RESEARCH PROGRAM ON Livestock and Fish

CGIAR

More meat, milk and fish by and for the poor

Livestock and Fish research program core and medium-term intermediate development outcome (IDO) indicator manual

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ICARDA Science for Better Livelihoods in Dry Areas

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Foreword

The CGIAR Research Program (CRP) on Livestock and Fish has set the ambitious goal of channelling our research efforts to work with partners in designing and catalysing sets of technical and institutional interventions for the pro-poor transformation of selected animal-source food value chains. This transformation is needed if small-scale, informal production and marketing systems in the developing world are to respond to quickly growing demand, making sure that the poor have access to nutrient-rich animal-source foods as part of a more diverse and healthier diet. By anchoring our research in selected value chains, we seek to ensure our research remains relevant and focused for impact at scale. To deliver on our commitment to transform value chains, our program must be intentional not only in its conventional role of generating and validating innovation, but also in its catalytical role to involve development partners, attract development investment and support scaling out of promising innovations.

To ensure that this new model of research-for-development is effectively progressing toward achieving its objectives, the CGIAR and the various CRPs, including the Livestock and Fish CRP, are developing a monitoring and evaluation architecture that will allow the program and its stakeholders to track progress both in producing its intended research outputs and in achieving its target development outcomes. This manual is a key building block for this new architecture. It provides a set of clearly defined indicators for measuring the progress related to the program's targeted development outcomes. It spells out the rationale for the specific measures we are proposing, and how data will be collected. We recognize that each development outcome is in fact the result of a highly complex set of factors and contributions, but emphasis is given to focusing on only one or two fairly robust indicators that can serve as a proxy within the context of such complexity. We are considering these the 'bottom line' measures: if these have not improved, we clearly will not have achieved our goal. It is also important to stress that the intention is to rely as much as possible on independent sources of data consistent with evaluation best practice.

Finally, we envisage this manual as a living document, to be updated and refined as we learn from its application over the course of the program. So please consider this an invitation for continued feedback.

Tom Randolph
Director, CGIAR Research Program on Livestock and Fish

Acronyms and abbreviations

A4NH	Agriculture for Nutrition and Health
CRP	CGIAR Research Program
FAO	Food and Agriculture Organization
GHG	Green House Gas
IDO	Intermediate Development Outcomes
ILO	International Labor Organization
IPCC	Intergovernmental Panel on Climate Change
KAP	Knowledge Attitude and Practice
L&F	Livestock and Fish
LCA	Life Cycle Assessment
LSMS	Living Standards Measurement Study
SLO	System Level Outcomes
SUN	Scaling Up Nutrition
TOC	Theory of Change

Introduction

This indicator manual provides guidance to the measurement of the progress and achievement of the Intermediate Development Outcomes (IDOs) selected by the CGIAR Research Program on Livestock and Fish. The table below defines the IDOs the program has committed to achieve.

IDO #	IDO description
1	Increased livestock and fish productivity in small-scale production systems for the target commodities
2	Increased quantity and improved quality of the target commodity supplied from the target small-scale production and marketing systems
3	Increased employment and income for low-income actors in the target value chains, with an increased share of employment opportunities for and income controlled by low-income women
4	Consumption of the target commodity responsible for filling a larger share of the nutrient gap for the poor, particularly for nutritionally vulnerable populations (women of reproductive age and young children)
5	Lower environmental impacts per unit of commodity produced in the target value chains
6	Policies (including investments) and development actors recognize and support the development of the small-scale production and marketing systems, and seek to increase the participation of women within these value chains, to contribute to all outcomes at the system level

To measure progress and achievement of the IDOs, it is imperative to select relevant indicators. For the selection of the indicators of this manual, the DOPA criteria[1] have been used as they capture the most important requirements of useful indicators and are simple to apply. DOPA criteria are standards used to assess that the indicators are:

- **D**irect: closely measure the intended change.
- **O**bjective: unambiguous about what is being measured and which data to be collected and clear operational definition that is independent of the person conducting the measurement.
- **P**ractical: reasonable in terms of data collection cost, frequency, and timeliness for decision-making purposes.
- **A**dequate: the minimum number of indicators necessary to ensure that progress towards the outcome is sufficiently captured.

An additional requirement is that the indicators have to be applicable to all value chains as much as possible, so each value chain can show its contribution to the achievement of the IDO in a similar way to enable aggregation. Figure 1 describes the relationship between Intermediate development indicators and their medium-term level indicators.

[1] Source: USAID TIPS Number 12, 1998. Document via: http://gametlibrary.worldbank.org/FILES/182_Indicator%20Selection%20Criteria.pdf

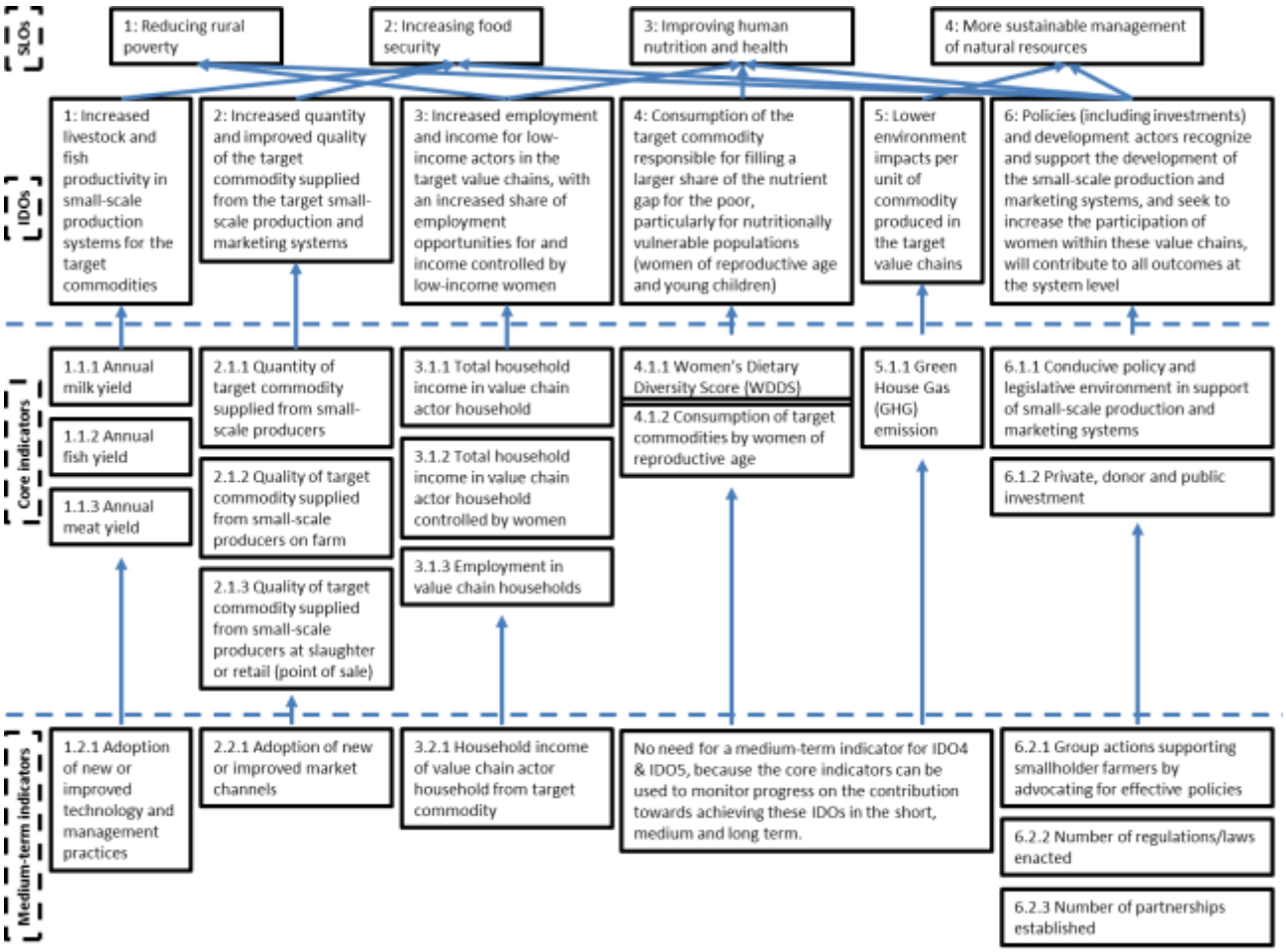

Figure 1: Relationships between System Level Outcomes (SLOs), IDOs and the suggested indicators.

