Livestock and Fish value chain assessment toolkit

CGIAR RESEARCH PROGRAM ON Livestock

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Version 2


WorldFish

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Foreword

In the past, CGIAR research on livestock and aquaculture typically focused on production or farming systems, with some attention given to the associated market systems. During the first decade of this century, researchers began adopting the emerging value chain construct to better recognize and understand how producers, market agents and consumers all interconnect within a very dynamic and complex system. When the CGIAR Research Programs on Livestock and Fish were initiated in 2012, they explicitly targeted efforts to use research to transform selected animal source food value chains in several countries. The first task was to describe those value chains and identify how they might be improved to supply more highly nutritious food for low income consumers. It quickly became apparent that while much of our conventional methodology for characterizing production and market systems was still relevant, considerable adaptation and innovation was needed to work within the value chain framework. This manual is the fruit of that effort and will serve as a reference for future research in this area, alerting practitioners to the particular challenges they face in assessing value chains for animal source food. As noted by the authors, it should be treated as a living document to be updated as we continue to gain experience with applying the methodologies in new contexts.

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Abbreviations

CRP	CGIAR research program
CIAT	International Center for Tropical Agriculture
DBH	Dairy business hubs
EADD	ILRI East Africa Dairy Development project
FGD	focus group discussion(s)
GIS	Geographical Information System
GTA	Gender transformative analysis
ICARDA	International Center for Agricultural Research in the Dry Areas
IDOs	Intermediate Development Outcomes
ILRI	International Livestock Research Institute
KII	Key informant interview(s)
PIM	CGIAR Research Program on Policies, Institutions and Markets
PO	Producer organization
POSA	Producers organization sustainability assessment

1. Introduction

Demand for livestock and fish and their products is growing at very high rates in the developing world (Enahoro et al. 2019). This demand is expected to trigger increased production of these products, creating an opportunity for millions of small scale livestock and fish farmers as well as for the many low capital intensive inputs and services providers working in the livestock and fish value chains. However, depending on the structure of the value chains, their current performance and governance, as well as how consumer demand is structured, there is a risk that small scale farmers and value chain actors may not be able to tap into these opportunities. This is particularly the case for women as they face additional constraints participating in, and benefiting from, these value chains. Between 2010 and 2016, the CGIAR Research Programs on Livestock and Fish worked with nine value chains to identify entry points for interventions through a process of problem identification, selection of promising interventions, testing and scaling. This toolkit describes the methods used during the problem identification stage. It is a living document that will be periodically revised.

What are livestock and fish value chains?

Value chains are defined as the full range of activities which are required to bring a product or service from conception through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers and final disposal after use (Kaplinsky and Morris 2000). Because of the multiplicity of value chain actors, their geographical spread, their different and sometimes conflicting incentives, and the structure of value chains (in terms of types of actors), understanding their governance and measuring their performance are complex. It is therefore important to develop robust tools to understand them. In the past, most socioeconomic research conducted by CGIAR in value chains focused on the producer level, largely due to its historical context on developing technologies and practices for higher productivity. Gender disaggregated analyses were few and could not inform the broader research and development agenda. The CGIAR Research Programs on Livestock and Fish adopted a value chain approach, which required analysing other actors besides livestock and fish producers, including providers of inputs and services, traders, processors and retailers, as well as looking at consumer demand for these products. The tools commonly used at producer level were therefore of limited use and needed to be adapted. Livestock and fish value chains have unique features, as these products are relatively high value, bulky and perishable (and therefore their conservation and storage for use is not as easy as it is for other products such as crops). Moreover, the delivery of some inputs, like vaccines and veterinary drugs and improved genetics through breeding services, is costly as they require specialized expertise and often cold chains, elements that need to be captured in the analysis and therefore the tools. For women, the nature of these value chains means that their participation is more difficult. Another characteristic of livestock and fish value chains is their relatively informal nature, as few transactions enter "official" chains and processing is often limited. While this means that some of these value chains are short (with fewer actors involved) and possibly easier to analyse, other important challenges are raised with respect to sampling. For example, livestock traders and fish retailers are not easily identified because many operate outside the legal framework) and follow up surveys involving traders are difficult to conduct as most are mobile with no fixed business premises. The interview length needs to be kept short to minimize the time required of the value chain actors. In addition, production and demand peaks are seasonal, which requires the appropriate tools (questions) to capture multiple data points throughout the year.

What is a toolkit and what are data collection tools?

A toolkit is an organized set of tools, herein defined as data collection sheets for gathering information in a systematic manner to allow comparison between observations (e.g. households), time (in case of repeated surveys) and space (when the same survey is conducted in more than one area). This toolkit includes qualitative tools such as key informant interviews (KII), focus group discussions (FGD) as well as quantitative tools such as household or value chain agent level surveys.

The tools made available in this toolkit have been designed and adapted over time and were developed within the context of CGIAR Phase 1 Consortium Research Programs (CRP), PIM and CGIAR Research Programs on Livestock and Fish. Hence, we strongly encourage users of the toolkit to pilot test and further adapt the tools to their context and needs. Feedback from users that could provide additional tools or further versions of the current tools is very welcome as we consider this toolkit to be a living document.

Why another toolkit?

There are many value chain assessment toolkits already available and some tools from this toolkit are adaptations of existing tools like the ILRI Livelihoods and Gender Indicators document (Njuki et al. 2011). On the other hand, because of the unique features of fish and livestock products as described above, existing tools developed for crops are not well adapted. We therefore developed tools for the Livestock and Fish CRP's value chain assessments to capture the unique features of these products.

The purpose of this toolkit is therefore to provide a set of tools to analyse livestock and fish value chains and to provide a process and associated tools to identify, monitor and evaluate best bet interventions, as per the CGIAR Research Programs on Livestock and Fish CRP experience. The overall objective is to identify best bet interventions that improve value chain performance and gender inclusiveness.

How to use this toolkit

Chapter 2 describes methods that are common to many tools, including good practices on: design approaches (including sampling), people resources and associated skills and experience, data capture and management, data analysis methods and appropriate ethics and ethical approval. Chapter 3 provides an overview of the four main implementation steps, moving from tools for broad characterization at national level to more detailed and focused tools, with the tools in the last step used for best bet monitoring, evaluation and learning. The process of best bet identification is also discussed in this chapter. The fourth chapter lists all the tools, organized by step and provides tool objective, type (e.g. FGD), when and where to implement it, resources and expertise needed, expected implementation duration and any specific data analysis and interpretation, as well as sampling considerations. The information for each tool is provided on one page for ease of reading and comparison across tools. Also included are links to the tools, examples of tool implementation and how to use tool results. The last chapter provides some concluding comments.

What this toolkit is not about

This toolkit does not provide information on how to select the target value chain (both in terms of livestock or fish product and geographic boundary of interest), rather it assumes that the research team and other stakeholders have already made a decision on this. In the CGIAR Research Programs on Livestock and Fish CRP, criteria for selection of the nine value chains were determined at the proposal development stage and refined thereafter.

For many of the tools, readymade analysis tools are not provided; for example, there are many ways to analyse the benchmarking household survey. For some tools, there are links to papers or reports describing how the data were analysed.

2. Methodology

This chapter presents general principles to consider when using the tools described in this toolkit and specificities as they apply to value chain research. It is not a substitute for a research methods textbook regarding the choice of qualitative versus quantitative tools nor a statistics textbook on sampling and sample size calculations. This chapter provides a broad overview of research methodology and links to references which may be useful.

Introduction

The tools in this toolkit can be clustered into four different types:

- Literature and secondary data review
- FGD
- KII
- Structured questionnaires (e.g. for producers, consumers, processors etc.)

Each of these tool types requires different design approaches (including sampling), human resources and associated skills and experience, data capture and management, data analysis methods and appropriate ethics and ethical approval. This chapter provides some general suggestions and guidance on these key methodology aspects and specifically how they relate to each tool type:

- Design approach – target population and geographic reach, hierarchy (e.g. stratification, clustering), sampling and sample size
- Resource requirements (skills and experience) – related to implementation of the tool
- Data capture and management – hardware and software, data management protocols, archiving and sharing of data
- Data analysis methods – software and references
- Ethics and ethical approval – principles of good research ethics, maintaining confidentiality, prior informed consent and implications for open access of data.

Design approach

The detailed sampling plans or protocols for each of the tools presented in this toolkit are designed to be adapted to each user, given differing objectives, steps of value chain assessment applied, indicators used etc. However, it is helpful to provide a simple checklist of issues that researchers should consider when using any of these tools, as they generally apply to both quantitative, qualitative and mixed method (quantitative and qualitative) approaches.

This toolkit focuses on the issues as they relate to sampling at different steps of a value chain assessment and of different populations (e.g. households, communities, specific groups of value chain actors, differentiation between women and men or by age groups etc.). However, as value chain research requires the integrated analysis of different actors, the design approach, including sampling methodology, should also consider the connectivity between these populations.

The need for documenting the sampling processes in a sampling protocol each time one of these tools is used cannot be over emphasized. This encompasses the need for documenting an important component of the research design together with the need for transparency regarding the extent to which the findings may be applicable more widely than the environment within which the research is taking place. The documentation of sampling plans also focuses attention on the need to take account of hierarchical structures in the population studied and the variability arising at each level.

This chapter does not include details on estimating sample size, as there are many resources on the subject and too many design options to cover all possible methods here. However, it is important to think about and be able to justify the sample sizes needed at each level of the design hierarchy, considering your research objectives, key indicators, stratification and clustering elements of the design, and to document the reasons for choices made and their limitations. This applies to both quantitative and qualitative data, even though the form of the justification may be different (e.g. other literature references, formal sample size equations etc.). In most cases, you will need to do as large a sample size as your resources (time/money) can manage!

Checklist of considerations

What are the objectives of my study? What is the overall design?

The key objective(s) of the study (the reason for carrying it out) drive the design approach for the study and combined with our target population assist in defining our sampling frame from which we select the sampling and/or observational units (e.g. households, communities, key informants, value chain actors etc.).

Most study design textbooks make a distinction between observational (no intervention, can look at observations at single or multiple timepoints) and experimental or quasi-experimental (intervention applied, look at changes influenced by the intervention) designs. This distinction will influence the design of the study, but in both cases we may use both quantitative and qualitative methodologies and all tools in this toolkit can be applied across these different study types.

What is my target population? To what extent can I generalize my results?

What is the population (e.g. the people, animals, farming households, villages or other groups) to which the results are expected to apply?

- Be realistic: to what population can the research results be generalized, while showing recognition and transparency as to the activity's limitations.
- Be precise: define exactly what population your results can be applied to. For example, it is better to say, 'All mixed crop-livestock farming households in western Kenya owning less than 10 dairy cattle' rather than 'all livestock farmers in western Kenya'.
- Be careful: we cannot claim a large breadth of coverage (e.g. results apply to all livestock farmers in east Africa) if the study is only taking place in a few sites or environments. The generalization cannot be supported when study sites do not capture the variation in environments.[1] A small sample size *at site level* in the hierarchy makes for limited generalization to other *sites*.

