

Evaluating the Impact of Capacity Building Activities in the field of Food Quality and Safety

Design of an evaluation scorecard and indicators

*Note: This report was prepared by Hilbert van der Werf, a volunteer working at FAO in 2007.
This report does not necessarily reflect the position of FAO, but is provided for information.
This is not an official FAO publication and has not been formally proofread.*

Evaluating the Impact of Capacity Building Activities in the field of Food Quality and Safety

Design of an evaluation scorecard and indicators

DRAFT PAPER

Hilbert van der Werf, Volunteer AGNS
Supervision: Dr. Maya Piñeiro, Senior Officer AGNS

Rome, July 2007



Acknowledgements

This paper was prepared by Hilbert van der Werf, Volunteer and Maya Piñeiro, Senior Officer, Food Quality and Standards Service in the Nutrition and Consumer Protection Division. The inputs of all attendees from the meeting¹, as well as the individual inputs from Catherine Bessy, Renata Clarke, Julius Jackson, Mary Kenny and Masami Takeuchi (AGNS) and Roberto Cuevas Garcia (AGST) are greatly appreciated. A special thanks is addressed to Marlynne Hopper (AGNS), for giving very valuable comments on an early draft of this document.

¹ For an overview of attendees, see Appendix 12

Scope and objectives

The demand for planning and evaluation in development activities through logical frameworks and indicators is increasing. The goal of the study, of which the results are presented in this paper, was to develop a set of indicators for measuring the impact of capacity building activities in the field of food safety and quality. Indicators can serve as a very useful tool, both for evaluating and discussing the outcomes of capacity building activities, as for setting targets and reaching consensus among stakeholders on objectives. Following the terms of reference which are presented in Appendix 13, a literature research and expert meeting were conducted to reach the described goal.

Contents and structure

The presented indicators are based on literature research, benchmarking and insights from FAO staff members. The paper starts with an introduction to the background of capacity building activities from AGNS (Chapter 1) and a benchmark on monitoring and evaluation of activities from other development agencies and literature (Chapter 12). From this benchmark, a view lessons are learned which are presented as recommendations for the development of indicators. Also, the *Framework of activities and results* (Appendix 2) and the *Evaluation Scorecard* (Appendix 3) were based on lessons learned from literature.

The actual set of generic indicators, that was refined based on the internal meeting, is presented in Chapter 4 (an overview can be found in Table 3 (page 12)). Also in Chapter 4, recommendations are given on how to further refine the indicators when applying them to specific projects.

Table of Contents

Acknowledgements	i
Scope and objectives	ii
Contents and structure	ii
Abbreviations	v
1 Project Outline.....	1
1.1 Background.....	1
1.2 Methodology	2
2 Monitoring and Evaluation	3
2.1 Benchmarking	3
2.2 Choices in monitoring and evaluation.....	4
2.3 Developing indicators	6
2.4 Conclusions	8
3 Developing Indicators.....	9
3.1 Collection of indicators.....	9
3.1.1 Gathering factors	9
3.1.2 Defining issues	9
4 Recommendations for generic outcome indicators.....	11
4.1 Introduction	11
4.2 Food Control Management	15
4.3 Food Legislation.....	21
4.4 Food Inspection	22
4.5 Official Food Control Laboratories	26
4.6 Food Safety and Quality Information, Education and Communication (IEC)	28
5 Appendixes	30
6 References	46

List of Appendixes

Appendix 1	Three types of indicators for HIV/AIDS prevention	30
Appendix 2	Framework of activities and results.....	31
Appendix 3	Evaluation Scorecard	32
Appendix 4	Institutionalizing Capacity Development Focus in Country Programming and Operations.....	33
Appendix 5	End evaluation of training activities.....	34
Appendix 6	National Sanitary Veterinary and Food Safety Authority (Romania).....	36
Appendix 7	Quality Cost Report: Tabular Format	37
Appendix 8	Sample Primary Production Facility Inspection Check List.....	38
Appendix 9	List of laboratory materials.....	41
Appendix 10	Standard format for exchange of information between countries on rejections of imported food	42
Appendix 11	The Aid Effectiveness Pyramid	43
Appendix 12	Attendees expert meeting	44
Appendix 13	Terms of Reference	45

Abbreviations

ADB	Asian Development Bank
AGNS	Food Quality and Standards Service
AS	Assurance System
BSc	Bachelor of Science
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)
EC	European Commission
ECDPM	European Centre for Development Policy Management
FAO	Food and Agricultural Organization of the United Nations
FS	Food Safety
FSQ	Food Safety and Quality
FSA	Food Safety Authority
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
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

1 Project Outline

1.1 Background

In the past years, the capacity building group of AGNS has conducted a multitude of projects to improve food quality and safety situations in a broad variety of developing countries. The focus areas of these projects can be described as:

- policy advice on specific issues;
- institutional development and/or strengthening;
- review and updating of food legislation;
- harmonization of food regulations and standards with Codex and other international regulatory instruments;
- training of technical and managerial staff in different food safety related disciplines;
- studies and applied research on specific food related subjects.

Although the field activities are adjusted to the specific situation and demands of the recipient country or region, they can be generally summarized as:

- providing training (on-the-job training, workshops and seminars);
- technical assistance and advice (e.g. on improving operations and developing food safety policies, standards and standard operating procedures);
- development and dissemination of tools (manuals, guidelines, training materials, etc.)

Mostly, these projects are led by one staff member of AGNS, in cooperation with the government of the developing country, as well as (inter)national consultants. The process of assessing needs, fundraising, formulating strategy and evaluation are therefore more or less the individual responsibility of the AGNS officer that is leading the project. Project documents may include project specific indicators for monitoring and evaluation, depending on the demands and approach of the involved parties. In order to use a standard approach to capacity building activities, the recently published "Guidelines to assess capacity building needs" (FAO, 2006b²) is used as a reference for the process of assessing needs and formulating strategies.

At the end of each mission, a terminal statement is produced as a summarization of project activities, which is sometimes accompanied by evaluations of these activities and evident outcomes. Still, a constraint that is commonly expressed by AGNS officers with regard to the execution of projects and the attempt to measure impact, is related to restricted possibilities to do follow-ups and thorough evaluations. This is an unfortunate fact, since more comprehensive evaluations would be very valuable to:

- inform stakeholders about outcomes (counterpart, AGNS lead-officer, donor country or organization, general public, etc.);
- leave other organizations and countries with a baseline description for follow-up projects;
- strengthen future approaches to capacity building (learning from the past);
- raise funds for follow-up projects

Also, mid-term evaluations could lead to improvements in the project approach for the remainder of its period. In order to cope with the limited funding that is available for evaluating, as well as with the fact that projects are conducted by different officers, it would be valuable to have a standard format for project evaluation. The goal of this study is to develop a set of indicators that are useful for measuring the impact of capacity building projects in the field of food safety and quality. A "project", in this sense, comprehends a combination of related activities that are focused on a certain region. These are Technical Cooperation Projects (TCPs) and Trust Fund Projects (TFs).

The set of indicators that is developed in this study will form a valuable basis for discussing a common approach to evaluation. By reaching agreement on the indicators, involved parties will be forced to make expectations and outcomes more explicit; which can improve clear communication and

² <ftp://ftp.fao.org/docrep/fao/009/a0601e/a0601e00.pdf>

alignment of expectations in project management. Though, merely having a set of indicators is not enough for reaching this improvement. As often stated in literature, indicators will only have value when they are considered in a context. This means that an answer should also be provided to questions such as: when to measure? Who should measure? How should one measure? Answering these questions; however is not the objective of this study, which merely seeks to create a complete list of indicators that can be used in measuring impact. The goal of this project is *not* to create a generic set of indicators that can be *directly applied to all projects* in the field of food safety and quality. Because of the complexity of this field, the diversity of activities and the diversity between countries and situations in which projects are conducted, such a set would be both far too extensive and besides, often irrelevant.

1.2 Methodology

At first, a benchmark was established, based on the evaluation activities of other development organizations. Afterwards, FAO project reports (TCPs and TFs) were reviewed in order to set up a draft set of indicators. Based on expert opinions, these indicators were tested on their applicability to recent national capacity building projects. In a consultation meeting, FAO staff members who have been involved in capacity building projects discussed on the set of indicators. After this, this draft paper, which incorporates the reviewed indicators, was written. This paper and the set of indicators can be further refined based on comments and suggestions of FAO staff.

2 Monitoring and Evaluation

2.1 Benchmarking

The publications of the following organizations were examined when establishing the benchmark:

- 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”. A broad discussion is going on about the definition of these terms and the broader concept of capacity building. At this stage, an overview of this discussion would be more distracting than clarifying. Therefore, at this point, only the specific definition of capacity building will be given that is applicable to the field of AGNS:

“...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, 2006b)

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.” (WB 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)

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

Table 1 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 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."</i>
6.	Committing to the investment costs <i>"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."</i>

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 program 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

2.2 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.

In the logical framework (logframe) for FAO projects (FAO, 2006a), a distinction is made between impact, outcomes, outputs and activities. *Outcome* is defined as “the results of outputs which are the result of activities”. According to the logical framework, outcome should be formulated as one clear statement, which (if certain conditions hold) will lead to impact. In the field of AGNS, the *outcome* of all activities can be described as “Strengthening the national food control system”. 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 program 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 outputs and outcomes. It is better to make decisions on the moments of measurement for these kinds of 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 framework³ that will be presented later in this report takes into account the dynamic character of capacity building, which enables practitioners to expose successes and failures that would be overlooked when putting too much faith in the linear relation that is presented by the logframe.

The distinction between process, outcome and impact is also used by PACT Brasil (2006), as shown in Appendix 1. 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 1 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.

