

Capacity building in Food Quality and Safety

*Evaluating the improvement of national food control systems
in the developing world*

MSc thesis
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Abbreviations

ADB	Asian Development Bank
AGNS	Food Quality and Standards Service
AS	Assurance System
BSc	Bachelor of Science
BSE	Bovine Spongiform Encephalopathy (mad cow disease)
CBI	Coffee Board of India
CIDA	Canadian International Development Agency
DANIDA	Danish International Development Agency
DEFRA	Department of the Environment, Food and Rural Affairs (UK)
EBA	Everything But Arms (Agreement)
EC	European Commission
ECDPM	European Centre for Development Policy Management
FAO	Food and Agriculture Organization of the United Nations
FS	Food Safety
FSQ	Food Safety and Quality
FSA	Food Safety Authority
FQM	Food Quality Management
GAP	Good Agricultural Practices
GDP	Gross Domestic Product
GEF	Global Environment Facility
GLP	Good Laboratory Practices
GMP	Good Manufacturing Practices
HACCP	Hazard Analysis and Critical Control Points
IEC	Information, Education and Communication
IFPRI	International Food Policy Research Institute
INTRAC	International NGO Training and Research Centre
ISNAR	International Service for National Agricultural Research
ISO	International Standards Organization
logframe	Logical Framework (FAO)
NGO	Non-Governmental Organization
NMTPF	National Medium Term Priority Framework (FAO)
NSVFSA	National Sanitary Veterinary and Food Safety Authority (Romania)
OECD	Organisation for Economic Co-operation and Development
OTA	Ochratoxin A
SMART	Specific, Measurable, Appropriate, Realistic and Temporal
SOP	Standard Operating Procedure
SSOP	Standard Sanitation Operating Procedure
TCP	Technical Cooperation Programme (FAO)
TF	Trust Fund Project (FAO)
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNU	United Nations University
USAID	United States Agency for International Development
USD	US dollar
wb	Wet Basis (when referring to moisture content)
WB	World Bank
WBI	World Bank Institute
WHO	World Health Organization

Foreword

When looking for a suitable topic for my thesis, my attention was drawn by the research area “Food Quality and Public Administration”. Of all research areas, this one was least discussed during the study programme Food Quality Management, as most focus was on the food production and distribution chain. Still, the field of international food trade, standards and compliance by developing countries seemed very interesting to me. Knowing that the FAO was an authority in this field, I decided to look for a project that could both serve the needs of the FAO as provide value for a thesis project in this field.

After receiving some basic information about the topic that the FAO would be interested in (indicators for measuring the impact of capacity building activities), I started with a literature research on capacity building. The discussion about this topic was amazingly broad and vivid. Moreover, very little information could be found on evaluation of such activities in the specific field of food quality and safety. This meant that a need existed for a fundamental basis for discussion, which highly interested me. This report seeks to provide this basis for discussion, and gives recommendations for an evaluation approach. Also, reference is made to the set of generic indicators that was produced during my project at the FAO. This set can serve as a valuable tool in creating consensus between stakeholders when discussing the evaluation activities for a project.

Working on this project has been a very interesting quest for me, given the fact that the topic was relatively little touched upon in literature. It really strengthened my interest in international development and food quality management on national level. I hope that this report can serve as an interesting and valuable source for others who are interested in these areas.

Summarization

Since the occurrence of some major crises, pressure on food quality and safety increased. In the international field, policies and standards are developed to which food business operators should comply. Governments have responded by creating policies and establishing national control agencies to protect the consumer. Producers have for instance implemented new labelling directives and food safety control systems.

For developing countries, it is hard to comply with international standards and to improve safety and quality of food on the domestic market. For decades, international initiatives have been taken to improve the situation in developing countries, with regard to health, economics and food. An approach to development that is often mentioned as the most current one, is “capacity building” or “capacity development”. The discussion about this approach, the definition, and about suitable ways to monitor and evaluate its impact, is very vivid.

Capacity building in food quality in the field of food quality and safety can be done by strengthening countries’ national food control systems. A national food control system can be divided in five building blocks ((1) *food control management*, (2) *food legislation*, (3) *food inspection*, (4) *official food laboratories*, (5) *food safety and quality information, education and communication*). In order to evaluate the true impact of capacity building activities that attempt to strengthen this control system, also the influence on “food chain” level should be assessed. For this, expectations with regard to changes in FQM functions and decisions on food chain level have to be concretely expressed, as well as expectations with regard to how these functions and decisions will be improved by strengthening one or more of the buildings blocks. This means that the basis for a good evaluation should already be created during the planning of capacity building activities.

Indicators can be useful tools for evaluating projects. Still, the variety in food products, their composition, behaviour and processes largely differ, as well as various projects and countries. For this reason, it is not possible to create one set of indicators that is directly applicable to the evaluation of all capacity building projects. Still, it is possible to define a set of generic indicators which can serve as a basis for further refinement (Appendix 2). This refinement process is important for reaching consensus between stakeholders on expectations with regard to a project. Therefore, stakeholder involvement is very important during the discussion on specific indicators.

In order to increase reliability when judging a project on such indicators, an evaluation scorecard (as presented in paragraph 4.4.) can be used, which:

- Uses baseline data and targets
- Assesses changes in NFCS
- Assesses the influence on the food chain
- Provides clear judgements (*in terms of a percentage and variables which are ordered according to the five building blocks*)
- Is based on the fact that capacity building is a process, more than a final outcome, since it demands a measurement over time
- Is applicable to different countries, projects and specific food products

1 Introduction

1.1 Pressure on food quality and safety

Food quality and safety are very complicated topics that influence a broad variety of sectors like the industrial, the agricultural, the commercial and the health sector. This impact was already recognized by international authorities like the FAO and WHO in the late seventies (Anyanwu 1990). From this period on, programmes have been planned in order to deal with the issue of food safety. Nonetheless, major food safety crises have taken place over the last decades. Examples are the spread of BSE, spreads of Food and Mouth disease and the dioxin crisis in Europe, or salmonella and E. Coli outbreaks in the United States (Hobbs, Fearn and Spriggs 2002; Garcia & Jukes 2004). Another example is the spread of Avian Influenza from Asia into parts of Europe and Africa¹. These events have contributed to a drastic increase of attention paid to food quality and safety of all parties involved in the production and human consumption of food.

Consumer concern has grown, not only with regard to safety, but also to topics like genetic modification, production origin, food additives and animal welfare (FAO/WHO 2003). Producers, driven by these growing consumer demands and stricter regulations, have implemented new labelling directives and food safety control systems. Examples of these systems are HACCP, ISO, BRC or TQM, but also different kinds of tracking and tracing systems.

Governments have put their efforts into developing policies and establishing national control agencies to protect the consumer, by striving for food quality and safety assurance (Hobbs, Fearn and Spriggs 2002, EC 2002). Measures to ensure this safety can vary depending on the type of product, the step in the food production chain, the size and capacity of the business, etcetera². The demand increases to "integrate and improve the coordination of regulatory activities"³. Countries seek for more coherence between their legal and administrative framework, by establishing a primary authority to oversee the complete food production system⁴. The need for harmonization of food safety and quality standards increases as food trade internationalizes (FAO/WHO 2003).

1.2 International field

In a world where markets are becoming more and more international, food safety too becomes more than a local or national concern. Food safety cannot be reached by merely enforcing measures on local producers, but also requires a focus on foreign producers and trading companies.

In the international field, the WTO has decided to treat the Codex Alimentarius as the source of international standards on food safety. This Codex was developed by the FAO and WHO in 1963 to serve the following purposes⁵:

- protecting health of the consumers
- ensuring fair trade practices in the food trade
- promoting coordination of all food standards work undertaken by international governmental and non-governmental organizations.

Until recently, most food safety regulatory systems were aimed at the removal of unsafe food from the marketplace. During the past decade, more scientific knowledge on food-borne illnesses and causes has become available, serving as a basis for a more preventive approach to food safety control (FAO/WHO 2003).

1.3 Developing countries

In developing countries, food systems continue to be stressed, due to growing populations, urbanization, lack of resources and problems of environmental and food hygiene. Food systems in these countries are often less well organized and developed compared to the industrial world⁶.

¹ <http://www.ifpri.org/themes/avianflu/avflu.asp>

² http://www.fao.org/ag/agn/food/quality_en.stm

³ <http://www.fao.org/legal/legstud/ls87/ls87e.pdf>

⁴ <http://www.fao.org/legal/legstud/ls87/ls87e.pdf>, 10

⁵ http://www.codexalimentarius.net/web/index_en.jsp

⁶ http://www.fao.org/trade/docs/LDC-foodqual_en.htm

Moreover, in many developing countries there is still a gigantic problem of under nourishment and micronutrient deficiencies. Already in 1978, the FAO/WHO established a categorization to typify the stage of development for countries, with regard to food security. These are:

- Situation A: Lack of basic hygiene, including food hygiene; high morbidity and mortality; high illiteracy; lack of potable water; subsistence farming; no industrial development; no market economy.
- Situation B: Some basic hygienic practices and food hygiene practices; supply of potable water; medium morbidity and mortality; some literacy; some agricultural development; some industrial development.
- Situation C: Good basic hygienic practices and good food hygiene; plenty of potable water; low morbidity and mortality; most people literate; agriculture well developed; industry well developed; market economy well developed⁷.

When these basic needs are not even met, it might be premature to put effort in tackling food quality and safety issues that are of more complex nature, or have less impact on consumer health.

In 2001, the 'Everything but Arms' (EBA) trade agreement went into force. This agreement was an initiative of the European Union, in order to enable the least developed countries to tax-free import products into the European Union. Still, the European Union has a tendency to impose technical standards with regard to food safety that are stricter than global demands⁸. WTO allows such trade barriers, as long as they are based on scientific grounds (Bureau et al. in Krissoff et al. 2002). Precise regulations with regard to trade barriers are specified in through the Sanitary and Phytosanitary (SPS) Agreement and the Technical Barriers to Trade (TBT) Agreement. The question is whether the free market access for developing countries really has any input, when these countries are forced to comply with high food quality and safety standards. Some countries accuse the EU of veiled protectionism.

On the other hand, meeting international standards may be a good motivation for developing countries to take upon an active attitude to food quality and safety. This serve as an incentive for developing countries to put effort in improving their regulatory system with respect to food quality.

For example, Morocco has recently put effort in reforming its regulatory system, striving for shared responsibility between government, industry and consumers (Majdi in Hanak et al. 2002). This process is described by Majdi as a shift from "system based on repressive control" towards "a modern control system based on preventive maintenance and a permanent dialogue between government and industry representatives". Although the author stresses some difficulties involved in this process, he suggests that the "new approach" may provide a "particular opportunity for developing countries".

Also in other developing African countries, case studies have been done concerning the development of a National food control system⁹. Different countries have made large steps towards the creation of such a system and there is a lot of speculation about the crucial success factors for these situations. The success of a food control system can be measured in different ways. Of course, the domestic levels of food quality and safety are very important indicators for the success of food regulation. After all, these factors influence health and prosperity in developing countries. On the long term though, domestic food safety and quality might not be the most important driver for development. Since food export is an important business for African countries, it is also very important that the food quality and safety of produce comply with standards from importing countries.

1.4 Problem statement

Many efforts have been taken since the late seventies to improve the food quality and safety situations of nations. To developing countries, for which complying with international standards can be a major struggle, due to weak regulatory systems and technologies, international help has been offered to improve the situation. Different strategies that have been used over the past decades will be further discussed in the next chapter. As will be clarified, there is much discussion on "the way to do development". The current focus of organizations that conduct developmental programmes seems to

⁷ Anyanwu, Jukes - Food safety control systems for developing countries.pdf

⁸ <http://www.vib.be/FarmersAtWork/NL/Teeltmethodes/Gangbare+teelt/Voedselveiligheid/>

⁹ http://www.fao.org/ag/agn/food/meetings_precafrica_en.stm

be on the “National food control systems” of countries. These organizations often refer to their programmes as “capacity building” or “capacity development”¹⁰. To make claims about the success or failure of development programmes and activities, there is a strong need for a clear system to evaluate such activities. Also, a clear evaluation approach can be very useful in discussions among stakeholders on setting objectives for certain programmes. Although the need for an evaluation system is often expressed by involved organizations, they face major struggles when trying to clearly formulate an evaluation approach. For the specific field of food quality and safety, little literature exists on the impact that improving governmental policy has on the safety and quality of products produced in a certain country, especially when it comes to developing countries. Given the fact that developmental programmes in this field have been conducted for decades, it could be concluded that a lot of attempts to improve national food quality and safety situations have been made, without a scientifically based approach to evaluate them. The focus of this thesis is partly influenced by the need that the FAO expressed to “have indicators to measure the impact of capacity building activities” in the field of food quality and safety.

The goal of this research is hence:

“To design a clear, scientifically underpinned and applicable instrument for evaluating capacity building activities in the field of national food quality and safety, which can serve as a basis for further discussion among stakeholders”

The ambition of this research is not to provide a generic and complete evaluation approach that can be directly applied to all activities in this field. Since available research on the topic of this thesis is relatively limited, this study will be of an explorative nature. Also, the goals and strategies of activities vary between different organizations and situations¹¹. In this report some an evaluation instrument will be provided that is based on literature and expert opinions. This instrument should serve as a basis for further refinement and application by practitioners in the field of capacity building.

In order to develop the evaluation instrument, an answer has to be provided to the question:

“What variables should be measured, and on which moment, to provide insight in the impact of capacity building activities?”

To answer this question, insight has to be gained into the following sub-questions:

1. What is the aim of capacity building activities?
2. What is the supposed influence of a National food control system on food quality and safety?
3. Which factors determine whether a National food control system is improved by capacity building?
4. Which variables can be formulated to measure these factors?
5. When should these variables be measured?

¹⁰ These terms will be used interchangeably in the report and will be further discussed in paragraph 2.2.

¹¹ The approach of the FAO will serve as most important reference for this research

2 Theoretic background

2.1 Introduction

For many years activities have been conducted in order to assist developing countries to reach higher standards in quality of life, not only in the field of food quality and safety, but also with regards to education, health, population control and the general prosperity of people (World Bank 1998 in Lusthaus et al. 1999). There has been a change in scope of these activities over time, which has led to various concepts of development. In this chapter, an overview is given of the history from which capacity building has arisen. Subsequently, different views on the meaning of “capacity building” are discussed. In paragraph 2.2.4, the approach of the FAO to the topic is discussed. Different models will be used to depict the processes involved in food quality management and capacity building.

2.2 Capacity development

2.2.1 Capacity in food quality management

In order to reach higher food safety, all actors involved should play their parts in striving for high standards. Who these actors are and what “their parts” comprehend depends on local situations and the structure of the food production chain. Influencing factors might be the power of the government, the presence of controlling agencies, the knowledge of different actors, etcetera. All these factors together determine the capacity to reach high(er) food quality and safety. This “food safety and quality capacity” can be described as:

“The ability of individuals, organizations and systems along the farm-to-table continuum to perform appropriate functions effectively, efficiently and sustainably in order to ensure the safety and quality of food for domestic consumption and export” (FAO 2006a)

The process of increasing this capacity, in whatever way, is called “capacity building” or “capacity development”. From literature, many diverse ideas about this activity arise, which will be discussed in the next paragraph.