It is envisioned that the selected indicators will be able to measure the achievement of the IDOs after 10-12 years which is the period set for attaining the IDOs, but there may be occasions where the indicators will be unable able to measure significant impact in the medium term (3-6 years). This is the case when the indicator will not yet be measurable because there are conditions and prior objectives to be met before progress on achieving the IDO can be measured, it will be involved in a complicated impact pathway to reach the IDO or a more long-term impact is expected. For these cases (IDO1 on 'productivity', IDO2 on 'quantity supplied', IDO3 on 'total household income' and IDO6 on 'conducive policy environment') medium-term indicators have been developed which are able to show progress in the contribution to the achievement of the IDO. The links between IDOs are further described in the program Theory of Change presented in Figure 2 below.

This manual only describes the minimum number of indicators necessary to ensure that progress towards the outcome is sufficiently captured to enable program learning and reporting at Consortium level to donors and other relevant stakeholders. This does not restrict value chain projects to collect extra data for additional indicators for project monitoring and learning purposes. For example, under IDO1, there are indicators on productivity that will be reported upon, but optionally data for indicators on reproduction (like annual kidding percentage, litter size and/or mortality rates) and inputs (for instance

labour, land, feeds, machinery and/or animal stock) could be collected to determine other features related to productivity and efficiency. However, that is not obligatory to enable reporting at consortium level, but could be useful for program/project monitoring and learning purposes.

The minimum frequency of data collection is at the start and end of a program or project. If a program or project lasts for more than 3 years, data should also be collected at least bi-annually. However, where possible, the program will rely more on third party data collection and sources which will call for close collaborations and linkages with existing national and international data collection efforts. This will require the program to adapt its timing to other data collection efforts and/or to the cycle of evaluations associated with other CRP cycles. For instance, data on income and employment requires standardized methodologies with robust quality control mechanisms embedded. The World Bank Living Standards Measurements Study (LSMS) collaborates with several national statistics bureaus to produce high quality integrated data that can be adapted for tracking program progress on 'income and employment', 'productivity' and 'nutrition' IDOs. Also, the Scaling Up Nutrition (SUN) baseline data implemented in about 30 countries, including Ethiopia, Burkina Faso, Tanzania and Uganda, will be supplemented with additional surveys, LSMS and Demographic Household Surveys (DHS) to monitor program's progress on the 'nutrition' IDO.

Value chain country coordinators are responsible for overseeing data collection, but the actual data may be gathered by partners and "next users" of value chain program interventions.

For each indicator, the following definition sheet is used:

CRP: Livestock and Fish	**Subsection:** *relevant for which value chain*
IDO NUMBER*: *IDO STATEMENT	
Indicator reference number: indicator name	
Type of indicator:	*Quantitative (quantifiable data; objective) or qualitative (qualities or characteristics; subjective)*
Designation:	*Indicator reference number*
Definition:	*Explanation of the indicator*
Rationale:	*Reasoning or logic for having the indicator*
Unit:	*A standard to express the magnitude of a measurement*
Disaggregated by:	*Breakdown of data to enable more detailed analysis*
Calculation tool:	*Way to convert data into a value that indicates the progress on the desired change*
Interpretation key:	*Expression of desired direction of change*
Data requirement and source:	*Kind of data needed and the means to get it (source)*
Measurement notes:	*More detailed description on the collection of data (level of collection, who collects data and how data should be collected)*
Unit of analysis:	*Entity (what or who) being studied/analysed*
Comment:	*Any other remarks*

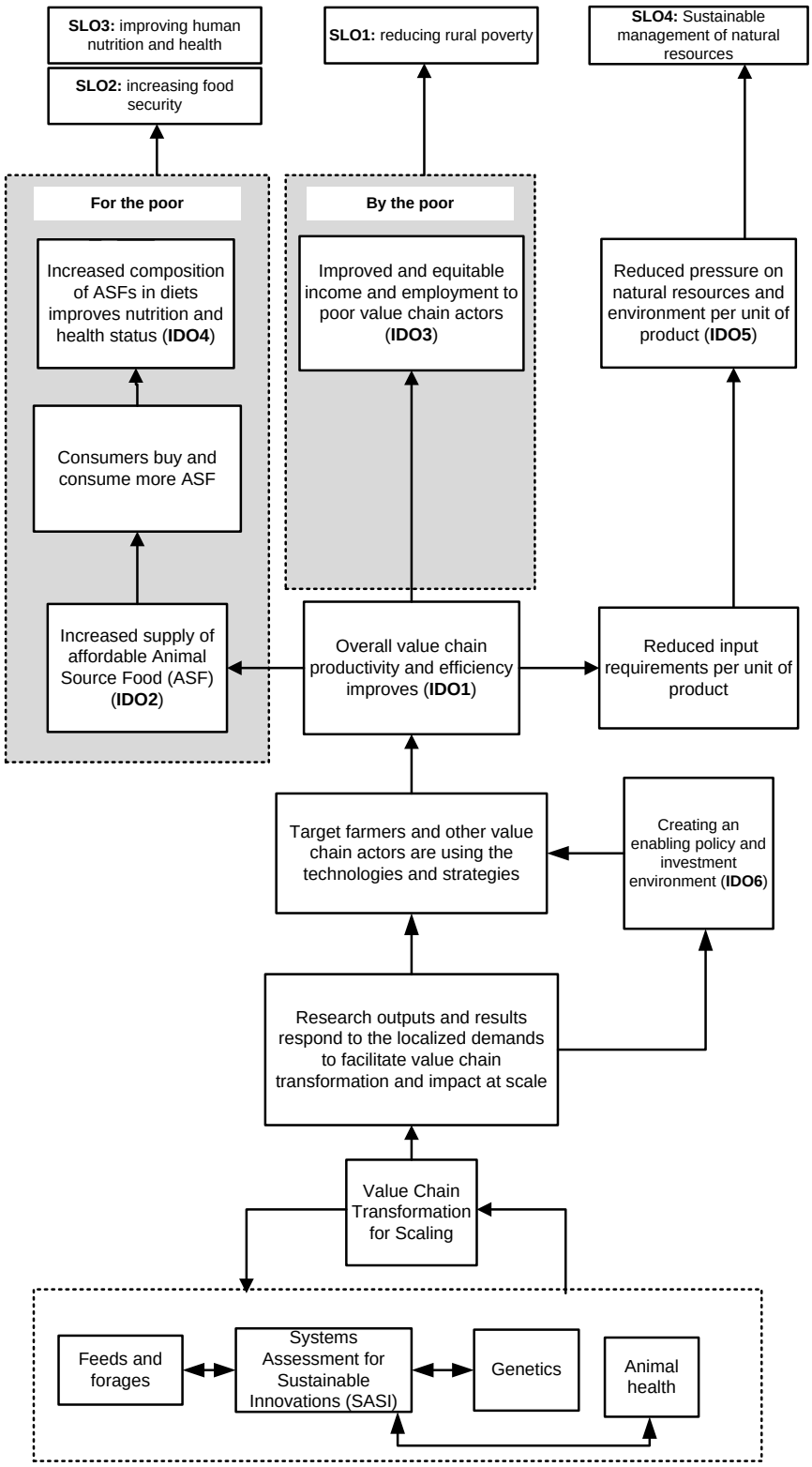

Figure 2: CGIAR Research Program on Livestock and Fish Theory of Change (ToC)

