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SDG 12.3.1.a

Data collection strategy at country level

A country guide

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Data collection strategy at country level

Why do we need a data collection strategy

Componentes of a data collection strategy

Step by step towards a data collection strategy

Working for  #ZeroHunger



Objectives of this session

- Understand the challenges of measuring and monitoring food losses at country level and why a data collection strategy is recommended
- Have a practical guide of the steps to design a food loss data collection strategy and prepare the data collection
- Present materials and templates for each of the steps





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Why a data collection strategy?





1) The existing data is not suitable to monitor food losses at country level (I)

What is the current situation?

Most of the existing information is not suitable for country-level monitoring:

- Piecemeal approach to food loss assessment (points of the supply chain)
- Studies only on discrete parts of the post-harvest system
- Studies have been one-off in complete isolation with each other and with the other surveys
- Often not comparable (different definition and concepts)

Almost no country level data available:

- Food losses are not part of country's national statistical system (not part of the agenda)
- The statistical system does not cover the food system adequately
- In some stages, no or very little statistics are generated (middleman, rural storage, informal businesses)

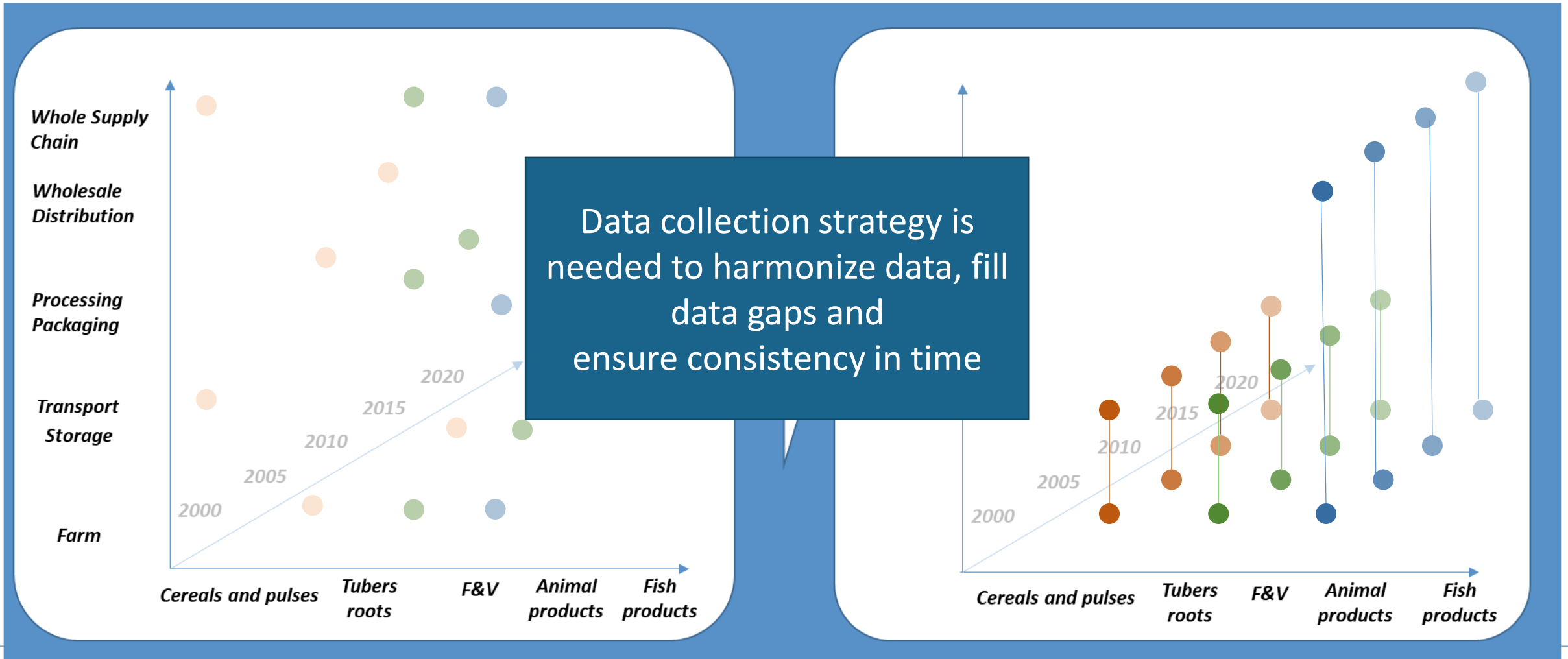
*What do we need for the
SDG 12.3.1.a?*

**Data that is suitable to
monitor progress of
food loss reduction at
country level**

- Robust
- Representative
- Data in time



1) The existing data is not suitable to monitor food losses (II)