1. The term "environments" here may relate to policy, agroclimatic, production system, market access or other conditions and relate to both our project goals and objectives.

What can we generalize?

In some situations, the research findings are limited to only the study locations as case studies for the research. Depending on the objectives, this may be entirely valid, for example, in selecting hot spots to investigate resistance to the use of trypanocides, but likely less so in value chain research. The value of the findings may be in the richness and depth of details they provide about a specific situation (e.g. the how and why in gender transformative research), rather than in our ability or need to generalize.

In some cases, it is not the research findings we want to generalize but the research methodology, for example, methodology for identifying the best pig breeds in smallholder production systems of southeast Asia. It is still important to be realistic about the conditions under which the methodology can be generalized, with possible adaptations to alternative environments. The same principles apply for proof of concept research.

Do I need to conduct my study at all sites?

If sites can be classified as homogeneous (i.e. similar in their key characteristics), then only a sample of sites may be studied. Unfortunately, experience with smallholder farming systems in Africa and Asia indicates that this is rarely true. Frequently, key variables vary across sites, e.g. local policy, market access, production system/agro-environmental situation etc. and these should be considered when selecting sites to study. However, unevenness in variables which are unimportant to the study and will not affect study outcomes do not need to be considered.

In the CGIAR Research Programs on Livestock and Fish CRP, a site selection process preceded the value chain assessment and three types of sites were identified based on discussions as to what may characterize different types of value chains (rural production to rural consumption, rural production to urban consumption and (peri) urban production to urban consumption). At least two areas (administrative units such as subcounty or sublocation in Uganda or Kenya) for each site type were then selected for the value chain assessment.

What type of counterfactual do I need?

For experimental and quasi-experimental studies, a counterfactual is used to explain the situation (the observed outcomes and impact) that would have occurred in the absence of the intervention. Since this can never be directly observed, alternative approaches are required that utilize appropriate comparison environments, the counterfactual. The type of counterfactual required (e.g. site, use of secondary data) depends on the study objectives, but in order to establish that the impact of the study on participants (before/after) is attributable to the study, some form of counterfactual must be used.

Estimating before/after status of population of interest:

- Establish population status before (study start) and after (study end) the study intervention.
- When using a random sample of the target population, it may not be necessary to use the same farmers at the start and end of the study as all famers should be representative.
- Collect only the data necessary to calculate the outcome indicators.

Options for with/without comparison to show that changes are attributable to the intervention(s):

- Use control sites: Is this realistic (given resources) and ethical? Are there sites which are similar enough in environment to be considered equivalent to the study sites?
- Use control communities/markets/households within a site: Is there likely to be spillover effect of study activities to neighboring communities/markets/households? Is it confirmed that communities/markets/households will not join the study later or that the time lapse can be documented and the sites used as staggered controls (see below)?
- Alternatives to control sites/communities/markets/households:

- Identification and measurement of external factors which may explain changes in key study indicators in order to separate the effects of the study from the effects of other environmental changes. Secondary data from key informants, government agencies or literature may provide this information.
- Various combinations of interventions across sites (i.e. sites become the controls for each other).
- Staggered interventions (i.e. status prior to each intervention becomes the control for previous interventions) or staggered recruitment to study requires very detailed and regular monitoring and evaluation.

What methods can I use to sample communities, markets, households or individuals (sampling units)?

There is a large variety of sampling methods for selecting units to study, often called by different names and frequently, especially for complex surveys, involving a combination of methods! Some basic methods used to obtain a representative sample are outlined below along with a few comments on when they might be used.

Stratified random sampling

- If we have important variables where the study response is likely to differ between levels of the variable (e.g. female headed versus male headed households, traders in large markets versus small) then we stratify by this variable.
- If we want to have a control population for the with/without comparison, then our stratification variable is with unit versus without unit.
- We randomly sample units within each level of the stratification variable.
- Sites can be one of our stratification variables if sites have varying characteristics.

Complete random sampling

- As the name suggests, this involves a completely random sample of units within the site. We use this if we have no obvious stratification variable.

Cluster random sampling (a.k.a. multi stage sampling)

- Randomly select clusters within a site (e.g. districts, communities and/or markets within provinces)
- Randomly sample units within each cluster
- Often, clusters are stratified (e.g. by community size, population density).
- The method is commonly used because resource constraints don't allow us to do completely random sampling.
- We need to balance the number of clusters and number of units within a cluster. Our common principle is to maximize the number of clusters and minimize the number of units within a cluster, while ensuring that the units will give sufficient precision of variables within the cluster. This assumes that variation within a cluster is smaller than variation between clusters, although this aspect should be considered by each study as in some situations this may not be true.

Sample size calculations using any of these methods are usually based on population data from secondary sources such as a census or a list of value chain actors.

The section above describes sample methods to obtain representative samples. However, in studies where we are using tools for qualitative analysis (e.g. gender transformative analysis (GTA) tools), then we may interview a small number of respondents who represent diverse or extreme views to acquire depth of information. In this case we may want to purposely identify our respondents to be the most informative (rather than representative) people in the community. The value of the findings focuses on the depth of information in this case rather than representativeness.

What is my sampling frame? How do I identify observation units for the study?

Once you have defined your study and sampling design (all the elements above), the next stage is to identify the units to study. These are selected from your sampling frame (population of interest). The sampling frame contains all units who are members of your target population within the study site; e.g. villages in the site, all households, livestock owning households, traders in specific markets, members of a producer organization etc.

We are often unable to obtain a physical list of units because of logistical restraints (e.g. no money/time for full census) or because the information is just not available. Cluster sampling often makes it easier to obtain the physical list, i.e. if you have already sampled communities within a site, then you only need to obtain the list of target households from the sampled communities. These often exist and can be obtained locally from key informants. If they do not exist, they can be constructed with input from key informants or from administrative lists. Care should always be taken, for example through triangulation of sources, to ensure that all units are included in the sampling frame.

Alternative sampling in the absence of a physical list

- Geographical sampling; e.g. Geographical Information System (GIS) random sample of points within a site. Note that there are certain biases associated with this type of sampling (e.g. households owning more land are more likely to get selected) but adjustments to the design can be used to minimize these (e.g. combine random point and random walk). Geographical sampling is a method that is relatively well suited for farming households and has been used in some bilateral studies mapped to the CRP, like the ILRI East Africa Dairy Development project (EADD).
- The task is particularly difficult for mobile agents, for example milk, pig or fish traders. In this case, aim at getting a list that is as comprehensive as possible, using different information sources. Do not fully rely on official sources.
- Another option is to study linked transaction flows. The starting point is to randomly select farm households and follow the value chain backwards and forwards by selecting the input and service providers the farmers purchase from, the traders that farmers sell to, and thereafter retailers. In this case, it is important that the starting points (in this example, the households) are randomly selected. This option could be combined with information from other sources e.g. extensionists, producers' organizations, local government staff etc. in order to validate the complete sampling frame for the traders and retailers. In some cases, value chain actors perform multiple roles in the value chain. For example, most pig traders in Uganda are also aggregators (bulk pigs from individual farmers or village middlepersons) who slaughter pigs and retail pork in pork outlets. Information on their roles at the different nodes of the value chain need to be captured in the sampling frame.
- Participants in a livestock market form another difficult case (e.g. traders, brokers, livestock keepers selling own animals). Make sure you first list all the markets in the study area and if needed stratify (by size, frequency or other characteristics) to select a manageable number of markets. Within each market, if listing of all participants is not practical (too many, too mobile, unwilling to be listed), identify actor types (e.g. small versus medium versus large scale, or small ruminants versus cattle traders) and sample the different types. Make sure you document as much as possible.

Specifics for literature and secondary data reviews

An example of this tool type is the country level situational analysis. Basic research design components for this type of tool that should be defined include the geographical reach and target population of the activity.

These aspects could include:

- spatial reach; e.g. regional, national, subnational, etc.
- agricultural or livestock production systems of interest; e.g. semi-arid areas only, mixed-crop livestock systems etc.
- value chains of interest; e.g. commodity specific, includes exports outside the spatial reach etc.
- population of interest; e.g. rural context only, commodity specific producers only etc.

The design may also reference available datasets (e.g. FAOSTAT, World Bank indicators etc.).

Flyvbjerg, B. 2006. Five misunderstandings about case study research. *Qualitative Inquiry* 12(2): 219–245. https://doi.org/10.1177/1077800405284363

Specifics for FGD

Examples of this tool type are the Value chain Assessment modules. FGD are used to obtain in-depth information on concepts, perceptions and ideas of a group. They may be used to focus research and development hypotheses by exploring the problem in greater depth, to inform the design of structured questionnaire surveys, to help design and/or understand unexpected problems in interventions, to characterize the study population and/or to explore controversial topics.

In addition to defining the target population for FGD studies, we also need to consider the hierarchy of our design and appropriate sample sizes for the qualitative and/or quantitative data that will be collected. A study that covers multiple environments may apply stratification to ensure that FGD are conducted in all environments. It may be too difficult, logistically, to conduct FGD in all study communities hence the need to select a subset of communities that best represents the whole study area.

Estimating the appropriate sample size for FGD (i.e. number to conduct) does not usually use classic equations but aims to ensure that the whole study area is represented and that patterns and trends or processes of interest may be understood from summaries of the results across FGD.

For each FGD, you will need enough participants to provide a diversity of opinions while ensuring that the group is small enough for everyone to have a chance to talk. Commonly, 10–15 participants are appropriate although larger groups can be split into smaller groups for discussion. In some cultural contexts or for specific modules, it may be a good idea to split the group by gender, age categories or by role (e.g. different types of value chain actors, different levels of influence within the community). The method of selecting participants can vary depending on the objectives of the study; in most cases, the researcher requires a representative group but due to the cultural situation, including the hierarchical nature of communities, it can be challenging to achieve this. Dividing the groups as described earlier may help to mitigate this. Alternatively, in cases when FGD aim to explore a given issue in detail, then the best sampling approach to select participants may be a purposeful identification of the most informative respondents (rather than a random sampling for representativeness).

Ritchie, J., Lewis, J., McNaughton Nicholls, C. and Ormston, R. 2014. *Qualitative research practice – A guide for social science students and researchers, second edition.* SAGE Publications Ltd.

Njuki, J. 2011. *Qualitative methods for monitoring, evaluation and impact assessment.* International Food Policy Research Institute and International Livestock Research Institute.

Specifics for KII

KII are often used to place context around the observations obtained from FGD and/or structured questionnaires. They can be used to obtain additional qualitative or quantitative information from a specific subgroup of the target population, obtain general information relevant to the topic of the research and gain insights on specific issues.

KII follow the same design principles as FGD, ensure that the selection of interviewees covers the full target area and population of the study (representative) or conversely, that the interviewees are the most informative on the topic of the study. A value chain analysis for a specific commodity on site (e.g. subnational area) should interview informants all the way along the value chain from input suppliers to producers to market agents and from community to site level.

