies located in Free Trade Zones. He also clarified that the government had recently changed the legislation in order to allow national companies to supply factories located in Free Trade Zones.

Although this workshop-seminar lasted for only one day, it was possible to conclude it with a work plan. A follow-up committee was set up to monitor various training activities (design of a professional training course on moulds and dies, organizing quality talks in companies), the creation of an inventory of relevant standards for target customers (automotive, plastics, medical and electronic instruments) and a guide to designing and manufacturing moulds. In addition, they committed to organizing two visits to companies of potential clients within the next three months.

As a result of these events, in 2009 MEIC and the companies in the association restated their commitment to following up on the agreements from the work plan. The experience of moulds and dies has shown that the Calidena methodology is a good tool that identifies companies' export potential. It is also a mechanism of integration and interaction between the public and private sectors in the framework of the National Quality System, which enables a comprehensive analysis of a country's ability to respond to the requirements of export markets.

6.4. Wood and furniture

The Calidena exercise on the wood value chain in Nicaragua was held in September, 2008 with broad participation by the stakeholders of the different links. We must highlight the participation of the owners of the community forests of the Autonomous North Atlantic Region, (the area where most of the country's forest activity takes place), who are normally excluded from these types of activities. Equally important for the workshop was the broad participation of institutional stakeholders from the government, who are involved in the regulation of the forest activity.

The participants increased their knowledge of the mandatory and voluntary standards that are important for the chain in Nicaragua, and of the different links involved. A highlight of the applied research phase was the meeting between wood producers and the manufacturing companies with their end products, finished and on sale in stores.

The identification of key issues was carried out for each link, and included the following:

In the Forest:

The high cost of forest certification, bureaucracy and the costs of complex processes to obtain permits, the inadequate scope of the National Mandatory Technical Standards related to the fauna and the non-timber forest products.

First Processing:

Metrology is not used in sawmills. Wood is often wasted due to the lack of calibration of the saw. Some are still using disc saws – instead of band saws – which gives the sawed wood an undesirable quality, the international system of units is not used, there is no equipment for analyzing logs before passing them on to the sawmill.

Second Processing:

There is a lack of standards for wood products, and a lack of qualified labour able to adapt the measuring systems to the international system, there is widespread ignorance of the existence of standards and a lack of people qualified to implement them, insufficient knowledge of drying techniques and a lack of measurement equipment.

Distribution:

The export procedures are complex and the firms do ignore the existence of several standards, regulations and procedures.

A follow-up committee was set up and its work plan drawn up. After several meetings of this committee, the members moved over to the committee of the wood value chain in Nicaragua created during a subsequent exercise involving the entire chain carried out by the GTZ/MASRENACE program, enabling it to monitor key issues of quality management.

6.5. Shrimp

At the beginning of 2007 the European Union closed its borders to shrimp and tilapia skin from Costa Rica. This decision was motivated by deficiencies in the handling and control of residues in farms and industrial plants.

This was a very alarming measure since it concerned the most profitable export market. The previous year's turnover was about US\$7.6 million from shrimp farming alone. About 25 producers were affected. Farming 1,600 hectares of pond for this type of shrimp, they provided direct employment to 1,800 people and indirect employment to another 23,000 in transportation, veterinary services, airlines and other sectors.

To have a better understanding of this issue it is important to know the conditions the European Union (EU) establishes for imports of fish, seafood and other fishing products (see http://ec.europa.eu/food/international/trade/im_cond_fish_es.pdf).

European consumers have high expectations with regard to food safety and quality. In order to meet them, European Union legislation applies the principle of quality management and process controls throughout the food chain, from the fishing vessel or aquaculture operation to the consumer's plate. Exclusive controls on the end product would not provide consumers with the same level of safety, quality and transparency.