2) Food losses data collection with direct methods (I)

Indirect methods

Estimation models
Imputation models
Mass-balance models



BUT:

Depend on robust data to
produce FL estimates; FL causes
are multi-factorial and complex
to explain in models

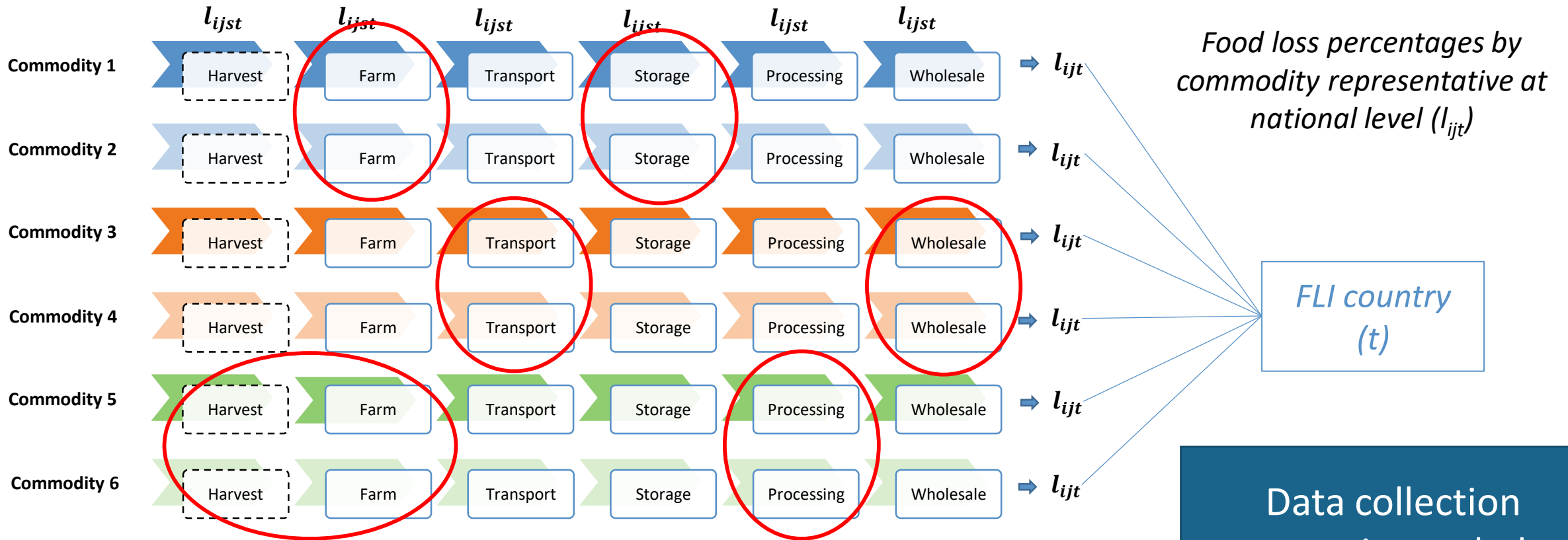
Direct methods

Direct data collection using
surveys, sample-based surveys, field
trials, expert opinion, rapid
appraisals

Representative
sample-based
surveys are
backbone

Aggregation
frameworks (Food
Balance Sheets,
Aggregate Food losses
along supply chain)

2) Food losses data collection with direct methods (II)– costly!



We need to limit the data collection efforts and reduce costs



The objectives of a data collection strategy are....

To ensure a minimum set of data needed for SDG 12.3.1.a

- Collect the missing food losses data
- Ensure the data is generated periodically

To achieve coherence

- Conceptual and classification uniformity
- Prevent publishing conflicting statistics
- Ensure methodological consistency in time

To achieve cost-efficiency

- Prevent overloading any statistical operation/survey/inquiry with too many items
- Focus on the most relevant commodities, stages, type of actors, etc.