Source: Adjusted from PACT Brasil (2006)

³ This framework will be referred to as “evaluation scorecard” or “scorecard” later on in this report, in order not to confuse it with the FAO logframe

Given the fact that capacity building is an “ongoing process” of which many results are mostly not directly visible 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.

In the “Framework of activities and results” (Appendix 2) the difference between activities, outcomes and impact is depicted for the field of food quality management. As shown, there is a pay-off between focus on short-term (outcomes) or long-term changes (impact) and certainty about the contributions a specific program has made to these changes. The more complex the field of development is, and the larger the number of development projects, the larger the uncertainty becomes. 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 best result that can be achieved with respect to this struggle is: moving “from a state of not really knowing anything about how a program is influencing a desired outcome” to concluding “with reasonable confidence that the program 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.

2.3 Developing indicators

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 should be used (Adapted from FAO 2007, 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 (or: relevant)*⁴: 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 issues⁵
- *Realistic (or: achievable)*: The NGO must have the resources necessary, human and financial, to measure the indicator
- *Temporal (or: time-based)*: 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.).

⁴ The terms between brackets can be found in the FAO document

⁵ This stresses a need for a *broad* set of indicators, not necessarily a *detailed* list

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 1. 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 2 Adapted from CIDA Evaluation Framework (2004)

- | |
|---|
| <ol style="list-style-type: none"> 1. What progress was made towards the achievement of results at the output, outcome and impacts levels? 2. To what extent did these results contribute to poverty reduction and sustainable development? 3. Has the program been responsive to Mubara's⁶ development changes, priorities and objectives? 4. To what extent will the results and benefits continue after CIDA's involvement ends? 5. To what extent have partnerships and/or linkages between institutions and organizations been encouraged and supported? 6. Were management structures effective in responding to ongoing challenges and in promoting creativity and innovation? 7. Were human, financial and physical resources used appropriately and financial information accurately and adequately maintained? 8. 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 offers a good starting point for developing indicators for AGNS 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 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 2003⁷).

⁶ Mubara is a fictive country that is used in the explanation of CIDA framework

- 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 ⁽¹⁰⁾
- 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.

2.4 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. Often, a weak distinction is made between direct outputs of a project, and long-term impact. A few concepts are evidently very important for establishing indicators:

- 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 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?"
- the goals of projects should be very clear. 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.
- 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
- 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 differ between different countries and situation, there is also a very strong need for specification between different AGNS 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.

3 Developing Indicators

3.1 Collection of indicators

3.1.1 Gathering factors

From project documentation, other publications (also from other organizations) as well as interviews, a multitude of factors were derived that were based on:

- intentions and demands that drove a project
- achievements / successes
- non-achievements / failures
- other lessons learned from projects

3.1.2 Defining issues

The factors were translated into indicators and these were placed in a framework, being attributed to one of the building blocks for strengthening a national food control system. These five building blocks play a central role in the activities conducted by AGNS and therefore largely define whether outcomes or impact have been reached. Still, some other issues from literature asked for special attention and did not seem to be directly attributable to one of the five building blocks. During the collection of indicators, compliance to the SMART-checklist was sought as much as possible. In an iterative process, issues were either reformulated or deleted when a lack of relevance was evident. When reformulating, an attempt was made to define an issue that covered a number of indicators and did not overlap too much with other issues. Eventually, this led to a distinction of the following issues:

1. Food control management
2. Food legislation
3. Food inspection
4. Official food control laboratories
5. Food Safety and Quality Information, Education and Communication
6. Influence on Food Supply Chain
7. Sustainability
8. Inter-Organizational Interactions
9. Management Strength and Creativity

After the indicators were established based on the different issues and information provided by documents and interviews, they were checked on relevance, applicability and overlap. Although the last criterion is not devastating for a good evaluation (in fact: it is better to have more information on a certain point than to little), it should be taken into account that a lot of indicators measuring the same thing might lead to false interpretations of project success or failure. Therefore, effort has been made to measure as much relevant information as possible, while limiting the number of indicators.

Indicators can, as clearly emerges from literature and interviews, only be relevant when they are measured at the right moment. Therefore, the distinction between *process*, *outcome* and *impact indicators* (which is discussed in paragraph 2.2) was made to subdivide the indicators. To link a moment of measurement to these different types of indicators, an evaluation scorecard is established, which is presented in the next chapter.

After the consultation meeting, it was decided to merge indicators from different issues and keep only the five building blocks. The reason for this decision was that the issues merely serve as a structure for the indicators. Because all indicators that were initially attributed to issues 6-9 could also be moved to one of the five building blocks (issues 1-5), the preference was given to keep only these five building blocks and removed issues 6-9. This leads to a more clear structure, which is based on the same distinction of building blocks as is used in other phases of AGNS project management. Following an advice from the consultation meeting, a substructure of *variables* was added to the main structure of the five building blocks. These variables describe what kind of capacity is measured by the different indicators that are attributed to them. In this variables the issues like “inter-organizational interactions” and “sustainability”, which were removed as main-issues, can be found back. Adding the variables clarifies what kind of capacity is important for each of the building blocks, which

promotes a more structured and clear discussion about the indicators, also when these are specified for a particular project.

For the consultation meeting, accompanying scales were provided for most indicators, as examples. These scales could trigger the thoughts of the expert on what would, and what would not, be relevant or possible in measuring the indicators. Since it became clear that scales are very strongly dependent on the specific situation in which a project is conducted (with regard to project focus, suitable data sources, moment of measurement, etc.), these original scales were taken out of the generic set of indicators. Instead, some recommendations and examples will be provided on how suitable scales *could be* developed for specific projects.

4 Recommendations for generic outcome indicators

4.1 Introduction

One of the most important outcomes of the consultation meeting was that it would be impossible to create an exhaustive list of indicators that can be directly applied to all AGNS projects. This finding confirms the findings from literature. Besides rating the different blocks of indicators (which were, during the expert meeting, still based on nine issues), the experts gave more general recommendations on the structure of the set of generic indicators and gave their opinions with regard to opportunities and constraints for using the set.

In this chapter, a set of *generic* indicators will be provided. It is very important to realise that these indicators, as they are formulated now, are not concrete enough for direct application to projects. Instead, this set should provide a broad insight in the important aspects that influence the impact of capacity building activities in the field of food safety and quality. It is up to practitioners to further specify the indicators and decide on the way in which they should be used for evaluations.

The indicators are subdivided into the five building blocks of a national food control system, instead of into the earlier mentioned nine issues. This was done to create a more clear structure in the list of indicators. Also, variables are mentioned that describe what kind of capacity is measured by the indicators. These variables can form a good basis for further discussing the set of indicators and for applying it to specific projects.

Table 3 Overview of process, outcome and impact indicators

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 <p>Variable: Capacity to implement procedures</p> <ol style="list-style-type: none"> Food business operators (producers / packers / traders) comply with food safety and quality regulations and procedures Existence of enforcement procedures for food regulations <p>Variable: Capacity of sustainable financial resources</p> <ol style="list-style-type: none"> Assurance of financial resources <p>Variable: Capacity of inter-organizational cooperation</p> <ol style="list-style-type: none"> Character of donor-partner relationship Alignment of project with a national development strategy Number of stakeholders engaged in updating regulations and standards <p>FOOD CONTROL SYSTEM - FOOD LEGISLATION</p> <p>Variable: Capacity of having procedures and standards throughout the food</p>	<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)

	<p><u>supply chain</u></p> <p>21. Existence of a food law that covers general provisions on food safety and quality</p> <p>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</p> <p>23. Consistency and overlap in regulations relating to or affecting food</p> <hr/> <p>FOOD CONTROL SYSTEM - FOOD INSPECTION</p> <p><u>Variable: Capacity of inter-organizational cooperation</u></p> <p>24. Effective cooperation between agencies involved in food inspection</p> <p>25. Working framework among inspectorates and official labs: Planned programme of work, sampling programme and feedback from lab</p> <p><u>Variable: Capacity of legal power for carrying out inspections</u></p> <p>26. Food inspectors have legal instruments to execute their activities</p> <p><u>Variable: Capacity of information provision</u></p> <p>27. Quality of documentation</p> <p>28. Quality of database with food establishments that categorizes premises according to risk</p> <p><u>Variable: Capacity to reach the right establishments and foodstuffs with inspections</u></p> <p>29. Percentage of food establishments that is being inspected</p> <p><u>Variable: Capacity of sustainable human resources</u></p> <p>30. Quantity of personnel with adequate knowledge, skills and motivation within inspection service</p> <p><u>Variable: Capacity of technical facilities and resources</u></p> <p>31. Adequate and operational facilities and equipment are available for food inspection</p> <hr/> <p>FOOD CONTROL SYSTEM - OFFICIAL FOOD CONTROL LABORATORIES</p> <p><u>Variable: Capacity to work according to standards</u></p> <p>32. Percentage of laboratories that have adequate Quality Assurance procedures in place</p> <p>33. Percentage of laboratories that are accredited</p> <p><u>Variable: Capacity to work efficiently and effectively with the available resources</u></p> <p>34. Percentage of laboratories that are in use</p> <p>35. Cost effectiveness of operations</p> <p>36. Average number of samples tested per week</p> <p>37. Average amount of time it takes before test results of a certain sample are reported</p> <p><u>Variable: Capacity to work efficiently and effectively with the available resources</u></p> <p>38. Existence of an adequate information system on food safety and quality issues relevant to food laboratories</p>	
--	---	--