Specifics for structured questionnaires

Toolkit examples of this tool type are the producer, consumer and other value chain actors questionnaire. Structured questionnaires are used to collect quantitative data from individuals or households. These data may be used to

characterize or baseline a population, provide indicators for monitoring and evaluation (e.g. changes in food security) and/or provide evidence of the performance of an intervention.

The research design of a structured questionnaire study should incorporate all aspects described above and be documented in a design and sampling protocol. Particular attention should be made to the sampling process to ensure that the individuals or households surveyed are representative of the target population and the protocol should indicate analysis methods, including any post weighting adjustments required.

Resource requirements

Resource requirements, the skills and experience required to implement the tools, is usually specific to the type of tool being used and is described below.

Literature and secondary data reviews

The main person responsible for this type of tool should have broad knowledge of the topic under review and be able to understand both the technical topic as well as other related areas, such as institutional (e.g. market) and policy issues when looking at value chain reviews. They should be an "expert" in at least one of these fields. If the exercise is large, they may recruit additional experts for certain areas or utilize research support to carry out some of the routine activities such as literature review or searching for relevant secondary data.

Pautasso, M. 2013. Ten simple rules for writing a literature review. *PLoS Computational Biology* 9(7): e1003149.

FGD

We recommend that a team of at least three people conducts FGD: a facilitator, observer and note taker (see below for details of each of their roles). At the least, the facilitator should have extensive experience in leading FGD and depending on the location, the whole team may need to be fluent in the local language of the community or preferably bilingual with knowledge of the national language and/or English. One of the key skills of an FGD facilitator is the ability to draw out the opinions of all participants in the discussion and enable key messages or insights and points of view to come out from these discussions. Recording disagreement is also important as well as details of the discussion that help provide depth of information.

- Facilitator: explains and guides the discussion, cross checks the summary/data collection templates and writes down key notes on flipchart to be read by all the participants.
- Observer: cross checks the summary/data collection templates and reminds the facilitator about missing issues.
- Note taker: detailed documentation of the discussions, notes observations during the workshop, cross checks the summary/data collection templates and reminds the facilitator about missing issues.

KII and structured questionnaires

Structured questionnaires are usually implemented by teams of enumerators with field supervisors overseeing their work. Formal training of enumerators is needed, so they understand the questions clearly and how to ask them. The training situation also provides the opportunity to pilot test the tool, if not already done, and implement final adjustments. A training manual can also be a helpful resource to provide reminders to enumerators and as a quality assurance aid to the supervisors.

Resource requirements may be less for KII, particularly if all interviews are conducted by the researcher but the above considerations to ensure standardization of the data being collected and quality assurance of the data remain the same.

Example enumerator training manuals:

- Purchase for Progress Enumerator Training Manual. Prepared by World Food Programme and Management Systems International. http://documents.wfp.org/stellent/groups/public/documents/reports/wfp229233.pdf.
- FAO-Netherlands Partnership Programme. Seed System Impact on Household Welfare and Agricultural Biodiversity. Household and Community Survey – Enumerator Guide. http://www.fao.org/tempref/docrep/fao/008/af843e/af843e05.pdf

Data capture and management

There is a wide variety of data capture technologies available from paper to customized data collection applications for tablets and text messaging (SMS) applications for direct data collection from research participants. The choice of the appropriate method or technology depends on the type of data being collected and the resources available. Complex studies with multiple activities and datasets should document the data workflow from collection to archiving and sharing of data using a data management plan.

Literature and secondary data reviews

Data for this tool type is typically qualitative in nature, most commonly presented in Word document format reports. Secondary data may be managed and stored in a repository for later use (e.g. DataVerse), but more preferably, hyperlinks to open access data are provided in the report.

A data management protocol is not required unless managing a large amount of secondary data and the analysis includes synthesis and meta-analysis of the data, in which case the elements of metadata and ethical aspects relating to data confidentiality should be documented.

McCaston, M.K. 2005. Tips for collecting, reviewing and analysing secondary data. CARE USA. https://www.ands.org.au/__data/assets/pdf_file/0003/713235/Tips_for_Collecting_Reviewing_and_Analyz.pdf

FGD

Data for this tool type is typically qualitative in nature (structured or unstructured text, audio recordings or video, graphics and pictures), most commonly collected and presented in Word document format reports. In some studies, quantitative methodologies such as proportional piling or ranking may be used and in these cases the data may then be entered into a spreadsheet or database for analysis.

A data management protocol for this type of tool is simple to design and will predominantly relate to how the information is managed to maintain the confidentiality of participants as well as relevant metadata for the FGD information.

KII and structured questionnaires

For structured questionnaires and KII, digital data collection tools such as tablets or smart phones are recommended. There is ongoing discussion on whether it is quicker than paper data collection and later data entry but digital is preferred for improving data quality and shortening the data cleaning process. This is due to the pre-validation and coding that can be used for digital data collection and the removal of transcription errors during data entry. Data entry in the field should be monitored by field supervisors and we recommend that reviews of the data are carried out at the end of each day in the field prior to data submission. Recommended software for data collection includes Open Data Kit (ODK) (ideal for Android tablets) or CsPro (best using netbooks or laptops, improvements ongoing to the tablet versions). Another option is Survey Solutions from the World Bank which provides an easier design framework for the tools where programming skills are not needed. All of these options are open source.

Data analysis

Literature and secondary data reviews

Formal qualitative or quantitative data analysis is not usually appropriate for these types of tools. Results will be presented as summaries of information collated including some critical review of the information.

Specialized software is not usually required for these types of tools. However, meta-analysis of secondary data may utilize a generic statistical package such as SPSS. Spatial analysis software such as ArcGIS or Q-GIS may be used to incorporate maps into the report. In some cases, a qualitative software such as NVivo or Atlas may be used.

- Katjiuongua, H. and Nelgen, S. 2014. *Tanzania smallholder dairy value chain development: Situation analysis and trends ILRI Project Report*. Nairobi, Kenya: ILRI.
- Sharma, B.R., Amarasinghe, U.A. and Sikka, A. 2008. Indo-Gangetic river basins: Summary situation analysis. Project Report. New Delhi, India: International Water Management Institute.

FGD

Formal qualitative or quantitative data analysis may be used to summarize data from FGD in order to extract patterns and trends in the data and compare across environments. Analysis of qualitative data can use several methods including social network analysis, narrative or conversation analysis, framework analysis and grounded theory. Several of these methods use some form of coding to categorize responses. For quantitative data, standard statistical methods may be used.

There are several options for qualitative data analysis including NVivo, Weft QDA and MAXQDA.

Campbell, J.L., Quincy, C., Osserman, J. and Pedersen, O.K. 2013. Coding in-depth semi-structured interviews: Problems of unitization and intercoder reliability and agreement. *Sociological Methods and Research* 42(3): 294–320.

Maxwell, J.A. 2010. Using numbers in qualitative research. *Qualitative Inquiry* 16(6): 475–482.

Burnard, P., Gill, P., Stewart, K., Treasure, E., and Chadwick, B. 2008. Analysing and presenting qualitative data. *British Dental Journal* 204: 429–432.

Coe, R. 2002. Analyzing Ranking and Rating Data from Participatory On Farm Trials. ResearchGate.

Taylor, C. and Gibbs, G.R. 2010. What is Qualitative Data Analysis (QDA)?. Online QDA Web Site – Multiple resources.

KII

Data analysis methods may be a combination of those for FGD and structured questionnaires depending on the nature of the data and the sample size.

Structured questionnaires

Data analysis should be driven by the research questions and hypotheses and/or by the indicators required for monitoring and evaluation. Analysis methods include both summary statistics and more formal analyses, or inferential statistics, such as regression modelling. There are many software programs available for these analyses; SPSS and Stata are both user friendly and provide most statistical methods that may be required. The R project platform is open source and highly recommended with a large community of package developers providing all the analysis options you may need.

Ethics and ethical approval

All tools in this toolkit should be implemented by following the principles of good research ethics (autonomy, beneficence, nonmaleficence and justice), maintaining confidentiality and obtaining consent before collecting data from individuals (Box 1). This also includes the implications for open access of data.

Box 1: Principles of research ethics – common definitions

Approval
A research ethics committee's affirmation that the proposed research has been reviewed and may be conducted at the nominated institution according to the constraints set out by the ethics committee, the institution and legal requirements.

Autonomy
Respecting the decision-making capacities of autonomous persons; enabling individuals to make reasoned informed choices.

Beneficence
This considers the balancing of benefits of research against the risks and costs; the researcher professional should act in a way that benefits the research participant, their community and/or the public generally.

Confidentiality
Pertains to the treatment of information that an individual has disclosed in a relationship of trust and with the expectation that it will not be divulged to others without permission in ways that are inconsistent with the understanding of the original disclosure.

Consent
The voluntary agreement of a person or group, based on adequate knowledge and understanding of relevant material, to participate in research. Informed consent is one possible result of informed choice, the other possibility is refusal. Oral consent may be used for persons who cannot read or feel uncomfortable signing forms for cultural reasons. In this case, a written text describing what will be told to subjects when oral consent is necessary should be provided.

Justice
This concept concerning fairness or equity is often divided into three parts. Procedural justice is concerned with the fair methods of making decisions and settling disputes; distributive justice seeks to ensure fair distribution of benefits and burdens; corrective justice is concerned with correcting the wrongs and harms through compensation or retribution.

Nonmaleficence
Avoiding the causation of harm; the researcher should not harm the research subject. Where treatment involves some harm, even if minimal, but the harm should not be disproportionate to the benefits of treatment.

Privacy
Defined in terms of a person having control over the extent, timing and circumstances of sharing oneself (physically, behaviourally or intellectually) with others.

Literature and secondary data reviews

This tool type typically utilizes publicly available information and data which do not require additional ethical approval in order to use or republish (recognizing that best practice is never to duplicate but to hyperlink to the original source of the information!).

However, it is important to ensure you do not publish information or data which is not already publicly available. This situation may arise when a project partner shares information or secondary data which is not yet in the public domain. In this situation, we must maintain the same level of openness, i.e. not publish, unless we have a formal agreement in place with the information/data supplier stating that these will be published in the form they were supplied in. Where a partner is supplying information relating to individuals (i.e. personal information such as names, geographical location, religious or political affiliation, health status etc.) this information is NEVER to be shared or made open access unless there is explicit ethical approval from the individual.

There does not usually need to be a plan for open access of data unless secondary data providers request the data be made open access; usually, these data already are open access through the original data owner and only hyperlinks need to be provided.

FGD

Individual consent from FGD participants should be obtained before the discussion. Commonly, written consent is used where each participant signs the same form. In certain situations, the written consent may be waived for an oral consent that should be witnessed and formally documented. It is recommended that prior to the discussion, participants are issued with codes so that any written transcription refers only to codes. These transcripts should be kept separate from consent forms and forms where the participant is named alongside their code. The consent forms should follow the World Medical Association Declaration of Helsinki standards.