To ensure data is aligned to country priorities

- Increase the value of the data collected in terms of decision making and policy
- Link data collection efforts directly to policy interventions for its monitoring



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Step by step towards a data collection strategy





Steps of the data collection strategy

1. ***Country priorities*** and selection of commodities
2. Supply chain mapping and identification of ***critical food loss points***
3. Mapping and selection of ***possible surveys and data sources for food loss data collection***
4. ***Governance and coordination*** of the data collection strategy



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1. Country priorities and selection of commodities



Food loss data collection aligned to policy priorities

- Value of data increases if aligned to policies
- More data collection efforts are in place where policy interventions exist
- Possibility to reduce food losses

Food Security Policy

- Food security of small-scale farmers and rural households
- Access to healthy diets
- Sufficient food production

Environmental Policy

- Natural resource management (water, land)
- Circular economy
- Organic waste management

Food System Policy

- Value chain development
- Small-scale producer inclusion
- Market development
- Storage capacity



Existing studies,
general knowledge
about food losses

Example of criterias to select commodity basekt for SDG 12.3.1 a

Heading	Commodity	Production and contribution to agricultural sector			Food Security and Nutrition		Socioeconomic Factors	Policy Factors	Relevance for Food Loss Reduction
		Production Volume (tons)	Percent of total volume of commodity group	Production Value (1000 Dollar)	Percent contribution to average food basket (%)	Priorities for nutrition	Relevance small scale farmers	Part of policy priorities/ programmes	Relevance for food losses
Cereals and pulses	Wheat	2,511,008	5%	609,498	6.0%	Medium	Low	Medium	Low
Cereals and pulses	Barley	963,288	2%	116,405	4.0%	Low	Low	Medium	Low
Cereals and pulses	Rice	587,980					Low	Medium	Low
Cereals and pulses	Maize	11,896,456	20%				High	High	High
Fruits and vegetable	Tomatoes	2,669,982	6%				Medium	High	High
Fruits and vegetable	Onions	943,848	2%				Low	Medium	Medium
Fruits and vegetable	Mango	902,014	2%				Medium	Medium	High
Fruits and vegetable	Bananas	594,295	1%				High	High	High
Meat & Animals Products	Eggs	2,772,544	6%				High	Medium	Medium
Meat & Animals Products	Raw milk of cat	3,099,608	7%				High	Medium	Medium
Meat & Animals Products	Meat of cattle f	2,315,441	5%				Low	High	High
Meat & Animals Products	Poultry Meat	3,277,342	7%	4,866,832	10.0%	High	Medium	High	Low
Roots, Tubers & Oil-Bearing	Soyabean	433,564	1%	139,646	0.0%	Low	Low	Medium	Medium
Roots, Tubers & Oil-Bearing	Palm kernals	804,923	2%	9,034	0.0%	Low	Low	Low	Low
Roots, Tubers & Oil-Bearing	Potatoes	1,257,076	3%	303,268	6.0%	Medium	Low	Medium	High
Roots, Tubers & Oil-Bearing	Coconut	1,002,283	2%	127,986	0.0%	Low	Medium	Low	Low

Step 1: To have identified the 10 commodities using a mix of criteria related to policy priorities



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What policies and criteria might be the focus for food loss reduction in your country?

- Food Security
- Small Scale Farmers/ Rural households
- Environmental Policies
- Policies related to food systems/ value chain development
- Others
- Or maybe Food Waste

What would be the priority commodities in your country?

- Cereals and pulses: ...
- Fruits and Vegetables: ...
- Roots and Tubers: ...
- Animal Products: ...
- Fish and Fish Products: ...
- Others: ...



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2. Supply chain mapping and critical loss points

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Mapping of the supply chains of the selected commodities (method)

Objectives:

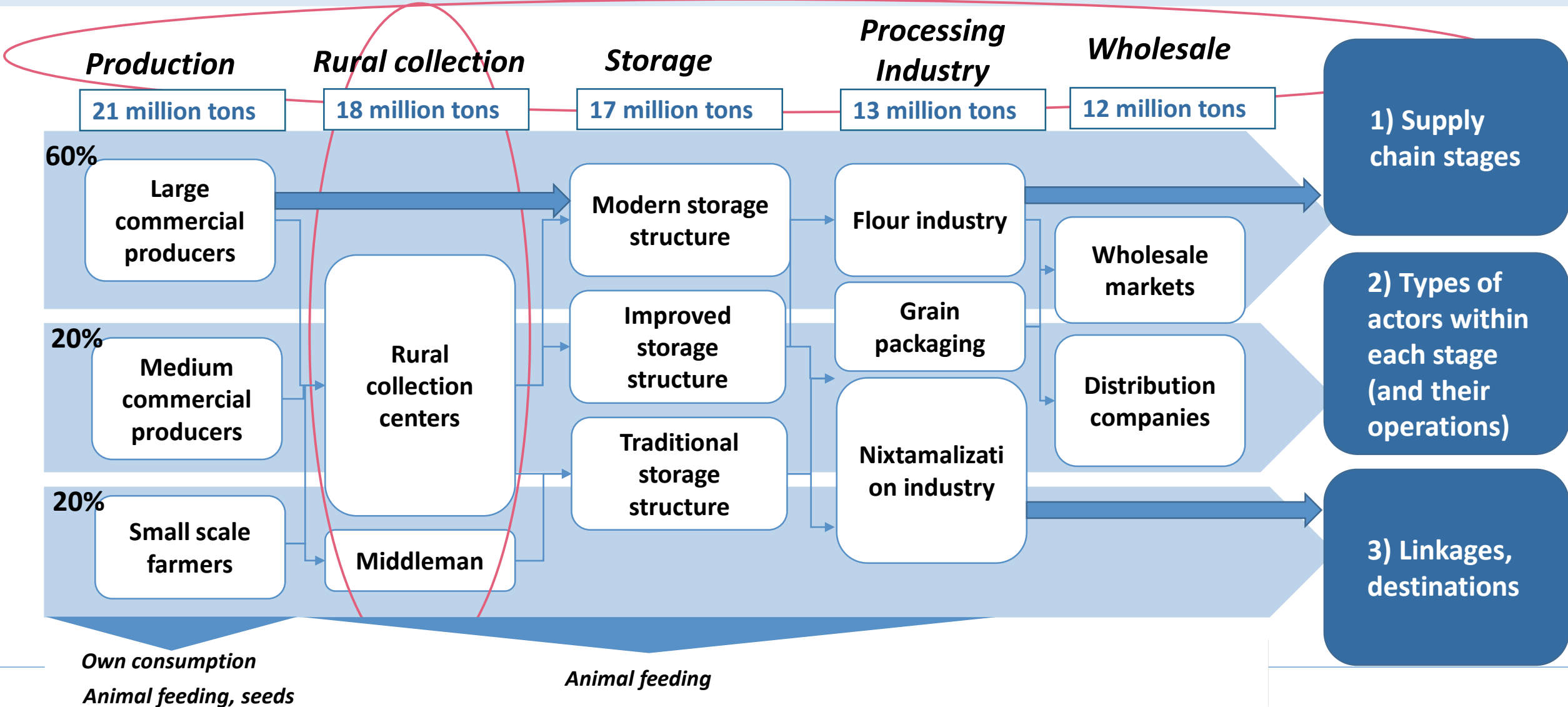
- Understand the main stages, stage actors and linkages of the supply chain
- Count with data/estimates on the volumes operated and the size of the population at each stage and by type of actor

Key questions:

- What are the different (core) steps in the value chain that link production with consumption?
- Who are the actors involved in these and what do they do?
- What are the characteristics of these actors?
- What are the flows and stocks of commodities in the value chain?
- What is the volume of products and the number of actors?
- What types of relationships and linkages exist?
- What are the loss points in the chain by commodity, actor, and level or process?
- What are the estimated losses along the chain?



Understand the structure and actors along the supply chain – White Maize Mexico





Identify critical food loss points in the supply chains

FAO Case Study Methodology for Food Loss Assessment

Objectives:

- Identify critical food loss points along the food supply chain
- Analyse the main food loss causes at micro, meso and macro level
- Design viable and sustainable solutions

Screening

- Initial research on **what is known** locally

Field investigation

- **Interviews, surveys, studies** in the field
- **Stakeholder** groups and **key informants**