The European Union delegates the responsibility for food safety and quality to a Competent Authority in the country wishing to export its products to the common European market (in EU terminology they are referred to as "third party countries"). This Competent Authority is obliged to guarantee an inspection and control system equivalent to the European requirements. This is a role assumed by the National Service for Animal Health of Costa Rica (SENASA).

In order to solve this problem, the affected producers from the National Chamber of Fish Product Exporters, technicians from SENASA and other representatives from the government immediately held a meeting to analyze the non-conformities detected. A complementary activity, carried out in the group with the technical support of PTB, consisted in identifying the responsibilities of the members of the chain, encouraging a commitment from SENASA to creating a residue plan, and tackling deficiencies in laboratories. There was no accredited laboratory in the country able to analyze the residues according to the detection limits required.

One immediate measure then was to contract an accredited laboratory abroad. The services of an accredited laboratory in Ecuador were obtained.

At the same time the process of extending the scope of the national laboratory (LANASE) was initiated for the purpose of accrediting testing under the ISO/IEC 17025 standard. In order to increase the credibility of the inspection, SENASA decided to begin an accreditation process for the Food Safety Department under ISO/IEC 17020. In addition, it was planned for 2009 to begin the implementation process of ISO 9001 in administration and ISO 17020 for the Quarantine and Food Departments. For 2010 the intention is to extend the scope of ISO/IEC 17020 in the Quarantine and Food Departments and to implement ISO/IEC 17020 in the Drug Department. The process is planned to be completed by the year 2011 with the implementation of a SENASA Integrated Quality Management System based on the ISO 9001, 17020 and 17025 standards.

The European Union appreciated the efforts undertaken by SENASA and the private sector to re-establish a reliable control system and in June 2008 it accepted the country as an importer of shrimp into the European market. In addition to the specific success of these activities, it is important to emphasize the way in which this experience strengthened the National Quality System (NQS). The national regulation and inspection authorities now have a clear example of the fact that a public mandate alone is not sufficient for them to be recognized as reliable by third parties. This applies not only to exports, but also to reliability within the country.

One interesting aspect to highlight is the transparency in the process through which the competent authority communicates all related activities on its web page www.senasa.go.cr.

7. Appendixes

7.1. Letter of invitation and registration



Guatemala, June 6th, 2008

Mr/Mrs
XXX

Dear Sir/Madam,

for a number of years the German National Metrology Institute (PTB) has been supporting the strengthening of quality systems in Central American countries and has also focused on encouraging exports from Central America to the European Union.

In this context you are cordially invited to the seminar ***“Quality Management in the Preserves and Marmalades Value Chain in Guatemala, with a view to exporting to the European Union”***.

The event will be held on **23rd, 24th and 25th June, 2008**, from 8.00 am to 5.00 pm, in the Oxford Conference Room in the Princess Reforma Hotel, located at 13 calle 7'65, zona 9 Guatemala.

The objective of this seminar is to **identify key problems of product quality in the links of the marmalades value chain in Guatemala, in response to the requirements of the European Union** and to draw up recommendations for improving the services of the institutions in the quality system.

To confirm your attendance please fill out the inscription form attached and send it to the following email address: cbarríos@industriaguatemala.com by 17th June at the latest.

If you have any questions or comments please contact _____, telephone _____, cell phone _____.

Yours faithfully,

Name and position



This event is developed in coordination with

GTZ DESCA, AGEXPORT
CIG AN CENPROMYPE





**Registration
Seminar
"Value chain Jams and Marmalades
in Guatemala and Quality Management"**

Name:

Surname:

Institution/Organization/Company you belong to:

Physical address:

Position:

Telephone:

Email address:

Website:

Do you export currently? Yes No

To which Markets?	What Products?

If you do not export: Would you be interested? Yes No
To which markets?

Are you interested in the European Market? Yes No
What products?