When introducing the FGD to participants, it is a good idea to set out the ground rules for participants behaviour, such as not repeating what has been said outside the meeting; this is the aspect of ensuring the privacy of FGD participants.

Open access FGD data should NEVER include identifying information for a participant, ensuring the confidentiality of FGD participants. The sharing of confidential data outside of the project team will depend on the consent provided by the participants and requires ethical approval of the recipient's organization in order to access these data. Data from FGD that will be open access should be anonymized summaries or transcripts.

KII and structured questionnaires

Individual consent for structured questionnaires and KII should be obtained before the interview as per the guidance above for FGD. It is similarly recommended that unique identifiers are given to each interviewee so that personal information can be removed from datasets prior to open access. Interviews should be conducted in private, where no one can overhear, ensuring the privacy of the interviewee. Open access of questionnaire data should NEVER include identifying information for a participant, ensuring the confidentiality of the interviewee. The sharing of confidential data outside of the project team will depend on the consent provided by the participants and requires ethical approval of the recipient's organization in order to access these data. Data from KII and structured questionnaires that will be open access should be anonymized.

Example consent forms: https://www.irb.cornell.edu/forms/sample.htm
http://www.who.int/rpc/research_ethics/informed_consent/en/
https://www.uow.edu.au/content/groups/public/@web/@raid/documents/doc/uow014904.pdf

3. Overview of the various steps involved in evaluating best bets by using the toolkit

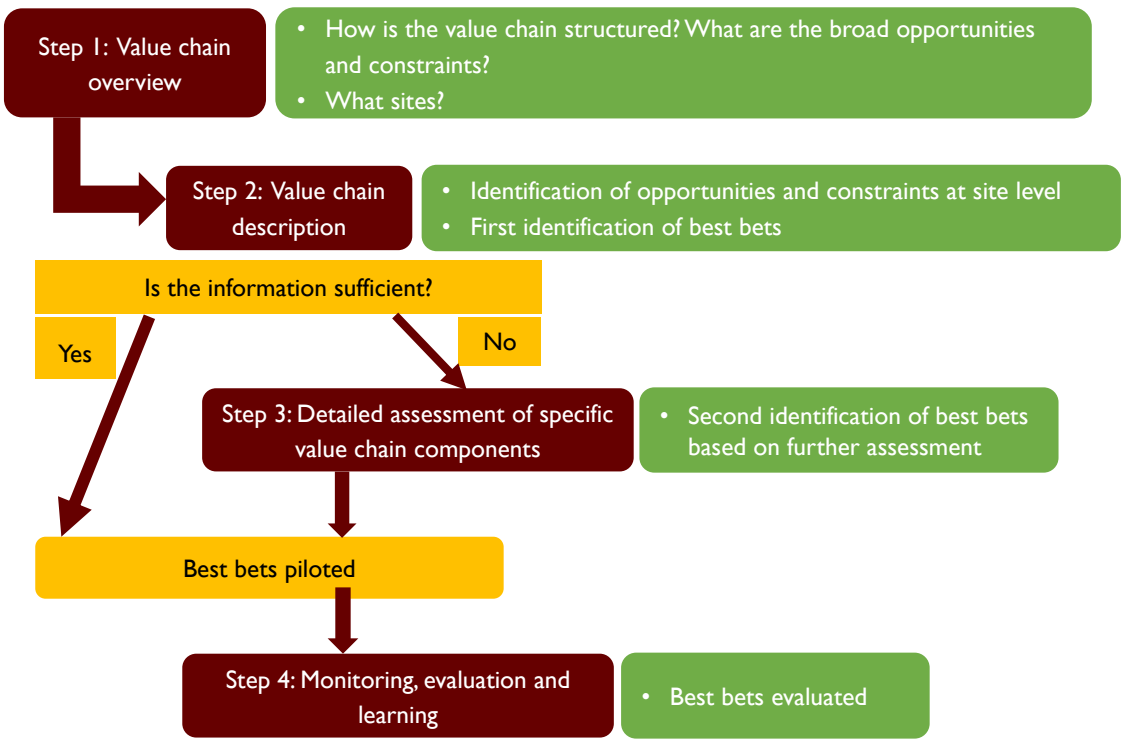
Introduction

This chapter describes the various steps involved in implementation of the toolkit and an overview of the associated tools. A fuller description of the various tools along with weblinks are given in Chapter 4. For value chains where prior assessments have not been performed, we recommend that all steps are implemented; however, in other cases where prior assessments have been performed, the initial step(s) may not be required.

As discussed in the introduction, it is assumed that the focal value chain has been preselected, both by the livestock or fish product of interest and geographic focus (for example, the pork value chain in Uganda, the buffalo milk value chain in a state of India).

Figure 1 presents the four steps and their expected results while Table 1 provides more details. The rest of this chapter is divided into four sections, one for each step.

Figure 1: Overview of the four steps and expected results



What are "best bet" interventions?

A best bet is a technology, process, institutional or social innovation that has been chosen through a rigorous, participatory and transparent research based selection process because of its potential for making a positive contribution to one or more development outcomes, for example those associated with the Sustainable Development Goals,[2] with possible negative impact on other outcomes being clearly documented. It can be packaged as a discrete innovation or as part of an integrated bundle of related innovations. See Box 2 for an example from Uganda.

How are best bets identified?

Best bets are selected based on the available evidence of their development potential. The selection of best bets starts in Step 1, using existing evidence available in the literature, both from the country of interest and from similar contexts. More evidence is gathered in Steps 2 and 3 at specific site and value chain levels, Step 4 being when the best bet is tested, monitored and evaluated. If sufficient information is collected at Step 2 to identify candidate best bet, piloting starts and tools in Step 4 are used. If, on the other hand, researchers and stakeholders consider that more evidence is needed, tools in Step 3 are to be used to identify candidate best bets.

Best bets are vetted along five dimensions or criteria using the available evidence (secondary or primary) at different steps and involve a range of stakeholders in the process. The stakeholder process involves selected value chain actors and other stakeholders such as policymakers, researchers and development agencies. Once sufficient evidence is gathered, the selected best bets are pilot tested and rigorously assessed (Step 4). If adaptation is required, the best bets are tested again, in an iterative way.

What are the criteria used for best bet selection?

To be selected, best bets are vetted against the five criteria described below, possibly with some sub-criteria. In many cases, there will be trade-offs to make, for example between economic and environmental sustainability. A scoring exercise can be organized for stakeholders to objectively look at the pros and cons of each best bet. Qualitative tools like EXTRAPOLATE can be used. If quantitative data are available, an ex-ante impact assessment provides a more quantitative and rigorous analysis; see how the Tanzania team used system dynamic modelling: http://ageconsearch.umn.edu/record/235242/files/Baker_%20D%20ppt.pdf (The Tanzanian example starts on page 16).

Economic sustainability: In the absence of external funding, there must be a reasonable expectation that the best bet will not immediately collapse. Initially, a best bet need not be financially sustainable, although over time there must be sufficient evidence to suggest that it will be. The best bet must be, at least in the medium term, economically profitable for the actor using it.

Gender and social equity: Best bets must show potential to contribute to enhancing gender and social equity. Interventions that show more potential to enhance gender and social equity must be given priority over those that show an increase in or reproduction of existing inequity patterns.

Environmental sustainability: This is about a wide spectrum of potential environmental impacts such as water use and pollution, soil health, biodiversity and greenhouse gas emissions. It may be regarded as satisfied if the impact is regarded as low, neutral or positive/beneficial.

Social sustainability: Best bets must be socially acceptable within the broader national context. Best bets that are socially accepted only in exceptional circumstances or after a substantive public education campaign are unlikely to succeed on a large scale. However, it should be noted that in some cases a best bet challenges existing norms and attitudes that perpetuate inequality. This criterion therefore is not always valid.

2. In livestock and fish, best bets were contributing to the livestock and fish Intermediate Development Outcomes (IDOs).

Political acceptability: A best bet must fit within the broader political norms of the national context. If a best bet will only work in an exceptional political context, then it cannot be expected to go to scale.

Box 2: How the Uganda value chain team developed best bet interventions: An integrated approach to value chain transformation in a rapid inclusive growth system

In 2011–2012, the Livestock and Fish CRP identified development of smallholder pig value chains in Uganda as a promising pathway to improve both livestock keepers' livelihoods, as well as the income of other actors along the value chains.

Designed as an integrated approach to transform the whole value chain initial activities included a situational analysis of the pig sector, as well as participatory site selection with partners. By combining CRP resources with bilateral project funds, ILRI and its partners conducted gender-responsive value chain assessments in specific locations, working with the National Livestock Resources Research Institute, and public universities. Based on these assessments, 'best-bet' interventions, in areas including health and biosecurity, vaccines, feeds, businesses development, capacity development, slaughtering, and food safety were identified and pilot tested, in close collaboration with local government partners and on-the-ground development partners (including local governments, Kampala City Council Authorities, VEDCO, Pig Production and Marketing Ltd., Iowa State University and SNV).

The Program now works with 8,000 pig farmers and 500 pig value chain actors in five districts. A national-level multi-stakeholder platform was set up to identify systematic issues in the pig value chain, connect actors, engage policy-makers and support the sector find long term and sustainable solutions for inclusive and profitable pig value chains in Uganda. Updates and research outputs are online: http://livestockfish.cgiar.org/focus/uganda

This approach of focusing and integrating efforts around a particular value chain in selected sites, building long-term relationships with partners, complementing on-the-ground gender-responsive pilot testing of interventions with high quality modelling work and upstream technology research, addressing systematic issues at a higher level and using evidence to adjust interventions when required, is a promising way to reach impact at scale (see Livestock and Fish CRP external evaluation report: http://hdl.handle.net/10568/52246)

Step 1. Value chain overview: synopsis of the selected value chain and selection of focal sites for more detailed assessments

Overview: the aim of this step is twofold: 1. To obtain a basic understanding of the selected value chain within the targeted geographical area, focusing particularly on value chain structure, governance and inclusiveness and performance; and 2. To identify sites of narrower geographic focus for further value chain assessments and implementation of potential interventions. Most of the evidence collated in Step 1 is from literature and outcomes of stakeholder engagement. As explained in the tools, stakeholder views are key to ensure that the broad interventions and selected sites match their priorities. This is applicable to public and private stakeholders and investors.

Tools: there are two tools supporting this step, each for one aim. The first tool is the overall assessment of the value chain for the target geographic area (which is often—but not necessarily—national level) and where data is generally obtained from secondary sources and KII. The second tool is for the site selection process and will define areas of narrower geographic focus for further value chain assessment and potential intervention implementation. This tool is implemented in conjunction with stakeholders and draws both on published evidence as well as stakeholder knowledge and priorities.

