GLOBAL AGENDA FOR SUSTAINABLE LIVESTOCK

Focus Area 1

Closing the Efficiency Gap

08 October 2014, Cali

Ernesto Reyes

agri benchmark Network (Beef, Sheep, IFCN dairy)

Global benchmarking analysis of production systems, their economics, drivers and perspectives

Chair of FA1

Content

1. Objectives and actions

2. Working areas

3. Efficiency Matrix exercise

4. Pilots

GLOBAL AGENDA

1. FA-1 Objectives and actions

1 Build up a comprehensive approach for improving efficiency across the livestock sector

Developing metrics system for NRUE	Tools & models
• Natural Resource Use Efficiency (NRUE) • NRUE Matrix	• Modeling and evaluation of efficiency gaps

GLOBAL AGENDA

1. FA1 - Objectives and actions

2 Promote regional/local interventions through efficient practices across the livestock sector

Exploring and select projects	Piloting
• FA1 partners projects • Criteria list for selecting pilots	• Selecting projects • Testing metrics, tools & models • Start monitoring activities • Scale up the process

GLOBAL AGENDA

1. FA1 - Objectives and actions

3 Facilitate the exchange of information and linkages between stakeholders, livestock initiatives and projects

Networking activities

- Linkages between experts and projects
- Information exchange center
- Common understanding and agreements
- Promoting NRU efficiency practices

Central portal of information

- Communication platform
- Dissemination platform

GLOBAL AGENDA

Content

1. Objectives and actions

2. Working areas

GLOBAL AGENDA

2. FA1- Working areas

- Defining NRUE
- Enlarging the scope of the FA1
- Efficiency matrix
- Efficiency matrix + evaluation areas
- Pilots proposals
- Efficiency matrix V1+ criteria for pilots selection

FA1- meetings

- Rome (04-2012)
- Nairobi (01-2013).
- Braunschsveig (04-2013).
- Rome (09-2013).
- Ottawa (10-2013)
- Paris (03-2014)
- Call conference (09-2014)