2.2.2 History and definitions

The concept of capacity development activities has shifted over time. Lusthaus et al. (1999) give an overview of these different concepts, which is presented in Appendix 3. The last mentioned concept in this table, “capacity development” (or: capacity building), can be seen as an umbrella concept. Capacity development is a bundling of “*approaches, strategies and methodologies which are used by national participants and/or outside intervenors to help organizations and/or systems to improve their performance*” (CIDA 2004). However vague this definition may be, many actors in the field of development (countries, donors, executing agencies) treat the concept “capacity development” as a driver in discussions about development (Morgan 1998; Horton et al 2000). Therefore, using the concept has both positive as negatives sides. On one side, the concept can work as an “integrating source to bring together a large number of stakeholders”. On the other side, the term is used more as a “slogan than as a term for rigorous development work” (Lusthaus 1999). Due to the broadness of the term, confusion might arise in using it as a basis for setting up projects, especially when a large number of people with diverse interpretations are involved. After all, as becomes clear from the previous paragraph, since the discussion about the mere definition of “capacity” is already large, discussion about “how to *reach or develop* this capacity”, intrinsically, are even larger.

Lusthaus states that “organizations define themselves in terms of their position within the international system, their decision-makers, organizational history and philosophy” and that it is “apparent that they [organizations] approach capacity development in terms of how they define themselves”¹². Remarkably, amongst the multilaterals UNICEF, IFAD and the World Bank, there was no commonly accepted definition of capacity development. Also, 60% of the donor organizations surveyed “did not have a common agency definition that was authorized or in common use throughout the organization.” (IWGCB, 1998 in Lusthaus et al. 1999).

¹² This provision brings along strong implications for the specific way in which FAO seeks to improve food quality and safety. The character and mandate of the organization lead to a government-focussed approach, and evokes an objective role as mediator (or forum) for the FAO itself.

The following table gives an overview of the diversity in definitions for capacity development.

Table 1 Definitions of Capacity Development

No.	Definition
1	"Capacity building is the ability of individuals, groups, institutions and organizations to identify and solve development problems over time." (Peter Morgan, 1996)
2	Capacity development is a concept which is broader than organizational development since it includes an emphasis on the overall system, environment or context within which individuals, organizations and societies operate and interact (and not simply a single organization). (UNDP, 1998)
3	Capacity development is "... any system, effort or process... which includes among it's major objectives strengthening the capability of elected chief executive officers, chief administrative officers, department and agency heads and programme managers in general purpose government to plan, implement, manage or evaluate policies, strategies or programs designed to impact on social conditions in the community." (Cohen, 1993)
4	"... capacity is the combination of people, institutions and practices that permits countries to reach their development goals ... Capacity building is... investment in human capital, institutions and practices" (World Bank, 1998)
5	Capacity building is any support that strengthens an institution's ability to effectively and efficiently design, implement and evaluate development activities according to its mission (UNICEF-Namibia, 1996)
6	"Capacity building is a process by which individuals, groups, institutions, organizations and societies enhance their abilities to identify and meet development challenges in a sustainable manner." (CIDA, 1996)
7	Capacity development: "The process by which individuals, groups, organizations and societies increase their abilities: to perform functions, solve problems and achieve objectives: to understand and deal with their development need in a broader context and in a sustainable manner" (UNDP, 1997)
8	Capacity strengthening is an ongoing process by which people and systems, operating within dynamic contexts, enhance their abilities to develop and implement strategies in pursuit of their objectives for increased performance in a sustainable way" (Lusthaus et al. for IDRC, 1995)

Source: Adapted from Lusthaus et al. 1999

A few things in general can be said about the way in which different authors look upon the term "capacity development". It is clear that capacity development is a response to earlier, little effective, programs which can be described as "starting from scratch to build institutions based on supposedly universal models taken from industrialized countries of the West" (Morgan, 1993 in Lusthaus 1999). The focus of capacity development is more on the contribution and self assessment of the developing country, and the strengthening of already-present indigenous capacities.

Since this study is merely focussing on food safety and quality, the following comprehensive definition will be used for capacity development in the field of food quality and safety management:

"the process through which relevant stakeholders from farm to table (including government agencies, food enterprises and consumers) improve their abilities to perform their core roles and responsibilities, solve problems, define and achieve objectives, understand and address needs, and effectively work together in order to ensure the safety and quality of food for domestic consumption and export." (FAO 2006a)

2.2.3 Approaches, levels, dimensions

A remark has to be made before going into different focus areas of capacity developing activities. In literature, the terms "level" and "dimension" are often used to address different entities. In this study, the term *level* will be used to describe the extent of a certain structure. A higher level consists of multiple lower levels. The term *dimension* will be used to define the nature of an activity or a set of activities. When referring to literature, the above definitions will be followed, which means that terms might differ from the terms that are used in the original sources.

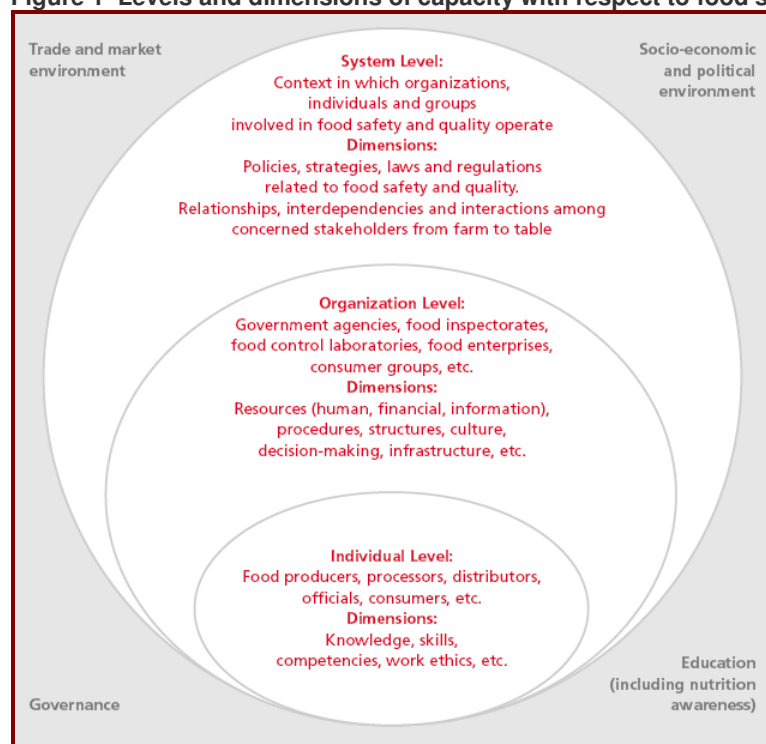
Traditionally, capacity building has been conceived as having two dimensions (Brown 2002)

- human resources
- organizational functions

Environmental influences on organizations, whether these are public or private organization, ask for a third dimension. The UNDP refers to this dimension as “the societal” one, but different terms can be found in other literature¹³. In other literature, other distinctions can be found, which are in essence very much alike.

In this study, a distinction will be made between three levels, each containing specific dimensions of capacity. This distinction is a broadly recognized in different sources, and also, it is used by FAO (FAO 2006a). Further on in this report, reference will be made to the approach that FAO, as an authority in the field of national food quality and safety capacity building activities, uses. Therefore, it is decided to use the distinction below as a reference for this study.

Figure 1 Levels and dimensions of capacity with respect to food safety and quality



Source: FAO 2006a

2.2.4 Approach of the FAO

As clarified in paragraph 2.2, a broad discussion is going on about the definition of the term “capacity” and the broader concept of capacity building. In order to assess capacity building in the field of food quality and safety, and in order to make clear recommendations, it is of utmost importance to first clarify the definition of capacity building as it will be used in this research.

For this research, the specific FAO definition of capacity building in the field of food quality and safety will be used, that was already mentioned in paragraph 2.2.2:

“...the process through which relevant stakeholders from farm to table (including government agencies, food enterprises and consumers) improve their abilities to perform their core roles and responsibilities, solve problems, define and achieve objectives, understand and address needs, and effectively work together in order to ensure the safety and quality of food for domestic consumption and export.” (FAO 2006a)

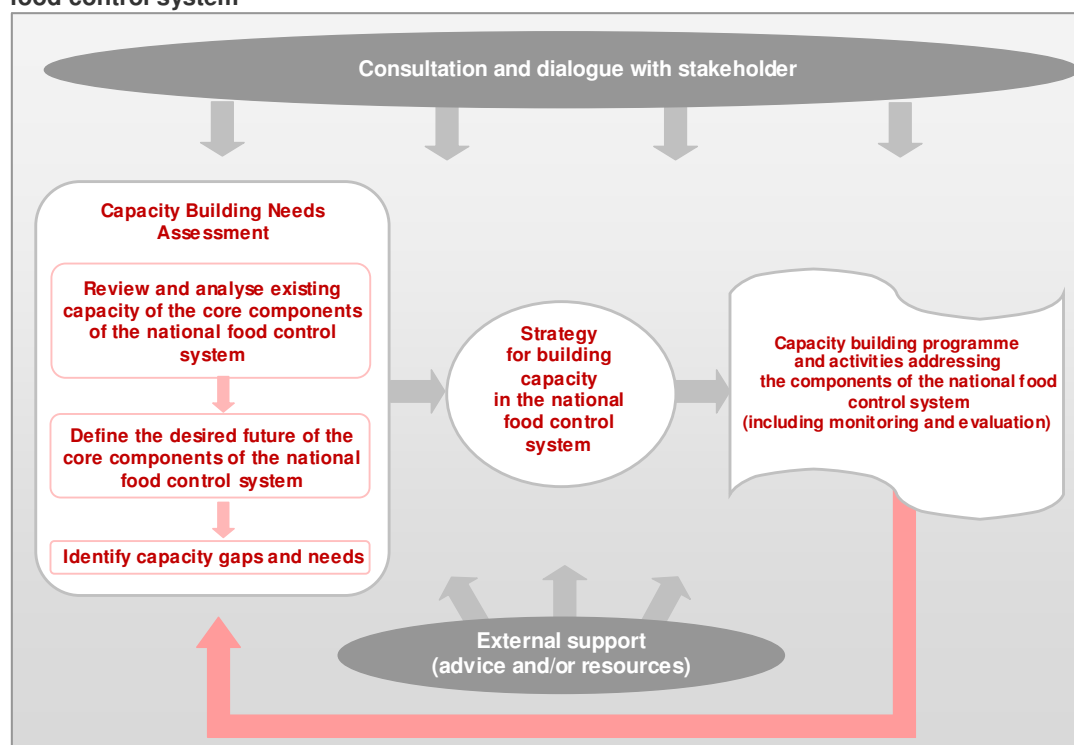
In the “Guidelines to assess capacity building needs” (FAO 2006a), the figure below (Figure 2) is provided as an overview of the process of capacity building. In this figure, an arrow is drawn from the box “Capacity building programme and activities addressing the components of the national food control system”¹⁴ back to the box “Capacity building needs assessment”¹⁵, which implies a feedback

¹³ Such as “institutional level” or “system level”. In this report, the latter term will be used

¹⁴ The term “national food control system” will be discussed later on in this paragraph

process. Also, the need for “monitoring and evaluation” is mentioned. It does not become clear from the Guidelines what exactly should be monitored and evaluated, besides the fact that it should concern “components of the National food control system”. Therefore, in the way it is presented now, it seems like the evaluation should only be focussed on assessing the changes that have been made in the National food control system. When measuring impact of programmes, it would be better to extend the scope, and also assess what influence a capacity building programme has on the food quality and safety situation. If this influence is *not* examined, the evaluation will only assess “internal” improvements of the National food control system, while the actual strength of this system lies in how it is influencing the way in which food is handled by food business operators. If such influence is absent or adverse, one cannot claim that positive impact has been reached by implementing the capacity building programme. More information on the scope of evaluation, and different levels and areas of food quality management will be discussed in paragraph 2.3.2.

Figure 2 Capacity building needs assessment as an initial step in the process of strengthening a National food control system



Source: Adapted from FAO 2006a

When using the distinction as shown in Appendix 6, it can be said that FAO takes on a system approach in order to improve food quality and safety in developing countries. The focus of the activities is largely on government organizations and representatives, and the evaluation is primarily focussed on the food control system as such. By training, creating and disseminating tools and guidelines, assisting in setting up food law, and improving interaction between stakeholders, FAO tries to improve *National food control systems*. The focus of these activities is on one or more of the so called five *building blocks of a National food control system* (FAO 2006a):

1. Food control management
2. Food legislation
3. Food inspection
4. Official food control laboratories
5. Food safety and quality information, education and communication

A short explanation of these building blocks is provided in the table below. A more comprehensive explanation can be found in Appendix 4.

¹⁵ Only to clarify the goal of this research, the “feedback” arrow has been given a red colour in Figure 2. It was grey in the original document

Table 2 Explanation of the five building blocks of a national food control system**Food control management**

Food control management is the continuous process of planning, organizing, monitoring, coordinating and communicating, in an integrated way, a broad range of risk-based decisions and actions to ensure the safety and quality of domestically-produced, imported and exported food for national consumers and export markets as appropriate. Food control management covers the various policy and operational responsibilities of competent government authorities responsible for food safety and quality and provide a sound framework for food control activities.

Food legislation

Relevant, up-to-date and enforceable food legislation is an essential part of a modern food control system. Sound laws and regulations are essential to create an enabling and predictable environment in which to develop and enforce food safety measures based on risk analysis. Food legislation protects the rights of consumers and defines the responsibilities of food producers, processors, manufacturers, traders and consumers, helping to ensure that food is safe, wholesome and fit for human consumption. Food laws and regulations establish clear, appropriate and fair rules that facilitate trade in foods, and protect consumers from fraudulent practices.

Food inspection

Food inspection, based on risk analysis, is a vital component of a modern food control system. Food inspection protects consumers by ensuring that domestically-produced or imported food is handled, stored, manufactured, processed, transported, prepared, served and sold in accordance with the requirements of national laws and regulations. In addition, inspection and verification of food exports promotes confidence in the safety and quality of exports, which is essential for international trade.

Official food control laboratories

Food control laboratories are an essential part of a National food control system. Analysis of food samples for physical, chemical and microbiological contamination is important to verify the safety and quality of food (including compositional characteristics, nutrition values, adulteration, presence of contaminants, etc.) that is produced domestically, imported and/or exported, and to enable appropriate action to be taken to protect consumers whenever necessary.

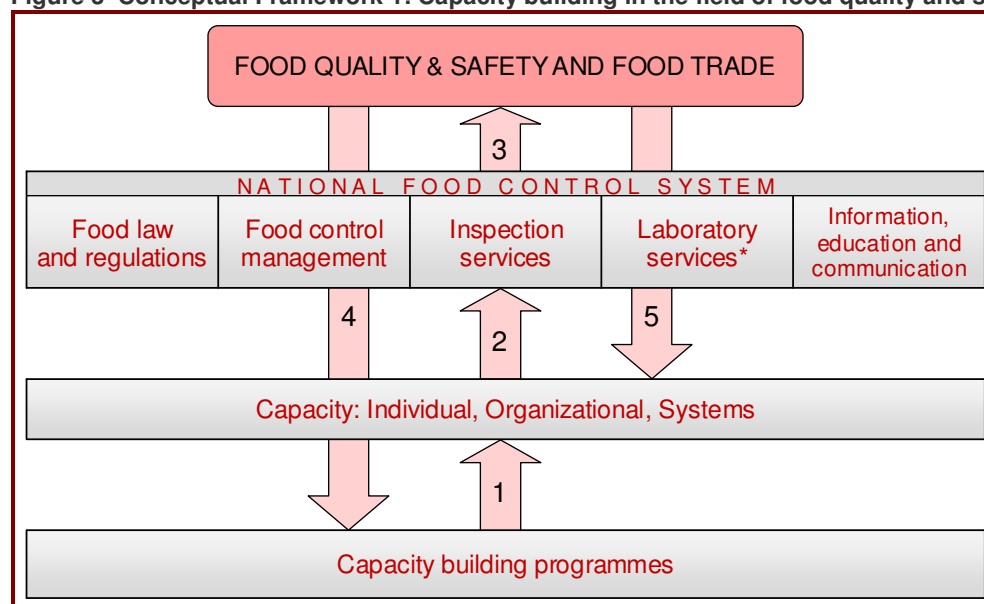
Laboratories are responsible for analysis food samples to detect, identify and quantify contaminants (such as pesticide residues or heavy metals), and for analysing specimens from humans and foods implicated in food-borne illness outbreaks to identify the causes and sources. They also provide support for food law enforcement. The scientific information produced by food control laboratories also informs and supports policy and decision making processes related to food safety and quality, for instance to design surveillance and monitoring programmes that target priority hazards or to investigate adulteration, misleading information, fraud, consumer complaints, disease outbreaks, etc. and other emerging food safety and quality issues.