IDO1: Increased livestock and fish productivity in small-scale production systems for the target commodities

Core IDO1 indicators

CRP: Livestock and Fish	**Subsection:** India and Tanzania dairy value chains and Nicaragua dual-purpose cattle value chain
IDO1: INCREASED LIVESTOCK AND FISH PRODUCTIVITY IN SMALL-SCALE PRODUCTION SYSTEMS FOR THE TARGET COMMODITIES.	
1.1.1 Indicator: Annual milk yield	
Type of indicator:	Quantitative
Designation:	Number: 1.1.1
Definition:	Litres of milk produced per animal per year
Rationale:	Livestock and fish research program aims to increase the productivity of livestock through a number of livestock productivity interventions. In most of the dairy value chains, change in milk production per cow resulting from program interventions can be an important indicator of the effectiveness of those interventions.
Unit:	Litres/animal/year
Disaggregated by:	Breed and household type (e.g. farm size and sex of household head)
Calculation tool:	$$Litres\ of\ milk\ produced\ per\ animal\ per\ year$$ $$= litres\ of\ milk\ produced\ per\ animal\ per\ lactation \times \left[\frac{365}{calving\ interval\ days}\right]$$ $$Average\ milk\ production\ per\ lactation = \left[\frac{lactation\ length \times\ milk\ production\ at\ calving}{2}\right]$$
Interpretation key:	*More is better*
Data requirement and source:	**Data:** Calving interval (days) used to adjust for effective milk production per lactation, litres of milk produced per animal breed per year and total number of lactating animals. **Data source**: Farm household surveys, World Bank-LSMS unit
Measurement notes:	**Level of collection:** Value chain program level of target commodity **Who collects data:** Value chain country coordinators and partners **How data should be collected:** Farm / household surveys, collaborate with the World Bank-LSMS unit **Source:** Njuki, J., Poole, J. Johnson, J., Baltenweck, I., Pali, P.N., Lokman, Z., and S. Mburu. 2011. Gender, livestock and livelihood indicators. Nairobi, Kenya: ILRI. **Remarks:** Data collection should include information on the effects of seasonality.
Unit of analysis:	Animal, household/farm
Comment:	For comparison, FAO collects/reports data on annual milk yield, but does not disaggregate between small and large scale production, and reports total country production. **Sources:** FAO Statistics: find link here FAO Statistics pilot reporting system: find link here

CRP: Livestock and Fish	Subsection: Egypt and Bangladesh fish value chains
IDO1: INCREASED LIVESTOCK AND FISH PRODUCTIVITY IN SMALL-SCALE PRODUCTION SYSTEMS FOR THE TARGET COMMODITIES.	
1.1.2 Indicator: Annual fish yield	
Type of indicator:	Quantitative
Designation:	Number: 1.1.2
Definition:	The gross weight of fish produced in kilograms per hectare per year
Rationale:	The yield of fish per hectare of land is an adequate measure of the biomass yield per unit of land.
Unit:	Kilograms/hectare/year
Disaggregated by:	Fish type
Calculation tool:	Kilograms of fish harvested per hectare per year
Interpretation key:	More is better
Data requirement and source:	**Data:** Gross weight of harvested fish per year, size of farm land/ponds **Data source:** Farm production data
Measurement notes:	**Level of collection**: Value chain program level of target commodity **Who collects data**: Value chain country coordinators **How data should be collected**: Farm surveys **Remarks**: The measurement needs to consider seasonality when collecting data.
Unit of analysis:	Farm
Comment:	By 2009 aquaculture in Egypt consisted mostly of farm pond culture (84.75%), but also cage culture (9.64%), rice field culture (5.34%) and intensive culture (0.26%). **Resource:** Macfadyen, G. et al. 2011. Value-chain analysis of Egyptian aquaculture. Project report 2011-54. The WorldFish Centre. Penang, Malaysia. 84 pp.

CRP: Livestock and Fish	**Subsection:** Nicaragua dual-purpose cattle value chain, Ethiopia and Mali small ruminants value chains, and Uganda and Vietnam pig value chains
IDO1: INCREASED LIVESTOCK AND FISH PRODUCTIVITY IN SMALL-SCALE PRODUCTION SYSTEMS FOR THE TARGET COMMODITIES.	
1.1.3 Indicator: Annual meat yield	
Type of indicator:	Quantitative
Designation:	Number: 1.1.3
Definition:	Annual meat yield per household per year
Rationale:	Annual meat yield per household closely correlated with the effective amount of meat produced by each animal and achieved by specific feeding regime and quality of husbandry practices, many of which will include those recommended by the programme.
Unit:	Kilogram/ household/ year
Disaggregated by:	Animal species, breed and breeds, management system (feeding and husbandry practices)
Calculation tool:	$$Annual\ meat\ yield\ per\ household\ per\ year = Number\ of\ animals\ slaughtered \times [Slaughter\ weight\ (kgs) - Entry\ weight\ (kgs)] \times \left[\frac{365}{Age\ at\ Slaughter(days)}\right]$$
Interpretation key:	Higher is better
Data requirement and source:	**Data:** Animal live weight before slaughter, age of animal at slaughter (days), number of slaughtered animals **Data source:** farm surveys/ World Bank-LSMS unit
Measurement notes:	**Level of collection**: Value chain program level of target commodity **Who collects data**: Value chain country coordinators and partners **How data should be collected**: Farm surveys, collaborate with the Word Bank-LSMS unit **Remarks**: The measurement needs to consider the effects of seasonality.
Unit of analysis:	Animal and farm
Comment:	For comparison, FAO collects/report data on meat production, does not disaggregate between small and large scale production, but reports total country production. FAO reports yield in carcass weight (not live weight). Dressing percentage is normally used as a conversion factor to calculate carcase weight from live weight or vice versa. **Sources:** FAO Statistics reports and data: find link here FAO pilot system for reporting statistics and data: find link here

Medium-term IDO1 indicators

CRP: Livestock and Fish	**Subsection:** All value chains
IDO1: INCREASED LIVESTOCK AND FISH PRODUCTIVITY IN SMALL-SCALE PRODUCTION SYSTEMS FOR THE TARGET COMMODITIES.	
1.2.1 Indicator: Adoption of new or improved technologies and management practices	
Type of indicator:	Quantitative
Designation:	Number: 1.2.1
Definition:	Proportion of target producers applying new or improved technologies and management practices, and the extent of use by target producers. Key livestock technologies relate to: 1)Feed and feeding, 2) Animal health, 3) Genetics, 4) Animal husbandry and 5) Output quality management.
Rationale:	Use of new or improved technology and management practices is an important step towards improving agricultural productivity.
Unit:	**Proportion**: Expressed in percentage of total target producers (e.g. percentage of farmers planting fodder; percentage of farmers using artificial insemination) related to new or improved technology or management practice. **Extent of use**: Technology use among adopters expressed in percentage of maximum use (e.g. percentage of land under fodder for farmers planting fodder; use of artificial insemination on percentage of target species by those using artificial insemination) related to new or improved technology or management practice.
Disaggregated by:	Breed, species, sex of household head and type of technology and management practices (as mentioned under the definition)
Calculation tool:	**Proportion:** Number of target producers applying new or improved technology and management practices divided by total number of target producers of target commodity in value chain. **Extent of use:** Use of new or improved technology and management practices applied to actual unit of production divided by use of new or improved technology and management practices applied to maximum quantity of production units averaged over the adopters.
Interpretation key:	Higher is better
Data requirement and source:	**Data:** level and extent of application of new or improved technology and management practices by target producers in target commodity value chain**.** **Data source:** Farm and household Knowledge Attitude and Practice (KAP) surveys and possibly service provider surveys.
Measurement notes:	**Level of collection**: Value chain program level of target commodity. **Who collects data**: Value chain country coordinators and **How data should be collected:** Farm and household KAP surveys, possibly confirmed with service provider surveys and assessments of current technology users.
Unit of analysis:	Value chain, farm/household
Comment:	A list of technology and management practices for each value chain may need to be defined. However, overtime there may be new technologies introduced that are currently unknown. It is always important to directly associate an increase in yield to a specific livestock technology. Therefore, specific research designs including experimental designs, based on the counter-factual logic, need to be implemented. In such a case the direct beneficiaries will be asked specific follow-up questions related with the livestock/fish technology.