GLOBAL AGENDA

2. FA1 - Working areas

1. Efficiency matrix
2. Pilots proposals and selection
3. Modeling and assessment
4. Data portal
5. FA1 management

GLOBAL AGENDA

Content

1. Objectives and actions

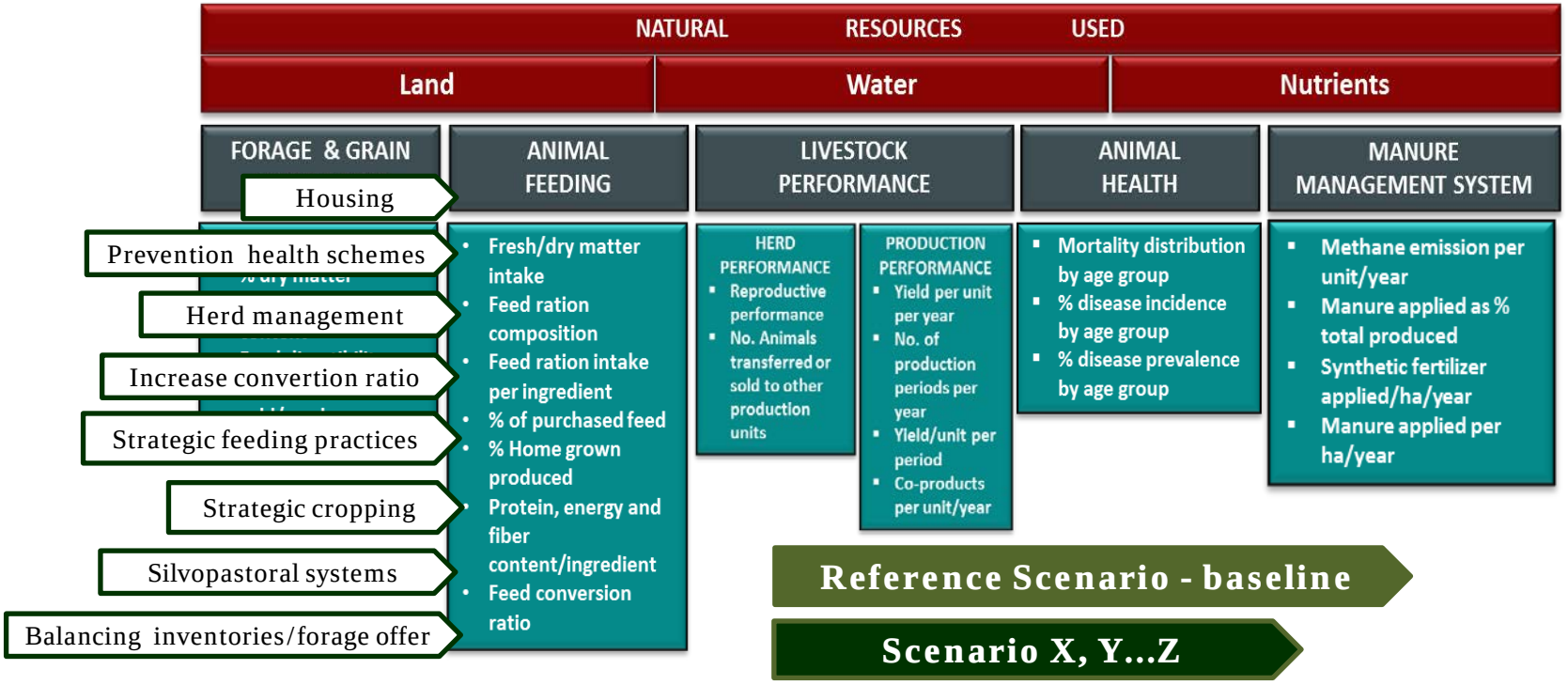
2. Working areas