Load Tracking

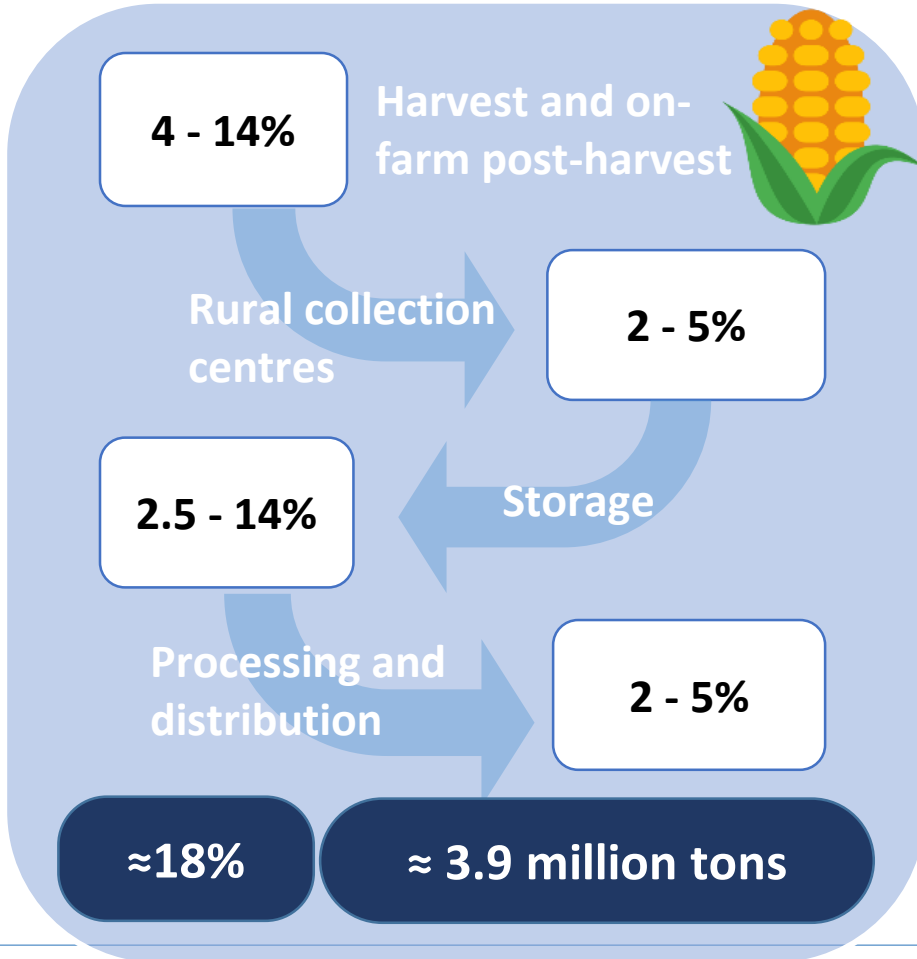
- Loss assessment **at critical loss points**

Synthesis

- Analysis of loss **causes and solutions**

Identify the most critical food loss points

White maize losses in % (Mexico)