Use of results: the expected outputs of this step are:

- A broad level understanding of the value chain;
- Identified opportunities and constraints along the value chain that will be the subject of further assessments; and
- Identified sites of narrower geographic focus for further value chain assessments and potential intervention implementation.

The purpose of Step 1 is therefore to:

- Provide an overview of the value chain environment (economic/social/policy);
- Contextualize the value chain;
- Identify potential challenges/opportunities in policy environment; and
- Identify sites for action research.

Step 2. Value chain description: site specific description of value chain actors and identification of value chain opportunities and constraints

Overview: the aim of this step is to obtain more detailed information on the value chain, focusing on the focal nodes and actors and narrower geographic sites identified in Step 1. This step is skipped in some cases, when researchers have gathered sufficient information from Step 1 to directly conduct detailed assessment as in Step 3.[3]

A literature review and collation of secondary data, focusing on the selected sites, is advised before doing primary data collection. Use the tool described in Step 1, or a simplified version as limited information may be available at the site level.

Tools: the tool for this step is called "the value chain scoping tool" and involves KII and/or FGD with representatives of all actors on: a) value chain mapping and description, b) key constraints and opportunities, reasons behind these and gender issues related to these, c) a visioning exercise and d) best bet interventions and entry points.

Use of results: the expected outputs of this step are

- A detailed description of the value chain for the target sites;
- Priority constraints and opportunities at different nodes of the value chain for different actors, including difference between women and men;
- Possible scenarios of likely evolution of the value chain in the next 15 or so years and drivers of change; and
- In some cases, first identification of best bet interventions for value chain improvement or additional information needs (to identify the best bet interventions) identified, in conjunction with stakeholders.

The purpose of Step 2 is therefore to:

- Get an overview of value chain (mapping/actors);
- Identify broad opportunities and constraints;
- Identify new researchable issues (for proposal development);

3. This would be the case when a large body of evidence is already available.

- Inform authorities about the project;
- First identification of best bets; and
- If more evidence is needed, it also helps planning the value chain assessment (Step 3).

Step 3. Detailed assessment of specific value chain components to define or refine best bets

Overview: the aim of this step is to obtain further data in cases when additional information is required for best bet identification or for ex ante impact assessment of best bet options (the latter in cases where this is required to better define the intervention prior to the pilot testing).

Tools: A set of tools is proposed to be used as a basis to formulate the specific tool(s) needed to fill the information gap(s) identified in Step 2. A modular approach is recommended, whereby a core module is suggested, and other modules are selected depending on the research questions.

The starting point to adapt these tool(s) should be specific articulation of the research question to be answered and the underlying data required to answer the question. We strongly recommend that these are well thought out and documented prior to initiating the actual tool development.

Use of results: the expected output of this step is best bet interventions identified or refined in conjunction with stakeholders. Data for this step is obtained from whatever source is most appropriate to fill the data gap—often this is FGD at community level, but this step could also include KII, household surveys, animal level surveys, or combinations of all three, if required.

See Box 3 for the example of the Tanzania dairy value chain and the identification of the dairy business hubs (DBH) as a best bet after the detailed value chain assessment (Step 3) and how this led to the monitoring of the DBHs with tools similar to those presented for Step 4.

The purpose of Step 3 is therefore to:

- Obtain more in-depth analysis of the value chain at different nodes; and
- Identify best bets to be piloted.

Step 4. Monitoring, evaluation and learning

Overview: the aim of this step is to facilitate monitoring, evaluation and learning. This is achieved by obtaining data on indicators prior to best bet interventions being implemented (often termed baseline data) and data on these indicators during and/or after intervention implementation. In some cases, it may be cost effective to combine this step with Step 3. The expected outputs of this step are assessments—performed in conjunction with stakeholders—of whether the best bets were the most appropriate to target and the performance of the implemented best bet. This should feed into an ongoing process of intervention reflection and refinement. Fewer indicators are tracked at this step compared to Step 4, since we now focus on a specific best bet.

Tools: A set of tools for baseline exist—for various actors namely producers, consumers, input and service providers, traders and processor/retailers—as summarized in Table 1.

Use of results: the expected outputs of this step are the baseline and subsequent values of the indicators selected to evaluate the best bet interventions.

The purpose of Step 4 is therefore to:

- Obtain baseline values for impact assessment at actor level and coordination in the value chain.

Box 3: How the Tanzania value chain team identified best bets at different levels

While the Step 1 assessment identified lack of coordination among actors as a major constraint, a possible best bet, namely the DBH approach, was identified following a detailed value chain assessment with different hub types to be tested depending on context and actor priorities. The identification was also made possible thanks to complementary work on dairy value chains in east Africa by ILRI and its partners. The identification of this best bet was done using tools similar to those presented under Step 3, Tanzania having skipped Step 2. Performance of DBH was thereafter monitored and evaluated within the MoreMilkiT project (Step 4), including analysing how best to structure the delivery of inputs and services through the hubs; see an analysis of the preferences of cattle keepers for DBH options in Tanzania. https://cgspace.cgiar.org/handle/10568/68494.

Table 1: Description of the four steps, purposes, types of tools, duration and frequency (tool names in blue)

Steps	Tools and tool names	How long	How often
Value chain overview	Desk review and KII: Situational analysis; site selection	Initial: 2 months Final: 3–6 months	Updated as necessary
Value chain description	• Interview checklist for small groups of district level officials, producer groups representatives, trader representatives, market agents, other KII • Checklist for use with individual consumers • Visioning exercise and first identification of best bets • All in VC scoping	1–2 day per value chain domain per district	Repetition only for new sites
Detailed assessment of specific components	Modular approach with core (mandatory) modules and others based on needs (optional). Both quantitative and qualitative information are collected. Producers level • Livelihoods analysis:VCA- producers- livelihoods • Purpose for and systems of livestock and fish production:VCA- producer – systems of production and purpose • Seasonal calendar:VCA- producer- seasonal calendar • Activity clock:VCA- producer- gender roles (activity clock) • Decision making:VCA- producer- decision making • Group membership/collective action:VCA- Producer group membership / collective action • Value chain mapping core and optional sections:VCA- producer value chain mapping • Feeds and feeding: Feed Assessment Tool for livestock—optional, to be done if best bets likely to focus on feed. See https://www.ilri.org/feast • Breeding/seed input—optional, to be done if best bets likely to focus on breeding:VCA- producer breeding/seed input • Animal health—optional, to be done if best bets likely to focus on animal health:VCA- Producer- participatory epidemiology to understand animal health constraints • Wrapping up: constraints and solutions:VCA- producer-constraints and solutions Social and gender assessment GTA tool complementing some of the above tools • access to resources • decision making • activity and time use matrix • gender attitudes • gender norms • relationships wheel • envisioning a gender transformative value chain Other value chain actors • Inputs, services and extension:VCA BM inputs services • Processors/retailers and traders:VCA BM pork retailers Uganda • Consumers:VCA BM consumers (2 documents)	3–6 months	Fill gaps for new interventions identified over time
Monitoring, evaluation and learning	Survey at several actor levels based on modular approach • Individual producer questionnaire: BM producers The following are the same as for value chain assessment: • Individual retailer/processor and trader questionnaire:VCA BM Pork retailers Uganda; • Individual input, services and extension questionnaire :VCA BM inputs services ; • Individual consumer questionnaire :VCA BM consumers (two documents) ; and • Producers organization sustainability assessment (POSA).	It depends on the project and level of funding available	Before and after best bet implementation

4. Tools description

This chapter provides a description of each tool as well as the weblink to the tool. Table 1 above provided the names of the tools in blue.

Tool name	Situational analysis 
Tool objectives	The main objective of the situational analysis is to assess the conditions within which the target value chain in the selected country operates. This assessment exercise involves overview of past trends, current status and likely future directions. The structure and content of the situational analysis follows stage by stage assessments of different segments of the value chain under study. Any data and analysis should include a gender dimension where possible. The tool provides an outline of the report.
Tool type	Secondary data collection and KII. The tool is simply the report outline.
When and where to implement	At the beginning of the engagement, at country level (or state in case of a large country like India). To be updated when the conditions in the value chain change significantly, for example the value chain structure has changed with the introduction of new players.
Resources and expertise needed	Two to three months of expert's time to review the literature and hold a series of KII to complement existing evidence. The expert needs to have a bird's eye view of the value chain and be able to understand technical issues (e.g. feed) as well as institutional (e.g. market) and policy issues and be a recognized expert in one of these fields. In some cases, a team of experts is assembled, under the coordination of a team leader. Besides time, resources required are relatively limited (less than United States Dollar (USD) 5,000) and are needed for: 1. Costs related to literature review and 2. Conducting KII. At the end of the exercise, it is advisable to share the results with stakeholders to: a. Validate the information and b. Get buy in for next steps.
Expected implementation duration	Three months
Any specific data analysis and interpretation considerations	The literature review may get complicated as most of it is "grey" literature. However, the process to search for and review references should be clearly documented.
Any specific considerations in relation to sampling	The literature review needs to be comprehensive and systematic.
Links to examples of use of the tool	Check the situational analysis for Tanzania here, Ethiopia here, Bangladesh here and Egypt here
How tool results can be used	The results, together with those of the site selection tool, guide the identification of best bets in some of the livestock and fish countries.
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 Situational analysis tool

Tool name	Site selection 
Tool objectives	The tool provides a process to guide the selection of sites where the research and development activities will take place. Sites are defined as homogenous areas in terms of livestock and fish production systems, market infrastructures, policy etc. For example, the Tanzania team identified four districts as the focus sites, i.e. sites are defined as districts (administrative boundaries).
Tool type	There are four steps: the first step uses GIS layers and analysis methods; the second step is a stakeholder workshop; the third step uses KII; the fourth step is a data analysis stage and stakeholder engagement.
When and where to implement	The tool is implemented at the beginning of the research work for the country (or state) where the value chain analysis will occur. The process can be repeated if additional (or replacement) sites need to be identified.
Resources and expertise needed	The resources needed depend on whether secondary data are available: the geographical spread, transport costs in that country etc. The expertise and costs vary by step: • The first step requires GIS skills, three weeks of a GIS expert, with possible additional cost of obtaining layers • The second and fourth steps require facilitation skills and resources for holding stakeholder workshops. It takes about one day. • The third step requires data collection skills and ability to triangulate information. Costs vary significantly by country; usually, costs are low (below USD5,000). It takes about one month. • The fourth step requires quantitative analysis skills at the intermediate level and no other specific costs. It takes about two weeks.
Expected implementation duration	The process takes about three months.
Any specific data analysis and interpretation considerations	As information from KII and secondary data are compiled, one needs to use triangulation techniques to increase level of confidence.
Any specific considerations in relation to sampling	None
Link to example of use of the tool	The Ethiopia example can be accessed here.
How tool results can be used	Same as above
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2, Site selection tool