3. Efficiency Matrix exercise

GLOBAL AGENDA

3. Efficiency matrix exercise

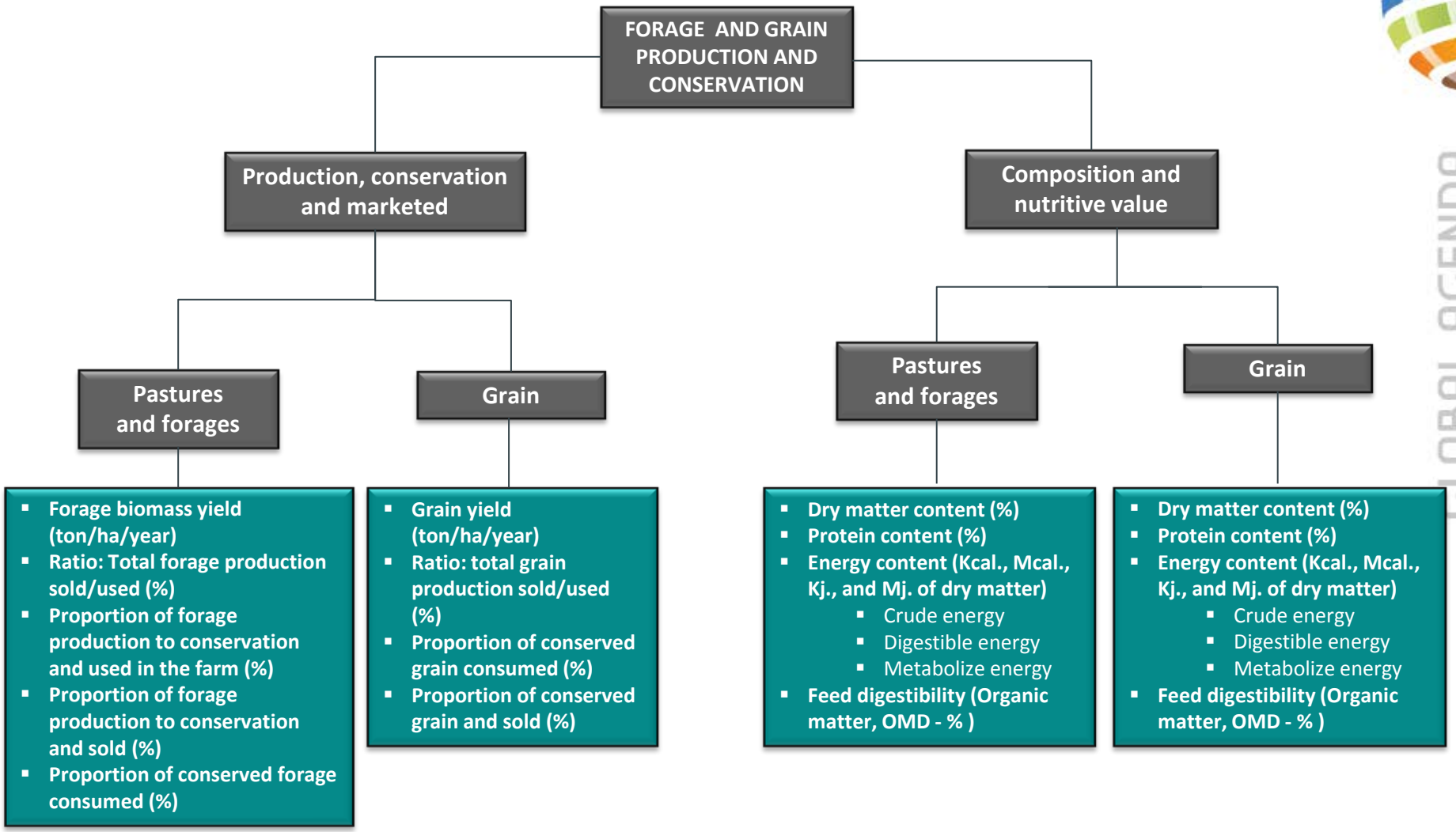
Efficiency matrix and NRU metrics



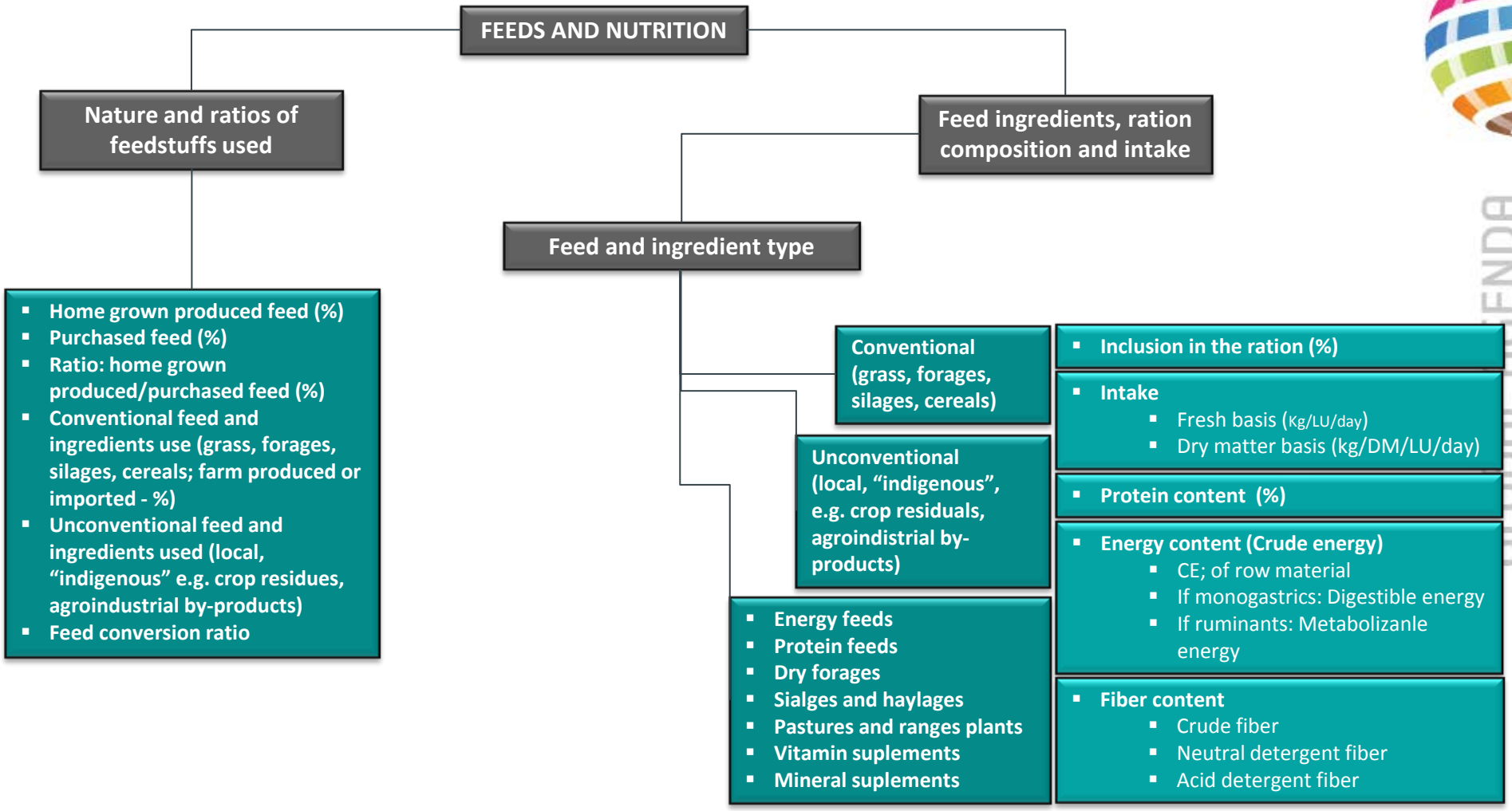
Economic → Animal welfare → Social impact → Environmental