	<p><u>Variable: Capacity of sustainable human resources</u></p> <p>39. Quantity of personnel with adequate knowledge, skills and motivation within official food control laboratories</p> <p>39.1 scientific staff</p> <p>39.2 management staff</p> <p>40. Average frequency with which laboratory staff is engaged in analysis</p> <p><u>Variable: Capacity of technical facilities and resources</u></p> <p>41. Percentage of food laboratories with adequate facilities and resources</p>	
	<p>FOOD CONTROL SYSTEM - FOOD SAFETY AND QUALITY INFORMATION, EDUCATION AND COMMUNICATION</p> <p><u>Variable: Capacity of a standard mechanism for communication among stakeholders</u></p> <p>42. Existence of one or more information points with adequate facilities to perform its functions</p> <p>43. Existence of a national communication strategy on food safety and quality</p> <p><u>Variable: Capacity to diffuse valuable information on food safety and quality</u></p> <p>44. Number of individuals reached through different communication channels</p> <p>45. Quality of information material provided through different communication channels</p> <p><u>Variable: Capacity to improve national governmental attention to food safety and quality</u></p> <p>46. Number of statements made on food quality and safety by the responsible Minister in Parliament</p>	

4.2 Food Control Management

A strong food control system demands a strong management process of planning, organizing, monitoring, coordinating and communicating. To integrate these activities, a solid structure has to be in place, consisting of:

- institutions that cover the different required management activities
- individuals who are capable and willing to execute the necessary tasks correctly

Food control management can be considered as the structure of entities that should ensure that the other building blocks are controlled in the right way. *Food legislation* forms a basis for the definition of authorities and responsibilities, which strongly influences food control management. Positive outcomes in strengthening *food control management* will be reflected in the coming into being of various organizations and systems, as well as adequate human resources. Below, indicators are defined that influence the strength of the food control management system.

Source: Adapted from FAO Guidelines to assess capacity building needs (FAO, 2006b)

Variable: Capacity of a good management structure

1. Existence of an effective Food Safety Authority (FSA)”

“This authority could be a specially created Food Council, composed of representatives from each currently relevant body dealing with food safety, or a separate Ministry. A central food authority would be able to set and to implement a national food policy and to enforce food measures uniformly across sectors and across levels of government. Such a centralised system may also allow for a more efficient use of resources and may offer an advantage in the case of a national food disease outbreak. A central food authority may also effectively participate in the development of regional and international standards” (Report on Food Legislation in the Republic of Moldova, TCP/RER/3002, FAO 2006)

Also, specific indicators should be defined based on the objectives and activities that the FSA has in a certain country. An example of these objectives and activities for the FSA in Romania is provided in Appendix 5. Specific indicators based on objective 6, for example, could be:

- Number of Codex documents received and made available for access
- Number of Codex documents actively disseminated to stakeholders
- Frequency with which government representatives attend international working groups on Codex issues
- Budget provided to the Codex Romanian subcommittees

It should be noted that these indicators are only valid when the FSA has this specific objective. In other countries, for example, other bodies might be responsible for dissemination of Codex document. Indicators for the functioning a certain body should therefore, naturally, be defined based on the specific mandate of that body. This remark accounts for all of the generic indicators provided below, and will therefore not be repeated each time.

2. Existence of a well functioning body providing advice to government on food safety and quality issues

This body can be for instance a Codex Committee, but does not necessarily have to be. In the example below, the Export Inspection Council serves as an advisory body on standard setting by the government.

“The Export Inspection Council, set up under the Export (Quality Control and Inspection) Act of 1963 is an advisory body to Central Government which is empowered under the act to notify commodities which will be subjected to quality control and inspection prior to export; establish standards and quality for such notified commodities; specify types of Quality Control/ or inspection to be applied to such commodities. Coffee is not among the commodities that it presently regulates.” (CFC/ICO/06 – GCP/INT/743/CFC)

Examples of specific indicators:

- Export Inspection Council is empowered by law as an advisory body to the Central Government to notify commodities for quality control and inspection
- Number of official meetings (of which minutes exist) between the Export Inspection Council and the Central Government
- Inclusion of coffee as a commodity that is regulated by the Export Inspection Council; which means that coffee will be subject to quality control and inspection prior to export and specific quality standards are established for coffee
- Frequency of interaction between National food safety advisory body and Regulatory Authority

3. Roles and responsibilities for food safety are appropriately assigned and harmonized across different agencies, clearly defined and implemented in a consistent and coordinated way

Examples of specific indicators:

- All agencies operating in the field of food safety have a clearly described mandate on which they base their activities
- The operations of different agencies are not conflicting, in a sense of contradictory intentions or overlapping tasks

4. Use of a strategic management plan

Examples of specific indicators:

- Goals, objectives and activities are clearly described for all governmental bodies operating in the field of food safety and quality (as is done for the NSVFSA in Romania; see Appendix 6)
- The operations of different agencies are not conflicting, in a sense of contradictory intentions or overlapping tasks

Variable: Capacity to take adequate decisions based on data

5. Existence of a mechanism for data management (collection, analysis and exchange) at national level

Examples of specific indicators:

- An institute exists (either governmental or commercial) that collects data on food safety and quality issues
- Frequency with which data is collected on different steps of the food supply chain (production, distribution, trading, consuming) and reported back to the Food Safety Authority

6. Existence of a rapid alert system including general provisions for crisis management in the event of food safety incidents

Examples of specific indicators:

- Guidelines exist on emergency preparedness and response, stating responsibilities parties and necessary actions
- Provisions on a rapid alert system are made in food legislation
- Percentage of messages sent to the FSA - regarding a serious direct or indirect risk to human health deriving from food or feed, - which were analyzed and taken corrective action upon, like:
 - suspension of the placing on the market or use of the food in question;
 - suspension of the placing on the market or use of the feed in question;
 - laying down special conditions for the food or feed in question;
 - any other appropriate interim measure (*EC 178/2002; Article 52*)
- Percentage of emergency cases in which the measures taken were confirmed, amended, revoked or extended within 10 working days (*EC 178/2002; Article 52*)

7. Existence of a traceability system

Examples of specific indicators:

- Percentage of food business operators who have systems and procedures in place which allows them to identify any person from whom they have been supplied with a food, a feed, a food-producing animal, or any-substance intended to be, or expected to be, incorporated into a food or feed (*EC 178/2002; Article 18*)
- Percentage of food or feed which is placed on the market that is adequately labelled or identified to facilitate its traceability, through relevant documentation or information in accordance with the relevant requirements of more specific provisions (*EC 178/2002; Article 18*)
- Percentage of food safety incidences in which the origin of the problem was traced down

8. Existence of a risk analysis body or network⁷

Examples of specific indicators:

- An independent and objective scientific institute carries out the following activities based on scientific evidence:
 - hazard identification
 - hazard characterisation
 - exposure assessment
 - risk characterisation
- Percentage of incoming requests for risk assessment that are taken up by the scientific institute
- Average time the scientific institute takes to report the risk characterisation back (to the FSA or other requesting party)
- Average time it takes for the communication body to communicate the risk to relevant stakeholders
- FSA authority has clear procedures for risk management

9. Use of procedures for feedback, monitoring and improvement

Examples of specific indicators:

- Number of meetings planned by the FSA to discuss the national food control system
- Average number of stakeholders from different parties involved in these meetings
- Percentage of recommendations that are derived from this meeting, which are translated into action

Variable: Capacity of sustainable human resources

10. Quantity of personnel with adequate knowledge, skills and motivation within different organizations (e.g. Relevant Ministries, Codex Committee, Food advisory body)

The knowledge and skills that individuals should possess depends on the function of the organization that they're working in. To measure this knowledge, it might be useful to use a confidence-rating as is done for the training evaluation that is presented in Appendix 5. Indicators for measuring the knowledge of Food advisory body employees could for instance be:

- confidence to explain the importance of food safety
- confidence to explain the concept of risk analysis
- confidence to explain the different aspects of a food law
- confidence to explain the concept of "farm-to-fork" approach
- confidence to disseminate acquired knowledge and skills

These indicators can be rated with a high level of subjectivity, especially when employees have little motivation to improve their knowledge or when they are reticent with being self critical. It might be possible to conduct open interviews, in which consultants ask interviewees to actually explain different concepts which are important in their work.

⁷ Food safety decision-making and priority-setting is based on the application of risk analysis processes (incorporating risk assessment, risk management, risk communication)

Also, it would be useful to measure the quality with which employees perform their job. This can for instance be done by letting supervisors (or external evaluators) give numerical ratings to the way in which employees perform different tasks.

Variable: Capacity of partner country initiative

11. Number of conducted follow-up activities after direct FAO involvement, based on the recommendations of the FAO project

“One component of the project is focused on the transposition of the EU food safety regulations (additives, contaminants, food hygiene, labelling, materials in contact with food etc.). In addition, five guidelines should be drafted on HACCP, GMP and GLP. Training Programs including those for inspection services on official control and general support for the operation of the FSA are also provided. In order to avoid overlaps, follow-up activities should concentrate on the recommendations of the present report.” (*Country Legislative Report Bosnia and Herzegovina, TCP/RER/3002, Chapter 7: “Follow up”*)

As broadly mentioned in literature, country ownership and involvement are very important in reaching sustainable development. This ownership can be indicated by measuring to what extent the recipient country takes its own initiative to follow-up on the initial project.

Indicators (to be measured *after* the project) for the case above could be:

- number of guidelines drafted on HACCP, GMP and GLP
- number of food inspectors trained on official food control
- financial provisions secured for supporting the FSA

12. Accumulative number of trade promotion actions (requests and notifications) introduced by the Member State in the WTO system

This indicator shows that the partner country is taking initiative to contributing to the process of international decision-making on food trade

Variable: Capacity of goodwill and commitment

13. Height of financial incentives for producing improved product quality

Financial benefits are a very important incentive for producers (and other food business operators) to comply with certain voluntary standards or procedures. Financial benefits are therefore an important form of systemic capacity that can increase the willingness for food business operators to deliver higher quality produce.