Tool name	Value chain scoping 
Tool objectives	This tool aims at getting a good understanding of the value chains in terms of structure and some understanding of the value chain governance and performance in the target sites (selected in Step 1). We also identify constraints and opportunities for value chain upgrading. This evidence is used to identify best bet interventions for value chain improvement for each site and/or additional information needs (to identify the best bet interventions) for each site.
Tool type	Literature review, primary data collection and stakeholder workshops. Note that it is the only tool in Step 2.
When and where to implement	Use once sites have been chosen and broad issues identified through Step 1. Implemented at sites where research and development will take place and where best bet interventions will be piloted.
Resources and expertise needed	Good facilitation skills expertise at site level as well as for the stakeholder workshop. At site level, teams can work in parallel if FGD are conducted separately for men and women.
Expected implementation duration	About two days per domain and district.
Any specific data analysis and interpretation considerations	With qualitative data, interpretation can be subjective; try and triangulate the information. Refer to Chapter 2 on methodology.
Any specific considerations in relation to sampling	Since the data are mainly qualitative, few villages to represent sites are usually selected and therefore document site selection carefully.
Links to examples of use of the tool	Not available
How tool results can be used	See blog on the stakeholders workshop of the project *Assessing competitiveness of smallholder pig farming in the changing landscape of Northwest Vietnam*: https://asia.ilri.org/2017/06/07/exploring-ways-of-uplifting-pig-farmers-livelihoods-in-northwest-vietnam/
Links to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 Value chain scoping tool

Tool name	Producers – Livelihoods analysis 
Tool objectives	This tool is part of the detailed assessment at producer level. It is one of the mandatory modules of this assessment. The objective of this module is to understand the composition of people's livelihoods (in terms of food and cash income) in the community and the role of the target livestock and fish commodity in it and to assess whether livelihoods have changed over the years.
Tool type	FGD
When and where to implement	The tool is used to guide the selection of a best bet intervention; it is done at selected (representative) villages within the selected sites.
Resources and expertise needed	As per the standard FGD requirements.
Expected implementation duration	This module takes about 30 minutes.
Any specific data analysis and interpretation considerations	Refer to Chapter 2 on methodology with respect to design, implementation and interpretation of qualitative information.
Any specific considerations in relation to sampling	Refer to Chapter 2 on methodology.
Links to examples of use of the tool	N/A
How tool results can be used	N/A
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 Value chain analysis producers livelihoods tool

Tool name	Producers – Systems of production and purpose 
Tool objectives	This tool is part of the detailed assessment, at producer level. It is one of the optional modules of this assessment. The objective of this module is to identify the production systems in which the target livestock and fish species are produced and the main purposes for which households keep them. It also identifies whether the community has been successful in achieving these purposes and the reasons. It asks about community definition of small, medium and large-scale farmers
Tool type	FGD
When and where to implement	The tool is used to guide the selection of a best bet intervention; it is done at selected (representative) village(s) within the selected sites.
Resources and expertise needed	As per the standard FGD requirements.
Expected implementation duration	This module takes about one hour.
Any specific data analysis and interpretation considerations	Refer to Chapter 2 on methodology with respect to design, implementation and interpretation of qualitative information.
Any specific considerations in relation to sampling	Refer to Chapter 2 on methodology.
Links to examples of use of the tool	N/A
How tool results can be used	N/A
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 Value chain analysis producer systems of production tool

Tool name	Producers – Seasonal calendar 
Tool objectives	This tool is part of the detailed assessment, at producer level. It is one of the optional modules of this assessment. The objective of this module is to learn about seasonality of rainfall, income from and workload for agriculture, livestock and fish production, off farm labour, non-agricultural activities and inputs of hired labour.
Tool type	FGD
When and where to implement	The tool is used to guide the selection of a best bet intervention; it is done at selected (representative) village(s) within the selected sites.
Resources and expertise needed	As per the standard FGD requirements.
Expected implementation duration	This module takes about one hour.
Any specific data analysis and interpretation considerations	Refer to Chapter 2 on methodology with respect to design, implementation and interpretation of qualitative information.
Any specific considerations in relation to sampling	Refer to Chapter 2 on methodology.
Links to examples of use of the tool	N/A
How tool results can be used	N/A
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 Value chain analysis producers seasonal calendar tool

Tool name	Producers – activity clock 
Tool objectives	This tool is part of the detailed assessment, at producer level. It is one of the optional modules of this assessment. The objective of this module is to understand specific roles of men and women in the daily activities undertaken by household members at different times of year. Also, it can help to facilitate the discussion on changes in the gender division of labour and how this is relevant to livestock and fish activities.
Tool type	FGD
When and where to implement	The tool is used to guide the selection of a best bet interventions; it is done at selected (representative) village(s) within the selected sites.
Resources and expertise needed	As per the standard FGD requirements.
Expected implementation duration	This module takes about one hour.
Any specific data analysis and interpretation considerations	Refer to Chapter 2 on methodology with respect to design, implementation and interpretation of qualitative information.
Any specific considerations in relation to sampling	Refer to Chapter 2 on methodology.
Links to examples of use of the tool	N/A
How tool results can be used	N/A
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 Value chain analysis producers activity clock tool

Tool name	Producers – Decision making 
Tool objectives	This tool is part of the detailed assessment, at producer level. It is one of the optional modules of this assessment. The objective of this module is to identify the areas where men and women make decisions and the control they have over the income derived from different sources.
Tool type	FGD
When and where to implement	The tool is used to guide the selection of a best bet intervention; it is done at selected (representative) village(s) within the selected sites.
Resources and expertise needed	As per the standard FGD requirements.
Expected implementation duration	This module takes about 30 minutes.
Any specific data analysis and interpretation considerations	Refer to Chapter 2 on methodology, with respect to design, implementation and interpretation of qualitative information.
Any specific considerations in relation to sampling	Refer to Chapter 2 on methodology.
Links to examples of use of the tool	N/A
How tool results can be used	N/A
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 Value chain analysis producers decision making tool

Tool name	Producers – Group membership/collective action 
Tool objectives	This tool is part of the detailed assessment, at producer level. It is one of the optional modules of this assessment. The objective of this module is to identify the types of formal and informal groups that are active in the community and whether there are any barriers for men/women or other subgroups to belong to and participate in these groups.
Tool type	FGD
When and where to implement	The tool is used to guide the selection of a best bet intervention; it is done at selected (representative) village(s) within the selected sites.
Resources and expertise needed	As per the standard FGD requirements.
Expected implementation duration	This module takes about 30 minutes.
Any specific data analysis and interpretation considerations	Refer to Chapter 2 on methodology with respect to design, implementation and interpretation of qualitative information.
Any specific considerations in relation to sampling	Refer to Chapter 2 on methodology.
Links to examples of use of the tool	N/A
How tool results can be used	N/A
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 Value chain analysis producers group membership tool

Tool name	Producers – Value chain mapping 
Tool objectives	This tool is part of the detailed assessment, at producer level. The tool is in two parts: the core part, which is mandatory and the detailed part, which is organized by types of inputs and services. During the discussions of the core part, you will agree with the participants about which inputs or services require more discussion, i.e. where there are opportunities for improvement or challenges. Based on this, select one or more of the sections of the detailed part. The objectives of this module are to examine: • The composition of the value chain including the main actors, services and enablers, the main market channels and their relative importance and requirements, and geographical spread, to visualize linkages and demonstrate interdependencies in the chain. • The major sources of inputs and services and their accessibility to different types of producers. • The relative access to and control over the different market channels and services by men and women respectively. • The major constraints in selling products and buying inputs and accessing services.
Tool type	FGD
When and where to implement	The tool is used to guide the selection of a best bet intervention; it is done at selected (representative) village(s) within the selected sites.
Resources and expertise needed	As per the standard FGD requirements.
Expected implementation duration	This module takes 1.5 hours for the core part and up to 1 additional hour for the detailed part.
Any specific data analysis and interpretation considerations	Refer to Chapter 2 on methodology with respect to design, implementation and interpretation of qualitative information.
Any specific considerations in relation to sampling	Refer to Chapter 2 on methodology.
Links to examples of use of the tool	N/A
How tool results can be used	N/A
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 Value chain analysis producers value chain mapping tool

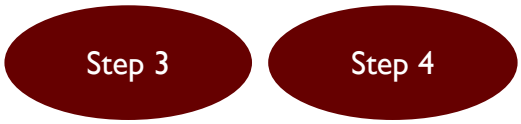
Tool name	Producers – Breeding/seed 
Tool objectives	The objective of this module is to understand the different breeds that are kept, their characteristics and sources of breeding stock and any changes in breeds in the past five years.
Tool type	FGD—there are separate questions for livestock and fish.
When and where to implement	The tool is used to guide the selection of a best bet intervention; it is done at selected (representative) village(s) within the selected sites.
Resources and expertise needed	As per the standard FGD requirements.
Expected implementation duration	This module takes about one hour.
Any specific data analysis and interpretation considerations	Refer to Chapter 2 on methodology with respect to design, implementation and interpretation of qualitative information.
Any specific considerations in relation to sampling	Refer to Chapter 2 on methodology.
Links to examples of use of the tool	N/A
How tool results can be used	N/A
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 Value chain analysis producers breeding tool

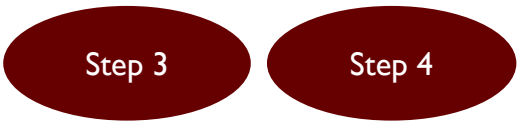
Tool name	Producers – Participatory epidemiology to understand animal health constraints 
Tool objectives	The objectives of this module are: • Assess the role diseases play in constraining production (farmer perceptions of the importance of health constraints in relation to specific production parameters) • Facilitate problem analysis on health constraints (diseases, symptoms or syndromes) • Understand gender differentials in animal health management • Assess animal health services that are accessed.
Tool type	FGD
When and where to implement	The tool is used to guide the selection of a best bet intervention; it is done at selected (representative) village(s) within the selected sites.
Resources and expertise needed	As per the standard FGD requirements.
Expected implementation duration	This module takes about two hours.
Any specific data analysis and interpretation considerations	Refer to Chapter 2 on methodology with respect to design, implementation and interpretation of qualitative information.
Any specific considerations in relation to sampling	Refer to Chapter 2 on methodology.
Links to examples of use of the tool	N/A
How tool results can be used	N/A
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 Value chain analysis producers participatory epi tool

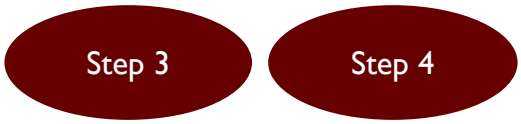
Tool name	Producers – Constraints and solutions 
Tool objectives	The objective of this module is to identify opportunities for improving local livestock and fish production systems, to review and rank the constraints previously identified and identify potential ways of addressing these constraints. It is based on the constraints identified in the previous tools and finalizes the FGD.
Tool type	FGD
When and where to implement	The tool is used to guide the selection of a best bet intervention; it is done at selected (representative) village(s) within the selected sites.
Resources and expertise needed	As per the standard FGD requirements.
Expected implementation duration	This module takes about one hour.
Any specific data analysis and interpretation considerations	Refer to Chapter 2 on methodology with respect to design, implementation and interpretation of qualitative information.
Any specific considerations in relation to sampling	Refer to Chapter 2 on methodology.
Links to examples of use of the tool	N/A
How tool results can be used	N/A
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 Value chain analysis producers constraints and solutions tool