Food safety and quality information, education and communication (IEC)

Information, education and communication (IEC) plays an important role in an effective food control system by increasing awareness and knowledge about food safety and quality issues among consumers and their organizations, food producers, processors, traders, food enterprises, industry associations and others, and empowering them to enhance food safety and quality for themselves, or for those who consume the food they produce and/or market. Governments can use IEC to educate consumers about food safety and quality, and to encourage the food industry to adopt good agricultural, manufacturing, hygiene and handling practices (including HACCP)

Source: Adapted from FAO 2006a

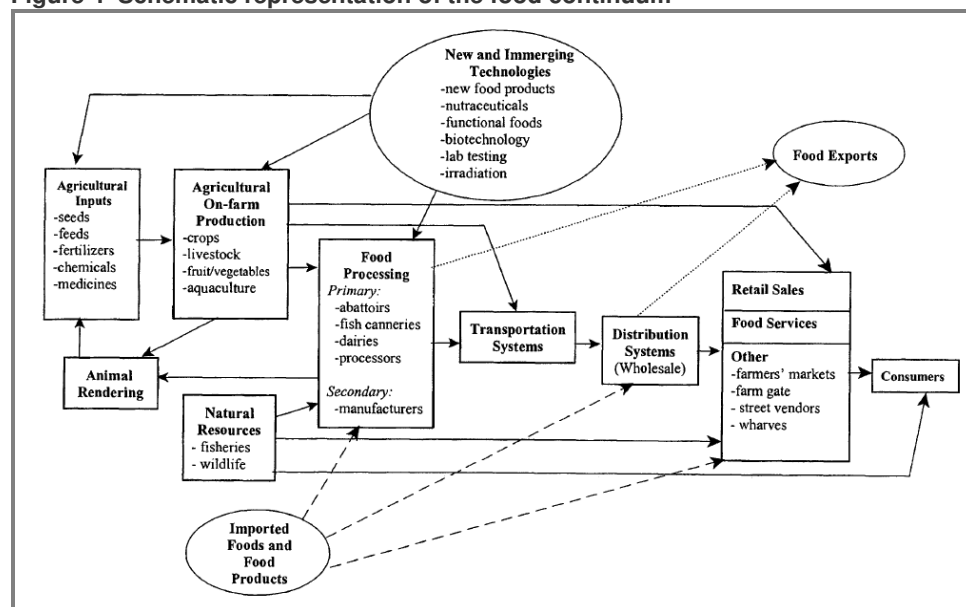
The assumptions that are made with regard to the process of improving a National food control system could be depicted as done in Figure 3. It is expected that capacity building programmes will improve capacity (of whatever kind) on individual, organizational or system-level (1). This improved capacity will subsequently promote the strength of one of the five building blocks (2), which will eventually result in higher food quality and safety (3), and increasing food exports. The other way around, the food quality and safety context will influence the different kinds of capacity, and will put down constraints and opportunities on the possibilities to conduct certain activities. These forces are represented by the downward pointing arrows (4 and 5).

Figure 3 Conceptual Framework 1: Capacity building in the field of food quality and safety

2.3 Food quality management

2.3.1 Functions, relations and decisions

As already mentioned in paragraph 1.1, food quality and safety are complicated issues that involved a broad variety of sectors. Problems can arise in all steps of the agricultural farm-to-fork production chain, or: the food continuum. In Figure 4, food can be seen as a vector, which “acquires positive or negative attributes” during the different steps in the continuum. Both materials as humans can enter and leave the systems at different stages, introducing all kinds of contaminations (Le Maguer 2004). These contaminations can cause problems of microbiological, chemical, biochemical, physical and physiological nature, influencing both safety as other quality aspects (Luning et al, 2002, Table 2.2). Efforts can be made to limit the risks or inferiority of end-products, for instance by introducing control points, tracking and tracing systems, risks assessments, procedure descriptions, hygienic design, input specifications.

Figure 4 Schematic representation of the food continuum

Source: Le Maguer (2004)

The complexity of all interactions in the food-continuum can be presented in a simplistic way, by depicting the concept “food quality” in a two dimensional relationship model. It is very important to acknowledge the “dynamic and complex character of perishable food in combination with the dynamic and often unpredictable behaviour of people involved in food production” (Luning & Marcelis, 2006). The model below is based on those considerations.

Figure 5 Food Quality Relationship Model

Food Quality = f (Food Behaviour x Human Behaviour)

Food Behaviour = f (Food Dynamics x Technological conditions)

Food Dynamics: i.e. variability in properties due to e.g. variable compositions, enzyme activities, or level of pathogens
Technological conditions: like process conditions, equipment and building circumstances

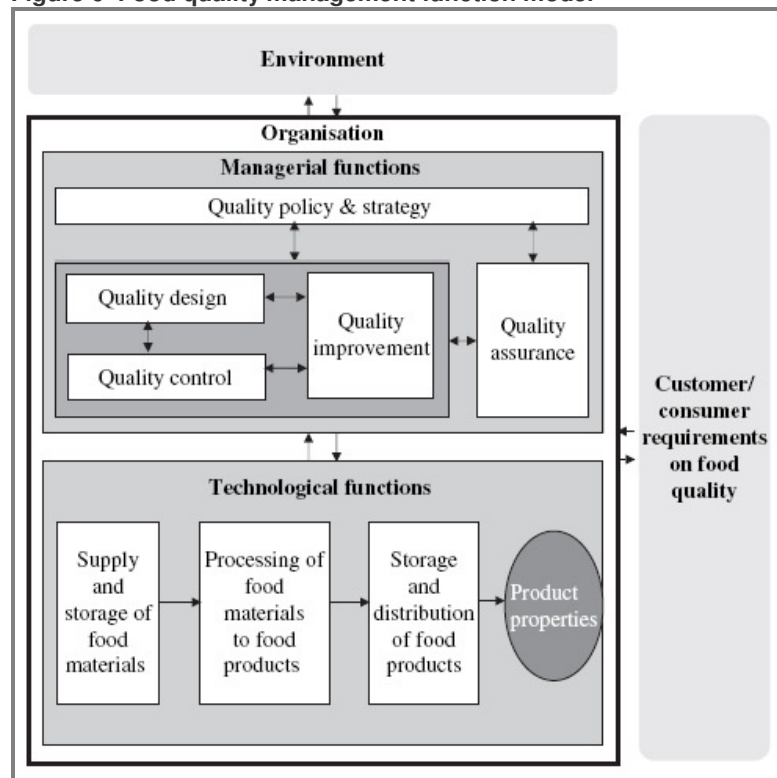
Human Behaviour = f (Human Dynamics x Administrative conditions)

Human Dynamics: i.e. variability in decisions due to e.g. variable perceptions, attitudes, or choice intentions
Administrative conditions: like information systems and procedures

Source: Adapted from Luning & Marcelis (2006)

During all stages of the food continuum, a change in food quality is a result of this interaction between human behaviour and food behaviour. When trying to manage, or improve, the quality of food products, it is always necessary to take both these factors into account. Within companies, management of these factors can be divided in different types of functions, which are interlinked in a fixed manner, as shown in Figure 6. A detailed description of these functions, which are either managerial or technological, is provided in Appendix 4.

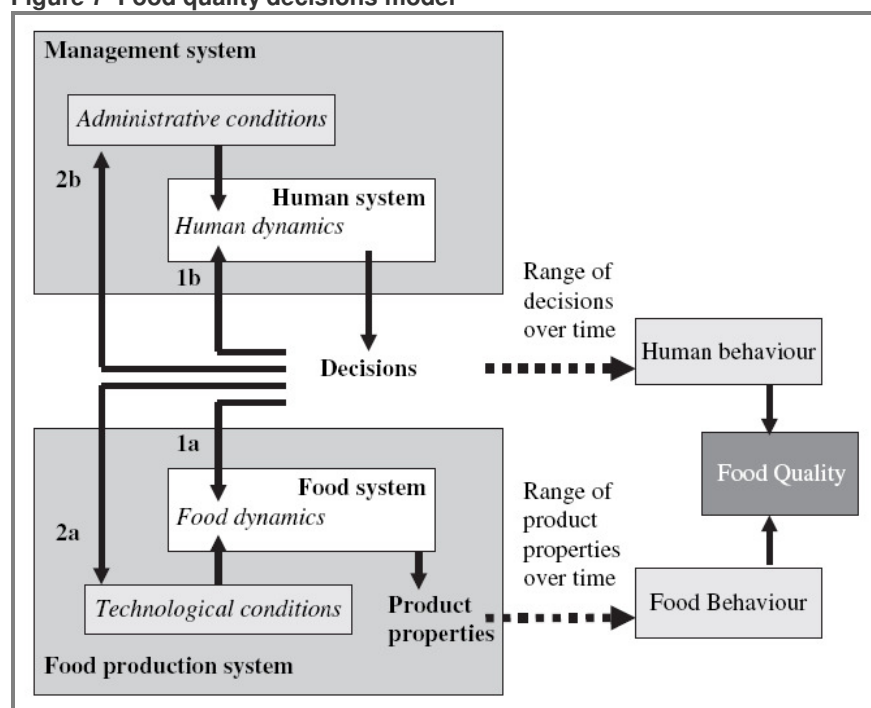
Figure 6 Food quality management function model



Source: Luning & Marcelis (2006)

It is very important to realize that the managerial functions, as described by Luning & Marcelis (1996), are focussing on a *company* as “the organization”. For instance, when considering the management function “quality policy and strategy”, the goals and strategy of *the company* are mentioned. Naturally, an organization does not necessarily have to be a company, but can just as well be a sector, or a government. When the subject of a research is a governmental organization, instead of a company, the managerial functions and model of Luning & Marcelis are less directly applicable for two reasons. Firstly, they merely describe governmental influences as part of the “environment”, together with other social, political, economical and technological factor. The influence of this environment is hardly touched upon within the food quality management function model. Secondly, the governmental influence is presented as a dichotomy, stating: “the government influences food quality along two lines, via rules and procedures and via inspection”. This definition may be a bit too narrow, since it could also be mentioned that government influence food quality by funding, assisting (direct or indirect) and offering tools. Many of these efforts can be considered as “capacity building”, as will be discussed later on in this report. For this research, which is typically dealing with company surpassing organizations, another model can further clarify the influence of environmental factors on the company level.

Figure 7 Food quality decisions model



Source: Luning & Marcelis (2006)

This decision-making based model still takes the multidisciplinary nature of food quality into account (as already depicted in Figure 5), but does not resemble any specific organizational level (like company-level). The model shows that human systems make decisions based on both food (1a) and human dynamics (1b), as on technological (2a) and administrative conditions (2b). It is expected that making the rights decisions based on food or human dynamics, will decrease the amount of variability in product quality that is due to these dynamics. On the other hand, decisions on technological or administrative conditions can help in creating the right circumstances for the behaviour. For technological conditions, this can lead to restrictions in the possibility of food to behave “uncontrolled”. Decision-making on administrative conditions can set the boundaries for personal decision-making.

2.3.2 Levels and research areas

Decision-making on human and food dynamics and on technological and administrative conditions can take place on different levels. A distinction is presented in Table 3.

Table 3 Food Quality Management Research areas

Level	Food Quality Management – research area
Environmental level	Food Quality and Public Administration
Food chain / Company level	Food Quality Management Processes
Individual Level	Food Quality and Quality Behaviour
Product property level	Food Quality attributes
Product composition level	Food Quality Characteristics

It must be emphasised that neither these levels, nor the research areas, can be seen as completely separated. Food quality management on a “higher” level, like the implementation of laws and regulations (on environmental level) will influence the behaviour on lower levels and visa versa. In fact, the influence that these different levels have on each other is fundamental for this research. As said before, the scope of this research (international policies and strategy) should be seen as an environmental factor in Figure 6. Still, in order for these policies and strategies to be effective, there must be a positive impact on company-level, which is depicted as “the organization” in the same model. Subsequently, company-level food and human behaviour will determine the final product quality. This is where Food Quality Management functions model (Figure 6) has to be taken into account again. In order for the governmental “management system” (Figure 7) to have an influence on the quality and safety of food produce, this governmental system (structure, strategies and actions) should affect the decision-making of food business operators. The need to take both the environmental level as the food chain / company level into account when evaluating, was already discussed in paragraph 2.2.4. Following the model provided in Figure 6, managerial functions relating to food quality and safety can be subdivided in five functions:

- Quality policy and strategy
- Quality design
- Quality control
- Quality improvement
- Quality assurance

In order for strategies and actions taken on “Environmental level” to be effective, they must influence at least one of these five functions on the “Food chain / company level”. These functions should consequently lead to an improvement of technological functions, such as supply, processing, storage and distribution of products. To make claims about the impact of FQM on environmental level, therefore, it is fundamental to include at least one lower level in the evaluation. If not, an evaluation would be merely focussed on systemic changes. As depicted in Figure 1, food business operators are very important when considering capacity, and thus capacity development, on organizational and individual level.

2.4 Designing an evaluation instrument

2.4.1 Introduction

In order to get more insight in approaches and instruments that other organizations use for evaluations, the publications of the following organizations were examined:

- Asian Development Bank (ADB)
- Canadian International Development Agency (CIDA)
- Danish International Development Agency (DANIDA)
- Department of the Environment, Food, and Rural Affairs, UK (DEFRA)
- International Food Policy Research Institute (IFPRI)
- Organisation for Economic Co-operation and Development (OECD)
- PACT Brasil
- United Nations Development Program (UNDP)
- United Nations University (UNU)
- World Bank (WB)

The reason for selecting these organizations was that they provided publications on project evaluation in different development fields. Often these projects were referred to as “capacity building”, “capacity

development” or “capacity enhancement”. Valuable lessons could therefore be learned from the experience of these organizations, which can be applied when designing an evaluation instrument for capacity building in the field of food quality and safety.