An indicator for this incentive could be the “Costs to quality”, which can give insight in savings or extra expenses between the initial situation and a latter one, for instance after a producer has adapted HACCP. A way to calculate Costs to quality is provided in Appendix 5.

14. Existence of political will in form of a statement

Variable: Capacity to implement procedures

15. Food business operators (producers / packers / traders) comply with food safety and quality regulations and procedures

Specific indicators should be based on the regulations and procedures that are needed in a particular situation. They can for instance be formulated as:

- percentage of producers that have implemented a traceability system
- percentage of producers that are implementing HACCP / have certification
- percentage of producers that have implemented GHP/GAP/GMP have certification
- percentage of producers that are complying to (other) project specific regulations (e.g. not using certain pesticides or specific quality schemes)

16. Existence of enforcement procedures for food regulations

The indicators below are an example of indicators for the enforcement of regulations of food hygiene:

- Percentage of inspection reports and letters in which a clear distinction is made between legal requirements and recommendations
- Percentage of enforcement actions in which authorities handled correctly according to prove, which means:
 - in case of surrenders of food: records are available and prove that food has been correctly⁸ disposed of
 - in case of a detention at a premise: records confirm that the detention has been appropriately
 - in case of closures of a premises: records show that actions which has been confirmed in writing with the food business operators were appropriate and the premises have been visited to check on closure
- In case of simple caution: records clarify that sufficient evidence had been gathered to enable a prosecution to be taken if the offer of a simple caution had been refused. The case was presented to the Environmental Health Manager for agreement on a pro-forma report (that is used to evaluate each case).

Variable: Capacity of sustainable financial resources

17. Assurance of financial resources

Examples of specific indicators:

- Yearly national budget (USD) that is reserved by the government for activities regarding the strengthening of the national food control system for the next year
- Planned yearly increase of this budget for the next five years, as reflected by official statements from the government. (e.g: 10% each year)
- Yearly external financial resources (USD) that are reserved for activities regarding the strengthening of the national food control system for the next year
- Planned yearly increase of these resources for the next five years, as reflected by official statements from the government

Variable: Capacity of inter-organizational cooperation

18. Character of donor-partner relationship

A way to typify this relationship is using Aid Effectiveness Pyramid (OECD 2006b, see Appendix 11), which distinguishes three levels. The levels below are based on this model.

1. Harmonization (*Donors⁹ -donors*): Donors and development agencies establishing common arrangements, simplifying procedures, sharing information. Proof of meetings between different development organizations should be provided, showing that common agreements have been made on procedures and sharing of information.
2. Alignment (*Donors-partners*): Aligning with partners' agenda, using partners' systems. Proof should be provided that development agencies assess the needs of the partner country and base their activities on these needs. This proof should reflect that activities are set up to strengthen the present situation, based on initiatives that are already taken.
3. Ownership (*Partner countries*): Partners setting the agenda. Evidence for this level could consist of official decisions from the Parliament of the partner country, which show that the government is setting its own agenda for development. Subsequently, work plans and strategies of other organisations should comply with the priorities and timing provided by this agenda.

A target should be set for the specific indicator:

- Percentage of missions within the project under evaluation that qualify for the "ownership" and the "alignment" character.

⁸ Terms like "correctly", "appropriately", "authorized" etc. refer to national food law and regulations

⁹ "donor" can both be interpreted as an organization that provided financial resources, as well as an organization, like FAO, that provides any other type of resources that contribute to capacity (e.g. knowledge).

19. Alignment of project with a national development strategy¹⁰

Besides alignment with a national (and nationally owned) agenda for development, it is valuable when activities are aligned with other UN activities. For this, the project under evaluation should fit to a national planning and resources network such as the “United Nations Development Assistance Framework” (UNDAF).

A specific indicator for this alignment can be:

- Percentage of activities in which the goals and priorities are derived from the UNDAF

20. Number of stakeholders engaged in updating regulations and standards

It is valuable to involve stakeholders in the decision-making process on food safety and quality regulations and standards. This can improve commitment to these standards, as well as provide useful knowledge for decision makers. Indicators to measure this engagement can be formulated as:

- Number of official meetings on food safety and quality regulations and standards, to which representatives of all stakeholder groups (Ministry, FSA, Advisory Body, farmers, producers, traders, consumer groups and NGO's) attended
- Average number of remarks made by each of the stakeholder groups during the meetings (*give a separate number for each stakeholder group*)

¹⁰ For example NMTPF or UNDAF (FAO 2006b)

4.3 Food Legislation

Food legislation here refers to the combination of laws and regulations that influence the food control system. The way in which these laws and regulations are managed is, in this framework, considered to be part of the building block food control management, since the executive power is an attribute of the different authorities as described under that building block. Therefore, indicators for food legislation are only focused on the existence of good laws and regulations; and not on the way in which these are carried out.

Source: Adapted from FAO Guidelines to assess capacity building needs (FAO, 2006b)

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

Food legislation forms the basis for provision of authorities. Therefore, it should cover statements on how different food safety and quality situations should be handled and delegate responsibilities.

A set of indicators for a good food law should be a comprehensive list of provisions that cover all aspects of food control that are necessary in a certain country. Amongst other things, a food law should:

- lay down general principles on food and feed, food and feed safety and quality
- put the primary responsibility for food and feed safety on food and feed producers
- create the Food Safety Agency of the country
- establish official control and crises management procedures
- lay down general conditions and procedures for all issues with a direct or indirect impact on food and feed safety and quality (such as placing food on the market including novel food, approval of the sites, register, export and import requirements etc.)

These functions of a food law can be seen as examples of indicators.

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

When a project is conducted because a direct hazard has been signalled for a certain foodstuff, it might be wise to formulate specific regulations and standards for that hazard. In case of the quote below, a project was set up to decrease the level of OTA¹¹ contamination in coffee. To control this level of OTA, it would be good to put down in law mandatory levels for moisture content during different steps in the supply chain, since this moisture content promotes the level of OTA:

“Consideration might also be given to the establishment of mandatory moisture limits for coffee in the marketing chain. Present CBI voluntary guidelines specify a maximum moisture content of 11.0 % (wb) with a tolerance of 0.5%. There is much information that has come out of the global project that could inform deliberations on this issue including: description of practices of moisture measurement in the market chain and moisture levels of coffee in local marketing from the market chain survey [...]; assessment of moisture measurement methods [...]; relationship between Aw and moisture content of coffee [...].”

An indicator can be formulated as:

- A mandatory maximum level of moisture content is described for each step in the supply chain of coffee

23. Consistency and overlap in regulations relating to or affecting food

¹¹ OTA stands for *ochratoxin A*, which is a microtoxin

4.4 Food Inspection

Food inspection, either carried out by government agencies or independent organizations, should ensure that food is handled in accordance with food legislation throughout the whole production and distribution chain (including domestically produced, imported and exported food). Outcomes in the improvement of food inspection services should be reflected in the existence of a well equipped service, both in terms of guidelines, legal instruments as human resources. Besides this internal improvement, an increase of the number of inspected foodstuffs should be visible.

Source: Adapted from FAO Guidelines to assess capacity building needs (FAO, 2006b)

Variable: Capacity of inter-organizational cooperation

24. Effective cooperation between agencies involved in food inspection

Together, the different agencies involved in food inspection should cover as much as the food market as possible. This can only be achieved by a good cooperation between these different agencies. Indicators can be formulated as:

- integrate risk based approach; choices on the order in which different establishments are inspected depend on the kind of foodstuff, market and possible hazards, as well as historical information
- existence of common practices and interventions
- adequate coordination between inspectorates, frequency of communication and existence of coordinating centre

25. Working framework among inspectorates and official labs: Planned programme of work, sampling programme and feedback from lab

- existence of procedures for communication between inspectorates and official labs
- frequency of communication between inspectorates and official labs
- average time it takes before an inspection service receives a report on a certain sample from the laboratory

Variable: Capacity of legal power for carrying out inspections

26. Food inspectors have legal instruments to execute their activities

In the “Perspectives and guidelines on food legislation, with a new model food law” (FAO 2005), a few recommendations can be found that focus on the role of food inspectors. These can be seen as indicators:

- inspectors have the power to inspect establishments where certain activities in relation to chemicals or pesticides are taking place, and the power to search premises, aircrafts, vessels or vehicles if violations are suspected
- inspectors may weigh, count, measure, mark, seal or open any samples of food as well as take samples or photographs, read any values recorded by measuring instruments installed at the food business or take their own measurements
- inspectors are provided with the power to seize chemicals, pesticides, documents or other materials
- inspectors may issue an improvement notice ordering a food business to make certain improvements within a specified time, and in the meantime they may seize food, destroy it if it poses a hazard to human health or shut down all or part of the food business
- inspectors have the power – on a temporary or permanent basis – to issue and withdraw licences to operate a food business
- with regard to foods of animal origin, inspectors have specific powers to deal with particular situations such as the power to prohibit or restrict imports and exports and the movement of animals and animal products within the country
- persons or entities importing, exporting, manufacturing, storing, distributing, selling and using specified substances have record-keeping responsibilities

- the law obliges owners, managers and employees of the inspected premises to cooperate with inspectors. Equally, however, where resistance is expected or where assistance is otherwise required, inspectors may call upon the forces of public order, local administrations and customs authorities in the exercise of their powers
- the law binds the inspectors to confidentiality, so that they will not reveal any information gained during inspections about the operation of food businesses

Also, the law should provide inspectors with the authority to FAO/WHO (2005a):

- charge fees for the inspection of consignments and sample analysis
- recall consignments following importation
- retain control over consignments in transit during intra-national transport or during storage prior to import clearance
- implement administrative and/or judicial measures when the specific requirements are not satisfied

Variable: Capacity of information provision

27. Quality of documentation

Standardization of formats in which information is very important both for clarifying *what* is measured, as for providing transparency in outcomes, to all involved parties.