Tool name	Producers and value chain actors: understanding choices and constraining gender norms Step 3
Tool objectives	Gender norms embody social expectations about the ways in which women and men, boys and girls are expected to behave in a given place. This shapes how people act and the choices they make and thus affect the ways women and men can engage in value chain opportunities as well as the way and extent to which they access and control resources, as well as benefit or bear costs from value chain innovations (such as best bets). This tool aims to explore the range and quality of choices that women and men have in the value chain and to investigate a particularly important, yet often overlooked, factor: the gender norms that may affect these choices. Identifying if and how gender norms may influence these choices (and gendered success in the value chain) is important because it will enable more effective design and thus outcomes of the best bet interventions that emerge from this value chain analysis. Specifically, this understanding can be applied in design so that best bets developed can, at a minimum, take a gender accommodative approach (working around constraining gender norms, such as by engaging women within the homestead sphere) or, more ambitiously, take a gender transformative approach (engaging women and men together in looking for ways to address constraining gender norms). The gender transformative approach seeks to—in a locally driven, locally appropriate way—increase awareness of and critical reflection regarding gender constraining behaviours and, conversely, build on existing norms that contribute to gender equality and to equitable engagement and outcomes. In a best bet relating to nutrition, for example, reflection and action-based sessions over an extended period of time that engage husbands and wives together with mothers-in-law and other decision-makers in the household or community. This will reveal how gender norms (such as women are solely responsible for cooking, women or girl children are least important) influence nutrition behaviours and family outcomes (excessive women's workloads, reduced health for women, less than optimal nutrition in family meals, low birth weight, stunting) and identify and try shifts in gendered norms and nutrition related behaviours (such as men and women share in learning about nutrition and share cooking, pregnant women and girls have equitable shares of food) could lead to more (locally) desirable outcomes (such as better nutrition for children).
Tool type	FGD as the method, using questions and tools within these (see Links to examples, below) oriented to surfacing gendered value chain choices and gender norms that shape these and their outcomes.
When and where to implement	This tool is used to guide the selection design of a best bet intervention so that the best bet can take into account both choices (which should shape selection) and gender norms (that need to be taken into account for effective, inclusive and equitable design). As above, note that if this tool reveals constraining gender norms then the best bet would either work around these to engage women (accommodative approach) or work to address these (gender transformative approach). Both, and the latter in particular, require gender expertise for effective design.
Resources and expertise needed	Gender expertise is important as well as careful attention to local power dynamics. Questioning well established gender discriminating norms can cause backlashes towards those who are discriminated against.
Expected implementation duration	Between one and two hours for each tool.
Any specific data analysis and interpretation considerations	To avoid backlashes, findings need to be handled with careful attention to local power dynamics while guaranteeing full anonymity. Keep in mind that gender norms are one kind of gender barrier, specifically, they are a form of informal structural barrier. Other barriers will need to be assessed and strategies embedded in the best bet interventions if the interventions are to engage and benefit both women and men, for example, policy related barriers.
Any specific considerations in relation to sampling	Sampling may be done purposively (rather than randomly) to ensure that all relevant parties are involved as in the above example of a nutrition program (tool objectives).

Links to examples of use of the tool	For qualitative tools that can be applied within FGD for assessing gender norms, see GENNOVATE: https://gennovate.org/ See also: Kruijssen, F., Kantor, P., Galiè, A. and Farnworth, C.R. 2016. Adding gender transformation into value chain analysis. In: Pyburn, R. and Eerdewijk, A. van. (eds) A different kettle of fish? Gender integration in livestock and fish research. Volendam: LM Publishers: 45–53. https://cgspace.cgiar.org/handle/10568/78648 This example of the fish value chain work is also worth reading: • Kruijssen, F., Pyburn, R. and Sultana, N. 2016. Transforming the fish value chain in Bangladesh: What a gender lens brings. In: Pyburn, R. and Eerdewijk, A. van. (eds) A *different kettle of fish? Gender integration in livestock and fish research.* Volendam: LM Publishers: 109–117. http://hdl.handle.net/10568/78641. For an example of the application of a gender transformative approach versus an accommodative approach within a value chain best bet type intervention, see: • Cole, S., Kaminiski, A.M., McDougall, C.M., Kefi, A.S., Marinda, P.A., Maliko, M. and Mtonga, J. (In Review). Can gender transformative change be catalyzed? Evidence from a capture fishery in Africa. *Gender, Technology and Development.*
How tool results can be used	Findings can help identify main informal (i.e. normative) gender constraints. These are important in order to inform the design of the best bet opportunities so that women and men can equally participate and benefit from an intervention. In other words, the findings can help develop strategies within the best bet interventions that accommodate (work around) or address the identified gender norm related constraints.
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 GTA tools (six tools)

Tool name	Input and services suppliers 
Tool objectives	The tool is used in Steps 3 (value chain assessment) and 4 (monitoring, evaluation and learning). It is administered to individual input and service providers, for example, an animal feed supplier, artificial inseminator, veterinarian or extension staff. It aims at calculating gross margins and identify constraints and opportunities to business development.
Tool type	The tool is administered at individual level and is mostly quantitative, with some open-ended questions on credit and constraints ranking.
When and where to implement	This is a common tool for Steps 3 and 4. Business data for input and service suppliers are best collected at individual level. Depending on the numbers of businesses operating in the target areas, either survey all of them (a census) or randomly select some (possibly by stratifying by type and size).
Resources and expertise needed	Experienced field enumerator with some business acumen.
Expected implementation duration	Each interview takes about 45 minutes to 1 hour.
Any specific data analysis and interpretation considerations	This tool has been implemented in the Uganda pig value chain to veterinarians and para-veterinarians. Adjustments are likely to be needed for other value chains.
Any specific considerations in relation to sampling	Identification and sampling of input and service providers are usually difficult as no list of such actors is readily available. The first step may consist of building a list, using information from KII and the other steps (in particular the producers FGD). We used a stratified random sample strategy, selecting small, medium and large-scale actors (or other important characteristics).
Link to examples of use of the tool	In the Uganda pig value chain, the tool has been used to characterize the health delivery systems as well as disease surveillance systems and to identify the constraints faced by the service providers, https://cgspace.cgiar.org/handle/10568/35661.
How tool results can be used	The findings can be used to identify the constraints in service delivery systems to help inform interventions to mitigate the constraints.
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 Value chain analysis BM inputs services tool

Tool name	Retailers 
Tool objectives	The tool is used in Steps 3 (value chain assessment) and 4 (monitoring, evaluation and learning). It is administered to individual retailers and processors. This tool has been used in the pork value chain in Uganda. It aims at calculating gross margins and identifying constraints and opportunities to business development.
Tool type	The tool is administered at individual level and is mostly quantitative, with some open-ended questions on constraints and opportunities.
When and where to implement	This is a common tool for Steps 3 and 4. Business data for retailers and processors are best collected at individual level. Depending on the numbers of businesses operating in the target areas, either survey all of them (a census) or randomly select some (possibly by stratifying by type and size).
Resources and expertise needed	Experienced field enumerator with some business acumen.
Expected implementation duration	Each interview takes about 45 minutes to 1 hour. Keep it short and focused, as these actors usually have little time.
Any specific data analysis and interpretation considerations	This tool is a specific example for the pig value chain so recoding will need to be done when used in another value chain.
Any specific considerations in relation to sampling	Identification and sampling of these actors are usually difficult as no list is readily available. The first step may consist of building a list, using information from KII and the other steps (in particular the producers FGD).
Link to examples of use of the tool	See https://www.tandfonline.com/doi/full/10.1080/09614524.2017.1363873
How tool results can be used	In Egypt, poor rural consumers benefit from the aquaculture sector through access to small and medium sized farmed tilapia sold by informal fish retailers, many of whom are women. The report accessible here aims to inform current and future strategies to improve conditions in informal fish retail by understanding in more depth the similarities and differences in employment quality and outcomes across different fish retailers. This knowledge will help to design interventions to overcome gender-based constraints, as well as approaches that address shared obstacles and include both women and men in gender responsive ways to ensure that all of those involved in the sector benefit. In Uganda, the tool has been used to calculate gross margins accruing to pork retailers. In addition, constraints for pork retailers especially associated with pork handling and pig slaughter have been identified and have informed capacity development interventions (https://livestockfish.cgiar.org/2015/09/09/butchers-training-uganda/).
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 Value chain analysis BM pork retailers Uganda

Tool name	Consumers 
Tool objectives	The tool described here was used in Uganda. The overall objective of the survey was to assess households' food demand and nutritional security with considerations for intra household resource and food allocation. It focuses on the demand, availability, actual access to and control over adequate food especially pork and other animal source foods, by household members. There is a specific section on intra household dietary survey for children, men and women to assess how food is distributed within the household and if some members may be at higher nutritional risk than others.
Tool type	The tool is administered at individual level and is mostly quantitative.
When and where to implement	This is a common tool for Steps 3 and 4.
Resources and expertise needed	Experienced nutritionist in charge of the survey design and implementation; experienced enumerators with expertise in human nutrition and gender.
Expected implementation duration	1.5 hours.
Any specific data analysis and interpretation considerations	N/A
Any specific considerations in relation to sampling	For studies focusing on the nutritional status of children, the eligibility criteria in terms of the age of the child (usually 6–23 months of age) is key.
Links to examples of use of the tool	https://www.slideshare.net/ILRI/spvc-ouma2-jul2017-78035044 and https://cgspace.cgiar.org/bitstream/handle/10568/51344/Uganda%20farmers%20pork%20consumption%20practices%20.pdf;sequence=2
How tool results can be used	The results can be used to assess the role of animal source foods in the diets of young children and adult men and women of reproductive age in the study population. In addition, the results can help to identify food consumption practices and inform potential interventions to increase animal source foods consumption. The WorldFish team in Egypt commissioned a study looking at consumption of fish, red meat and poultry among the resource poor households, as the lack of quality data about fish consumption preferences and practices was identified as a key gap. See here for a report on The role of farmed fish in the diets of the resource poor in Egypt.
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 BM consumers Uganda (two files)