Does your company have an innovation plan?
Yes No



This event is developed in coordination with

GTZ DESCA, AGEXPORT
CIG AN CENPROMYPE



7.2. Preparation Plan

(x = Workshop-Seminar Date)

When?	What?	Who?	How?
x – 8 weeks	<p>Generate interest in the Calidena methodology among the main stakeholders of the value chain</p> <p>Identify the host for the Calidena process</p>	<p>Technical Assistance Organization</p> <p>Quality System</p> <p>Representatives of the interested sector or chain</p> <p>Calidena Host</p>	<p>Awareness-raising workshop with important stakeholders of the chain or sector, the quality system and the technical assistance organization in order to define the specific product to be worked on in the exercise under the supervision of a Calidena facilitator</p> <p>Follow the criteria below for identifying a host:</p> <p>Good reputation in the value chain</p> <p>Good connections with both the business sector and local government</p> <p>Ability to sustain the quality process after diagnostic</p>
x – 7 weeks	<p>Set the date for the Calidena exercise</p>	<p>Technical Assistance Organization</p> <p>Calidena host</p>	<p>Reach an agreement with local stakeholders and facilitators</p>
x – 6 weeks	<p>Invite representatives of clients to the workshop-seminar or prepare their representation</p>	<p>Technical Assistance Organization</p> <p>Calidena host</p>	<p>Identify foreign and domestic buyers of the product from the chain</p> <p>Invite via email, explaining the conditions of participation (travel costs, allowances and fees)</p> <p>In the event that participation is not possible, carry out a telephone or written interview</p>

(x = Workshop-Seminar Date)

When?	What?	Who?	How?
x – 5 weeks	Initiate the selection process for the participants of the Calidena exercise	Calidena host with the collaboration of the technical assistance organization	<p>The criteria for identifying possible candidates are centred on the following requirements:</p> <ul style="list-style-type: none"> 100% availability during the Calidena seminar A certain level of knowledge, prestige and reputation in the value chain Good understanding of business and economic issues from the public sector, business sector, NGOs and educational institutions
x – 4 weeks	Establish the list of participants for the workshop-Seminar	<p>Technical assistance organization</p> <p>Calidena host</p>	<p>Analyze potential participants: see the list presented under “Calidena Tools”</p> <p>Establish the number of attendees. The recommended number is between 20 and 25 people</p>
x – 3 weeks	Set the date and venue for the workshop-seminar	<p>Technical assistance organization</p> <p>Calidena host</p> <p>Facilitators</p>	<p>Criteria to decide the venue:</p> <ul style="list-style-type: none"> Adequate size to accommodate the established number of guests established Easy access. Enough room for parking. Internet access on the premises Check the conditions and Internet access personally
x – 3 weeks	Hire the venue for the workshop-seminar	<p>Technical assistance organization</p> <p>Calidena host</p>	Contract

(x = Workshop-Seminar Date)

When?	What?	Who?	How?
x – 3 weeks	Determine the number of interviews. Draw up a preliminary list of candidates for interviews.	Technical assistance organization Calidena host Calidena team (participation is not clear, neither is its composition)	See criteria and suggestions in “Calidena Tools”
x – 3 weeks	Invite the participants to the workshop-seminar. Ask them to bring laptops.	Calidena host	Explain the importance of using at least three of the six channels of communication: face to face, telephone, fax, letters, email, SMS
x – 3 weeks	Arrange appointments for the interviews	Calidena host	Explain the importance of using at least three of the six channels of communication: face to face, telephone, fax, letters, email, SMS
x – 2 weeks	Follow up on the guests and speakers	Calidena host	Explain the importance of using at least three of the six channels of communication: face to face, telephone, fax, letters, email, SMS
x – 1 weeks	Follow up on the interviews	Calidena host	By telephone
x – 0.5 weeks	Get all the material and equipment ready to use during the workshop-seminar	Facilitators	Gather together the boards, video beams, laptops, and buy all the material mentioned in “Calidena tools” if necessary
x	Implementation of workshop-seminar	Calidena host Facilitators	Prepare the boards and cards necessary for beginning of the workshop



7.3. Detailed Facilitation Instruction

The facilitation instructions for the initial Calidena exercise are the guideline for its execution and include the description of the thematic units, procedures, techniques and necessary resources. It also contains the estimated timeframes for each sequence.