2.4.2 Needs, constraints and lessons learned

The need for monitoring and evaluation in capacity building activities is broadly recognized in literature. This monitoring and evaluation is one of the most important steps in “closing the gap between policy intentions and effective implementation of aid” (ECDPM 2006, WBI 2004). Unfortunately, also major constraints are very evident in literature:

“In the absence of systematic results-based capacity development management, the assessment of ADB’s performance with regard to the achievement of capacity development objectives is somewhat anecdotal.” (ADB 2007)

“Of course, perceptions are by their nature subjective and must be interpreted with care. One prefers to have more tangible measures or evidence of actual impact, ideally on the welfare of the poor, food insecure, and malnourished, who are the target groups for IFPRI. Unfortunately, in this case, it was not possible to derive evidence of such final impacts.” (IFPRI 1999)

“Assessing impact is a complicated process, especially when measuring the impact of intrinsically complex, intangible and often ill-defined processes such as organisational capacity building. While much progress has been made it is clear that this is a rapidly changing field, which is beset by definitional problems, methodological debates, contradictory criticisms, and uncertainty as to the primary purpose of such assessment processes.” [...] “The complexity of impact assessment increases when trying to measure the impact of intrinsically intangible, fluid and iterative processes. One such process is capacity building.” (INTRAC 2005)

“In large part, the difficulty of measuring capacity enhancement is that by definition, capacity enhancement is a process, rather than a final outcome or an output (the results of capacity) which are more easily identified and quantified. Moreover, enhancement may lead to different degrees of capacity.” (WBI 2004)

“With regard to monitoring and evaluation systems, design and monitoring frameworks do not include capacity development targets and capacity development indicators are often not defined and monitored. ‘Soft’ capacity development indicators, such as indicators relating to ownership, leadership, and inclusiveness are normally not defined.” (ADB 2007)

“Practitioners need to develop cost-effective PME systems (questions, indicators, methodologies, report formats) that can meet the needs of different audiences. This is not an easy task, and divergent needs make the whole process subject to compromise.” (Lusthaus et al. 1999)

In summary, the main issues in assessing impact of capacity building activities are:

Table 4 Overview of issues in assessment, adapted from INTRAC (2005)

- | |
|---|
| 1. Unclear programme and process design.
<i>“If you are not sure what your starting point is or where you’re going, how will you know when you get there?”</i> |
| 2. Power, control and ownership: whose needs and agenda?
<i>Discrepancy between demands of donors and the actual needs to be solved</i> |
| 3. Measuring complex and intangible change
<i>Search for quantifiable outcomes leads to focus on easily measured outcomes, which gives a twisted view of the actual outcomes.</i> |
| 4. Demonstrating causality and attribution
<i>Interplay of internal and external factors, as well as changing circumstances. “Are we missing the point by endlessly searching for impact based on cause and effect relationships which may or may not exist?”</i> |
| 5. Responding to context and culture
<i>Different approaches are suitable in different contexts. “The key may lie in the appropriate application of impact assessment frameworks which are based on a few ‘core’ principles which are applicable to, and relevant within, most contexts.” [...] “It may therefore be</i> |

necessary to compromise between the need to collect comparable information in order to draw out general lessons, and to develop approaches which are flexible and appropriate for specific contexts.”

6. Committing to the investment costs

“If organisations and their donors are not prepared to cover the full cost of effective and appropriate measurement processes, they must question whether they are viable.”

To deal with these issues and overcome the challenges, INTRAC (2005) give the following recommendations with regard to the evaluation process:

- it is necessary to initially reach some consensus about the wider process and purpose of capacity building and how it occurs;
- impact assessment process should be owned by those who it affects and who can best engage in it;
- any credible attempt to assess the impact of capacity building initiatives should incorporate a range of qualitative approaches – including reflective commentaries, case studies, role-plays, characterisation or drawing and narratives

During, or after, the evaluation process, there is also a need for clear and valid communication of findings. When reporting a contribution analysis (or evaluation) and making claims about differences that a specific programme has brought about, the following aspects should be covered (Mayne 1999):

- well-articulated presentation of the context of the program and its general aims;
- presentation of plausible program theory leading to the overall aims. (The logic of the program has not been disproved, i.e. there is little or no contradictory evidence and the underlying assumptions appear to be valid);
- highlighting the contribution analysis indicating there is an association between what the program has done and the outcomes observed;
- pointing out that the main alternative explanations for the outcomes occurring, such as other related programs or external factors, have been ruled out or clearly have only had a limited influence

2.4.3 Choices in monitoring and evaluation

In order to make sensible claims about project outcomes, a few considerations have to be central in setting up monitoring and evaluation tools. UNDP (2005) stresses the need for adherence on the following general principles for the design of measurement tools:

- clarity of purpose: what, why and for whom? [...];
- nature of information required and choice of data collection method. Well conceived and targeted survey questions reduce information overload [...];
- overall management of the assessment process [...] Tools and indicators are meant for use in combination with information from other sources and good judgement.

An important distinction in the nature of indicators is the difference between short-time and long-term indicators. In literature, different terms are used to describe these various types of indicators. In general, the first type would give insight in the “specific actions and steps” that were taken during certain capacity building activities; while the latter would seek to describe the resulting state of increased (or decreased) capacity.

Since capacity building is a dynamic, ongoing and open process, and therefore not linear, many outcomes cannot be noticed directly or attributed to a specific programme with full certainty. Also, what seems to be a positive outcome may be a negative or non-sustainable one on longer term. Therefore, when evaluating, it makes little sense to make an absolute distinction between direct outputs and longer-term outcomes. It is advisable to make decisions on the moments of measurement for different indicators, and keep track over time. In this way outputs, which are not directly reached on the moment they were expected, may become evident some time later. This provides a more nuanced judgement on a project, since it is more relevant to be able to say what change has been brought about after a certain while, than to merely judge on reaching targets on an agreed moment. The

framework that will be presented later in this report takes into account the dynamic character of capacity building.

The distinction between process, outcome and impact is also used by PACT Brasil (2006), as shown in Appendix 7. The examples of indicators as presented in the table are focussing on HIV/AIDS prevention programme. In the field of food quality and safety, examples for these types of indicators can be:

Figure 8 Examples of indicators for food quality and safety

Type of indicator	Examples
Process Indicators	<ul style="list-style-type: none"> • Number of food inspectors trained • Number of laboratories established and equipped • Number of consumers reached in food safety information activities • Number of workshop participants • Number of workshops held • etc.
Outcome Indicators	<ul style="list-style-type: none"> • Number of food producers and traders working according to HACCP • New food law accepted by Parliament • Number of follow-up trainings • Use of standard operating procedures for food inspection • Use of standard operating procedures for diagnostic analysis • Rejections of food exports by importing country • etc.
Impact Indicators	<ul style="list-style-type: none"> • Number of food borne illnesses • Consumer satisfaction with quality of food products • Number of food exports • Height of GDP • etc.

Given the fact that capacity building is an “ongoing process” of which many results are mostly not directly evident after a certain intervention, the use of process indicators would be the easiest. Unfortunately, these indicators give little insight in the achievement of final goals. According to PACT, it's not possible to measure impact when the period of a project is too short. For example, the following quote is about a two-year lasting HIV project in São Paulo: “Given that this is an example of a two-year project, it is not possible to measure impact indicators”. This claim may be a bit too definite, since certain long-term outcomes may be expected based on short-term results. Besides, even if the project would last longer than two years, impact would still not be linearly connected to the project inputs. A valuable assessment therefore has to acknowledge, and take into account, this uncertainty. The challenge in developing a valuable monitoring and evaluation tool, is incorporating these expectations and the likeliness of their occurrence (or: “*plausible linkages*”¹⁰). Still, it might be wiser to use the term “monitoring” than “measuring”; since the latter one brings about the connotations to statistical preciseness and quantification.

Managing the balance between the need to make claims about eventual impact, and the certainty of attribution, is one of the biggest struggles in project evaluation (Kumar 1989; CIDA 2004; INTRAC 2005; OECD 2006a / 2006b). The more complex the field of development is, the wider the time scope, and the larger the number of development projects, the larger the uncertainty becomes about the linkage between a certain project and a long term outcome. The best result that can be achieved with respect to this struggle is: moving “from a state of not really knowing anything about how a programme is influencing a desired outcome” to concluding “with reasonable confidence that the programme is indeed having an attributable impact; that it is indeed making a difference. We might also be able to provide a reasonable estimate of the magnitude of the impact” (Mayne 1999). Mayne claims that measurement in the public sector is more about reducing uncertainty than about precision and therefore stresses the need for softer and qualitative measurement tools.

2.4.4 Developing indicators

The need for clear indicators is recognized in literature, although their value should not be overestimated (ADB 2007, PACT 2006, UNDP 2005, Lusthaus et al. 1999, Alley & Negretto 1999). Many development organizations have made progress in the past years towards a more participatory assessment process to develop indicators, involving different stakeholders. This approach would improve ownership both of the process of impact assessment, as well as the results.

For the development of indicators the following SMART-checklist can be used (PACT 2006):

- *Specific*: The indicator should unambiguously specify what it will measure and the set of indicators should be concise
- *Measurable*: The indicator must be measurable by quantitative or qualitative mechanisms. Scales for judgment should be based on agreed and expectations and criteria of performance and should be accompanied by feasible methodologies and resources for measurement. Definitions of indicators and scales should support unbiased ratings.
- *Appropriate*: The indicator must directly relate to the project goals and objectives. It should be based on an agreed and appropriate identification of what needs to be measured/assessed, based upon a demonstrated and solid relationship with the result to be assessed. Also, the set of indicators should be complete in covering all relevant issues¹⁶
- *Realistic*: The NGO must have the resources necessary, human and financial, to measure the indicator
- *Temporal*: The indicator must be measurable within the project timeframe

In literature and publications of development agencies, few overviews can be found of indicators that comply with these demands. Mostly, no clear distinction is made between direct outcomes and long-term expectations, or the indicators are described too vaguely to be rated and to provide evidence for. Also, indicators provided in literature are often focusing on general development issues (including poverty reduction, health improvement, etc.).

ADB has made an attempt to set up “broadly defined performance indicators”. Some examples of these indicators, which were the outcome of a working group, are presented in Appendix 8. This table contains both a few qualitative as quantitative indicators. Also, the last two give a time limit for achievement. A disadvantage of these indicators is the great variability in concreteness. Some indicators are very quantitative (e.g. “number of workshop”), while others are very qualitative and multi-interpretable (e.g. “support provided”). For this reason, it is hard to apply the indicators directly and more or less objectively to project evaluations.

One of the most complete and concrete evaluation strategies is provided by CIDA. The organisation proposes a framework⁶, which addresses the following issues:

Table 5 Adapted from CIDA Evaluation Framework (2004)

1. What progress was made towards the achievement of results at the output, outcome and impacts levels?
1. To what extent did these results contribute to poverty reduction and sustainable development?
2. Has the program been responsive to Mubara's¹⁷ development changes, priorities and objectives?
3. To what extent will the results and benefits continue after CIDA's involvement ends?
4. To what extent have partnerships and/or linkages between institutions and organizations been encouraged and supported?
5. Were management structures effective in responding to ongoing challenges and in promoting creativity and innovation?
6. Were human, financial and physical resources used appropriately and financial information accurately and adequately maintained?
7. Did CIDA anticipate and respond to change based on adequate information?

This type of issues can be found more often in literature and in other organizations' approaches. Although the CIDA evaluation framework provides a good basis for developing indicators for capacity building activities, it falls short on a few very important points:

- Relation to food quality and safety. The CIDA framework is set up as an example, focussing on a fictive country and poverty reduction as development issue. Due to the complexity and specific nature of food quality management, more specific issues should also be addressed in

¹⁶ This stresses a need for a *broad* set of indicators, not necessarily a *detailed* list

¹⁷ Mubara is a fictive country that is used in the explanation of CIDA framework

the framework. Improvement in food quality and safety is not merely a matter of bringing about organizational change, but also about technical improvements.

- Concreteness of the indicators. The “Performance indicators / Variables to be considered” are too vague to serve as real indicators. Less ambiguous formulations are needed to make sure that clear answers can be given by the persons who are using the framework as an evaluation tool
- The broadly stressed concept of three levels in capacity building (individual, organizational and enabling environment) is not evidently reflected by the framework. More explicit notions should be made about the distinction and interaction between these levels; as this is recognized as a fundamental consideration for sustainable improvement.
- Lack of timeliness. As often mentioned in literature: capacity building is an ongoing process that does not stop directly after an intervention (or: capacity building activity). Therefore, measuring results should happen over a certain period of time. Only this enables the evaluator to make claims about improvements, especially when these have to do with slow-going processes.

Nonetheless, the use of a framework is very valuable. Using a framework enables evaluation practitioners to structure indicators, giving insight in the issues that the indicators eventually should give insight in. To make a framework as provided by CIDA more valuable, it is advisable to:

- Use more concrete variables. If variables are ambiguous, different practitioners will rate them in a different way. Also, vague indicators will not contribute to making clear judgements about the issues raised. For non-quantifiable indicators, a scorecard methodology will be used to give numerical rating to qualitative indicators (UNDP/GEF 2003).
- Add a timescale. As broadly recognized, capacity building activities should be seen as contributions to a process, more than as means to reach fixed goals. The true value of capacity building interventions will have to be examined over time
- Add baseline information and targets. To see progress or impact, a comparison has to be made between the initial situation and a moment later on in the project period, or afterwards. In the absence of targets, nothing can be said about the success of an intervention.
- Focus on the field of food safety and quality. This complexity of this field is very important to take into account when evaluating outcomes and impact. Food quality management ask for a farm-to-fork approach and an assessment of both technical and managerial factors. Attention should be paid on the influence that governmental actions have on the lower levels of food quality management, as depicted in Figure 6.

2.5 Conclusions

The need for monitoring and evaluation of development programs is broadly recognized by involved organizations. Despite this recognition, few organizations have shown applicable approaches to evaluate impact in a concrete way. One reason is that there is a lot of ambiguity about the true meaning of capacity building. The term is often used by organizations to describe a weakly defined process, of which intentions, goals, strategies and activities are not clearly defined. Also, a weak distinction is often made between direct outputs of a project, and long-term impact. A few concepts are evidently very important for designing an evaluation instrument:

Firstly, the aim of capacity building activities must clearly defined and be specific for a certain field of work, which is “national food quality and safety” in the case of this study. In other words: the focus should be specific. Capacity building activities are specific for different developmental fields. Improvements in poverty reductions are not the same as improvements in food safety and quality, and should therefore neither be treated the same in evaluations. Because also the focus between different project within the field of food safety and quality largely differs between different countries and situation, there is also a very strong need for specification between different projects. This means that a generic set of indicators may be very useful as a guideline for evaluation, but indicators will always have to be made more applicable to specific situations. Also, the goals of projects should be very clearly formulated. When no goals are set, nothing can be said about the value of outcomes. Results have to be linked to intentions and objectives, in order to serve as a subject for judgements.

Secondly, when an evaluation is only focussing on the national food control system as such, little information will be provided on what improvements have actually been brought about in the food

quality and safety field. In order to provide insight in those improvements, processes in this field, on food chain level should be included. This can be done by using the FQM functions and decision models.

Furthermore, a distinction has to be made between input, process, output, outcome and impact. These terms are sometimes used interchangeably in literature; but have very different meanings. When assessing the results of a project, one has to choose to assess short-term outputs or long-term impacts. The more short-term the focus is, the more assumptions will have to be made about sustainability. On the other hand, if the focus is more long-term, direct causal relationships between project inputs and long-term changes will be less evident. Impact can be addressed with the question: "What positive and negative, primary and secondary long-term effects have been produced by a development intervention, directly or indirectly, intended or unintended?"

Finally, some sort of baseline data should be available. If no information is available about the initial situation, nothing can be said about contributions to improvement by a certain project.

3 Research design

3.1 Introduction

Based on the conclusions that were provided in the previous chapter, a research model can be developed, which is presented in this chapter. This model seeks to depict the process of capacity building, while including the specific characteristics of the field of food quality and safety. Again, the approach of improving food quality and safety by strengthening National food control systems, as used by the FAO, will be used as a basis.