Indicators for this capacity can be formulated as:

- food inspectorates are using high quality inspections checklists
- food inspectorates are using standardised inspection report forms

In Appendix 8 examples are provided of integrated inspection checklists and inspection report forms for Primary Production Facilities. The report form consists of the record keeping, overall assessment, corrective actions, etc.

For a good inspection of imported and exported food, it is important that there is a good exchange of information between countries. Appendix 10 states a list of requirements for the sharing of information between countries. These requirements can serve as a list of specific indicators for judging this kind of information provision.

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

Example for a specific indicator:

- Percentage of chicken farms, slaughterhouses and processors that are recorded in a national database and ordered according to a scientifically based risk rating

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

29. Percentage food establishments that is being inspected

Based on risk-analysis, choices should be made on which food establishments have the highest priority to be checked. This priority can be based on e.g. type of food, geographical location, domestic or import, production size, export market, incidences in the past, etcetera. The specific indicators depend on the basis on which priorities are given.

For example, a distinction between different types of food establishments can be made as follows:

- Retail grocery store, convenience store, party store
- Bakery, fish market, butcher shop, candy store, produce market
- Food warehouse, distribution centre, transfer station, public cold storage facility
- Large or small food processing plant including:
 - Ice, water, juice or soft drink plant
 - Winery, brewery, or distillery
 - Egg grading & packing plant
 - Fruit & vegetable repacking operation, or brining station

- Flour mill or cereal plant
- Cider mill, maple syrup or honey house
- Food salvage or reclamation centre
- o State or county fair concession
- o Establishments that primarily serve food that can be immediately consumed, or:
 - Restaurant, cafeteria, grill, cafe, delicatessen
 - Bar, brewpub, tavern, or nightclub
 - Rental hall, theatre, commissary, catering kitchen
 - Donut shop, lunch counter, sandwich shop, soda fountain, coffee shop
 - Catering truck
 - Temporary food service stand at a festival, event, or flea market
 - Vending machine
 - Special transitory food unit¹²

The percentage of inspected establishments of each of these groups can function as a specific indicators. Also, indicators can be formulated more broadly, such as:

- o percentage of inspected establishments that produce food with animal origin
- o percentage of inspected establishments that produce food with non-animal origin
- o percentage of inspected importing food establishments
- o percentage of inspected domestic food establishments

Or, a combination between a type of food and a geographical location can be made, e.g.:

- o percentage of establishments that import fruits and vegetables, that was inspected (e.g. in the last year)

Variable: Capacity of sustainable human resources

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

This indicator can be compared with indicator number 10, keeping in mind that the type of required knowledge and skills differs for individuals involved in food inspection.

Indicators can be formulated as the “confidence to explain” all important aspects below, which are derived from the “Risk-based food inspection manual” (Pre-publication, FAO/WHO 2007).

“A food inspector conducting food process inspections based on risk must know the following:

- o Relevant laws and regulations
- o Food safety and quality assurance systems (FSQ/AS)
- o Food processing operations, food microbiology and food chemistry
- o Prerequisite programs: Standard Operating Procedures (SOPs) and Standard Sanitation Operating Procedures (SSOPs)
- o Properties and use of cleaning and sanitizing compounds
- o Hygienic practices, including personnel hygiene
- o Hazard Analysis and Critical Control Point (HACCP) system
- o Auditing and inspection techniques
- o Food sampling techniques and testing methods”

Also, the inspector must:

- o “have compliance verification skills: experience, focus
- o have appropriate training and a certificate/diploma and update certificates
- o not be suffering or carrying any disease that can be transmitted during an inspection
- o be a good communicator and exhibit dignity and integrity”

These indicators can be rated with a high level of subjectivity, especially when employees have little motivation to improve their knowledge or when they are reticent with being self

¹² http://www.michigan.gov/mda/0,1607,7-125-1569_16958_16974-11873--,00.html

critical. It might be possible to conduct open interviews, in which consultants ask interviewees to actually explain different concepts which are important in their work.

Also, it would be useful to measure the quality with which employees perform their job. This can for instance be done by letting supervisors (or external evaluators) give numerical ratings to the way in which employees perform different tasks.

Variable: Capacity of technical facilities and resources

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

4.5 Official Food Control Laboratories

Food Control Laboratories can be considered as the scientific backbone of food control systems. Laboratories are used to analyse food samples (in order to detect, identify and quantify contaminants) and human specimens (in order to clarify relationships between contaminants and food-borne illnesses). Outcomes in the improvement of food control laboratories will include their number and resources, both technical as human.

Source: Adapted from FAO Guidelines to assess capacity building needs (FAO, 2006b)

Variable: Capacity to work according to standards

32. Percentage of laboratories that have adequate Quality Assurance procedures in place

As a reference for such guidelines, and therefore the development of more specific indicators, the following sources can be used:¹³

- *The International Harmonized Protocol for the Proficiency Testing of (Chemical) Analytical Laboratories*, Pure and Applied Chemistry, 78 (2006) 145-196¹⁴
- *Protocol for the Design, Conduct and Interpretation of Method Performance Studies*, Pure and Applied Chemistry, Vol. 67 (1995) 331-343¹⁵; and
- *Harmonized Guidelines for Internal Quality Control in Analytical Chemistry Laboratories*, Pure and Applied Chemistry, Vol. 67, No. 4 (1995) 649-666¹⁶

33. Percentage of laboratories that are accredited on international standards

"Since the late 1990s, Codex and the European Union have recommended (or required) that laboratories responsible for controlling the export and import of foods comply with an internationally recognized standard such as ISO Standard 17025 (General Requirements for the Competence of Calibration and Testing Laboratories), and be accredited by an accreditation body."¹⁷

A specific indicator for international accreditation could therefore be:

- o Percentage of laboratories that has been accredited on ISO 17025 by a certified body

It should be noted that accreditation for ISO 17025 too hard to strive for in developing country. The adaptation of other quality assurance procedures would be a more realistic target.

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

34. Percentage of laboratories that are in use

Sometimes laboratories are provided with technical resources and training, but they are not taken into use. Therefore, it's useful to monitor how many of the laboratories in a country are actually operational after a certain while. If some laboratories are not in use, explanations should be provided of reasons why certain laboratories are not being used (lack of human resources, mismanagement, political problems, etc.)

35. Cost effectiveness of operations

In order to reach a sustainable operation of laboratories, these should also be operating in a financially sound way. Therefore, it is useful to examine the cost effectiveness of operations. By calculating this effectiveness for each laboratory separately, choices can be made on budget reallocation, fees that are charged to food business operators and also on closures of laboratories

¹³ Updated from the list on http://www.codexalimentarius.net/download/standards/356/CXG_028e.pdf

¹⁴ Available at: <http://www.iupac.org/publications/pac/2006/pdf/7801x0145.pdf>

¹⁵ Available at: <http://www.iupac.org/publications/pac/1995/pdf/6702x0331.pdf>

¹⁶ Available at <http://www.iupac.org/publications/pac/1995/pdf/6704x0649.pdf>

¹⁷ http://www.fao.org/ag/agn/agns/foodcontrol_laboratory_en.asp

36. Average number of samples tested per week

This indicator, together with indicator 37, gives insight in the quantitative capacity of a food laboratory. By measuring it for each laboratory separately, conclusions can be drawn on the performance of each laboratory.

37. Average amount of time it takes before test results of a certain sample are reported

Variable: Capacity to improve operations based on information

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

Specific indicators can be formulated as:

- laboratory management is familiar with the most recent sampling techniques
- laboratory management is familiar with recent events in the field of food safety and quality and knows what implications these have for the role of their food laboratory (e.g. need for extra personnel, training, more equipment or other resources)

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

Indicators could be formulated as:

- Number of scientific staff (per laboratory) that has a degree (at least BSc) in food microbiology and has finished a training on GLP
- Number of scientific staff (per laboratory) that has a degree (at least BSc) in food chemistry and has finished a training on GLP

When very specific analytical tests have to be carried at certain laboratories, for which extra training is needed, an indicator for staff trained on these tests should be added.

39.2 Management staff

Indicators could be formulated as:

- Number of laboratories that has a management team which is in number, skills and knowledge adequate in delegating the analytical activities, has knowledge on the inspection service and its demand and is capable of communicating results to stakeholders with a high level of integrity.

40. Average frequency with which laboratory staff is engaged in analysis

To ensure that scientific laboratory staff keeps its analytical skills, it is important that staff members are regularly involved in this analysis.

Variable: Capacity of technical facilities and resources

41. Percentage of food laboratories with adequate facilities and resources (e.g. housing, equipment, clear and effective organizational structure)

“adequate” should be defined per project. An example of necessities for a laboratory, subdivided in categories, can be found in Appendix 9.