Tool name	Producers Step 4
Tool objectives	The tool is designed to provide data for monitoring and evaluation indicators to evaluate the effects of a producer/household level intervention. It can be conducted at baseline, during implementation and/or at study end to monitor changes due to the intervention. Core module elements are designed to provide data and monitoring and evaluation indicators which are relevant across any intervention that aims to improve livelihoods of poor smallholders. This may include adoption indicators, changes in income, changes in food security or nutrition status or another livelihood measure. Note: only a few environment indicators are covered in this tool. Optional modules can then be selected depending on the interventions and the monitoring and evaluation indicators to be measured to track changes due to those interventions.
Tool type	Household level, quantitative.
When and where to implement	The Step 4 Producer level tool should be utilized AFTER identification of value chain constraints/ opportunities and articulation of the interventions to be designed/tested/implemented in the value chain. It can be used to provide a baseline, progress during the testing of the intervention and/or for end of study assessment.
Resources and expertise needed	Team(s) of enumerators, with a maximum of four enumerators per supervisor. Count on between two and three questionnaires per day per enumerator.
Expected implementation duration	Count on between two and three questionnaires per day per enumerator.
Any specific data analysis and interpretation considerations	Refer to Chapter 2 on methodology.
Any specific considerations in relation to sampling	In some cases, it is useful to sample only households keeping a certain species. In the EADD survey for example, only cattle keepers were surveyed and the results therefore can only be extrapolated to that population.
Link to examples of use of the tool	N/A
How tool results can be used	See https://onlinelibrary.wiley.com/doi/full/10.1002/agr.21492 for how cattle keepers data were used to assess the effects of the types of processor linkages on the performance of the dairy farm enterprises in east Africa.
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 BM producers

Tool name	POSA 
Tool objectives	The tool is used to monitor selected indicators of financial and social sustainability at producer organization (PO) level for dairy. It therefore helps to identify activities for improved sustainability as well as provide a framework for comparison across time and POs. The tool is designed for dairy POs but can be adapted for other sectors. It is an output of EADD, (see https://livelihoods-gender.ilri.org/2014/05/21/tracking-the-progress-of-a-dairy-development-project-eadd-implements-use-of-the-stage-gate-assessment-tool/). It was previously called the stage gate tool.
Tool type	The tool is administered at PO level based on records (e.g. financial reports) as well as a FGD with PO leadership and management team. It includes data entry and data analysis sheets in Excel.
When and where to implement	The tool is used for POs that are part of a development intervention, to be used before the interventions, with the assessment conducted ideally on a yearly basis to track changes.
Resources and expertise needed	At least two persons: one facilitating the discussion and the other person taking notes and checking veracity of answers based on reports, documents etc.
Expected implementation duration	About two to three hours per PO.
Any specific data analysis and interpretation considerations	This tool has been used extensively in the EADD project, with different versions used. Equity (gender and youth) indicators are quite sensitive to changes, see https://cgspace.cgiar.org/handle/10568/78646 for details.
Any specific considerations in relation to sampling	All POs are assessed on an annual basis.
Link to examples of use of the tool	This poster provides an overview of the tool use.
How tool results can be used	The tool results have been used in two ways: first, as background information by the POs themselves and development agencies supporting them to assess progress (or lack of) towards maturity and secondly, to understand factors affecting PO progress towards sustainability or as inputs in research papers, as here.
Link to tool	http://data.ilri.org/tools/dataset/livestock-and-fish-value chain-assessment-toolkit-version-2 Final POSA tool (one zipped file)

5. Conclusion

With many tools and methodologies available, researchers and development actors are sometimes at a loss on how to conduct value chain assessment. Commodities specificities, like high value and perishability in the case of products from livestock and aquaculture, make the assessment more complicated. We synthesized the lessons learned during livestock and fish value chain analysis in this toolkit and we hope that these tools will be used and adopted widely.

References

Downing, J., Snodgrass, D., Northrip, Z. and Woller, G. 2006. *The new generation of private sector development programming: the emerging path to economic growth with poverty reduction*. USAID and Development Alternatives Inc.

Enahoro, D., Mason-D'Croz, D., Mu, M., Rich, K. M., Robinson, T. P. et al. 2019. Supporting sustainable expansion of livestock production in South Asia and sub-Saharan Africa: Scenario analysis of investment options. *Global Food Security* 20:114–121. https://doi.org/10.1016/j.gfs.2019.01.001

Gereffi, G. 1994. The organization of buyer-driven global commodity chains: How U.S. retailers shape overseas production networks. In Gereffi, G. and Korzeniewicz, M. (eds), *Commodity chains and global capitalism*. Westport CT: Praeger: 95–122.

Gibbon, P., Bair, J., and Ponte, S. 2008. Governing global value chains: An introduction. *Economy and Society* 37(3): 315–338.

Hellin, J. and Meijer, M. 2006. *Guidelines for value chain analysis*. Unpublished document.

Kaplinsky, R. and Morris, M. 2000. *A Handbook for Value Chain Research*. IDRC. (Available from http://www.ids.ac.uk/ids/global/pdfs/VchNov01.pdf)

Njuki, J., Poole, J., Johnson, N., Baltenweck, I., Pali, P., Lokman, Z. and Mburu, S. 2011. *Gender, livestock and livelihood indicators*. Version 2. Nairobi, Kenya: ILRI. https://hdl.handle.net/10568/33974

North, D.C. 1990. *Institutions, institutional change and economic performance*. Cambridge, UK: Cambridge University Press.

Ponte, S. 2007. *Governance in the value chain for South African Wine*. TRALAC Working Paper 2007/9.

Ponte, S. 2009. Governing through quality: Conventions and supply relations in the value chain for South African Wine. *Sociologia Ruralis* 49(3): 236–257. doi:10.1111/j.1467-9523.2009.00484.x.

Springer-Heinze, A. 2007. *Value links manual: The methodology of value chain promotion*. Eschborn, Germany: German Technical Cooperation (GTZ).

Resources

Ferris, S., Kaganzi, E., Best, R., Ostertag, C., Lundy, M. and Wandschneider, T. 2006. A market facilitator's guide to participatory agro-enterprise development - Good Practice Guide 6. CIAT (this is a summary of guides 2–5).

Humphrey, J. and Schmitz, H. 2004. Chain governance and upgrading: Taking stock. In: Schmitz H (ed) *Local enterprises in the global economy: issues of governance and upgrading.* Edward Elgar Publishing Limited: Cheltenham: 349–382.

Glossary

Access (to resources): This is having the opportunity to use a resource or asset.

Best bet interventions: A best bet intervention is a technology, process, institutional or social innovation that has been chosen through a rigorous, participatory and transparent research based selection process because of its potential for making a positive contribution to one or more of the livestock and fish Intermediate Development Outcomes (IDOs) without having a negative impact on other IDOs. It can be packaged as a discrete innovation or as part of an integrated bundle of related innovations.

Collective action: Term used to describe group activities; used to increase economies of scale, bargaining power and/or access.

Control (over resources): The ability to define and impose a resource or asset's use.

Enabling environment: The enabling environment of the value chain consists of the critical factors and trends that shape the value chain environment and operating conditions. These enabling environment factors are generated by structures (national and local authorities, research agencies etc.) and institutions (policies, regulations and practices) that are beyond the direct control of economic actors in the value chain (Hellin and Meijer 2006).

Focus group discussion(s): A focus group discussion (FGD) is a way to gather together people to discuss a specific topic of interest. The group of participants is guided by a moderator (or group facilitator) who introduces topics for discussion and helps the group to participate in a discussion among themselves.

Input suppliers: Businesses that sell inputs such as seeds, tools, fertilizers, and agrochemicals to value chain actors.

Institutions: The humanly devised constraints that shape human interaction. They are not organizations, although they encompass them, but are best understood as a set of formal (e.g. laws) and informal (e.g. norms of social behaviour) rules (North 1990).

Key informant interview(s) (KII): These are qualitative in-depth interviews with key people that are well informed about a topic of interest. The purpose of KII is usually to collect information and opinions from a wide range of people on a particular topic.

Market channel: A component of the value chain through which a product flows with particular characteristics, or the flow of product into a particular market segment.

Nodes: A node is the point in a value chain where a product is exchanged or goes through a major transformation or processing (Ponte 2007).

Ownership (of resources): This is having the ultimate and exclusive lawful claim over the resource (you have the ownership documents).

Service providers: Service providers encompass all supporting services and information provision by individuals, enterprises and public agencies that are not directly involved with handling the value chain product but still perform crucial functions in the business environment of the value chain in question. This may include transport, ice, inputs, and also information and training.

Site selection: The process followed to identify sites, i.e. geographical areas where research in development activities will be undertaken.

Upgrading: Upgrading is moving up the value chain, either by shifting to more rewarding functional positions or by making products with more value added and/or providing better returns.

Upstream/downstream: In a value chain where materials are transformed from a raw status into products that are marketed to consumers, upstream refers to the activities related to and the flows towards primary production. Downstream refers to the activities further down the chain and flows of products towards consumption.

Value chain: While there are many different definitions of the concept value chain, it is generally accepted that the term refers to the full range of activities that are required to bring a product (or service) from its conception to its disposal after use (Downing et al. 2006; Gereffi 1994). These include design, production, marketing, distribution and support to get the product to the final user. The activities that comprise a value chain may be contained within a single firm or may embrace many firms. They can be limited to a single country or stretch across national boundaries (Downing et al. 2006).

Value chain actors: Value chain actors (also sometimes referred to as value chain operators) are the individuals and enterprises performing the basic functions of a value chain. Typical actors include farmers/fishers, small and medium enterprises, industrial companies, exporters, wholesalers and retailers, and processors. They have in common that they become owners of the (raw, semi-processed or finished) product at one stage in the value chain. Thus, there is a difference between actors and operational service providers, the latter being subcontracted by the value chain actors (Springer-Heinze 2007).

Value chain analysis: This provides a framework to identify challenges and opportunities in the value chain and, in the case of pro poor value chain development, should uncover entry points for improved participation of poor and vulnerable people in markets. The analysis involves assessing product types and market segments, and actors in the chain, their relationships and relative power. It also requires an understanding of the enabling environment, including the policy and institutional structures and processes, as well as public and private investments that hinder or support pro poor, gender equitable and sustainable development. Finally, value chain analysis can assist to identify and overcome inequities in the distribution of benefits from participation in the value chain.

Value chain governance: This concept refers to the inter-firm relationships and institutional mechanisms through which nonmarket, or "explicit", coordination of activities in the chain is achieved (Humphrey and Schmitz 2004). Three approaches to governance have been identified, each with their own sets of criticisms: 1) governance as driving, 2) governance as coordination and 3) governance as normalization (Gibbon et al. 2008; Ponte 2009).

Value chain map: A value chain map shows the structure of a value chain and graphically shows the main actors in the value chain and their interlinkages, the main products that are traded and the market channels they are traded through. It is also often used to indicate relative power and access by men and women.

Value chain performance: Value chain performance can be identified along several dimensions: (1) financial, (2) efficiency, (3) product suitability, (4) innovation and upgrading, (5) equity and (6) resilience and risk. All these dimensions influence competitiveness of the value chain. The degree of importance of these performance dimensions depend on the issue and research questions of interest.

Value chain structure: Value chain structure relates to the organization of the activities from production to delivery to final customers.

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