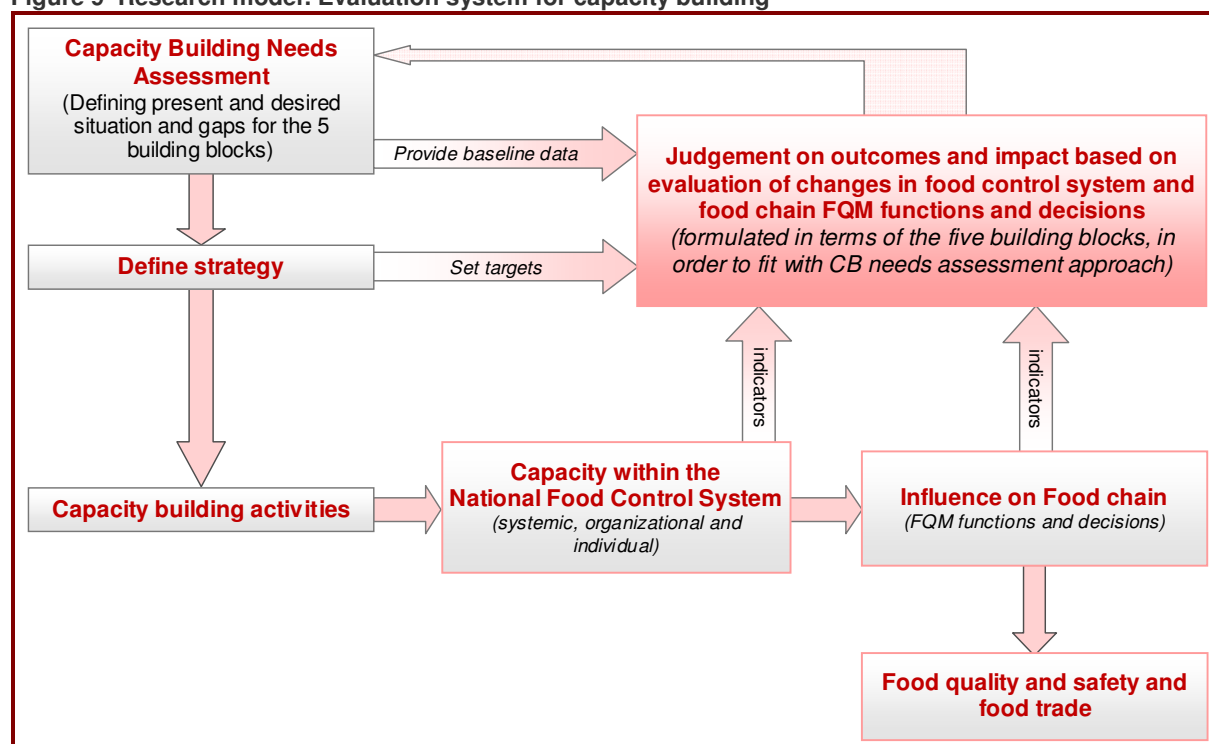
3.2 Activities, outcomes and impact

One of the main discussions in project evaluation literature is about defining impact and distinguishing short- and long-term outcomes. As discussed in the previous chapter, it would not make sense to define a very clear distinction between outcomes and outputs, as is sometimes done by organizations. The reason for this is that capacity building is more of an ongoing process than a fixed and final outcome. Therefore, in this research, the choice was made to only distinguish activities (process), outcomes and impact, as was done by PACT (2006). In the *Conceptual framework of activities and results* (Appendix 1) this distinction is presented. The focus of this research will be primarily on the outcome indicators, since these will describe the linkage between activities and impact. As shown in Appendix 2, there is a pay-off between focus on short-term (outcomes) or long-term changes (impact) and certainty about the contributions a specific programme has made to these changes.

3.3 Research model

Although in Figure 2 a feedback arrow is drawn, and the need for monitoring and evaluation is mentioned, these concepts are not discussed in more detail in the guidelines for assessing capacity building needs (FAO 2006a). No specific reference is made to changes that have been brought about *outside* the National food control system. By combining Figure 2 with the Food quality management function model (Figure 6) and the food quality decisions model (Figure 7), the linkage between food quality management on environmental level and company level can be made. The conceptual model that is presented below is based on this combination.

Figure 9 Research model: Evaluation system for capacity building



As in the model used by FAO (Figure 2), the steps of defining gaps & needs, defining strategies, and conducting activities are included in this research model. The centre of this research, and hence of

this model, however, is the red box which states “Judgement on outcomes and impact based on evaluation of changes in food control system and food chain FQM decisions”. In fact, the combination of all red bordered boxes can be seen as an extension of the red arrow in Figure 2. This extension is needed to evaluate the process that is designed based on the capacity building needs assessment, i.e. the capacity building activities. Impact¹⁸ will be defined as the result of two types of influence:

Influence on the different kinds of capacity within the National food control system:

- Food control management
- Food legislation
- Food inspection
- Official food control laboratories
- Food safety and quality information, education and communication

Influence on Food chain / FQM functions and decisions: (*further described in Appendix 5*)

Managerial functions:

- Quality policy & strategy
- Quality control
- Quality improvement
- Quality assurance

Technological functions

- Supply and storage of food materials
- Processing of food materials to food products
- Storage and distribution of food products

The instrument that is developed in this study should provide the judgement based on these two influences. In order to make this judgement, input has to be provided for the instrument, by rating indicators that measure (or monitor) changes of important capacity aspects. These should be compared to the baseline situation and targets that have been set, in order to judge what improvements capacity building activities have caused.

In the research model, an arrow could also be drawn from the box “Food quality and safety and food trade” to the red box. After all, changes in this FQS and food trade determine whether the “final goal” of capacity building activities has been reached. The reason that this arrow is not included in the research model, is the attribution problem. Linking indications like “decrease in food borne illnesses” or “increased food exports” too a specific project would be too much based upon assumptions. Therefore the choice has been made to only focus the evaluation process at changes in the National food control system and the food chain.

Also when *planning* a capacity building programme, activities can not be based directly on the FQS and food trade situation, but firstly a problem or need has to be expressed in terms of the five buildings blocks or FQM functions. The FAO gives a few examples of driving forces between the need for capacity building.

Example 1 Where to start assessing capacity building needs?

In Country A, processed fish exports provide an important source of employment and foreign exchange earnings. Unexpectedly, exports are banned by the major importing country due to concerns about veterinary drug residues, which laboratories in the country have been unable to detect. It is decided that the capacity building needs assessment should focus on official food control laboratories. Once the assessment is underway, the importance of related issues and constraints within the wider food control system becomes clear. Although there are internal weaknesses within the country’s food laboratories, other external factors (including the absence of

¹⁸ This stipulative definition of impact should not be confused with the “final impact” as earlier described in this research, which comprehends e.g. a decrease in food borne illnesses or increased food exports. From now on, the term “impact” will be used to indicate the changes that have been brought about by capacity building activities in the field of food quality and safety; i.e. the influence these activities have on the national food control system and the food chain level.

suitable regulations, poor coordination between official food control laboratories and other concerned institutions, and inadequacies within food inspection and sampling) within the wider food control system are also identified as a root cause of weak capacity. Therefore, officials decide to broaden the scope of the needs assessment and apply the modules for food control management, food legislation and food inspection.

In Country B, a serious outbreak of food-borne poisoning causes a number of deaths in the capital city, focusing attention on food safety and quality. Different groups are blamed for the incident and there is no consensus as to where responsibility lies. Several government organizations are involved in different aspects of food control but without clarity on their respective responsibilities. The roles and responsibilities of different stakeholders from farm to table have never been defined. The country's leaders recognize that urgent attention must be taken to prevent such a disaster happening again. A decision is made to review the mandates and responsibilities of all the government agencies involved in food control. The capacity building needs assessment process starts with the module for food control management, and then moves on to apply the modules on legislation and IEC.

In Country C, a significant share of the food consumed domestically is imported. A series of food safety scares in the country from which many food products are imported causes concern about the ability of the government in Country C to guarantee the safety and quality of food imports. The national inspectorate is extremely weak and most food inspectors lack specific training or knowledge about food safety and quality. Regulations that stipulate food safety and quality requirements for food imports have never been developed and laws governing food are outdated. The government decides to begin with the modules on food legislation and food inspection.

Source: FAO, 2006a

These fictive situations describe a good structure for setting up capacity building programmes. The process starts with recognizing a problem in the food quality and safety area (like outbreaks of food-borne poisoning) and linking it to something that “goes wrong” in the food chain. The more specific this problem in the food chain is formulated, the easier it is to make judgements on improvements afterwards. On this point, the examples given in the table above are still too vague.

After identifying the problem, the most suitable building blocks are determined to be strengthened in order to fight the problem. When evaluating the capacity building activities, practitioners can determine whether progress in the food chain has in fact been made. If this process is not followed, again, an evaluation would be too much system-focussed, lacking a linkage to the field.

Another example could be:

Example 2 Assessing system and food chain in planning capacity building

Each year, a very large number of people in country X get infected by Salmonella (problem in the FQS situation)

Before this problem can be solved, it has to be expressed in terms of “what is going wrong in the food chain”. By conducting profound research, the problem or gaps in the National food control system could be determined, for instance:

After further research, it turns out that In multiple chicken slaughterhouses, HACCP schemes are in place, but they are not followed by company workers. The slaughterhouses can get away with this because they are not inspected accurately by the authorities of country A.

The problem here would thus be that food inspection is not operating properly. This could not be directly concluded after determining the problem of 10.000 Salmonella infections a year.

Although a feeling might already exist in an early stage that certain parts of the National food control system are underdeveloped compared to other countries, it is strongly advisable to first assess what is going wrong in the food chain, before determining which parts of the National food control system should be strengthened. If this step is skipped, an improvement in the system might not lead to tackling the most urgent problem.

On national level, there is an innumerable number of food products, each with their specific properties, compositions and production processes. It would be impossible to create an instrument or set of indicators that is directly applicable to all these products and all countries, given the variety in compositions, processes and environmental factors. Therefore, the scope of this research will be narrowed down by emphasizing on the upper two research areas (environmental and food chain level). The evaluation instrument will have to be formulated with a certain extent of generality, in order to be applicable to every country and all types of food products. This leads to a need to further refine the instrument for specific situations.

3.4 Research methods

Based on the conclusions presented in paragraph 2.5, and using the research model presented in this chapter, the evaluation instrument can be designed. This instrument should:

- Use baseline data and targets
- Assess changes in NFCS
- Assess the influence on the food chain
- Provide clear judgements
- Be based on the fact that capacity building is a process, more than a final outcome, and therefore take into account the aspect of timeliness
- Be applicable to different countries, projects and specific food products

Based on project documentation from different development organizations, a set of indicators was designed as part of an FAO research (2007). This set, which was based on project intentions, demands, (non-) achievements and more general opportunities and constraints of capacity building projects, set was refined in an internal FAO meeting¹⁹. The refined set is presented in the next chapter.

The needs that were summarized above will be translated in an evaluation instrument, which is also presented in the next chapter.

¹⁹ A more detailed description of this internal research cannot be provided here, due to the classified nature

4 Evaluation instrument

4.1 Introduction

In this chapter, recommendations will be given on how to conduct a valuable evaluation for capacity building activities in the field of food quality and safety. These recommendations should be seen as a first step to create a strategy and tools for such an evaluation. It is not possible to create an evaluation instrument that is directly applicable to all projects, since specifications depend on the organization that is conducting the activities, as well as the specific country, project goals, needs and donor demands. The tools (indicators, evaluation scorecard) and recommendations below should serve as an input for reaching agreement between stakeholders when deciding on the evaluation of a project.

4.2 Linking national food control to food chain functions

As extensively discussed in paragraph 3.3, problems in the food chain have to be identified in order to make judgements on the results of a programme. After this identification, practitioners have to decide upon which building blocks should be strengthened, and how. Although these are steps that should be taken when *planning* capacity building, they intrinsically determine which aspects should be evaluated afterwards. To make the linkage between the control system and the food chain concrete, the following matrix can be used:

Figure 10 Linking National food control system to food chain functions

Building block FQM function	Food control management	Food legislation	Food inspection	Official food control laboratories	Food safety and quality IEC
Quality policy & strategy					
Quality control					
Quality improvement					
Quality assurance					
Supply and storage of food materials					
Processing of food materials to food products					
Storage and distribution of food products					

For each project, practitioners should define which FQM functions should be improved. Subsequently, they should define which building blocks should be strengthened in order to reach this improvement. In the different cells it should be explained in what way the influence is expected to occur. This can be done by noting down what kinds of capacity would have to be build. Based on this information, specific indicators can be established.

4.3 Indicators

Based on the lessons learned from literature and the benchmark that was established based on other organizations' approaches, a set of generic indicators was established. This set was refined based on expert opinions, both through individual interviews as through a consultation meeting. The refined set of generic indicators is presented in Appendix 2. The subdivision of these indicators in the categories "process", "outcome" and "impact" indicators was based on the "Conceptual Framework 1: Capacity building in the field of food quality and safety" (Figure 3). During the meeting, only the intermediate outcome indicators were refined, since these should reflect the link between activities and final input. Based on recommendations from experts, variables were defined that give insight in the type of

capacity that is monitored by the different indicators. Although factors like inter-organizational interactions and sustainability were also discussed in the meeting, the variables and indicators were subdivided under the five building blocks of a National food control system. The reason therefore is that such a subdivision will make it easier to formulate the final judgements in terms that can directly serve as input for a new capacity building needs assessment.

The indicators that were developed are very general because they're derived from a broad variety of projects. It is for instance very important to add technical indicators (T-indicators), but these would be very much depend on the specific composition and behaviour of the food product(s) under scope. For example:

Example 3 OTA in coffee

An FAO project has developed good hygiene practices for coffee producers aimed at reducing contamination of raw beans by a potent fungal toxin... [...]

Facts about OTA

Ochratoxin A is produced by species of two genera of fungi, *Aspergillus* and *Penicillium* that grow naturally on cereals, grapes, coffee and cocoa. In coffee, the most important OTA-producers are *Aspergillus ochraceus* [...], *A. carbonarius* and strains of *A. niger*. OTA is so dangerous that FAO/WHO experts have set a maximum tolerable limit for humans of 100 billionths of a gram per kilogram of body weight per week. In 2004, the EU set maximum permissible limits for OTA of 5 ppb in roasted and ground coffee, and 10 ppb in instant coffee. No limit for green coffee has been announced.

Source: <http://www.fao.org/ag/magazine/0607sp1.htm>

In this particular case, a T-indicator could be defined as “the average level of ochratoxin A present in coffee”, for which a sub-indicator could be formulated for different steps in the supply chain. These sub-indicators will indicate to what extent the implementation of good hygiene practices is successful with regard to decreasing the actual problem in the food quality and safety field.

The most important aim of the indicators provided in Appendix 2 is to provide a broad overview of factors that should be taken into account when basing a judgement on changes in a National food control system and food chain, both on systemic, organizational and individual level. The variables and indicators should be further refined when designing and evaluating specific projects, as discussed in the previous paragraph.