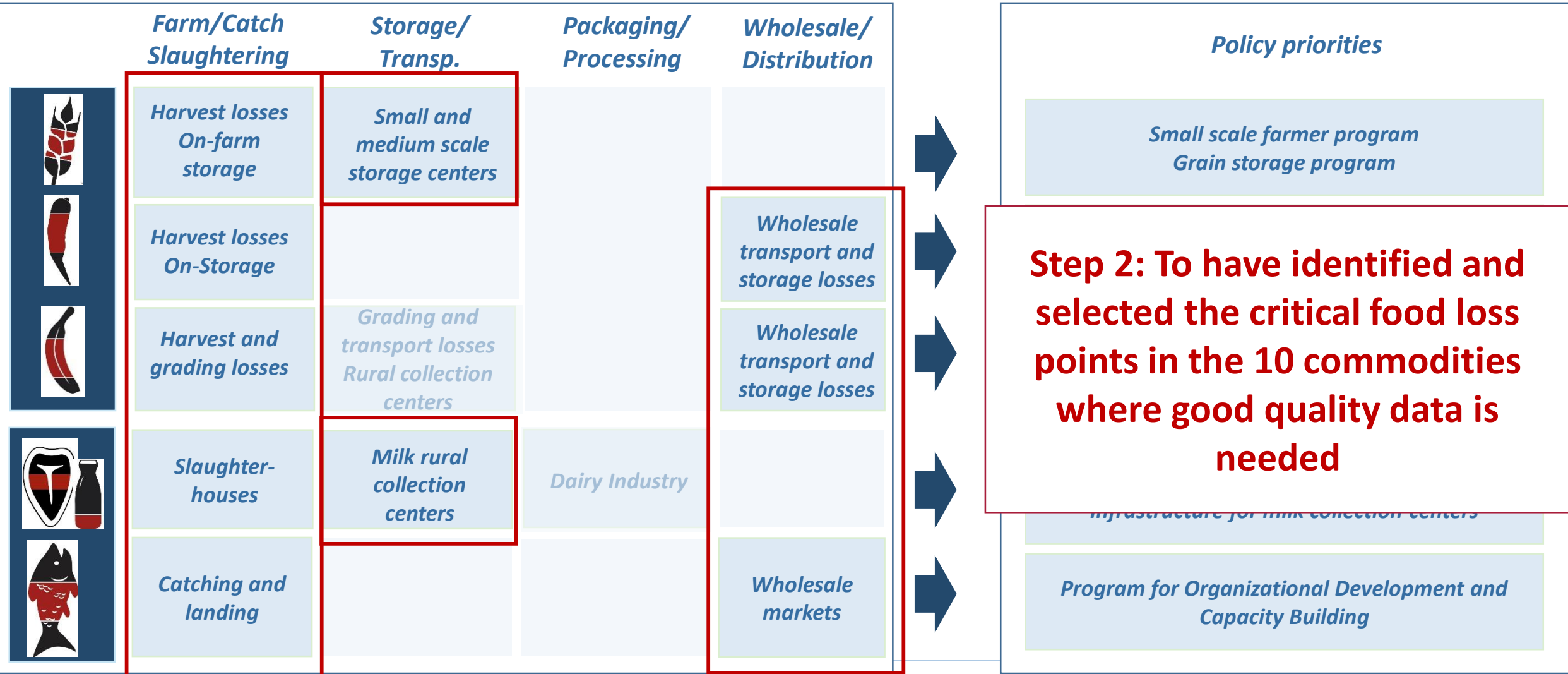


	Operated volume (1000 ton)	Food Loss volume (1000 ton)	Food loss %
Harvest and post-harvest	21,693	≈1,702	≈7.5%
Large scale farmers	13,016	≈521	≈4%
Medium scale farmers	4,772	≈609	≈12%
Small scale farmers	3,905	≈572	≈14%
Rural collection center	18,029	≈443	≈2.5%
Storage	17,586	≈1,308	≈7.4%
Modern storage structure	7,556	≈189	≈2.5%
Improved storage structure	2,268	≈68	≈5.1%
Traditional storage structure	7,365	≈1,035	≈14%
Processing	13,582	≈498	≈3.5%
Flour industry			≈2%
Nixtamalization industry			≈5.1%
Packaging			≈4.6%
TOTAL			18,2%

Usually, 1-2 key loss points



Select critical food loss points





RECAP

What might be the critical food loss points of the commodities you mentioned?

- On-farm: Small-scale farmers, exporting producers, etc.
- Processing Industry: Slaughtering, meat processing industry
- Transportation Sector: Meat and milk transportation, fruits and vegetables
- Wholesale Markets

What might be the main food loss points and loss causes at these stages?

- Harvesting operations: e.g. harvest practice or on-farm storage...
- On-farm storage:...
- Grading:...
- Processing/Packaging:...
- Transportation:...
- Storage:...



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3. Mapping and selection of existing data sources and instruments

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Maximizing the use of existing data sources: Screening

- **National Statistic System:**
 - Screen all the existing surveys
 - Sectorized statistics (agricultural, economic, industrial surveys, etc.)
- **Other data sources**
 - Administrative data (Registers, market interactions, veterinary records, transport records, food safety records, waste records, etc.)
 - Programs and policy (information system, monitoring system)
 - Field case studies, loss assessments, etc.

Tips:



i) Start to revise existing **sample-based surveys** and move on to less representative sources

ii) Control the **coverage, level of disaggregation**

iii) Try to screen the **key information** already captured by the data source



Identify best option of the existing data collection instruments (scope, information...)

	Critical food loss points			Surveys and data sources				
	FLP Cereals	FLP Fruits and Vegetables	FLP Roots and tubers	Institution	Instrument	Coverage	Frequency	Food Loss Indicator
Harvest and post-harvest								
Large scale farmers								
Harvest process		Instrument in place, but not covering FL, actor, operation	Instrument in place, but not covering FL, actor, operation	INEGI	ENA Agricultural Survey	National	2 years	yes (improve)
On-farm post-harvest		Instrument with adequate coverage and FL	Instrument with adequate coverage and FL					
Small scale farmers								
Harvest process		Instrument in place, but not covering FL, actor, operation		INEGI	ENA Agricultural Survey	National	2 years	yes (improve)
On-farm post-harvest		Instrument with adequate coverage and FL		INEGI	ENA Agricultural Survey	National	2 years	yes (improve)
On-farm storage	Instrument with adequate coverage and FL			CONEVAL	Rural Household Survey	Rural areas	5 years	yes (improve)
Storage, Transport, Distribution								
Rural storage facilities (grains)								
Storage	Instrument in place, but not covering FL, actor, operation			ASERCA	Administrative data	Priority territories		yes (improve)
Wholesale Markets								
Reception		No sufficiently good instrument/low coverage	No sufficiently good instrument/low coverage	Economy	Administrative data		Continuous	no
Storage		No sufficiently good instrument/low coverage	No sufficiently good instrument/low coverage	Economy	Administrative data		Continuous	no
Transport		No sufficiently good instrument/low coverage		Economy	Administrative data/Surveys		Continuous	no



Instrument in place, but not covering FL, actor, operation

Instrument with adequate coverage and FL

No sufficiently good instrument/low coverage



Optimize data collection: Decide on the scope of food losses in each instrument

Which commodities?