IDO2: Increased quantity and improved quality of the target commodity supplied from the target small-scale production and marketing systems.

Core IDO2 indicators

CRP: Livestock and Fish	**Subsection:** All value chains
IDO2: INCREASED QUANTITY AND IMPROVED QUALITY OF THE TARGET COMMODITY SUPPLIED FROM THE TARGET SMALL-SCALE PRODUCTION AND MARKETING SYSTEMS.	
2.1.1 Indicator: Quantity of target commodity supplied from small-scale producers	
Type of indicator:	Quantitative
Designation:	Number: 2.1.1
Definition:	Per capita supply of the target commodity per day from small-scale producers
Rationale:	Increasing total production of target commodities within a specific value chain leads to an overall increase in supply and availability of the target commodity to poor and rural households and eventually contributes to improved food security status. Extrapolating commodity supply to population size ensures that the increased supply is commensurate with long run population change.
Unit:	Kilograms or litres of the target commodity per capita per day
Disaggregated by:	Poverty status, sex of household head
Calculation tool:	$$Kilograms\ or\ litres\ of\ target\ commodity\ supplied\ from\ small-scale\ producers\ per\ capita\ per\ day = \left[\frac{\frac{Total\ amount\ of\ kilograms\ or\ litres\ of\ commodity\ produced\ during\ the\ reference\ period}{Total\ population\ in\ a\ defined\ value\ chain\ during\ the\ reference\ period}}{number\ of\ days\ in\ the\ reference\ period}\right]$$
Interpretation key:	More is better
Data requirement and source:	**Data:** Total production of target commodity from small-scale producers in a defined geographical boundary, populations in the geographical unit, number of days in the reference period. **Data source**: Secondary data, and farm/household surveys/ World Bank-LSMS unit
Measurement notes:	**Level of collection**: Value chain program level of target commodity **Who collects data**: Value chain country coordinators and partners **How data should be collected**: Farm and household surveys, collaborate with the World Bank-LSMS unit the LSMS-ISA. **Remarks**: The measurement needs to consider effects of seasonality.
Unit of analysis:	Geographical area of target commodity small scale producers
Comment:	This indicator only defines average food availability in the population and does not indicate the extent to which food is actually consumed (especially by the target population; see IDO 4). This indicator should be used in combination with other measures of food utilization and access, including dietary diversity (see IDO 4) and indicators of food quality (indicators 2.1.2 and 2.1.3).

CRP: Livestock and Fish	**Subsection:** All value chains
IDO2: INCREASED QUANTITY AND IMPROVED QUALITY OF THE TARGET COMMODITY SUPPLIED FROM THE TARGET SMALL-SCALE PRODUCTION AND MARKETING SYSTEMS.	
2.1.2 Indicator: Quality of target commodity supplied from small-scale producers on farm (or nearest appropriate unit)	
Type of indicator:	Quantitative
Designation:	Number: 2.1.2
Definition:	Quality refers to a combination of aspects of products valued by the intended users. Safety aspects of quality of products are, however, the key concerns for consumers. Safety is the absence of any contamination in food products including introduction of external pathogens at the producer or farm level of the value chain**.**
Rationale:	Part of food security is consumption of high quality and sanitary food, which impacts on public health and nutrition. Preventing and/or reducing exposure to zoonotic diseases has a direct impact on public health and might also be associated with the nutritional status in the target community.
Unit:	Pathogen prevalence per unit of commodity produced or sold at the farm level
Disaggregated by:	Target commodity
Calculation tool:	Prevalence of target pathogen in animal population (and milk from dairy cattle) on farm (or nearest appropriate unit)
Interpretation key:	Less is better; reduction in prevalence from baseline is an indicator of success
Data requirement and source:	**Data:** Live samples of the product at farm level (meat/milk samples) **Data source**: Zoonotic disease prevalence testing on farm (or nearest appropriate unit)
Measurement notes:	**Level of collection**: Farm (or nearest appropriate unit) **Who collects data**: Value chain country coordinators and partners **How data should be collected**: Live samples from farm or nearest appropriate point, forwarded for testing. CGIAR Research Program on Agriculture for Nutrition and Health (A4NH) - at ILRI has the capacity (equipment and staff) to conduct the test according to acceptable international standards. ILRI-A4NH has advised for different measures in different value chains. These measures, especially with respect to the exact species of the zoonotic parasite for on-site testing of fish for zoonotic helminths, will often be verified by in-country experts. The following will be measured in the various value chains: • Milk from India and Tanzania dairy value chains – on farm testing for brucellosis antibodies. • Milk and meat from Nicaragua dual-purpose cattle value chain – on farm testing for brucellosis antibodies. • Meat from Ethiopia and Mali small ruminants value chains – on farm testing for brucellosis antibodies. • Meat from Uganda and Vietnam pig value chains – on farm testing for cysticerocosis antigens. • Fish from Egypt and Bangladesh fish value chains – on site testing for zoonotic helminths. Some useful resources can be found here: 1. http://www.ncbi.nlm.nih.gov/pubmed/22004574, 2. http://www.ncbi.nlm.nih.gov/pubmed/20098670; 3. http://www.ncbi.nlm.nih.gov/pubmed/21327714; 4. http://www.ncbi.nlm.nih.gov/pubmed/24139481; 5. http://www.ncbi.nlm.nih.gov/pubmed/23497587; 6. http://www.ncbi.nlm.nih.gov/pubmed/23951177.
Unit of analysis:	Target commodity on farm or nearest appropriate point of disposal
Comment:	See indicator 2.1.3 for point of sale assessment of prevalence of target pathogen in animal population or milk

CRP: Livestock and Fish	**Subsection:** All value chains
IDO2: INCREASED QUANTITY AND IMPROVED QUALITY OF THE TARGET COMMODITY SUPPLIED FROM THE TARGET SMALL-SCALE PRODUCTION AND MARKETING SYSTEMS.	
2.1.3 Indicator: Quality of target commodity supplied from small-scale producers at slaughter or retail (point of sale)	
Type of indicator:	Quantitative
Designation:	Number: 2.1.3
Definition:	Quality refers to a combination of aspects of products valued by the intended users. Safety aspects of quality of products are, however, the key concerns of consumers. Safety is the absence of any contamination in food products for instance introduction of external pathogens at the producer or farm level of the value chain**.**
Rationale:	Part of food security is consumption of high quality and sanitary food, which impacts on public health and nutrition. Preventing and/or reducing exposure to zoonotic diseases has a direct impact on public health and sometimes nutritional status in the target community.
Unit:	Pathogen prevalence per unit of commodity sold.
Disaggregated by:	Target commodity, farm type (scale of production), slaughter or retail (point of sale)
Calculation tool:	Prevalence of target pathogen in animal population at slaughter or retail (point of sale)
Interpretation key:	Less is better; reduction in prevalence from baseline is an indicator of success
Data requirement and source:	**Data:** Live samples from slaughter or retail (point of sale), meat/milk samples **Data source**: Zoonotic disease prevalence testing for E.Coli O157 at slaughter or sale points
Measurement notes:	**Level of collection**: Value chain program levels (slaughter or retail) **Who collects data**: Value chain country coordinators **How data should be collected**: Live samples from slaughter or retail points (point of sale), forwarded for testing. Idea is to measure food safety though bacterial coliform counts using standard food industry tools (refer to 2.1.2). CGIAR Research Program on Agriculture for Nutrition and Health - A4NH - at ILRI has the capacity (equipment and staff) to conduct the measurements according to global standards. ILRI-A4NH advised that it should be possible to do retail testing for E. coli O157, but it should be confirmed by in-country experts of the value chains. **Sources:** 1. Park *et al*., 2001, via Find the link 2. Agriculture and Horticulture Development Board, 2010, via Find the link. 3. Compendium of Methods for the Microbiological Examination of Foods, edited by Frances Pouch Downes, Keith Ito, American Public Health Association, 2001, p. 69-82, via find link here *4.* Ministry for Primary Industries, 1995, Food administration manual S.11 Microbiological reference criteria for food version 2.0, New Zealand via find link here
Unit of analysis:	Target commodity at slaughter or retail (point of sale)
Comment:	See indicator 2.1.2 for on farm assessment of prevalence of target pathogen in animal population and milk.