In order to refine the indicators, though, more information is needed about the expectations or demands with regard to the way in which food business operators respond to the changes in the National Food Control system. When considering Country A of Example 1 (paragraph 2.2.4) as an example, these responses could for instance be:

- More companies implement HACCP guidelines because the number of inspections by the Food Authority is increased (this would be an influence on *quality control*)
- Fishing companies start using other types of veterinary drugs (which are allowed by the importing country), start using other ways to extinguish pathogens, or start fishing on locations where less veterinary drugs are needed (*quality improvement* or *quality assurance*)
- Fishing companies introduce their own system for guaranteeing a drug-free product, by testing samples
- Fishing companies formulate long-term plans on how to systematically lower the amount of veterinary drugs in their product over the next five years (*quality policy & strategy*)

For Country B, it would have to be clarified in far more detail *where* and *how* the outbreak originated. It is obvious that the food control management-system in this country needs a lot of general attention, since it is totally unclear which party has what responsibilities in case of an emergency. For the same reason, setting up an emergency response system, for which authorities should be defined by law, is fundamental. Still, it is very important to find out what the exact source of the contamination was. This would provide valuable insight in where the major lacks in food quality management exist in the food chain. The influence of the National food control system on the situation in the specific sector where the outbreak can then be evaluated; by comparing the situation at moment of the outbreak with the

situation a few years after. If the source of the outbreak was for instance the presence of *Escherichia coli* 0157: in spinach²⁰, the following aspects should be evaluated
This evaluation should focus on aspects like:

- Knowledge of growers on occurrence, behaviour and risks of *Escherichia coli*
- Existence of mandatory limits of *Escherichia coli* during different steps of the food chain
- Compliance of food business operators with these limits
- Adoption of voluntary guidelines to reduce the risk of microbial contamination by growers

4.4 Evaluation scorecard

As stressed before, merely having a set of indicators is not enough for conducting a valuable analysis. It is fundamental that the context in which these indicators are used is taken into account, since this context largely differs between countries and projects. In Figure 11 (next page), an evaluation scorecard is presented which:

- Links output to input; giving quantitative judgements while incorporating both qualitative and quantitative outputs.
- Enables the measuring of results on different moments; making it possible to link vague terms like “output”, “outcome” and “impact” to specific indicators and moments of measurement
- Enables stakeholders to get insight in *where* and *when* a project is falling short (or: has fallen short) in reaching outcomes. This can be extremely valuable in planning follow-up projects or as a general lesson for other projects.
- Is a transparent tool that will enable different stakeholders to get insight in the evaluation process more easily. This works in favour of objectivity.

²⁰ <http://www.ers.usda.gov/AmberWaves/June07/Features/Spinach.htm>

Figure 11 Evaluation instrument: Scorecard

Issues	Indicators	Scorecard	Baseline	Target			Measured			Rating			Data	
													Sources	Collection
			t ₀	t ₁ (end of project)	t ₂	t ₃	t ₁ (end of project)	t ₂	t ₃	t ₁ (end of project)	t ₂	t ₃		
FOOD CONTROL MANAGEMENT	indicator 1	-	###	5	10	15	5	0	16	1	0	1		
	indicator 2	A: description 1 B: description 2 C: description 3	A. B or C	B	C	C	B	C	B	1	1	0		
	indicator 3													
	etc.													
							Total issue rating (%):			100%	50%	50%		
FOOD LEGISLATION														
							Total issue rating (%):							
FOOD INSPECTION														
							Total issue rating (%):							
OFFICIAL FOOD CONTROL LABORATORIES														
							Total issue rating (%):							
FOOD QUALITY AND SAFETY INFORMATION, EDUCATION AND COMMUNICATION														
							Total issue rating (%):							
							Total project rating (%):			%	%	%		

The data provided in this evaluation scorecard merely serves as an example.

The scorecard was based on the approach from UNDP/GEF (UNDP/GEF 2003), which provides a way to make quantitative judgements on qualitatively formulated indicators. Furthermore, columns for “Data Sources” (e.g. *persons, organizations, documents, etc.*) and “Data Collection” (e.g. *document review, focus groups, key person interviews, etc.*) were added, following the approach of CIDA (2004). Also, different moments of measurement were added, as well as column for baseline information, as it was recommended in literature and by experts.

In the scorecard, the different issues are filled out, as well as a schematic example for filling out indicators and values. The values are randomly chosen as an illustration of how to use the scorecard. When using the scorecard for evaluations, the following steps should be taken:

1. Ensure that the list of indicators is complete, well-structured and (where necessary) adjusted to the specific programme. This step is the most important for starting a valuable evaluation. As stated before, the generic set of indicators that is provided in this report, should serve as a guideline for using in specific projects. Examples of how to further refine the set of generic indicators are provided in the previous paragraph.
2. Fill out the indicators in the scorecard and fill out sources of data collection
3. When possible, fill out baseline information for each indicator, which can serve as reference for setting targets and later comparison
4. Fill out moments in time for different evaluations. Based on possibilities and desires, more or less moments of measurement can be added to the scorecard, depending on the number of evaluations the project team want to, and can, carry out.
5. Define sources of information for each indicator; ensure that valid data can actually be obtained during all evaluation moments
6. Set targets for each indicator for each moment of measurement. As stated before, without clear targets, outcomes could still be reached; but cannot be judged. Also, a lack of targets will cause uncertainty for stakeholders in what they are (jointly) striving for.
7. At each moment of measurement: fill out measured data, compare this with the targets and rate each indicator with either a “0” or a “1”, meaning respectively “target is not reached” and “target is reached”.
8. Calculate the score per issue by giving the percentage of indicators with scored a “1”.
9. Calculate the project score by taking the average of all issue scores.

It should be kept in mind that particular successes or failures in certain areas may not always be attributable to the project under evaluation, but to some other external factors. Therefore, this evaluation should always be accompanied by remarks about external circumstances (e.g. other development projects, events) that may have had strong influence on the measured factors. Even, for factors, which are very strongly influenced by other projects, the indicators could be taken out of the calculation, in order to make the evaluation more project-specific.

5 Conclusions

Food quality and safety are complicated issues that involve a broad variety of sectors. Food quality and safety are influenced by both *food behaviour (food dynamics and technological conditions)* and *human behaviour (human dynamics and administrative conditions)*. Recent outbreaks of food borne illnesses and increased consumer concern with regard to food quality and safety have increased governmental pressure on the quality of food products. This has, amongst other things, lead to high standards for food imports, to which many developing countries have troubles complying with. In order to help developing countries improve the quality and safety of food products, both for the domestic market as the export market, different international organizations have undertaken development programmes over the last decades. The most recent approach to this development is referred to as “capacity building” (or alike terms) by the involved parties.

A lot of discussion is going on about the exact meaning of the term “capacity building”; often intentions and goals are not clearly formulated and organization-wide definitions of the term “capacity building” are absent. Still, the need for evaluation and monitoring of the outcomes of these activities is broadly recognized and expressed. In order to design an evaluation system, the following aspects should be clarified with regard to the capacity building programme:

- clarity of purpose: what, why and for whom? [...];
- nature of information required and choice of data collection method. Well conceived and targeted survey questions reduce information overload [...];
- overall management of the assessment process [...] Tools and indicators are meant for use in combination with information from other sources and good judgement.

The clarity of purpose can be provided by focussing on a specific field of development like, in the case of this research, food quality and safety. A clear definition of capacity building in the field of food quality and safety is formulated by the FAO: *“the process through which relevant stakeholders from farm to table (including government agencies, food enterprises and consumers) improve their abilities to perform their core roles and responsibilities, solve problems, define and achieve objectives, understand and address needs, and effectively work together in order to ensure the safety and quality of food for domestic consumption and export.”* (FAO 2006a). This means that the aim of capacity building activities is on the improving the *abilities* of different actors involved in the food continuum. This process should improve systemic, organizational and individual capacity by strengthening the five building blocks of a national food control system, which are:

1. Food control management
2. Food legislation
3. Food inspection
4. Official food control laboratories
5. Food safety and quality information, education and communication

When evaluating the impact of capacity building, attention should not merely be paid to these five building blocks, since that would only provide insight in systemic changes. In order to provide a better evaluation of the true impact, factors on “food chain” level of food quality management should also be taken into account. Changes in functions and decisions on this level can reflect the influence that governmental changes have had on the way in which food business operators handle food. The following FQM functions can be distinguished on food chain level:

Managerial functions:

- Quality policy & strategy
- Quality control
- Quality improvement
- Quality assurance

Technological functions

- Supply and storage of food materials
- Processing of food materials to food products
- Storage and distribution of food products

In order to be able to attribute changes on the “food chain” level to specific capacity building projects, expectations have to be clarified and changes should be tracked over time. Since capacity building is an ongoing process, and not a fixed and final outcome, impact will occur as a sequence of changes. Impact²¹ should therefore be seen as the changes that are made by capacity building activities over time. These changes should occur both on the level of the national food control system (changes in the five building blocks) as on the food chain level (changes in FQM functions and decisions), in order to be called impact. In short, impact can therefore be defined as: “The influence of capacity building activities on the five building blocks of a national food control system and FQM functions and decisions over time”.

Only relevant changes should be taken into account when evaluating and judging a certain capacity building project. Since the goals, strategies, involved food products (and intrinsic food composition and behaviour) largely vary between different projects, as well as environmental factors, the evaluation approach should be refined to fit the situation. This refinement starts during the planning of the capacity building activity. First, practitioners should identify the problems that occur in the food chain. If this step is skipped, little can be said afterwards about the improvements that have been caused by the project; since only changes in the food control system could be examined.

After it is clarified which problems exist in the food chain, practitioners should determine which FQM functions should be improved, and decide which building blocks of the national food control system should be strengthened in order to cause this improvement. Subsequently, it should be specified what types of capacity should be strengthened on the level of the food control system, in order to cause improvements on food chain level. Based on these specifications, specific indicators can be developed. In Appendix 2, a set of generic indicators is provided which provides a broad overview of factors (variables and indicators) that should be taken into account when formulating a more refined set of indicators. When formulating such a set, also indicators should be formulated for T-functions, based on the composition and behaviour of the food product, or food chain, under scope. Refined indicators should be as specific, measurable, appropriate, realistic and temporal as possible, while covering all important aspects as provided in the set of generic indicators.

Practitioners should not attempt to express all indicators in a quantitative way. It is better to make qualitative judgements on some aspects, than to use numerical expressions that are not valid or accurate. In order to still make a numerical judgement on project impact, a scorecard approach can be used. This approach links qualitative descriptions of situations to a numerical value. By using this approach, a judgement on project impact can be given in terms of a percentage. It is fundamental that such judgements are always accompanied by qualitative expressions, which give insight in the context, plausible programme theory (the logical of the programme) and alternative explanations for the outcomes occurring (such as related programs or external factors).

The evaluation scorecard provided in this report is an evaluation tool which, based on literature and expert opinions:

- Uses baseline data and targets
- Assesses changes in NFCS
- Assesses the influence on the food chain
- Provides clear judgements (*in terms of a percentage and variables which are ordered according to the five building blocks*)
- Is based on the fact that capacity building is a process, more than a final outcome, since it demands a measurement over time
- Is applicable to different countries, projects and specific food products

²¹ This stipulative definition of impact should not be confused with the “final impact” as earlier described in this research, which comprehends e.g. a decrease in food borne illnesses or increased food exports.

6 Discussion and recommendations

The creation of the set of generic indicators and evaluation scorecard is the first step in improving the process of evaluation. To ensure that this framework will be of any practical use, though, some very important decisions have to be made with regard to project design. Since capacity building is an ongoing and iterative process, choices with regard to evaluation will also influence choices with regard to planning and project execution. Therefore, it is important that during the evaluation process, like during all part of a capacity building project, all stakeholders are involved, or as it is stated by INTRAC (2005): *“impact assessment process should be owned by those who it affects and who can best engage in it”*.

Moreover, the evaluation scorecard should be adjusted to the specifics of the project under scope. In Appendix 9, recommendations are given that can improve the process of capacity building evaluation, with regard to effectiveness and reliability. In this Appendix, the different paragraphs represent different steps that, regarding to the author, should be taken in an evaluation process, in chronological order.

Below, a summarization is provided of recommendations that can be made to the overall process of capacity building and evaluating.

1. A common agency definition and strategy, on which stakeholders agree, should be formulated
2. Intentions, goals and targets should be clarified and expressed when planning a project. Without clear targets, little can be said about the value of outputs.
3. The focus of evaluation should be specific. It is not possible to create one set of indicators that is applicable to all capacity building activities in the field of food quality and safety. Experienced practitioners should formulate indicators that are suitable in a specific situation. The set of generic indicators provided in Appendix 2 can serve as a basis for discussion
4. Stakeholder involvement and ownership should be sought during all steps of the management process
5. Impact of activities throughout the whole food chain (/continuum) should be monitored, since improving national food quality and safety by strengthening a national food control system is largely based on expectations. Eventually, all food business operators will have to put effort in bringing safer food to the market, for these efforts to succeed. Although it might be good to focus activities on governments (like the FAO does), paying more attention to producers, and traders, or even consumers, when evaluating is very important.
6. The different forms of capacity on systemic, organizational and individual level should be considered. This recommendation coheres with the previous one, since a shift of focus from government to consumer implies a shift from systemic to individual level.
7. Practitioners should have a sense of history and process. Logical frameworks can be useful for setting up projects and expressing expectations and linkages, but should not be trusted blindly when measuring outcomes or impact. Also, a distinction should be made between process, outputs and impact; which brings about needs for the different moments of measurement. Therefore, a framework such as provided in this report, accompanied by qualitative information about external factors, provides a more nuanced insight in possible errors in attributing project efforts to final outcomes.

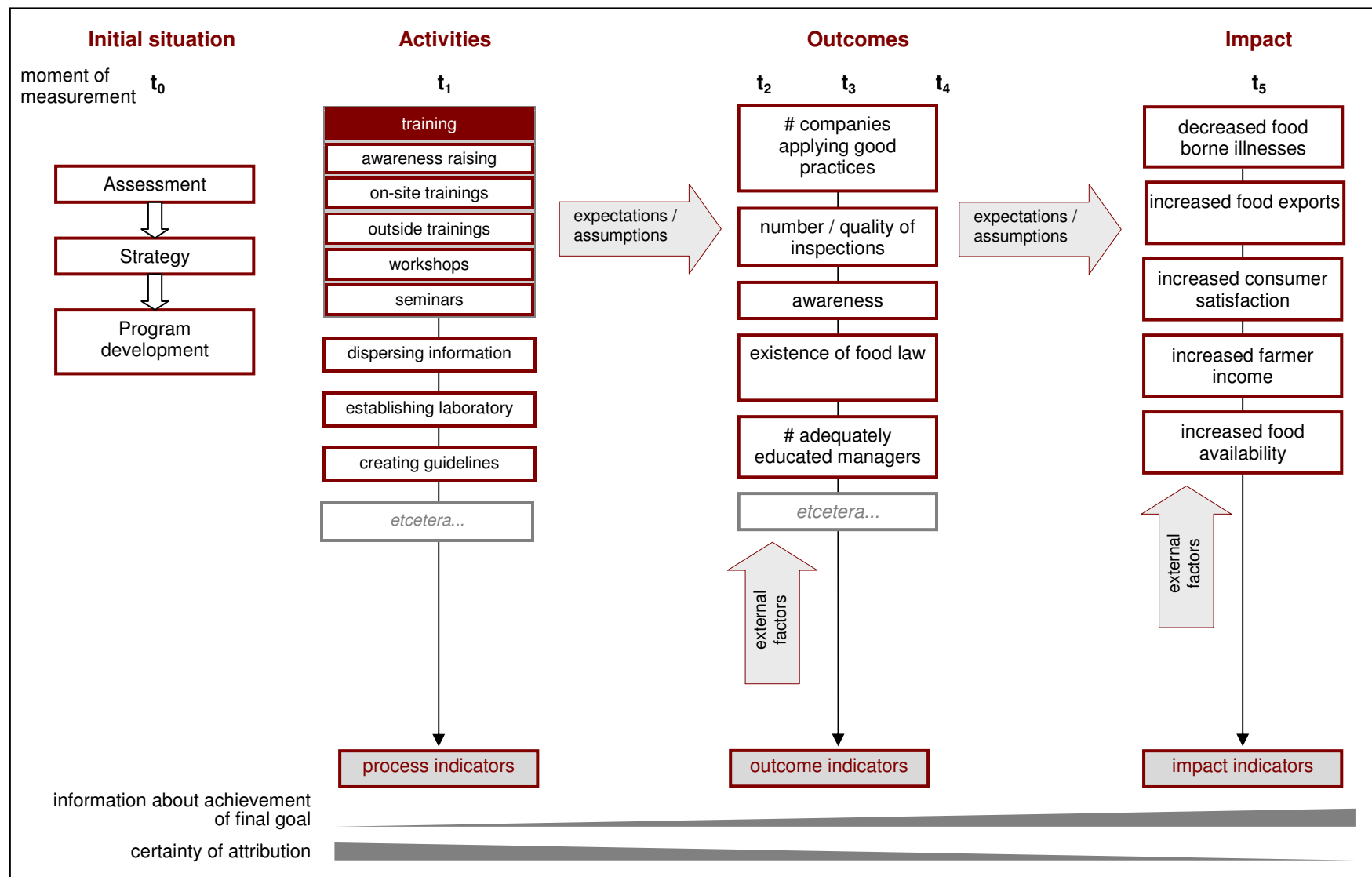
Organizations should realize that choosing for the inclusion of a monitoring and evaluation process brings along many consequences with regard to resources. In order to conduct strong evaluations, experienced consultants will be needed, who can refine indicators to fit a particular project, and judge changes in these indicators afterwards. These consultants should all be involved, or at least be very familiar, with the history and progress of the project. If not, they might misinterpret changes in indicators, are they might not be able to link these changes to the process of capacity building. As discussed, the basis for a good evaluation lies in a good planning of capacity building activities, by concretely expressing expectations and targets. For this reason, choosing for monitoring and evaluation will intrinsically bring along the need for very large investments in terms of human and financial resources. Still, the evaluation instrument provided in this study can serve as a basis to create a transparent evaluation tool. This transparency may lead to lower investments, since it can be used to better structure discussions about projects and reach consensus between involved parties.