The instrument may cover different commodities

Which type of actors?

Maybe focused on small-scale farmers, or on export producers, or on certain industries (small/family businesses)

Which operations?

Not all operations are relevant for food losses

On-farm storage, harvesting losses or grading losses

What additional information?

Causes of losses, technologies, equipment used, etc.

What frequency?

Food losses do not have to be collected every year (structural)

Decide on frequency, use imputation



A further way to optimize data collection of food losses



Optimize data collection: Data sources selected for the data collection strategy



At the end, 5 instruments to collect food loss data in 5 commodity groups

Cereals and pulses

Fruits and vegetables

Roots and tubers

Animal products

Fish and fish products

INEGI Agricultural S
CONEVAL Rural hou

ASERCA storage
program: include food
loss module

Step 3: To have identified and selected the surveys and instruments to collect food loss data, optimizing the scope to reduce costs

SA: New data
collection effort
needed

SE/SA: New data collection effort for food loss in
Wholesale Markets



RECAP

What instruments exist on the supply chain stages and commodities you selected for food loss data collection? How well is the food system covered by the national statistics system?

- Agricultural Surveys
- Meat Production Surveys (Slaughterhouses)
- Industrial/Manufactural Surveys
- Trade Surveys
- Storage Surveys
- Transportation Surveys
- Wholesale Surveys
- Others
- If no survey is in place, what other data sources could be used?

In which of these do you consider it is relevant to include food losses?



RECAP

Of the identified surveys, what of the following aspects are fulfilled?

- The target population and coverage is adequate
- The required operations are covered (e.g. post-harvest operations on farm)
- The level of disaggregation (by commodity groups or by commodity) is sufficient
- Food losses are or can be included
- Other relevant indicators are covered by the survey (type of actor, technologies used, size, etc)



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4. Governance and coordination of the data collection strategy

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Stakeholders

Coordinating Body: Ideally an agency that has access to necessary administrative data and has resources to collect nationally representative data, compile the analysis and communicate results. Established/designates the appropriate methodology

Data users: Policy makers, researchers, NGOs, private sector actors, general public for decision making and to monitor progress.

Coordinating Body

Data providers

Data users

Data providers: Data producing agencies, institutions, stakeholders – how collect data, who will be asked to provide data through surveys, how they benefit from the data they collect.

Dissemination: Disseminate the information of food losses to data users (depends on the frequency of data collection).