Medium-term IDO2 indicators

CRP: Livestock and Fish	**Subsection:** All value chains
IDO2: INCREASED QUANTITY AND IMPROVED QUALITY OF THE TARGET COMMODITY SUPPLIED FROM THE TARGET SMALL-SCALE PRODUCTION AND MARKETING SYSTEMS.	
2.2.1 Indicator: Evidence of improved market structure	
Type of indicator:	Quantitative
Designation:	Number: 2.2.1
Definition:	Improved market structure will be assessed on four major dimensions of market structure: 1. Increased number of storage facilities (including cooling plants) 2. Increased number of dedicated market structures or locations 3. Increased number of new or improved market information communication innovations 4. Increased number of new or improved commodity post-production handling innovations 5. Increased number of new or improved commodity transport practices
Rationale:	Improvement in infrastructure for collection, storage and post-production handling, market information communication/technologies and improvement in overall handling and transport infrastructure enables livestock farmers to increase marketable volumes, and potentially achieve favourable profit margins and consequently increase income.
Unit:	Numbers
Disaggregated by:	Target commodity and value chain
Calculation tool:	Summation of number across the 5 components of market structure Analysis of levels of adoption of innovations should also be accompanied with narratives on the extent of the innovations.
Interpretation key:	More is better
Data requirement and source:	**Data:** level of adoption of new or improved market channels (facilities, technology and practices) as mentioned above **Data source:** Value chain analysis / KAP surveys/World Bank LSMS unit
Measurement notes:	**Level of collection**: Value chain program level of target commodity **Who collects data:** Value chain country coordinators and partners **How data should be collected:** Value chain analysis / KAP surveys
Unit of analysis:	Value chain
Comment:	A list of market channels and innovations (facilities, technology and practices) for each value chain will be defined. However, it important to note that new technologies will develop with time.

IDO3: Increased employment and income for low-income actors in the target value chains, with an increased share of employment for and income controlled by low-income women.

Core IDO3 indicators

CRP: Livestock and Fish	**Subsection:** All value chains
IDO3: INCREASED EMPLOYMENT AND INCOME FOR LOW-INCOME ACTORS IN THE TARGET VALUE CHAINS, WITH AN INCREASED SHARE OF EMPLOYMENT FOR AND INCOME CONTROLLED BY LOW-INCOME WOMEN.	
3.1.1 Indicator: Total household income in value chain actors' households	
Type of indicator:	Quantitative
Designation:	Number: 3.1.1
Definition:	Total household income (cash and non-cash) for low income value chain participants.
Rationale:	Measuring income is a direct way of predicting people's economic transformation. Increased income is also correlated with reduced poverty, food security, and improved nutrition. It is important to assess changes in the overall household income since diversification of income source might also lead to newer income sources replacing existing income sources rather than increasing total household income as might be desired.
Unit:	Value chain specific monetary units
Disaggregated by:	Sex of household head and poverty status
Calculation tool:	Summation of household income (cash and non-cash) from both farm and non-farm income sources.
Interpretation key:	More is better
Data requirement and source:	**Data:** Income (cash and non-cash) from both farm and other income sources. Farm income includes all income from farming activities whereas other income sources include off-farm employment, businesses, remittances, pensions, etc. Consumption of own products (target commodity) should be valued and included along with other forms of in-kind income sources. **Data source:** Secondary data and value chain actor surveys; World Bank-LSMS unit
Measurement notes:	**Level of collection**: Value chain program level of target commodity **Who collects data**: Value chain country coordinators and partners **How data should be collected**: Household surveys The following notes are important while compiling income data: 1. Need to consider the effect of inflation and price seasonality. 2. Need to be cautious about over- and undervaluation since low income actors in the value chain are in many cases producers and consumers of the target commodity and may have relatively more in-kind sources of income. 3. Estimation normally depends on respondents being able to give accurate recall sales and expenditure responses; however, this might increases their incentive not to give honest responses. 4. There is need for a qualitative tracking of the household income portfolio before and after the interventions is recommended. This allows evaluators to track salient changes in the contribution of alternative household income sources. **Source:** Njuki, J., Poole, J. Johnson, J., Baltenweck, I., Pali, P.N., Lokman, Z., and S. Mburu. 2011. Gender, livestock and livelihood indicators. Nairobi, Kenya: ILRI.
Unit of analysis:	Household
Comment:	It is possible that an increase in overall household income may not translate into improvement in individual household members' welfare, especially women and children. Therefore, this indicator needs to be collected alongside information on control of household income by women (indicator 3.1.2).

CRP: Livestock and Fish	Subsection: All value chains
IDO3: INCREASED EMPLOYMENT AND INCOME FOR LOW-INCOME ACTORS IN THE TARGET VALUE CHAINS, WITH AN INCREASED SHARE OF EMPLOYMENT FOR AND INCOME CONTROLLED BY LOW-INCOME WOMEN.	
3.1.2 Indicator: Total household income in value chain actors' households controlled by women	
Type of indicator:	Quantitative
Designation:	Number: 3.1.2
Definition:	Proportion of total household income in value chain actor household controlled by women.
Rationale:	Women's control of significant part of household income is a proxy indicator for the level of women's empowerment in the household. There is a need to keep track of this share during value chain upgrade since the process might lead to diminishing women's benefits. Besides, increased women's control over household income also leads to improvement of the nutritional status of the household members and accumulation of household wealth and assets.
Unit:	Percentage
Disaggregated by:	Age, marital status, sex of household head
Calculation tool:	Value of household income controlled by women divided by total household income in value chain actor's household.
Interpretation key:	More is better
Data requirement and source:	**Data**: Amount of household income in value chain actor household controlled by women and total household income in value chain actor household. **Data source**: secondary data, household surveys, World Bank-LSMS unit
Measurement notes:	**Level of collection**: Value chain program level of target commodity **Who collects data**: Value chain country coordinators and partners **How data should be collected**: Household surveys (linked with indicator 3.1.1) Should be carefully collected because of its sensitivity. Where key household respondent is male, triangulation of information by interviewing female member of household may be useful.
Unit of analysis:	Household
Comment:	It is possible that an increase in overall household income will not translate into improvement in individual household members' welfare, especially women and children. Therefore, this indicator needs to be collected alongside the indicator for overall household income (indicator 3.1.1).