Applying the evaluation scorecard to actual projects would be the best way of conducting further research to its value. Such an application will provide insight in the practical value of the instrument, and will lead to a refinement of the generic set of indicators.

Finally, it is of utmost importance to realize that “measurement in the public sector is more about reducing uncertainty than about precision and therefore stresses the need for softer and qualitative measurement tools”. Although having indicators and scoring outcomes can be very valuable as an indication of project successes and failures, the dialogue that is involved within the process of evaluation is far more important. Discussing the outcomes of ratings does not necessarily have to lead to stakeholders having the exact same opinion, as long as it serves as a means to improve consensus with regard to future focus and strategy and common understanding. Such a consensus will improve involvement and ownership by different parties involved.

Appendixes

Appendix 1 Conceptual framework of activities and results



Appendix 2 Overview of process, outcome and impact indicators²²

PROCESS INDICATORS	INTERMEDIATE OUTCOME INDICATORS	IMPACT INDICATORS
<ol style="list-style-type: none"> Number of people trained (with trainings, workshops, seminars) on state-of-the-art aspects of food safety among <ul style="list-style-type: none"> government representatives (e.g. on key elements of a modern food control system) food inspectors industry employees (e.g. on hygiene controls, HACCP, GMP) NGO employees consumers Average rating of different trainings <ul style="list-style-type: none"> Number of trainees that mentions that no elements have been missing in the training Number of trainees that mentions that training was relevant to them Number of trainees that feel confident with regard to knowledge on different aspects of the training Respective number of individuals from target groups that received and understood different information materials <ul style="list-style-type: none"> # from group 1 (e.g. farmers: GAP) # from group 2 (e.g. consumers: risks and safety of food) ... Number of lab organizations / laboratories assisted to implement Quality Assurance procedures or achieve accreditation Number of companies to which specific consultancy input has been provided Training materials produced and distributed to different target groups 	<p>FOOD CONTROL SYSTEM - FOOD CONTROL MANAGEMENT</p> <p>Variable: Capacity of a good management structure</p> <ol style="list-style-type: none"> Existence of an effective Food Safety Authority Existence of a well functioning body providing advice to government on food safety and quality issues Roles and responsibilities for food safety are appropriately assigned and harmonized across different agencies, clearly defined and implemented in a consistent and coordinated way Use of a strategic management plan <p>Variable: Capacity to take adequate decisions based on data</p> <ol style="list-style-type: none"> Existence of a mechanism for data management (collection, analysis and exchange) at national level Existence of a rapid alert system including general provisions for crisis management in the event of food safety incidents Existence of a traceability system Existence of risk analysis body or network Use of procedures for feedback, monitoring and improvement <p>Variable: Capacity of sustainable human resources</p> <ol style="list-style-type: none"> Quantity of personnel with adequate knowledge, skills and motivation within different organizations Number of conducted follow-up activities after direct FAO involvement, based on the recommendations of the FAO project Accumulative number of trade promotion actions (requests and notifications) introduced by the Member State in the WTO-system <p>Variable: Capacity of goodwill and commitment</p> <ol style="list-style-type: none"> Height of financial incentives for producing improved product quality Existence of political will in form of a statement 	<ol style="list-style-type: none"> Value of food exports Number of food borne illnesses and deaths Number of countries that accept food export products from the Member State Availability of food Food producer income Number of countries in which similar programmes have been launched (= replicability)

²² The table was produced as output for an FAO Volunteer project. The contributions that were made by the persons mentioned in Appendix 10 are greatly appreciated.

Variable: Capacity to implement procedures

- 15. Food business operators (producers / packers / traders) comply with food safety and quality regulations and procedures
- 16. Existence of enforcement procedures for food regulations

Variable: Capacity of sustainable financial resources

- 17. Assurance of financial resources

Variable: Capacity of inter-organizational cooperation

- 18. Character of donor-partner relationship
- 19. Alignment of project with a national development strategy
- 20. Number of stakeholders engaged in updating regulations and standards

FOOD CONTROL SYSTEM - FOOD LEGISLATION

Variable: Capacity of having procedures and standards throughout the food supply chain

- 21. Existence of a food law that covers general provisions on food safety and quality
- 22. Existence of food regulations and standards that prescribe project specific mandatory requirements applicable to various aspects of food production, handling, processing, marketing and trade
- 23. Consistency and overlap in regulations relating to or affecting food

FOOD CONTROL SYSTEM - FOOD INSPECTION

Variable: Capacity of inter-organizational cooperation

- 24. Effective cooperation between agencies involved in food inspection
- 25. Working framework among inspectorates and official labs: Planned programme of work, sampling programme and feedback from lab

Variable: Capacity of legal power for carrying out inspections

- 26. Food inspectors have legal instruments to execute their activities

Variable: Capacity of information provision

- 27. Quality of documentation
- 28. Quality of database with food establishments that categorizes premises according to risk

Variable: Capacity to reach the right establishments and foodstuffs with inspections

- 29. Percentage of food establishments that is being inspected

Variable: Capacity of sustainable human resources

- 30. Quantity of personnel with adequate knowledge, skills and motivation within inspection service

Variable: Capacity of technical facilities and resources

- 31. Adequate and operational facilities and equipment are available for food inspection

FOOD CONTROL SYSTEM - OFFICIAL FOOD CONTROL LABORATORIES

Variable: Capacity to work according to standards

- 32. Percentage of laboratories that have adequate Quality Assurance procedures in place
- 33. Percentage of laboratories that are accredited

Variable: Capacity to work efficiently and effectively with the available resources

- 34. Percentage of laboratories that are in use
- 35. Cost effectiveness of operations
- 36. Average number of samples tested per week
- 37. Average amount of time it takes before test results of a certain sample are reported

Variable: Capacity to work efficiently and effectively with the available resources

- 38. Existence of an adequate information system on food safety and quality issues relevant to food laboratories

Variable: Capacity of sustainable human resources

- 39. Quantity of personnel with adequate knowledge, skills and motivation within official food control laboratories
 - 39.1 scientific staff
 - 39.2 management staff
- 40. Average frequency with which laboratory staff is engaged in analysis

Variable: Capacity of technical facilities and resources

- 41. Percentage of food laboratories with adequate facilities and resources

FOOD CONTROL SYSTEM - FOOD SAFETY AND QUALITY INFORMATION, EDUCATION AND COMMUNICATION

Variable: Capacity of a standard mechanism for communication among stakeholders

- 42. Existence of one or more information points with adequate facilities to perform its functions
- 43. Existence of a national communication strategy on food safety and quality

Variable: Capacity to diffuse valuable information on food safety and quality

- 44. Number of individuals reached through different communication channels
- 45. Quality of information material provided through different communication channels

Variable: Capacity to improve national governmental attention to food safety and quality

- 46. Number of statements made on food quality and safety by the responsible Minister in Parliament

Appendix 3 Conceptual Predecessors to Capacity Development

Term	Emergence as development theme	Associated Meaning
Institution building	1950s and 60s	Objective was to equip developing countries with the basic inventory of public sector institutions that are required to manage a program of public investment. Focus was on the design and functioning of individual organizations, not broader environment or sector. Imported or transplanted models from develop countries were often used.
Institutional strengthening/development	1960s and 70s	Shift from establishing to strengthening institutions. Focus was still on individual institutions and not a broader perspective. Tools were expected to help improve performance.
Development management / administration	1970s	Objective was to reach special public or target groups previously neglected. Focus was on delivery systems of public programs and capacity of government to reach target groups.
Human resource development	1970s, 80s	Development is about people. Stresses importance of education, health, population. Emergence of people-centered development.
New Institutionalism	1980s, 90s	Focus was broadened to sector level (government, NGO, private) including networks and external environment. Attention to shaping national economic behaviour. Emergence of issue of sustainability and move away from focus on projects. Emerged in 1970s through field of institutional economics.
Capacity development	Late 1980s and 1990s	Emerged in the 1990s as an aggregate of many other development approaches. Re-assessed the notion of technical cooperation (TC). Stresses importance of ownership and process. Has become “the way” to do development.

Source: Lusthaus et al. (1999)

Appendix 4 Comprehensive explanation of the five building blocks of a National food control system

(a) Food Law and Regulations

The development of relevant and enforceable food laws and regulations is an essential component of a modern food control system. Many countries have inadequate food legislation and this will impact on the effectiveness of all food control activities carried out in the country.

Food law has traditionally consisted of legal definitions of unsafe food, and the prescription of enforcement tools for removing unsafe food from commerce and punishing responsible parties after the fact. It has generally not provided food control agencies with a clear mandate and authority to *prevent* food safety problems. The result has been food safety programmes that are reactive and enforcement-oriented rather than preventive and holistic in their approach to reducing the risk of foodborne illness. To the extent possible, modern food laws not only contain the necessary legal powers and prescriptions to ensure food safety, but also allow the competent food authority or authorities to build preventive approaches into the system.

In addition to legislation, governments need updated food standards. In recent years, many highly prescriptive standards have been replaced by horizontal standards that address the broad issues involved in achieving food safety objectives. While horizontal standards are a viable approach to delivering food safety goals, they require a food chain that is highly controlled and supplied with good data on food safety risks and risk management strategies and as such may not be feasible for many developing countries. Similarly, many standards on food quality issues have been cancelled and replaced by labelling requirements.

In preparing food regulations and standards, countries should take full advantage of Codex standards and food safety lessons learned in other countries. Taking into account the experiences in other countries while tailoring the information, concepts and requirements to the national context is the only sure way to develop a modern regulatory framework that will both satisfy national needs and meet the demands of the SPS Agreement and trading partners.

Food legislation should include the following aspects:

- it must provide a high level of health protection;
- it should include clear definitions to increase consistency and legal security;
- it should be based on high quality, transparent, and independent scientific advice following risk assessment, risk management and risk communication;
- it should include provision for the use of precaution and the adoption of provisional measures where an unacceptable level of risk to health has been identified and where full risk assessment could not be performed;
- it should include provisions for the right of consumers to have access to accurate and sufficient information;
- it should provide for tracing of food products and for their recall in case of problems;
- it should include clear provisions indicating that primary responsibility for food safety and quality rests with producers and processors;
- it should include obligation to ensure that only safe and fairly presented food is placed on the market;
- it should also recognise the country's international obligations particularly in relation to trade; and
- it should ensure transparency in the development of food law and access to information.

Guidelines for the development of food laws are contained in Annex 6.

(b) Food Control Management

Effective food control systems require policy and operational coordination at the national level. While the detail of such functions will be determined by the national legislation, they would include the establishment of a leadership function and administrative structures with clearly defined accountability for issues such as: the development and implementation of an integrated national food control strategy; operation of a national food control programme; securing funds and allocating resources; setting standards and regulations; participation in international food control related activities; developing emergency response procedures; carrying out risk analysis; etc.

Core responsibilities include the establishment of regulatory measures, monitoring system performance, facilitating continuous improvement, and providing overall policy guidance.

(c) Inspection Services

The administration and implementation of food laws require a qualified, trained, efficient and honest food inspection service. The food inspector is the key functionary who has day-to-day contact with the food industry, trade and often the public. The reputation and integrity of the food control system depends, to a very large extent, on their integrity and skill. The responsibilities of the inspection services include:

- Inspecting premises and processes for compliance with hygienic and other requirements of standards and regulations;
- Evaluating HACCP plans and their implementation;
- Sampling food during harvest, processing, storage, transport, or sale to establish compliance, to contribute data for risk assessments and to identify offenders;
- Recognizing different forms of food decomposition by organoleptic assessment ; identifying food which is unfit for human consumption; or food which is otherwise deceptively sold to the consumer; and taking the necessary remedial action;
- Recognizing, collecting and transmitting evidence when breaches of law occur, and appearing in court to assist prosecution;
- Encouraging voluntary compliance in particular by means of quality assurance procedures;
- Carrying out inspection, sampling and certification of food for import/export inspection purposes when so required;
- In establishments working under safety assurance programmes such as HACCP, conduct risk based audits.

Proper training of food inspectors is a prerequisite for an efficient food control system. As current food systems are quite complex, the food inspector must be trained in food science and technology to understand the industrial processes, identify potential safety and quality problems, and have the skill and experience to inspect the premises, collect food samples and carry out an overall evaluation. The inspector must have a good understanding of the relevant food laws and regulations, their powers under those laws, and the obligations such laws impose on the food sector. They should also be conversant with procedures for collecting evidence, writing inspection reports, collecting samples and sending them to a laboratory for analysis. With gradual introduction of HACCP systems in the food industry, the inspector should be trained to handle HACCP audit responsibilities. Clearly, there is a continuing need for training and upgrading the skills of existing inspectional staff and having a policy for human resource development, especially the development of inspectional specialists in specific technical areas. As human resources in some food control agencies in developing countries may be limited, environmental health inspectors are often also asked to work as food inspectors. This is not the ideal situation as they may lack the skills and knowledge to effectively evaluate and inspect food operations. If environmental health inspectors must be used, then they should be carefully supervised and provided with on-the-job training.

(d) Laboratory Services: Food Monitoring and Epidemiological Data

Laboratories are an essential component of a food control system. The establishment of laboratories requires considerable capital investment and they are expensive to maintain and operate. Therefore careful planning is necessary to achieve optimum results. The number and location of the laboratories should be determined in relation to the objectives of the system and the volume of work. If more than one laboratory is required, consideration should be given to apportioning the analytical work to achieve the most effective coverage of the food analyses to be performed and also to having a central reference laboratory equipped for sophisticated and reference analyses.