GLOBAL AGENDA

3. EM – NRUE – **Horizontal assessment**



3. EM – NRUE – **Horizontal assessment**



3. EM – NRUE – **Horizontal assessment**

ANIMAL HEALTH

Cattle and small ruminants
- % Still birth
- % Mortality 1st year
- Overall % off-take due to disease (death or culling)
- Prevalence of OIE notifiable diseases in country

Pigs
- % stillbirth/farrowing
- Ratio No. of pigjets weaned:born alive/litter
- Prevalence of OIE notifiable diseases in country

Poultry
- % off-take due to disease (death or culling)
- Prevalence of OIE notifiable disease in country

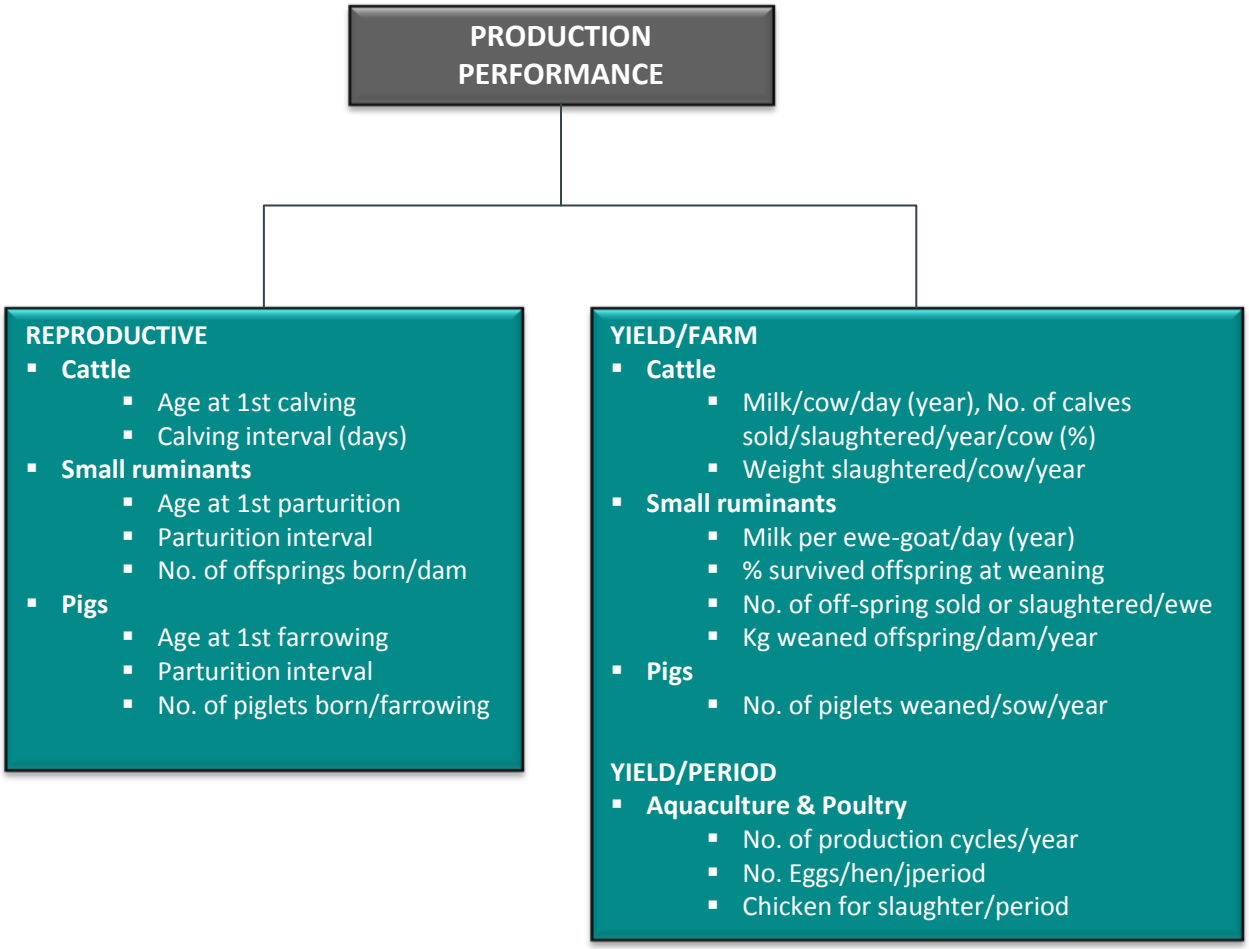
MANURE MANAGEMENT SYSTEM

MANURE APPLIED
- Manure storage capacity (% of months available/months needed
- Ratio: manure used on farm/exported
- Manure applied in accordance with with crop requirements (right time/right quantity)

MANURE STORAGED
- % of the original amount of nitrogen still in the manure after manure storage/spreding
- Manure storage capacity (% months available/months needed)
- Storage and treatment systems
  - Biodigester, lagoons, composting, etc.

GLOBAL AGENDA

3. EM – NRUE – **Horizontal assessment**



GLOBAL AGENDA

3. EM – Sustainability – **Vertical evaluation**

Economic evaluation

Economic indicators		Indicators		
	level	**Enterprise level**		**Whole-farm level**
	enterprise level	**cow-calf, beef finishing, sheep**		**all enterprises**
	reference units	per animal, kg live weight or carcass weight per ha	per enterprise per ha	per farm per ha
Returns / Receipts (quantity * price)				
- Total returns		x	x	x
- Market returns		x	x	x
- Government payments (subsidies)				
- Social returns (where possible)		x	x	x
Costs (where possible quantity * price)				
- Total costs, breakdown into up to 50 items		x	x	x
- Feed costs (incl. purchase feed, fertilizer costs)		x	x	x
- Other costs		x	x	x
- Social prices and costs (where possible)		x	x	x
Profitability				
- Margin over feed costs		x	x	
- Margin over cash costs		x	x	x
- Medium-term profitability 1)		x	x	x
- Long-term profitability 2)				
- Social profitability (where possible)		x	x	x

1) total returns less cash costs less depreciation
2) medium-term profitability less opportunity costs

GLOBAL AGENDA

3. EM – Sustainability – **Vertical evaluation**