CRP: Livestock and Fish	Subsection: All value chains
IDO3: INCREASED EMPLOYMENT AND INCOME FOR LOW-INCOME ACTORS IN THE TARGET VALUE CHAINS, WITH AN INCREASED SHARE OF EMPLOYMENT FOR AND INCOME CONTROLLED BY LOW-INCOME WOMEN.	
3.1.3 Indicator: Employment in value chain actor households	
Type of indicator:	Quantitative
Designation:	Number: 3.1.3
Definition:	Number of jobs gained by participating value chain actors
Rationale:	Creation of employment opportunities is good measure of the program's contribution to improved livelihoods.
Unit:	Number
Disaggregated by:	Gender, age, poverty status, status of employment (wage or salaries and self-employed or employees, part-time, seasonal, full-time).
Calculation tool:	Number of jobs by participating value chain actors. Computation of this indicator will follow the International Labor Organization (ILO) guidelines (http://www.ilo.org) and guided by the following definitions adopted at the 13th (International Centre for Labour Statisticians (ICLS) (1982): • Being employed refers to one working for pay or profit for at least one hour during the reference period (paid employment or self-employment). • Reference period will be a specified brief period (either a week or a day). • Working age is defined as falling between 15 and 64 years of age. One can also be considered employed if he/she is on a job but temporarily not at work because of several circumstances including injury, leave, vacation etc. Jobs should be converted to full-time equivalents, for instance a job that lasts for 4 months should be considered as 1/3 Full Time Employment units.
Interpretation key:	Higher is better
Data requirement and source:	**Data:** Number of hours worked participating value chain actor, value of remuneration **Data source:** Secondary data, farm surveys, World Bank-LSMS unit
Measurement notes:	**Level of collection**: Value chain program level of target commodity **Who collects data**: Value chain country coordinators and partners **How data should be collected**: Household/value chain surveys
Unit of analysis:	Value chain
Comment:	It is the goal of the program to generate sustainable and meaningful employment opportunities and therefore the indicator will need to account for net changes in employment given that some value chain changes may eventually lead to fewer jobs. Secondly, the type of employment and income opportunities for low-income women should be meaningful and not be limited to lower-income sectors of the value chain only. Therefore, it may be important to constitute groups of jobs and determine how people migrate from group one to another to assess the quality of jobs.

Medium-term IDO3 indicators

CRP: Livestock and Fish	**Subsection:** All value chains
IDO3: INCREASED EMPLOYMENT AND INCOME FOR LOW-INCOME ACTORS IN THE TARGET VALUE CHAINS, WITH AN INCREASED SHARE OF EMPLOYMENT FOR AND INCOME CONTROLLED BY LOW-INCOME WOMEN.	
3.2.1 Indicator: Household income of value chain actor household from target commodity	
Type of indicator:	Quantitative
Designation:	Number: 3.2.1
Definition:	Household income derived from target commodity as income source earned by low income value chain participants.
Rationale:	Measuring income is a direct way of predicting people's economic status. Increased income is also correlated with reduced poverty, food security, and nutrition. Measuring income derived from target commodities may establish association with value chain interventions.
Unit:	Value chain monetary units
Disaggregated by:	Sex of household head and poverty levels
Calculation tool:	Summation of farm income sources from target commodity (refer 3.1.1).
Interpretation key:	More is better
Data requirement and source:	**Data:** Income derived from target commodity as source of income by low income value chain actors (such as producers) but should also including the value of the target commodity used for own consumption. **Data source**: Secondary data, household surveys, World Bank-LSMS unit
Measurement notes:	**Level of collection**: Value chain program level of target commodity **Who collects data**: Value chain country coordinators and partners **How data should be collected**: Household surveys (linked with indicator 3.1.1) **Remarks:** Need to consider the effect of inflation, price seasonality (also related to target commodity used for own consumption)
Unit of analysis:	Household
Comment:	It is possible that an increase in household income from the target commodity will not translate into higher overall household income, and may not translate into improvement in individual household members' welfare. This indicator needs to be collected alongside those for overall household income and intra-household distribution and control of household income.

IDO4: Increased consumption of target commodity responsible for filling a larger share of the nutrient gap for the poor, particularly for nutritionally vulnerable populations (women of reproductive age and young children)

Core IDO4 indicators

CRP: Livestock and Fish	**Subsection:** All value chains
IDO4: INCREASED CONSUMPTION OF TARGET COMMODITY RESPONSIBLE FOR FILLING A LARGER SHARE OF THE NUTRIENT GAP FOR THE POOR, PARTICULARLY FOR NUTRITIONALLY VULNERABLE POPULATIONS (WOMEN OF REPRODUCTIVE AGE AND YOUNG CHILDREN)	
4.1.1 Indicator: Women's Dietary Diversity Score (WDDS)	
Type of indicator:	Quantitative
Designation:	Number: 4.1.1
Definition:	Women's Dietary Diversity Score (WDDS) is a count of the different food types or food groups over a specified period of time (previous 24 hours) consumed by women aged 15-49 years (reproductive age).
Rationale:	Dietary diversity has for long been recommended by nutritionists all around the world and similarly a significant number of nutrition research has revealed that dietary diversity is highly associated with child growth, income availability and access to adequate energy. The indicator is an appropriate and reliable measure of food and nutrition security. Inadequate access to a diversified diet is directly correlated with exposure to risks of inadequate intake of vital micronutrients which might result in far reaching health and nutritional consequences. Individual women's dietary diversity scores aim to reflect nutrient adequacy consumed by women aged 15-49 years (reproductive age). Generally, improvement of the nutritional status of the women at reproductive age also reflects on other household members as they (as mothers and wives) would prioritize care for their spouse and children over themselves.
Unit:	Index
Disaggregated by:	Gender of household head, age of respondent and household poverty status
Calculation tool:	WDDS is a sum of all food groups consumed by women aged 15-49 years (reproductive age) in the last 24 hours. There are 16 questions regarding consumption of food from predefined food groups; the WDDS is created from aggregations into 9 food groups based on micronutrient intake rather than on economic access to food. The 9 groups include: 1) Starchy staples (aggregation of cereals and white roots and tubers); 2) Dark green leafy vegetables; 3) Other vitamin A rich fruits and vegetables (combination of vitamin A rich vegetables and tubers and vitamin A rich fruit) and red palm oil if applicable; 4) Other fruits and vegetables; 5) Organ meat; 6) Meat and fish; 7) Eggs; 8) Legumes, nuts and seeds; 9) Milk and milk products. The possible score range is between 0 and 9, based on the answers (yes=1 and no=0) to each of the 9 categories. **Resource:** FAO. 2011. Guidelines for measuring household and individual dietary diversity. Find the link here To get specific information about target commodities (milk, meat - beef, pork, mutton and lamb and fish) for indicator 4.1.1 an additional question should be asked on what kind of meat under 5) Organ meat and 6) Meat and fish was consumed, and the source of dairy products under food group 9) Milk and milk products (i.e. cow milk versus from other species, especially goats). Norms for ideal levels of diet diversity are not yet available. Swindale and Bilinksy (2006) suggest the use of diet diversity of the richest 33 percent of a population or the average diet diversity of the upper tercile (highest 33 percent) as targets. **Resource**: Swindale, Anne, and Paula Bilinsky. 2006. Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access: Indicator

	Guide (v.2). Washington, D.C.: FHI 360/FANTA. Find the link here
Interpretation key:	Higher is better
Data requirement and source:	**Data:** Individual food consumption data of women aged 15-49 years (reproductive age) **Data source:** Secondary data, individual surveys, World Bank-LSMS unit, SUN
Measurement notes:	**Level of collection**: Value chain program level of target commodity **Who collects data**: Value chain country coordinators and partners **How data should be collected**: Individual surveys with women aged 15-49 years (reproductive age). Also consider the seasonal effects (like availability of target commodity, purchasing power of target population)
Unit of analysis:	Women aged 15-49 years (reproductive age)
Comment:	Limitation of the index is that it is a snapshot in time and may be seasonal or otherwise vary over time.