4.6 Food Safety and Quality Information, Education and Communication (IEC)

This building block is concerning the dispersion of information and 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. The indicators below give insight in the reach and quality of information. When talking about communication, there are always three main factors to consider: the sender, the message and the receiver. In the case of Food Safety and Quality IEC, the senders are concerned to be both government as non-government agency that produce or disseminate food safety and quality IEC materials. Receiving parties can be consumers and/or food business operators. The message can be any kind of information concerning food safety and quality. It is important to note that the indicators provided for this issue are merely giving insight in the amount of knowledge that is shared within the system. Since knowledge is an important type of capacity, it is valuable to measure to what extent this capacity is dispersed. The indicators do not give insight in the extent to which the knowledge is eventually used in practice, for this will be indicated by the other factors. (for example: if operators in food producing companies don't use their knowledge on good hygienic practices, the company will not be accredited for GHP, which will be indicated by indicator 15)

Source: Adapted from FAO Guidelines to assess capacity building needs (FAO, 2006b)

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

In order to have a good infrastructure for information provision on food safety and quality, it's important that some information points exist; from which different types of information can be dispersed. This could for instance be a support centre for producers who have questions relating to new laws and standards, but also a website for consumers to inform them about outbreaks of food borne illnesses or more general food safety and quality related issues. The needed facilities largely depend on the type of information centre(s), the public that should be reached and the type of information that has to be dispersed. For instance, one could think about the following indicators:

Website:

- The amount of time it takes before newly available relevant information is placed on the website
- The knowledge and experience in the field of food safety of people who are updating the website
- The amount of site visits that a website can handle per hour
- Existence of a possibility for visitors to provide feedback on the website through a web-form

Information centre:

- Number of experts that give advice during working hours
- Percentage of questions to which a satisfactory answer is provided in time (according to the demanding party)
- Number of telephone lines available for handling questions
- Number of books and publications on food safety and quality available in the information centre

43. Existence of a national communication strategy on food safety and quality

A national communication strategy should include

- a statement on which organization is coordinating the communication of food safety and quality related issues on national level
- the delegation of activities; *which* organization should communicate *what* kind of information to *whom* (and: *when*)
- procedures for communication in the case of food safety emergencies

- provisions on how to scientifically underpin the information that is provided
- These criteria can be seen as indicators for a good national communication strategy

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

44. Number of individuals reached through different communication channels

The mechanism of for communication as such is an important indicator for systemic communication capacity, but does not clarify whether stakeholders are actually reached with valuable information. Therefore, it's also important to measure how many individuals actually received information and how they rate the value of this information.

An approach to do this is by creating a matrix, putting indicators for different communication channels on the vertical axis, and different groups of stakeholders on the horizontal axis. An example of such a table is presented in **Error! Reference source not found.** This matrix can be filled out for information provision on specific issues (e.g. for specific communication actions like "The WHO Five Keys to Safer Food" or more general information like "Food safety risks of raw meat"

45. Quality of information material provided through different communication channels

The quality of provided information depends on the value it has to the receiver. A few important indicators to measure this value are:

- Completeness of information material
- Relevance of information material to the recipient
- Confidence with regard to knowledge on different aspects of the information material
- Motivation to use the received information to change behaviour

These indicators can be measured by conducting surveys.

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

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

In order to ensure that progress in the strengthening of the national food control system is sustainable, it is important to have commitment from the government. Using this indicator, it is possible to get some insight in how actively the topic is discussed by the government.

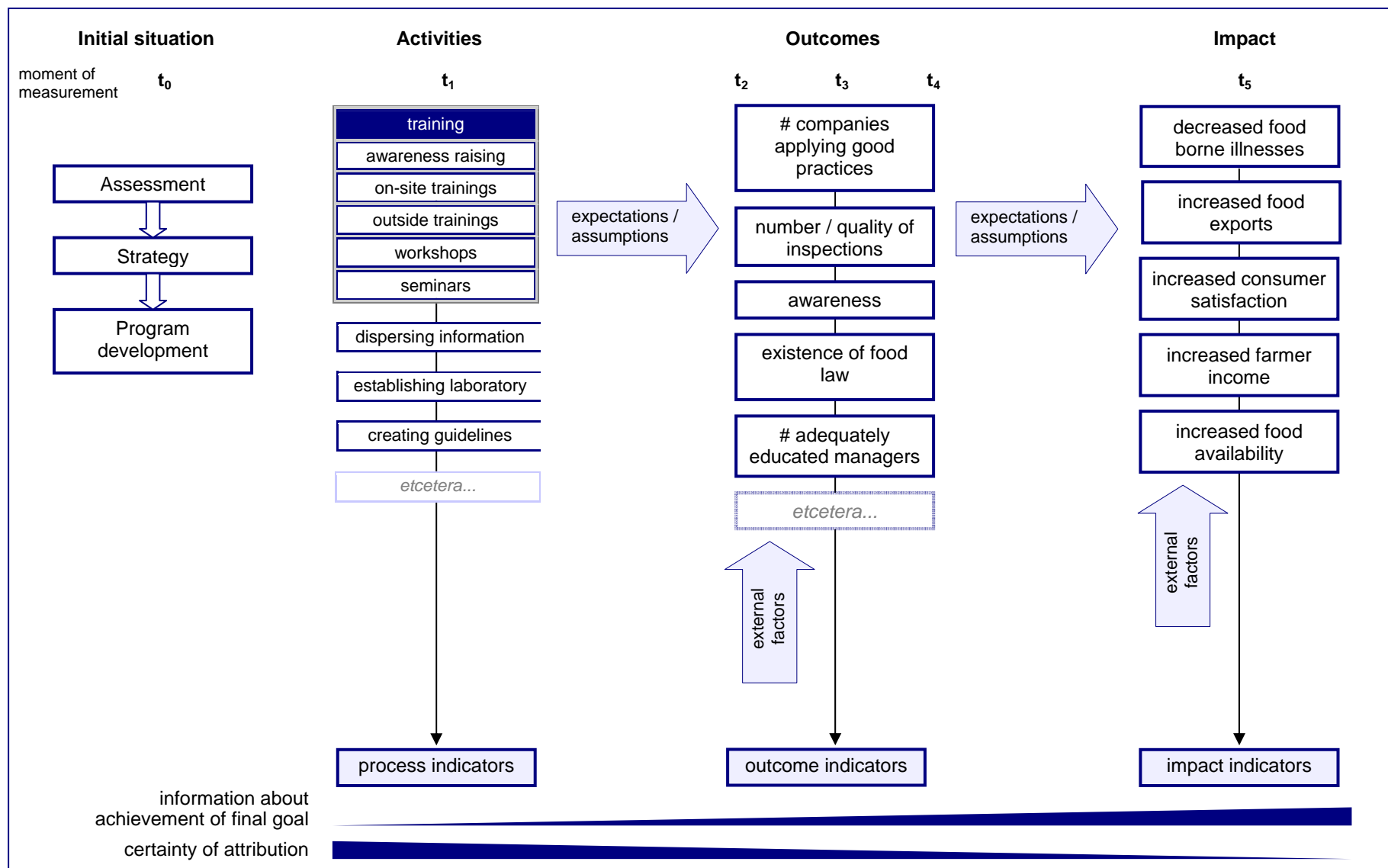
5 Appendixes

Appendix 1 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

Source: Pact Brasil (2005)

Appendix 2 Framework of activities and results



Appendix 3 Evaluation Scorecard

Issues	Indicators	Scorecard	Baseline	Target			Measured			Rating			Data Sources
			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 %):			%	%	%	

Appendix 4 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: This is a fragment of a table provided by ADB (2; "Appendix 2: Institutionalizing Capacity Development Focus in Country Programming and Operations"). These indicators are more or less randomly chosen (with respect to some variability) from the document "Integrating Capacity Development into Country Programs and Operations Medium-Term Framework and Action Plan". The first two are (semi-)quantitative, the second two are qualitative, and the last two contain a time indication.

Appendix 5 End evaluation of training activities

1. Please explain the relevance of this Training Course in relation to your work and your needs as listed at the beginning of the course.

Improving food safety

- Very important for improvement of food safety (4x);
 - Very important for identifying hazards during the food production (2x);
 - Very important for identifying CCPs in production companies;

Practical application

- Satisfactory because it made practical application in companies possible;
- Very important especially for management of production companies;
- Very important for practical work on establishments;
- Very efficient considering good practical and theoretical implication on implementation of HACCP;
- Very important and necessary for application of HACCP in companies to have safety products on the market.

Understanding HACCP principles

- Very important for understanding the HACCP principles;
- Very important for understanding the compliance of HACCP with implementation of EU legislation;

Pre-requisites

- Very important for improving the GMP;

2. Please describe which elements of the Training Course you found **most** relevant and why.

All elements

- All elements were most relevant;

Practical part

- The parallel implication of practical and theoretical part of HACCP in companies;
- The practical implementation of HACCP in an establishment;
- The practical part in production process, detection of contamination points in particular;
- The practical element, which was applied for the first time;

Identification of CCP's

- Identification of CCPs (7x);
- Identification of CCP and prevention of hazards.

Hazard Analysis

- Hazard analysis;
- Identification of hazards;

3. Please describe which elements of the Training Course you found **least** relevant and why.

- None (11x)
- Theoretical elements;
- Technical issues;
- Pre-requisites and theory;
- Long breaks.

4. Which relevant elements/topics were **missing** in this Training Course?

- None (13x)
- CCP were more or less difficult;
- Categorisation of CCP

5. To what extent do you feel confident to: (15 responses)	Not confident	Fairly confident	Confident	Very confident
A. Explain the concept of quality	-	[5] 33.3%	[9] 60%	[1] 6.7%
B. Explain the importance of food safety	-	[2] 13.3%	[9] 60%	[4] 26.7%
C. Explain the importance of putting pre-requisites in place prior to implementation of the HACCP system	-	[6] 40%	[7] 46.7%	[2] 13.3%
D. Explain and be able to apply HACCP principles and techniques	-	[8] 53.3%	[7] 46.7%	
E. Be able to disseminate acquired knowledge and skills	-	[2] 13.3%	[7] 46.7%	[6] 40%

6. To what extent have the combination of methodologies used (e.g. group work, presentations, field visits) been effective in relation to the course objectives (tick the appropriate box)? What suggestions do you have for possible improvement?