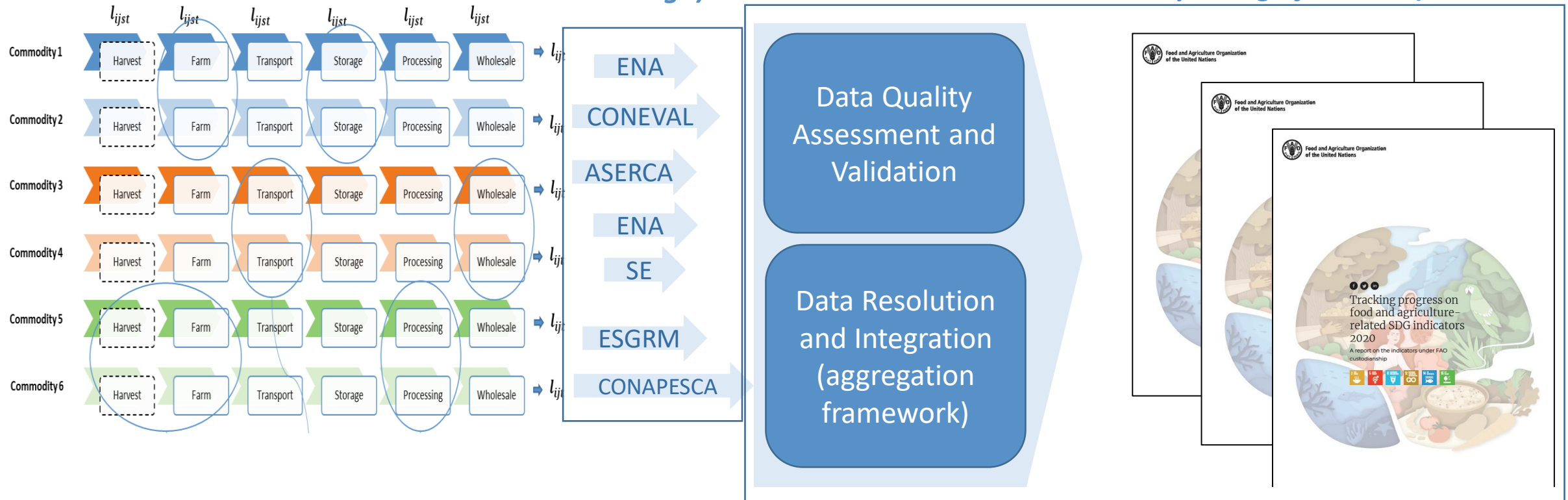
Dissemination

SDG 12.3.1.a Country level monitoring system

Coordinating body

2. Seminar (direct methods for data collection, questionnaires, sample design)

3. Seminar (aggregation of food loss data, compilation of the indicator, validation, reporting of the SDG)



Establish a BASELINE

Monitor PROGRESS (every 3-4 years)

Report SDG 12.3.1.a (every 3-4 years)



RECAP

Which institution might be the coordinating body in your country, which other institutions should be involved?

How would you suggest to coordinate, integrate and analyse food loss data from different sources within your countries?

How can we achieve sustainability of the data collection in order to generate time series and monitor progress?



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Next steps





FIST STEP: DEFINE THE COUNTRY COMMODITY BASKET (choosing the criteria)

Example of criterias to select commodity basket for SDG 12.3.1 a									
Heading	Commodity	Production and contribution to agricultural sector			Food Security and Nutrition		Socioeconomic Factors	Policy Factors	Relevance for Food Loss Reduction
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Fruits and vegetable	Tomatoes	2,669,982	6%	1,495,688	6.0%	High	Medium	High	High
Fruits and vegetable	Onions	943,848	2%	20,590	2.0%	Medium	Low	Medium	Medium
Fruits and vegetable	Mango	902,014	2%	1,316,557	2.0%	Medium	Medium	Medium	High
Fruits and vegetable	Bananas	594,295	1%	671,627	3.0%	High	High	High	High
Meat & Animals Products	Eggs	2,772,544	6%	1,178,366	9.0%	High	High	Medium	Medium
Meat & Animals Products	Raw milk of cat	3,099,608	7%	1,197,611	11.0%	High	High	Medium	Medium
Meat & Animals Products	Meat of cattle	2,315,441	5%	10,315,245	6.0%	Medium	Low	High	High
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Roots, Tubers & Oil-Bearing	Coconut	1,002,283	2%	127,986	0.0%	Low	Medium	Low	Low
Fish & Fish Products	Freshwater	273,982	1%	1,095,928	0.0%	High	Medium	Medium	High
Fish & Fish Products	Demersal Fish	217,392	0%	1,086,960	0.0%	Medium	Medium	Medium	High
Fish & Fish Products	Pelagic Fish	826,321	2%	2,478,963	1.0%	High	Medium	High	High
Fish & Fish Products	Crustaceans	319,038	1%	2,871,342	0.0%	Low	Medium	Medium	Medium



THIRD STEP: DECIDE THE SCOPE TO INCLUDE FOOD LOSSES IN THE INSTRUMENT

Which commodity?

*The instrument may cover different commodities
Different varieties of crops
(e.g. for human consumption or animal consumption)*

Which type of actors?

Maybe focused on small-scale farmers, or on export producers, on certain industries (small/family businesses)

Which operations?

Not all operations are relevant for food losses

On-farm storage, harvesting losses, grading losses, transportation losses

What additional information?

*Causes of losses
Methods, technologies, equipment used*

What frequency?

*Food losses do not have to be collected every year (structural)
Decide the frequency to collect data vs the level of detail, interpolation*

ENA - INEGI					
CONEVAL					



FOURTH STEP: DECIDE ON THE COORDINATION MECHANISM

Institutions, stakeholders, institutional mechanism

Coordinating Body

Data providers

Data users

Dissemination

Institutions, stakeholders, institutional mechanism

*Data Quality
Assessment and
Validation*

*Data Resolution
and Integration*

Baseline

Frequency



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Thank you very much!