It is important to emphasize that this is a guideline, not an order that has to be carried out to the letter. Its execution depends on the participating groups, their speed of learning, their academic level, etc.

Day 1:

Thematic Unit	Procedure	Technique	Resources	Time
Welcome	A top representative from an important institution or company within the chain	Oral presentation		5'
Warm up	How does the future of the sector look? Growing or shrinking market?	Closed question Thermometer or meter	Board, round stickers and workshop cards for comments	15'
1. Opening Introduction of participants	Introducing visual display rules: legible handwriting, one idea per card, no more than 7 words in 3 lines The participants fill out cards with: Name, Origin, Position and expectations Introduction at front	Individual work Plenary	Cards Markers Boards	30'
Introduction of objectives and agenda	The stated expectations are reviewed and compared to the objectives of the workshop The agenda is presented	Plenary Guided dialogue Presentation		10'
2. Conceptual basis: value chain	The concept of the chain is developed as explained in the description of the sequence	Guided dialogue	Cards Markers	45'

Thematic Unit	Procedure	Technique	Resources	Time
Quality	Facilitator asks "What do YOU understand by quality?" Answers are written on the cards	Activity: forming chains	Sufficient space Cards and markers	15'
3. The Chain The links of the chain and its stakeholders at a micro level	A space is marked out with adhesive tape on the floor for each link. A square is also marked out for supporting organizations, such as projects, etc. Participants write out cards with the name of their institution, organization or company Participants position themselves in the spaces marked according to their location in the chain Participants stick the corresponding cards on the boards prepared per link and per supporting organization, then go back to their seats	Brain storming Plenary Activity: mapping on the floor	Large workshop cards with the titles of the links and levels Adhesive tape Cards Markers Prepared boards	30'
	In work groups per link, they complete the stakeholders per link and level, and put up the cards with the names on the corresponding boards, respecting their function as business/producers, quality services, standards and regulatory institutions Results from work groups are presented	Group work Plenary Guided dialogue	Cards Markers Prepared boards	30'
	A sequence of activities is created in work groups per link and is marked with cards on the boards for each link The results are then presented in a plenary session	Group work	Cards Markers Prepared boards	60'
	Lunch break			

Thematic Unit	Procedure	Technique	Resources	Time
Quality requirements	<p>A brain storming session is carried out on:</p> <p>What relevant standards and technical regulations are there for the chain's product?</p> <p>Cards are arranged according to</p> <ul style="list-style-type: none"> • National technical regulations to be met (country of origin) • Mandatory national standards. Country of destination • Specific standards demanded by clients 	<p>Brain storming</p> <p>Plenary</p>	<p>Cards</p> <p>Markers</p> <p>Boards</p>	30'
4. Research on quality requirements	<p>Work groups are organized for Internet research and the review of documents. The number of groups will depend on the number of standards and technical regulations identified.</p> <p>Research topics refer to the chain's product:</p> <ul style="list-style-type: none"> • Mandatory quality standards and technical regulations in the country of origin • Mandatory quality standards and technical regulations in the destination country in Europe • Specific standards relevant to the client <p>Information gathered is applied by filling out the corresponding workshop cards.</p>		<p>Enough laptops with Internet access</p> <p>Electronic information flash cards and printed cards</p>	180'
Evaluation of the day	<p>What was the most surprising thing about the day for me?</p> <p>What questions do I have?</p>	Plenary	<p>Cards</p> <p>Markers</p>	15'

Day 2:

Thematic unit	Procedure	Technique	Resources	Time
Golden Thread	Throwing the ball with questions about contents from the previous day	Plenary	Ball made of cards with questions	15'
Preparation Field work	Preparation of field work		Copies of information form	30'
Field work	The participants carry out the field work			180'
	Lunch break			
Quality system in the country	Report on the quality system in the country by a representative of the system. Distinguish between the concepts of: metrology, calibration, certifications and accreditation. for types of standards and technical regulations	Plenary Presentation	Video beam Laptop	30'
Identification of key issues	In the same workgroups the information gathered is copied on to different color cards and the requirements identified are displayed according to activities per link	Plenary	Flash card in digital and printed form Cards Markers	90'
	Participants walk from one board to another and each group presents the results of their investigation and answers any questions	Activity walkabout		60'
	Evaluation of the day. What belief or conviction did I lose today?			15'

Day 3:

Thematic Unit	Procedure	Technique	Resources	Time
Golden thread	The crux of Calidena	Individual Plenary	Cards prepared according to the number of participants	45'
Continued Identification of key issues in each link	In the same groups per link key issues are identified: Question: "What is the problem preventing compliance with the requirements?" Key issues are written on pink cards and stuck on the boards, next to the requirements identified	Group work	Cards Markers	30'
5. Action plan	The pink cards are then moved to another board with the outline of an action plan In the same groups, an action plan is created with a timetable of between three and six months, people in charge and resources necessary to improve quality services in the value chain in the country Guiding question: "What actions are needed to overcome the situation?" Criteria: Where can we contribute? Where can we achieve a significant change? Where can results be achieved quickly?	Plenary	Boards Cards Markers	30'

Final evaluation of the event	The follow up committee is created: What must it do? What must it NOT do?	Plenary		30'
	The learning island. There is an anonymous final evaluation of the event	Individual Plenary	Cards Markers Copies of the evaluation sheet	30'
	Closing of the event and handing out of participation certificates and documentation CD		Certificates	15'

7.4. Form for recording the results of Internet research

Institution or Company the visited website belongs to	
Website address	
Name of the standard	
Brief description of the standard	
Relevant requirements for the different links (fill in according to the name of the link)	Link 1
	Link 2
	Link 3
	Link 4

7.5. Form for interview information

Name of the interviewee	
Company or institution	
Date and time	
Role in the chain/quality system	
Problems observed in the chain	
Proposals for solving the problems	
People who should be interviewed to check or expand on the information	
Sources of information	

7.6. Final evaluation of the workshop-seminar

Final evaluation of the workshop-seminar Quality management in the value chain				
Factors to evaluate	Poor	Fair	Good	Very Good
<p>Contents</p> <p>In relation to your expectations, how would you rate the seminar?</p> <p>What are the possibilities for you to apply the contents in your work?</p>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
<p>Methodology</p> <p>What did you think of the facilitation techniques?</p> <p>What was the level of participation like?</p> <p>How was the work environment during the sessions?</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>Facilitators</p> <p>Grasp of contents:</p> <p>Facilitated participation by everyone:</p> <p>Relationship with the participants:</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Factors to evaluate	Poor	Fair	Good	Very Good
Materials				
What do you think about the materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- amount	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- usefulness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Venue/refreshments				
Do you think the venue was appropriate for the workshop-seminar?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
What do you think about the location of the venue?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How were the refreshments during breaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality of workshop seminar				
What is your overall view of the workshop-seminar?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How did you feel during the workshop-seminar?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Additional questions might be:

- What did you learn above all from the workshop-seminar?
- In your opinion, how could we improve this workshop-seminar?
- Other comments

7.7. The Stupid Cow Syndrome

The Monitor Company worked for the government and private sector leaders of Colombia to study and provide recommendations on how leather producers in that Andean nation could become more prosperous by exporting to the United States. We began in New York City to find the buyers of leather handbags from around the world and we interviewed the representatives of 2,000 retail establishments across the United States. The data were complex but boiled down to one clear message: the prices of Colombian bags were too high and the quality was too low.