CRP: Livestock and Fish	Subsection: All value chains
IDO4: INCREASED CONSUMPTION OF TARGET COMMODITY RESPONSIBLE FOR FILLING A LARGER SHARE OF THE NUTRIENT GAP FOR THE POOR, PARTICULARLY FOR NUTRITIONALLY VULNERABLE POPULATIONS (WOMEN OF REPRODUCTIVE AGE AND YOUNG CHILDREN)	
4.1.2 Indicator: Consumption of target commodities by women of reproductive age	
Type of indicator:	Quantitative
Designation:	Number: 4.1.2
Definition:	Proportion of women of reproductive age (15-49) consuming target commodities beyond minimum threshold amount over a specified period of time (previous 24 hours).
Rationale:	To establish a correlation between improved WDDS and increased consumption of the target commodities by the target population (women aged 15-49 years).
Unit:	Percentage
Disaggregated by:	Gender of household head, poverty status, age, target commodities
Calculation tool:	Women of reproductive age (15-49) consuming target commodities in the last 24 hours (beyond minimum threshold amount) divided by the total number of women of reproductive age (15-49)
Interpretation key:	Higher is better
Data requirement and source:	**Data:** individual food consumption data of women aged 15-49 years (reproductive age) **Data source:** secondary data, individual surveys, World Bank-LSMS unit, SUN It is important to add question to the survey for Indicator 4.1.1 to specifically get data on consumption of target commodities which are part of overarching food groups as determined for measuring the WDDS under 4.1.1.
Measurement notes:	**Level of collection**: Value chain program level of target commodity **Who collects data**: Value chain country coordinators and partners **How data should be collected**: Individual surveys with women aged 15-49 years (women of reproductive age)**.** Also consider effect of seasonal variations (for instance availability of target commodity, purchasing power of target population)
Unit of analysis:	Women aged 15-49 years (reproductive age)
Comment:	Minimum threshold amounts for consumption of target commodities need to be set to enable calculation of the indicator, for instance, for milk most countries advise at least one serving of milk daily. Despite serving sizes varying by great amounts most recommendations suggest about 500 ml of milk per day. **Source:** FAO, 2013, Milk and Dairy Products in Human Nutrition http://www.fao.org/docrep/018/i3396e/i3396e.pdf **Other relevant information:** For meat/fish most countries advise 1 ounce of meat to be equivalent to 1 ounce of protein food. Based on a 2,000 calorie diet threshold, the U.S. Department of Agriculture recommends that one needs no more than approximately 4 ounces of total meat per day to meet recommended protein requirements. However, the fact that not all meat is the same should be considered in the assessment. For example, some cuts of red meat contain high amounts of unhealthy saturated fat, whereas fatty fish contain healthy fats. Thus based on the 2000 –calorie the U.S. Department of Agriculture recommends consumption of no more than an average of 1.8 ounces of red meat, 1.5 ounces of poultry and 0.4 ounces of seafood per day. The rest of one's protein requirements should come from non-meat sources. **Sources:** 1. Kamps, A., *Healthy Meat Serving Size Per Day*, Demand Media, 2013.

	Find the link here; U.S. Department of Agriculture and U.S. Department of Health and 2. Human Services. *Dietary Guidelines for Americans, 2010*. 7th Edition, Washington, DC: U.S. Government Printing Office, December 2010. (Find the link here)

Medium-term IDO4 indicators

It is anticipated that there is no need for medium-term indicator(s) for IDO4, since the core indicator is adequate to monitor progress on the contribution towards achieving the IDO in the short, medium and long term.

IDO5: Lower environmental impacts per unit of commodity produced in the target value chains.

Core IDO5 indicators

CRP: Livestock and Fish	**Subsection:** All value chains
IDO5: LOWER ENVIRONMENTAL IMPACTS PER UNIT OF COMMODITY PRODUCED IN THE TARGET VALUE CHAINS.	
5.1.1 Indicator: Green House Gas (GHG) emission	
Type of indicator:	Quantitative
Designation:	Number: 5.1.1
Definition:	GHG emitted per unit of target commodity produced
Rationale:	Increased levels of GHG are harmful to the ecosystem. Monitoring them gives a good indication of the status of natural resources with regards to presence of pollutants.
Unit:	Expressed in CO_2-Equivalents per unit commodity produced (litre milk; kilogram fish/hectare; kilogram meat)
Disaggregated by:	Target commodity, value chain country
Calculation tool:	GHG emitted in target value chain divided by unit of the target commodity produced
Interpretation key:	Less is better
Data requirement and source:	**Data:** GHG emissions (nitrous oxide, methane, carbon dioxide), herd/pond sizes, manure management, feed use data, commodity production, (soil carbon stocks, area afforested/deforested) **Data source:** Life Cycle Assessments (LCAs)
Measurement notes:	**Level of collection**: Value chain program level of target commodity **Who collects data**: in collaborations with CCAFS **How data should be collected**: Farm data survey and farm GHG emission measurement. The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) at ILRI advised on the data requirement and data source. They have the capacity (equipment and staff) to quantify greenhouse gas emissions according to global standards. **Resources related to GHG measurement**: 1. Rosenstock, T.S. et al. 2013. Toward a protocol for quantifying the greenhouse gas balance and identifying mitigation options in smallholder farming systems. Environ. Res. Lett. 8, 021003 2. Source accessed via: http://iopscience.iop.org/1748-9326/8/2/021003/ 3. Rochette, P., 2011. Towards a standard non-steady-state chamber methodology for measuring soil N2O emissions. Animal Feed Science and Technology 166– 167, 141– 146 4. 2006 IPCC Guidelines for National Greenhouse Gas Inventories:: http://www.ipcc-nggip.iges.or.jp/ 5. Opio, C., Gerber, P., Mottet, A., Falcucci, A., Tempio, G., MacLeod, M., Vellinga, T., Henderson, B. & Steinfeld, H. 2013. *Greenhouse gas emissions from ruminant supply chains – A global life cycle assessment.* Food and Agriculture Organization of the United Nations (FAO), Rome.
Unit of analysis:	Farm
Comment:	Overall contribution to GHG may rise but GHG emitted per unit of target commodity should go down by interventions.

Medium-term IDO5 indicators

It is anticipated that there is no need for a medium-term indicator for IDO5, since the core indicator can be used to monitor progress on the contribution towards achieving the IDO in the short, medium and long term.

IDO6: Policies (including investments) and development actors recognize and support the development of the small-scale production and marketing systems, and seek to increase the participation of women within these value chains.

Core IDO6 indicators

CRP: Livestock and Fish	**Subsection:** All value chains
IDO6: POLICIES (INCLUDING INVESTMENTS) AND DEVELOPMENT ACTORS RECOGNIZE AND SUPPORT THE DEVELOPMENT OF THE SMALL-SCALE PRODUCTION AND MARKETING SYSTEMS, AND SEEK TO INCREASE THE PARTICIPATION OF WOMEN WITHIN THESE VALUE CHAINS.	
6.1.1 Indicator: Conducive policy and legislative environment in support of small-scale production and marketing systems	
Type of indicator:	Qualitative
Designation:	Number: 6.1.1
Definition:	Level of supportiveness of policy and legislative environment towards the development of small-scale production and marketing systems.
Rationale:	It is important that the policy and legislative environment concerned with the development of small-scale production and marketing systems is conducive to stimulate increased productivity, supply and consumption of the target commodities in our target value chains. Thus, an overall improvement in the policy environment should engender increased income, employment and nutritional status of target populations in equitable and environment friendly manner.
Unit:	Value chain
Disaggregated by:	Value chain or target commodity (holistic assessment)
Calculation tool:	Mixed-methods combining qualitative and quantitative analysis of policy environment supportive of the development of small-scale production and marketing systems. Policy-tracing in combination with elements of Outcome Harvesting may be a useful methodology to apply. Outcome Harvesting is a utilisation-focused and highly participatory tool that enables the identification, verification and understanding how outcomes of policies have been influenced. Outcome Harvesting does not measure progress towards predetermined outcomes or objectives but rather collects evidence of what has been achieved and works backwards to determine whether and how the project or intervention contributed to the change. Key policy outcomes will entail reduction in market distortions in the livestock sector of target value chains including the level of government control of agricultural marketing, processing and input supply, agricultural price controls, level of suppression of the private sector in agricultural investment and level of input subsidization. **Sources and resources:** 1. Oxfam GB Policy & Practice project effectiveness reviews: Find the link. 2. Example of a project review using this the Outcome harvesting approach is the Chuku Hatua program in Tanzania: Find the link 3. More information about Outcome Harvesting: Wilson-Grau, Ricardo & Britt, Heather (2012) Outcome Harvesting, Ford Foundation. Available from Find the link
Interpretation key:	The more positive the better
Data requirement and source:	**Data:** Policies and legislations assessed on their effects on developing the small-scale production and marketing systems with special attention to gender equitable and pro-poor results **Data source**: Secondary data, value chain community surveys, focus group discussions, key informant interviews
Measurement notes:	**Level of collection**: Value chain program level of target commodity **Who collects data**: Value chain country coordinators **How data should be collected**: Value chain policy and legislative environment analyses, semi-quantitative data and qualitative statements.
Unit of analysis:	Value chain

Comment:	Emphasize participation and representation of the stakeholders and beneficiaries during the assessments. The program's situational analyses which are done in each value chain should also be considered as living documents in tracking changes in the policy and investment environment overtime.