Not effective []	Fairly effective [1] 6.7%	Effective [6] 40%	Very effective [8] 53.3%
----------------------	------------------------------	----------------------	-----------------------------

Suggestions for improvement: None

7. To what extent did you consider the balance between practical and theoretical work appropriate? Please explain.			
Not appropriate []	Fairly appropriate [2] 13.3%	Appropriate [6] 40%	Very appropriate [7] 46.7%
Explanation: None			
8. To what extent have we used the available time effectively? Please give suggestions for improvement.			
Not effective []	Fairly effective [3] 20%	Effective [11] 73.3%	Very effective [1] 6.7%
Suggestions for improvement: None			
9. To what extent have the facilitators been effective in communication and in transfer of knowledge and skills? Please give suggestions for improvement.			
Not effective []	Fairly effective []	Effective [4] 26.7%	Very effective [11] 73.3%
Suggestions for improvement: None			
10. Any additional comments, suggestions and/or future training needs with regard to food safety and –quality:			
<ul style="list-style-type: none"> - Continue training in countries where HACCP is obligatory/applied/implemented (5x); - To see practical implementation of HACCP (2x); - It is very important to continue with this kind of training in countries with significant experience; - More trainings to be organized; - This course is not efficient enough for implementation of HACCP in establishments in Kosovo. It is most necessary to visit the companies where HACCP is implemented. My opinion is that this course has fulfilled 25% of needs in Kosovo. 			

Source: Adapted from TCP/RER/3002: Regional project in South East Europe: Strengthening food safety; Appendix 13: End-evaluation results Kosovo. Report by J.H.M. Merx, August 2006.

Appendix 6 National Sanitary Veterinary and Food Safety Authority (Romania)

Principal goals

- Assuring a high level of human health protection and consumers interest
- Using the fair practice in food trade
- Animal health and welfare protection
- Plant health

Objective 1

Strengthening surveillance and control system

(Residues, contaminants, GMO, hygiene, food management quality system - HACCP)

- Integrated implementation of new hygiene package (intergovernmental)
- Traceability- obligation for the food business operators – enforcement
- Issuing control procedures – unitary inspection

Objective 2

Improving risk analysis

- Communication
 - important; high development potential and impact
- Assessment
 - staff training on epidemiology and basic risk assessment
 - use the international assessments for financial and expertise reasons

Objective 3

Development of the laboratories network

- Measure 1.2." Improving the structures to carry out veterinary, quality and phytosanitary official control system" - SAPARD18 support
- February 2006- expected to be accredited by EU

Objective 4

Staff able to carry out their tasks

- Identifying training needs
- Proper training for specific tasks
- Recourse to international and national programmes

Objective 5

Standards and legislation in place according to international requirements (EU, Codex Alimentarius, ISO, WTO)

- Fully and up-to- date transposed EU legislation
- Sustain the functioning of Codex Alimentarius
- Participation of standards setting inside ASRO19
- Sustain the functioning Inquiry Point

Objective 6

Improving Codex Alimentarius activities

- Continue to receive Codex documents and provide stakeholders access to them
- Continue to disseminate the Codex documents
- Participate in international working groups
- Foster the functioning of the Codex Romanian subcommittees (5)

Objective 7

Improving cooperation with East European countries in order to better cope with food safety requirements

- Joint projects
- Formal contacts etc.

Source: TCP/RER/3002, Second and third mission report; Appendix 8, C. Froese, FAO, May 2006

¹⁸ SAPARD: Special Accession Programme for Agriculture and Rural Development

¹⁹ ASRO: Asociatia de Standardizare din România (Romanian Standards Association)

Appendix 7 Quality Cost Report: Tabular Format

Description	Current Month		Year-to-Date	
	Costs (\$)	% of Total	Costs (\$)	% of Total
Prevention Costs
<i>quality planning</i>				
<i>product design</i>				
<i>training</i>				
<i>process control</i>				
<i>data analysis</i>				
<i>reporting</i>				
<i>projects</i>				
Total Prevention Costs
Appraisal Costs
<i>inspection</i>				
<i>test</i>				
<i>measurement</i>				
<i>materials</i>				
<i>calibration</i>				
Total Appraisal Costs
Internal Failure Costs
<i>scrap</i>				
<i>rework</i>				
<i>retest</i>				
<i>vendor losses</i>				
<i>yield losses</i>				
Total Internal Failure Costs
External Failure Costs
<i>failure, mfg.</i>				
<i>failure, customer returns</i>				
Total External Failure Costs
Total Quality Costs
Total Quality Targets

Source: Website Guelph Food Technology Centre, www.gftc.ca/articles/1998/costqual.cfm, 04-07-07

Appendix 8 Sample Primary Production Facility Inspection Check List

Primary Production Facility Inspection Check List				
Inspector: Establishment: Address: Tel. No.: E-mail Address: Manager/Supervisor: No. of Shifts: No. Employees: Establishment Categorization:				
Objective of Inspection: (Regular, Follow Up or Response to Complaint/Violation)				
Scope: (Full Inspection, Partial, Specific)				
Last Inspected	Non-Compliances:	Violations:		
	Corrections:	Corrections:		
Product and Categorization	Food-borne Illness Risk Factors		Addressed	
	Intrinsic	Specific	YES	NO
1.				
2.				
3.				
4.				
5.				
Critical Steps Identified (from Flow Diagram)				
1.				
2.				
3.				
4.				
5.				
.....				
Walk-Through Inspection				
Where to look?	What to look for?		Problem?	
Building (walls, floor, ceiling, windows)	Cracks, drainage, screens			
Equipment	Condition, materials, cleanliness, sanitation			
Ventilation	Ambient temperature, dust			
Water	Analytical records			
Maintenance	Plan, records			
Sanitation	Schedule, protocol, chemicals storage			
Pest Control	Plan, schedule, evidence			
Personnel Hygiene	Hand washing practices, signs, cleanliness, apparel			
Personnel Facilities	Cleanliness, soap, disposable towels, signs			
Monitoring of Critical Steps	Training, procedure			
1.				
2.				
3.				
4.				
5.				
Raw Product Storage	Sanitary practices & handling			
Packaging	Cleanliness, product protection			
Labeling	Compliance, coding			

Final Product Storage	Product protection	
Product Transportation	Dedicated transport, product protection	
Premises	Dirt, dust, weeds, garbage	
Record Keeping	Details	In Order
Monitoring (critical steps) 1. 2. 3. 4. 5.		
Training		
Production Practices (irrigation water quality, field hygiene, animals)		
Harvesting Practices (pesticide withdrawal periods, field hygiene)		
Product Lot/Batch		
Distribution Records		
Recall Plan		
Corrective Action Taken		
Overall Assessment of the FSQ/AS		
Closing Meeting		
Findings	Corrective Action (if needed)	Timeline for Corrections
1.		
2.		
3.		
4.		
5.		
FSQ/AS Improvements		
1.		
2.		
3.		
4.		
5.		
Inspector Name:		Signature and Date:
Manager/Supervisor Name:		Signature and Date:

Follow-Up Inspection	
Previous Inspection Date:	
Previous Findings	Corrections Made Satisfactory Unsatisfactory – Further Action Recommended:
1.	
2.	
3.	
4.	
5.	
Date: Inspector Name: Signature:	
FOR ACTION: (Food Control Authority)	

Source: Risk-based food inspection manual, pre-publication (FAO/WHO, 2007b)

Appendix 9 List of laboratory materials

Item No.	Description	Quantity
Materials and Equipment for the Chemistry Section		
Glassware and minor equipment		
1	Beakers, 25 ml, glass 23 x 48 mm	10
2	Beakers, 100 ml, glass 51 x 71 mm	10
3	Beakers, 250 ml, glass 69 x 95 mm	20
...
Laboratory equipment		
1	Refrigerator, for lab.	2
2	Freezer-35, 250 l	1
3	Condensors, watercooled, glass with dimrothspiral	6
...
Laboratory reagents and consumables		
1	Acetone A.R.	20 L
2	Cyclo hexane A. R.	10 L
3	Ethyl acetate A. R.	10 l
...
Laboratory safety aids		
1	Eye wash bottles, support and bottle	5
2	Laboratory coats, polyester/cotton, size M	3
3	Absorbent granules, hazard spill	1
...
The tentative list assigned for microbiology section		
Glassware		
1	Petri dishes Steriplan	500
2	Micro slides with ground edges Pack of 400 g Cotton wool	100
3	Weighing glass, 3 ml, borasilicate	2
...
Laboratory equipment		
1	Incubator	5
2	Colony counter with magnifying glass	2
3	Pipette tips, universal yellow	1 pkt
...
Laboratory reagents and consumables		
1	Standard plate count agar, pack 500gr	2 kg
2	Filter paper 595, qualitative purposes	100
3	Clean room gloves, disposable	100
...
Laboratory safety aids		
1	Fire extinguisher, dry powder	2
2	Safety screen, polycarbonate with support	1
3	Fire blanket thermo	1
...

Source: TCP/BHU/0065 and TCP/BHU/3002, Annex 3, summarized

Appendix 10 Standard format for exchange of information between countries on rejections of imported food

The following information should be provided by countries in relation to rejections of imported food as available and appropriate to the circumstances.