We returned to Colombia to ask producers what lowered their quality and forced them to charge high prices. They told us: "It is not our fault". They said it was the fault of the local tanneries that supplied them with the hides. The tanneries had a 15 % tariff protection from the Colombian government, which made the prices of competing hides from Argentina too expensive.

We travelled to the rural areas to find the tannery owners. The tanneries pollute the nearby ground and water with toxic chemicals. The owners answered our questions happily. "It is not our fault", they said. "It is the fault of his slaughterhouses. They provide a low quality hide to the tanneries because they can sell the meat from the cow for more money with less effort. They have little concern for damaging the hides."

We went into the country side and found slaughterhouses, with cowhands, butchers and managers wielding stop watches. We asked them the same questions and they explained that it was not their fault; it was the ranchers' fault. "You see", they said, "the ranchers over brand their cows in an effort to keep the guerrilla – some of whom protect the drug lords – from stealing them." The large number of brands destroys the hides.

We finally reached the ranches, far away from the regional capital. We had reached the end of our search, since there was no one left to interview. The ranchers spoke in a rapid local accent. They told us that the problems were not their fault ... "It is the cow's fault". The cows are stupid, they explained. They rub their hides against the barbed wire to scratch themselves and to deflect the biting flies of the region.

We had come a long way, banging our laptop computers over washboard-surfaced roads and exposing our shoes to destruction from the chemicals in the tanneries and mud. We had learned that Colombian handbag makers cannot compete for the attractive American market because their cows are dumb.

Source: Michael Fairbanks Michael Fairbanks BLAME THE COW FOR NO PROSPERITY, <http://tinyurl.com/62kqt8>

7.8. Calidena Facilitators

A Calidena project requires experts with

- Good knowledge of group facilitation
- A general understanding of the functioning of value chains and
- of quality infrastructure.

This skill will be transferred in the framework of PTB projects not only “train the trainer” (ToT) courses but also in the form of practical accompaniment, known as “coaching”.

This manual to date is based on the experience of three facilitators, involved in carrying out Calidena workshops.



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Braunschweig, September 2009

8. Glossary

5 S	The most efficient method for organizing factories based on five principles (named after the first letter in Japanese): (1) Seiri: Organization. Sorting; (2) Seiton: Order. Setting in order; (3) Seis: Cleanliness. Sweeping clean; (4) Seiketsu: Standardizing. Signaling anomalies and (5) Shitsuke: Sustaining discipline. Keep improving.
Accreditation	Formal recognition that an organization is competent to perform specific conformity assessment activities. For example, laboratories, certification or inspection bodies are accredited for specific services.
Calidena	Combination of the Spanish words for chain (of value), <i>cadena</i> and quality, <i>calidad</i> . Name of PTB's methodology.
Certification	Attestation by a third party in relation to products, processes, systems or people.
Competent Authority	The European Union requires a third party country wanting to export products of animal origin to establish a control system equivalent to that of the EU. The ministries assuming this control function are called competent authorities.
Competitiveness	Ability to achieve profitability equal or superior to competitors in the market. The concept is dynamic and involves innovation and customer satisfaction.
Golden thread	A training activity in which a group of course participants summarizes in a creative way what was learned the previous day. It serves to refresh and check learning.

Conformity	Compliance of a product, service, process, system, individual or body with the requirements specified.
Conformity assessment	Any activity whose objective is to determine directly or indirectly whether the requirements specified for a product, process, system, individual or body are met. Conformity assessment includes activities such as: sampling, testing, inspection, certification; as well as the accreditation of conformity assessment bodies.
Continuous improvement	Tool for increasing productivity that encourages steady and consistent growth of all segments of a process. Quality management systems are used to reach the quality objective.
Equipment calibration laboratories	Metrological laboratory that measures equipment of a certain size against a superior standard. A distinction is made between the national laboratory which defines the primary national standard and secondary laboratories belonging to universities, research centers or private companies for the quality control or testing for all kinds of measuring equipment.
Market failures	Term used by economists to describe the situation produced when the market supply of a product or service is not efficient.
Governance	New way of "governing" or coordinating non-hierarchical networks. It is applied to the interaction of stakeholders in a value chain.
Inspection	Assessment of the design of a product, the product, a process or facilities and determination of its conformity with specific requirements or, on the basis of professional judgment, with general requirements. Inspection of a process may include inspection of people, facilities, technology and methodology.