CRP: Livestock and Fish	**Subsection:** All value chains
IDO6: POLICIES (INCLUDING INVESTMENTS) AND DEVELOPMENT ACTORS RECOGNIZE AND SUPPORT THE DEVELOPMENT OF THE SMALL-SCALE PRODUCTION AND MARKETING SYSTEMS, AND SEEK TO INCREASE THE PARTICIPATION OF WOMEN WITHIN THESE VALUE CHAINS.	
6.1.2 Indicator: Private, donor and public investment	
Type of indicator:	Quantitative
Designation:	Number: 6.1.2
Definition:	Public, donor and private investment in the relevant value chains
Rationale:	The amount of public, donor or private investment in any agriculture sub-sector gives a good reflection of government, development and corporate commitment towards the development of sub-sector. Furthermore, increased investment also reduces market failure in the sub-sector and improves the overall performance of the value chain.
Unit:	Monetary currency of the target value chain/country
Disaggregated by:	Source of investment (public, private, including whether domestic or international), loan or grant, target sub-sector (value chain) or target commodity, target population (poor, women)
Calculation tool:	Aggregating public, donor and private investment in the focal value chains
Interpretation key:	More is better
Data requirement and source:	**Data:** Public sector investment in the sub-sector (via government's budget); donor development resources (not via government budget); private sector investment through companies and private foundations. **Data source**: Continuous monitoring of investments through secondary data analysis and value chain surveys
Measurement notes:	**Level of collection:** Value chain program level of target commodity **Who collects data:** Value chain country coordinators and partners **How data should be collected:** Secondary data or value chain survey of sector investors.
Unit of analysis:	Value chain
Comment:	Avoid double counting of donor contributions that are expended through government budgets.

Medium-term IDO6 indicators

CRP: Livestock and Fish	**Subsection:** All value chains
IDO6: POLICIES (INCLUDING INVESTMENTS) AND DEVELOPMENT ACTORS RECOGNIZE AND SUPPORT THE DEVELOPMENT OF THE SMALL-SCALE PRODUCTION AND MARKETING SYSTEMS, AND SEEK TO INCREASE THE PARTICIPATION OF WOMEN WITHIN THESE VALUE CHAINS.	
6.2.1 Indicator: Group actions supporting smallholder farmers by advocating for effective policies	
Type of indicator:	Semi-quantitative
Designation:	Number: 6.2.1
Definition:	Evidence of change in group action around agendas that support small-scale production and marketing systems, with special attention to poor and women.
Rationale:	Action by groups around agendas that support small-scale production and marketing systems can lead to more conducive policy environments for smallholder farmers, especially when prioritized and identified policies are pro-poor and gender equitable.
Unit:	Number but with qualitative descriptions of changes
Disaggregated by:	Value chain
Calculation tool:	Number of groups with observable action around agendas that support small-scale production and marketing systems.
Interpretation key:	More is better
Data requirement and source:	**Data:** Identified policies that have been advocated for by groups supporting smallholder farmers, actions taken by these groups and what kind of responses they have triggered, and details of the groups. This will also demand that case studies are developed and documented. **Data source**: Secondary data, KAP surveys that include observable change
Measurement notes:	**Level of collection**: Value chain program level of target commodity **Who collects data**: Value chain country coordinators and partners **How data should be collected**: Secondary data or value chain survey of sector stakeholders The term "evidence of change" needs to be described in more detail (in theories of change and impact pathways of the value chains or as part of the overall CRP3.7) to enable monitoring of the direction of expected change.
Unit of analysis:	Value chain
Comment:	Identified policies that groups advocate for can be value chain or target commodity specific and applicable at different levels - national, regional, local.

CRP: Livestock and Fish	Subsection: All value chains
IDO6: POLICIES (INCLUDING INVESTMENTS) AND DEVELOPMENT ACTORS RECOGNIZE AND SUPPORT THE DEVELOPMENT OF THE SMALL-SCALE PRODUCTION AND MARKETING SYSTEMS, AND SEEK TO INCREASE THE PARTICIPATION OF WOMEN WITHIN THESE VALUE CHAINS.	
6.2.2 Indicator: Number of regulations/laws enacted	
Type of indicator:	Qualitative
Designation:	Number: 6.2.2
Definition:	Number of regulations/laws enacted and enforced to maintain and improve the quality and safety of the target commodities.
Rationale:	Ensuring food security should not only stop at ensuring food is accessible and affordable but it should also ensure that the food is safe and of good quality. This indicator mainly focuses on assessing efforts taken by relevant government departments and non-governmental value chain coordinating bodies ("self-regulation") in designing and implementing both product and processing standards.
Unit:	Number of laws/regulations enacted and enforced
Disaggregated by:	Value chain
Calculation tool:	Number of laws/regulations
Interpretation key:	More is better
Data requirement and source:	**Data:** Laws and regulations enacted and enforced. Qualitative data on extent of enforcement, and the degree to which the enforcement supports better quality versus creating constraints to market access for small-scale system actors, will need to be collected and assessed. **Data source:** Secondary data, value chain community surveys
Measurement notes:	**Level of collection:** Value chain program level of target commodity **Who collects data:** Value chain country coordinators and partners **How data should be collected:** Secondary data or value chain survey of sector stakeholders (especially in the case of self-regulation/policing by non-governmental value chain coordinating bodies)
Unit of analysis:	Value chain/country
Comment:	The key question for this indicator is the extent to which governments (and non-governmental value chain coordinating organizations) have put in place regulations/laws to promote appropriate controls and ways in which farmers can meet the standards demanded by the market.

CRP: Livestock and Fish	Subsection: All value chains
IDO6: POLICIES (INCLUDING INVESTMENTS) AND DEVELOPMENT ACTORS RECOGNIZE AND SUPPORT THE DEVELOPMENT OF THE SMALL-SCALE PRODUCTION AND MARKETING SYSTEMS, AND SEEK TO INCREASE THE PARTICIPATION OF WOMEN WITHIN THESE VALUE CHAINS.	
6.2.3 Indicator: Number of partnerships established	
Type of indicator:	Quantitative
Designation:	Number: 6.2.3
Definition:	Partnerships in the target subsectors (value chains)
Rationale:	Building of partnerships and communities of practice or other relevant networks with provides innovative platforms for development actors to recognize the necessity of developing the target value chains and express their support and level of collaboration.
Unit:	Number of agreements and organizational representations/memberships in networks or communities of practice.
Disaggregated by:	Partnership agreements, networks /communities of practice membership
Calculation tool:	Partnership agreements with organizations/agencies. Organizational representatives or members in networks or communities of practice
Interpretation key:	More is better
Data requirement and source:	**Data:** Partnership agreements and network memberships **Data source**: Secondary data, value chain community surveys
Measurement notes:	**Level of collection:** Value chain program level of target commodity **Who collects data:** Value chain country coordinators and partners **How data should be collected:** Secondary data or value chain survey of sector stakeholders networks
Unit of analysis:	Value chain
Comment:	The implementation of commitments expressed through partnerships in terms of the kind of support and level of collaboration will ultimately determine the extent to which partners contribute to the development of the target value chains.