Identification of the food concerned

- Description and quantity of product
- Type and size of package
- Lot identification (number, production date, etc.)
- Container number, bill of lading or similar transportation details
- Other identifications stamps, marks or numbers
- Certificate number
- Name and address of manufacturer, producer, seller and/or exporter, establishment number, as appropriate

Importation details

- Port or other point of entry
- Name and address of importer
- Date presented for entry

Details of rejection decision

- Whole/part of (specify) consignment rejected
- Name and address of food control authority making decision to reject
- Date of decision
- Name and address of food control authority which can provide more information on reason for rejection

Reason(s) for rejection

- Biological/microbiological contamination
- Chemical contamination (pesticide or veterinary drug residues, heavy metals, etc.)
- Radionuclide contamination
- Incorrect or misleading labelling
- Compositional defect
- Non-conformity with food additive requirements
- Organoleptic quality unacceptable
- Technical or physical defects (e.g., packaging damage)
- Does not come from an approved country, region or establishment
- Other reasons

Note: Where imported food has been rejected on the basis of sampling and/or analysis in the importing country, details should be made available on request as to sampling and analytical methods and test results and the identity of the testing laboratory.

Action taken

- Food destroyed
- Food held pending reconditioning/rectification of deficiencies in documentation
- Food held pending final judgement
- Place where food is held
- Import granted for use other than human consumption
- Re-export granted under certain conditions, e.g. to specified informed countries
- Importer notified
- Embassy/food control authorities of exporting country notified
- Authorities in other likely destination countries notified
- Other

Source: FAO/WHO, 2005

Appendix 11 The Aid Effectiveness Pyramid



Source: OECD, 2006c

Appendix 12 Attendees expert 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 Garcia, Roberto	AGST	Agricultural and Food Engineering Technologies
Jackson, Julius	AGNS	Food Quality and Standards
Kenny, Mary	AGNS	Food Quality and Standards
Pineiro, 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

Appendix 13 Terms of Reference - Hilbert van der Werf

Location: Food Quality and Standards Service, Nutrition and Consumer Protection Division, FAO Rome

Duration: 10 April- 10 July

Supervision

The volunteer will be under the overall guidance of the Chief of the Food Quality and Standards Service and the direct supervision of the Senior Officer, Food Quality and Consumer Protection Group.

Duties and responsibilities

1. Assist in the implementation of the Programme of Work in the field of food quality and safety
2. Conduct literature search and of FAO technical documents for collecting information on project assessment and use of indicators for monitoring and measuring the impact of capacity building activities in food safety and quality
3. Review selected FAO project reports (TCPs, TF, etc) in food safety and quality and identify possible indicators for monitoring and evaluation of projects results and project implementation in developing countries
4. Develop indicators for measuring the impact of capacity building activities in food safety and quality (based on literature search and outputs of capacity building projects implemented)
5. Pilot test these indicators by applying them to recent national capacity building projects; using project reports and expert opinions (FAO staff and project counterparts)
6. Review the developed indicators (based on the testing)
7. Elicit and obtain inputs from relevant services to ensure that developed indicators and key data for the paper are complete
8. Prepare a word draft paper completing the agreed outline and following the standard format used by FAO
9. Present / distribute the first draft to an internal FAO review group and record their comments and suggestions
10. Refine the draft to accommodate issues raised and prepare and submit second draft
11. If appropriate, lead a process of stakeholder review and discussion of the draft document.
12. Undertake other related professional duties as assigned by the supervisor.

Project output

Development of indicators for assessing the impact of capacity building activities in food quality and safety. The results of the project will be presented in a paper. The paper will be completed by the end of June.

6 References

- ADB. 2007., *Integrating Capacity Development into Country Programs and Operations; Medium-Term Framework and Action Plan* (available at: <http://www.adb.org/Documents/Policies/Integrating-Capacity-Development/>)
- CIDA. 2004. *CIDA Evaluation Guide; Overcoming challenges, Delivering results, Meeting expectations, Making a contribution*, CIDA Evaluation Division; Performance & Knowledge Management Branch, Ottawa (available at: [http://www.acdi-cida.gc.ca/INET/IMAGES.NSF/vLUIImages/Performancereview5/\\$file/English_E_guide.pdf](http://www.acdi-cida.gc.ca/INET/IMAGES.NSF/vLUIImages/Performancereview5/$file/English_E_guide.pdf))
- DANIDA. 2006. DANIDA's Evaluation Policy. (available at: <http://www.um.dk/en/menu/developmentpolicy/evaluations/objective/objective.htm>)
- ECDPM. 2006. P.G.H. ENGEL, Development policy and practice: more questions than answers. ECDPM
- EUROPEAN COUNCIL. (EC 178/2002) Regulation (EC) No. 178/2002 of the European Parliament and of the Council; laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety, Official Journal of the European Communities, 28 January 2002
- FAO. 2006a. Perspectives and guidelines on food legislation; with a new model food law, FAO legislative study No. 87
- FAO. 2006b. Strengthening national food control systems, Guidelines to assess capacity building needs, Rome
- FAO. 2007a. Field Programme Circular No. FPC 2007/02
- FAO/WHO. 2005. Food import and export inspection and certification systems, combined texts. Joint FAO/WHO Food Standards Programme, Codex Alimentarius Commission. Second edition, Rome
- FAO/WHO. 2007. Risk-based food inspection manual, pre-publication, Rome
- FOOD STANDARDS AGENCY (UK). 2006. Report on the Food Law Enforcement Service, London Borough of Greenwich (available at: www.food.gov.uk/multimedia/pdfs/greenwichaudit.pdf)
- GEF. 2000. *Measuring Results from Climate Change Programs: Performance Indicators for GEF*, Monitoring and Evaluation Working Paper 4, Washington (available at: http://www.gefweb.org/4_Climate_Change-nocov.pdf)
- HIGH LEVEL FORUM PARIS. 2005. Paris Declaration on Aid Effectiveness: ownership, harmonisation, alignment, results and mutual accountability. ECDPM (available at: <http://www.oecd.org/dataoecd/11/41/34428351.pdf>)
- IFPRI. 1999. JAMES G. RYAN, *Assessing the Impact of Policy Research and Capacity Building by IFPRI in Malawi*, Impact Assessment Discussion Paper No. 11, Washington (available at: <http://www.ifpri.org/impact/iadp11.pdf>)
- INTRAC. 2005. HAILEY, J., R. JAMES AND R. WRIGLEY, *Rising to the Challenges: Assessing the Impacts of Organizational Capacity Building*, Praxis Paper No. 2, Oxford (available at: <http://www.intrac.org/pages/PraxisPaper2.html>)
- KUMAR, K., 1989. *Impact Indicators: General Issues and Concerns*, AID Evaluation Occasional Paper No. 30. Washington D.C.: U.S. Agency for International Development
- MAYNE, J. 1999. *Addressing Attribution Through Contribution Analysis: Using Performance Measures Sensibly* (available at: <http://io.ssc.govt.nz/pathfinder/documents/SensiblePerformanceMeasures-ImpactEvaluation-PerformanceMonitoring.pdf>)
- OECD. 2006a. *The Challenge of Capacity Development: Working Towards Good Practice*, Paris (available at: <http://www.oecd.org/dataoecd/4/36/36326495.pdf>)
- OECD. 2006b. MANNING, N., D.-J. KRAAN AND J. MALINSKA. *How and Why Should Government Activity be Measured in "Government at a Glance"?*; OECD GOV Technical Paper 1, Paris (available at: [http://www.ois.oecd.org/olis/2006doc.nsf/linkto/gov-pgc\(2006\)10-ann1](http://www.ois.oecd.org/olis/2006doc.nsf/linkto/gov-pgc(2006)10-ann1))

OECD. 2006c. *2006 Survey on Monitoring the Paris Declaration; Overview of the Results; OECD GOV Technical Paper 1*, Paris (available at: [http://www.oecd.org/olis/2006doc.nsf/linkto/gov-pgc\(2006\)10-ann1](http://www.oecd.org/olis/2006doc.nsf/linkto/gov-pgc(2006)10-ann1))

OECD. Website about The Paris Declaration. http://www.oecd.org/document/18/0,2340,en_2649_3236398_35401554_1_1_1_1,00.html. Viewed on 4 July 2007

PACT BRASIL. 2006. *Monitoring and Evaluation Workshop*, São Paulo (available at: http://www.impactalliance.org/ev_en.php?ID=14432_201&ID2=DO_TOPIC)

UNDP. 2005. *Measuring Capacities: An Illustrative Catalogue to Benchmarks and Indicators*, UNDP Capacity Development Group, New York (available at <http://www.capacity.undp.org/index.cfm?module=Library&page=Document&DocumentID=5509>)

UNDP/GEF. 2003. *Capacity Development Indicators; UNDP/GEF Resource Kit No. 4, Work in Progress*. (available at: [http://www.undp.org/gef/05/documents/me/CapDevIndicator %20Resource %20Kit_Nov03_Final.doc](http://www.undp.org/gef/05/documents/me/CapDevIndicator%20Resource%20Kit_Nov03_Final.doc))

WBI. 2004. YEMILE MIZRAHI. *Capacity Enhancement Indicators; Review of the Literature*, Washington (available at: <http://siteresources.worldbank.org/WBI/Resources/wbi37232Mizrahi.pdf>)

Project documentation

Project documents, terminal statements, review sheets and mission reports from national and international consultants where used from the following projects:

1. Enhancement of Coffee Quality through the Prevention of Mould Formation, International Project (CFC/ICO/06 and GCP/INT/743/CFC)
2. Regional project in South East Europe, Strengthening food safety (TCP/RER/3002)
3. Renforcement des Capacités Nationales dans le contrôle alimentaire, Haïti (TCP/HAI/8922)
4. Strengthening compliance of the SPS Requirements for expanded exports of fresh and processed fruits and vegetables, Thailand (TCP/THA/2903)
5. Strengthening National Capacities for Food Control and Effective Participation in Codex in Bhutan (TCP/BHU/0065 and TCP/BHU/3002)
6. Strengthening testing capability for food safety, People's Republic of China (TCP/CPR/3007)