All food analysis laboratories may not be under the control of one agency or ministry, and a number could be under the jurisdiction of the states, provinces and local authorities. The Food Control Management should, however, lay down the norms for food control laboratories and monitor their performance.

The laboratories should have adequate facilities for physical, microbiological and chemical analyses. In addition to simple routine analysis, the laboratories can be equipped with more sophisticated instruments, apparatus and library facilities as required. It is not only the type of equipment that determines the accuracy and reliability of analytical results but also the qualification and skill of the

analyst and the reliability of the method used. The analytical results of a food control laboratory are often used as evidence in a court of law to determine compliance with regulations or standards of the country. It is therefore necessary that utmost care be taken to ensure the efficient and effective performance of the laboratory. The introduction of analytical quality assurance programmes and accreditation of the laboratory by an appropriate accreditation agency within the country or from outside, enables the laboratory to improve its performance and to ensure reliability, accuracy and repeatability of its results. Prescription of official methods of sampling and analysis also support this effort.

An important element of a national food control system is its integration in a national food safety system so that links between food contamination and foodborne diseases can be established and analyzed. Access to reliable and current intelligence on the incidence of foodborne illness is critical. The laboratory facilities for this type of activity are generally situated outside the food control agencies. It is essential, however, that effective linkages are established between food control agencies and the public health system including epidemiologists and microbiologists. In this way information on foodborne diseases may be linked with food monitoring data, and lead to appropriate risk-based food control policies. This information includes annual incidence trends, identification of susceptible population groups, identification of hazardous foods, identification and tracing of causes of foodborne diseases, and the development of early warning systems for outbreaks and food contamination.

(e) Information, Education, Communication and Training

An increasingly important role for food control systems is the delivery of information, education and advice to stakeholders across the farm-to-table continuum. These activities include the provision of balanced factual information to consumers; the provision of information packages and educational programmes for key officials and workers in the food industry; development of train-the-trainer programmes; and provision of reference literature to extension workers in the agriculture and health sectors.

Food control agencies should address the specific training needs of their food inspectors and laboratory analysts as a high priority. These activities provide an important means of building food control expertise and skills in all interested parties, and thereby serve an essential preventive function.

Source: FAO/WHO (2003)

Appendix 5 Managerial and technological functions that contribute to the realization of quality

Managerial	1. Quality design	
	Drive:	High quality and complex products can only be achieved by starting at the source of the production cycle
	Objective:	- Designing a product - Reduce ambiguity by analysing underlying food and human systems - Stimulate learning processes
	Procedure:	Specify consumer and/or customer demands and translate them into product and process specifications. Specify requirements on resources (suppliers, equipment, people)
	2. Quality control	
	Objective:	Keep product properties, production processes, and human processes between certain acceptable tolerances
	Procedure:	Ongoing performance evaluation of technological and human processes and taking corrective actions if necessary
	3. Quality improvement	
	Drive:	Contributes to reducing ambiguity due to the necessity to better understand systems
	Objective:	Bring system to a higher level of quality performance and into “new zones of control”; working with lower tolerances.
	Procedure:	Involves a systematic approach to improving a system by paying attention to structural causes and solutions by aiming at changing both people, processes and resources
technological	4. Quality assurance	
	Drive:	Typical characteristics of agri-food production put high demands on assuring ultimate product quality, specifically on the intrinsic attribute safety
	Objective:	Control the quality system, which includes all activities and decisions to realise quality, and to provide confidence to customers and consumers that quality requirements will be met.
	Procedure:	Activities deal with setting requirements on the quality system, evaluating its performance and organising necessary changes. Evaluate <i>quality control</i> , <i>design</i> and <i>improvement</i> activities and influence them by means of the quality system.
	5. Quality policy and strategy	
	Objective:	Determine long-term food quality goals and objectives, and how to achieve them by the quality system.
	Procedure:	Determining quality levels of both products, and technological and human resources, and the type of quality system.
	1. Supply and storage of food materials	
	Objective:	<i>Obtaining</i> incoming food materials with required initial physical properties, which must be <i>maintained</i> by appropriate storage conditions.
	Requires:	Understanding of sources of variation that influence variation in properties of incoming materials in relation to (history of) storage conditions.
	2. Processing of food materials to food products	
	Objective:	<i>Transforming</i> incoming materials into food products with desired physical properties by applying appropriate technological conditions.
	Requires:	Insight into how variation sources affect these transformation processes.
	3. Storage and distribution of food products	
	Objective:	<i>Maintaining</i> the required food properties and preventing deterioration by applying appropriate storage and distribution conditions
	Requires:	Understanding of sources of variation affecting deterioration behaviour of (fresh and processed) products in relation to packaging, storage and distribution conditions

Source: Freely adapted from Luning & Marcelis, 2006

Appendix 6 Approaches to capacity development

1. Organizational Approach

Sees an entity, organization or even set of organizations as the key to development. Focus on the capacities of organizations, looking from the inside out. Operational development (OD) approaches apply to work with governments, non-governmental organizations, as well as other civil society and community organizations. The approach focuses on identifying the elements or components of capacity within an organization. Labels for these elements of capacity and prioritization may vary from author to author. There are two kinds of organizational approaches:

1. closed system: examining internal workings of the organization, the bureaucratic machinery
2. open system: examining the organization's relationship to influences from its external environment: institutions, social values, and the political and economic contexts

When capacity development is viewed primarily as organizational development, analysis and intervention function at a practical, micro-level and useful sets of assessment tools. When it extends outwards from OD to encompass institutions and systems, it can become more difficult to plan, monitor, and evaluate intervention

Advantage

Relatively focused and unit of change is clear; due to similarities with the well established field of organizational theory and change

Disadvantage

Narrow focus: organizational component is necessary for development, but not sufficient

2. Institutional Approach

Emerging because early literature didn't distinguish between institutions and organizations. This approach builds the capacity to create, change, enforce and learn from the processes and rules that govern society. The boundary between institutional change and capacity building is vague. Institutional capacity building is often expert-driven and does not include a stage-of-development approach.

Disadvantages

- Fails to consider how it could link to other approaches
- We must be careful to avoid a kind of chauvinism by judging some institutions "right" and others "wrong"

3. Systems Approach

A multidimensional idea. At one level, both institutional and organizational approaches take on a systems perspective. Organizations *are* systems. However, the systems approach refers to a global concept that is multilevel, holistic and interrelated. Systems extend beyond the individual and organizational levels to systems of organizations, their interfaces, and the institutions that guide them.

"capacity systems are seen as dynamic, interconnected patterns that develop over time along certain dimensions toward greater complexity, co-ordination, flexibility, pluralism, interdependence and holism"

Advantage

Comprehensive, flexible, and emphasis linkages between elements.

Disadvantage

Often lacks focus

4. Participatory Process Approach

Those who view development as people-centered and non-hierarchical believe that unless CD is participatory, empowering partnership for which those involved feel a high degree of ownership, intended results cannot be achieved. Development of institutions should be based on attempts to identify and use local expertise, and develop a grassroots, domestic model; rather than impose a foreign model.

Source: Freely adapted from Lusthaus et al, 1999

Appendix 7 PACT – Three types of indicators for HIV/AIDS prevention

Type of indicator	Examples
Process Indicators	<ul style="list-style-type: none"> • Number of members in the technical team • Number of consultants hired to facilitate training • Number of health agents trained • Number of workshop participants • Number of workshops held • Number of people reached in prevention activities • Number of condoms distributed • Number of IEC materials distributed
Outcome Indicators	<ul style="list-style-type: none"> • Percentage of intended population reporting condom use at last with a non-regular partner • Percentage of intended population reporting condom use at last sex with a regular partner
Impact Indicators	<ul style="list-style-type: none"> • HIV incidence among MSM • Percentage of HIV-infected infants born to HIV- infected mothers

Appendix 8 Institutionalizing Capacity Development Focus in Country Programming and Operations

Output	Activities	Indicators	Responsibility
1.1 Increased dialogue with developing member countries (DMCs) on country-specific capacity development (CD) concepts and principles.	Conduct awareness measures and training on capacity development for DMC focal points.	Three awareness-raising sessions prepared and conducted every year beginning in 2007.	Regional departments (RDs). With support from Capacity Development and Governance Division (RSCG), Asian Development Bank Institute, and Strategic Planning and Results Unit (SPRU) on a selective basis.
1.6 Increased resident mission and headquarter staff skills and incentives for capacity development.	Place emphasis on recruitment of sector staff with capacity development skills and long-term DMC experience.	Percentage of new recruits that meet the criteria.	RDs, Budget, Personnel, and Management Systems Department, RSCG
1.3 More efficient and effective support for improved capacity development strategic focus in country development and/or poverty reduction strategies.	Support identification of strengths and weaknesses with regard to critical sector and thematic capacities.	Support provided for inclusive capacity development baseline assessment and gap analysis on request.	RDs. With support from RSCG and SPRU on a selective basis.
2.1 Effective Asian Development Bank (ADB)-wide leadership exercised in support of the proposed capacity development (CD) approach.	High-level officials communicate ADB's capacity development approach in official speeches and include capacity development in policy dialogue with developing member countries (DMCs) and global partnerships.	Records of high-level missions reflect capacity development focus.	Management, regional departments (RDs), Strategy and Policy Department (SPD), Capacity Development and Governance Division (RSCG), Department of External Relations (DER)
1.2 Strengthened RD-wide results-based management system for capacity development objectives.	Identify strengths and weaknesses of RDs' capacity development program and conduct gap analysis based on quality-at-entry criteria.	Performance analysis of 2005 and 2006 programs conducted by February 2007.	RDs. With support from RSCG and SPRU.
1.7 Increased experience with piloting new modalities and processes to support CD.	Pilot new modalities, such as capacity development funds.	Two pilots have been initiated by 2008.	RDs, Regional and Sustainable Development Department, Strategy and Policy Department

Source: ADB(2007)

Appendix 9 Evaluation steps

1. Assemble evaluation team

Evaluation will never be a completely objective process. To increase validity, though, it is very important to set up an evaluation team that can be trusted to make reliable judgements on the different indicators over time. A few characteristics of this team should be kept in mind:

- **Bias.** People and organizations that are involved in the process of capacity building are, naturally, striving for positive outcomes. This may form a bias which might influence the validity of an evaluation in a destructive way. For example, when a negative evaluation will lead to a stop of funding, this might form a reason for stakeholders to mainly report on positive outcomes, and keeping negative outcomes out of scope. This does not necessarily have to happen consciously, the motivation to achieve results itself might lead to a subconscious overestimation of positive outcomes. Therefore, it is important to involve people in the evaluation process that do not gain direct benefit from positive outcomes, or will suffer from a negative evaluation. For example, the evaluation should not be conducted by people whose income is depending on a continuation of funding.
- **Ownership.** As for every step in a capacity building process, it is very important to involve benefiting parties in the process of evaluation as soon as possible. By creating a sense of ownership, letting partner governments conduct or delegate evaluation activities themselves, more motivation will be created. Also, this ownership will lead to a more sustainable approach towards judging progress in food quality and safety improvement. Again, it has to be kept in mind that the party that is coordinating the evaluation will gain no benefits from exaggerating positive outcomes or concealing negative outcomes.
- **Donor demands.** It is possible that donors expect or demand a certain way of reporting on the project they are funding. In this case, it might be wise to involve donors in assembling an evaluation team. This might lead to more confidence in evaluation outcomes.

2. Appoint team coordinator

To promote the ongoing process of evaluating, it is important that activities are well coordinated. Therefore, one person should be in charge of coordinating discussions and performance of different people involved. This person should:

- be independent
- have good contact with all stakeholders (in the sense of having a strong network)
- have expertise in evaluation
- be well acquainted with the project background, activities and stakeholder demands
- be able to take on leadership which is accepted by the other stakeholders

In a process lead by the team coordinator, the steps described below should be carried out. The scorecard can be used as a tool to fill out indicators and data, and can function as a transparent information source on project performance.

3. Completing list of indicators

As discussed in the previous chapter, it is not possible to create one set of indicators that can be directly applied to all projects, since situations and project objectives are too diverse. Therefore, the set of generic indicators that is provided in this report should serve as a basis for further refining. Stakeholders should discuss project objectives and reach consensus on what should be measured. It might be helpful to “map” the indicators, depicting them in a figure that shows linkages and expectations. When further refining the indicators, the SMART checklist (paragraph 2.4.4) should be used.

4. Formulating data sources

For each indicator, suitable data sources should be formulated at the beginning of the project. These data sources should be reliable, valid and accessible over time, during the different moments of measurement. Organizations and individuals involved with the provision of this data should be trusted to provide reliable information.

5. Defining moments of measurement

Depending of project runtime, donor support and availability of stakeholders, the number and moments of measurement have to be defined.

6. Setting targets for each moment

After setting priorities for achievements, target values for all indicators should be linked to moments of measurement. Where possible, baseline information should be filled out as a source of reference.

7. Collect data and rate indicators

At all moments of measurement, or if necessary: also in between these moments, data should be assembled from different data sources in order to rate all indicators. Practitioners should make sure that data collection is as objective as possible, by using standardized surveys, checklists and interview guides. If possible, the same person should rate a certain indicator on each moment of measurement. The ratings should be discussed with the evaluation team, so that some differences in measurement over time can be tracked down. Qualitative information, on remarkable outcomes and external factors that may have influenced the project, should be documented to complement quantitative data.

8. Adjust targets

If desired, targets for future moment of measurement can be adjusted based on an early evaluation. If the goal of a project is changed after a certain period, due to whatever circumstances, it might be wiser to reset targets. By doing this, stakeholders will have a better view on intentions and goals for the upcoming period, and the next evaluation will resemble outcomes in a more realistic way. After all, capacity building programmes should fit to a capacity building needs. If these needs change, so should the activities and therefore the targets. It can be very valuable, though, to use the initial targets as a reference for final evaluation; because it enables practitioners to clearly judge how the course of a programme changed.

9. Discuss outcomes and take follow-up action

The following issues should be discussed

- Overall project performance (and changes over time)
- Per-issue performance (and changes over time)
- External factors that have influenced the project

Based on this discussion, recommendations for further actions should be formulated. This means that “new” capacity building needs should be formulated that exist in the situation after the project was executed. These needs form the basis for the design of new projects. Also, recommendations with regard to priority-setting should be made and the performance of the evaluation team itself should be discussed.

Appendix 10 Attendees FAO meeting

Name	Service	Service
Bessy, Catherine	AGNS	Food Quality and Standards
Casey, Siobhan	AGSF	Agricultural Management, Marketing and Finance
Clarke, Renata	AGNS	Food Quality and Standards
Cuevas García, Roberto	AGST	Agricultural and Food Engineering Technologies
Jackson, Julius	AGNS	Food Quality and Standards
Kenny, Mary	AGNS	Food Quality and Standards
Piñeiro, Maya	AGNS	<i>Moderator</i> , Food Quality and Standards
Takeuchi, Masami	AGNS	Food Quality and Standards
Van der Werf, Hilbert	AGNS	<i>Moderator</i> , Food Quality and Standards
<i>Attending during a part of the meeting</i>		
Muehlhoff, Ellen	AGNP	Nutrition Programmes
Rolle, Rosa	AGST	Food Engineering Technologies
Vandecandelaere, Emilie	AGNS	Food Quality and Standards

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