Legitimate interests of states	According to the rules of the WTO, states have the right to create technical regulations to protect the safety and health of their population and the environment.
Metrology	Measurement science. A distinction is made between scientific, legal and industrial metrology.
National Quality System	Group of bodies responsible for the quality infrastructure of a country. It usually includes metrology, standards and accreditation bodies.
Pareto Principle	Prioritization method based on the 80/20 rule.
Proficiency testing	Use of inter-laboratory comparisons to determine the individual performance of laboratories in carrying out specific testing or measurements.
Quality	Degree to which a group of inherent characteristics meets requirements. It is demonstrated by customer satisfaction.

Quality infrastructure	All the institutions that provide services enable compliance with existing regulations and knowledge and application of the quality requirements of specific markets.
Quality services	Direct providers of companies: calibration and testing laboratories, certification and inspection bodies.
Standardization	Writing and approval of standards established to guarantee the fitting together of independently built elements, as well as guaranteeing spare parts where necessary, guaranteeing the quality of manufactured elements and their safe functioning. Unlike technical regulations, standards are created by private organizations and compliance with them is voluntary.
Supporting institutions	Public, private or mixed bodies providing specific services to companies. For example, training, financing and certification of products and processes.
Systemic competitiveness	Conceptual approach that distinguishes four levels of competitiveness: meta, macro, meso and micro.
Technical obstacles to trade	Bi- and multilateral agreements attempt to facilitate trade and eliminate technical obstacles to it. Exceptions are only tolerated when they involve the legitimate interests of states (see here).

Technical Regulations	Act issued by the competent authority, which establishes the characteristics of a product or service or related products, with the inclusion of applicable administrative dispositions, and observance of which is mandatory or imperative.
Testing	Determination of one or more characteristics of an object evaluated for conformity according to a procedure. The term is applied in general to materials, products or processes.
Testing and analysis laboratories	Laboratory that performs conformity testing.
Third party	Individual or organization recognized as independent from the interested parties. Interested parties are usually the supplier's interests (first party) the customer's interests (second party).
Traceability	Ability to trace or leave records of movements and processes gone through by a specific product, mainly intended for human consumption. The concept is also applicable to the logistics management of warehouses, inventories, production processes of any product, etc.
Value chain	Complete range of activities carried out by companies taking the product from its creation to its end use and beyond. This process includes materials, production and distribution and it usually involves a number of companies and supporting institutions.

The Physikalisch-Technische Bundesanstalt (PTB) is the German National Institute of Metrology and is, with its 1,800 associates, a global player in the world of quality.

Since the beginning of German cooperation on development, the International Technical Cooperation of the PTB has been supporting developing countries (see <http://www.ptb.de/en/org/q/q5/index.htm>). Not only has a great deal been achieved in four decades, a lot has also been learned. Currently, the Technical Cooperation supports counterpart countries in:

- Adjusting their quality infrastructure to international agreements to facilitate their participation in global trade,
- Ensuring the protection of the consumer, the environment and health and
- Facilitating the fair exchange of goods.

Through the Calidena methodology, the PTB supports developing countries in further adapting their infrastructure to the needs of local companies, in particular fostering the access of SMEs to quality production.

Calidena is a PTB methodology developed with the support of the knowledge management company "mesopartner".

For further information about Calidena go to the website www.calidena.de or email Reinhard.Schiel@ptb.de