ANIMAL WELFARE

Resources measures

- Housing quality including shelter from environmental extremes e.g. cold / wet /heat
- Light/dark schedule relevant to species' needs
- Resources to facilitate comfort e.g. foraging substrates, bedding substrates
- Access to and quality of feed and water
- Space and facilities to exercise, move, rest and perform important behaviours
- Handling facilities and practices
- Provision for sick and injured animals
- Provision for humane transport and slaughter

Outcome measures

- Body condition
- Presence/ absence of disease in an individual animal (or flock incidence)
- Presence/absence of injury and / or routine mutilations
- Mortality and morbidity
- Presence/absence of parasites
- Ability to move normally / walk normally / measures of lameness
- Associated measures of health including longevity, fertility, replacement rate
- Absence of negative behavior (e.g. reflecting fear/ aggression / sickness / stereotypy / other abnormal behaviour)
- Ability to perform behaviours important to the species (and species subtype e.g. mothers or offspring), using appropriate resources
- Absence of behavioural restriction
- Ability to rest/sleep adequately
- Presence of behaviours reflecting positive welfare (e.g. play behavior, rest, foraging)

GLOBAL AGENDA

3. Efficiency matrix exercise

- We have a contextual document
- It is an open exercise, for refinement and adjustments
- A testing phase will take place
  - Consistency between areas
  - Animal species
  - Indicators to measure

GLOBAL AGENDA

Content

1. Objectives and actions
2. Working areas
3. Efficiency Matrix exercise
4. Pilots

GLOBAL AGENDA

4. FA1 pilots

- Pilots have been classified according to the interaction with the Focus Area
- A criteria list has been developed
- A set of proposals have been presented
- FA1 is in the process of selecting pilots and defining level of interaction in terms of:
  - Information Exchange
  - Interventions required
  - Resources required

GLOBAL AGENDA

4. FA1 pilots - Classification

I Currently running projects	II New FA1 projects	III Complementary projects	IV Pre-feasibility projects
• NRUE monitoring and evaluation • Testing and input for the EM • Practical lessons gained from improving NRUE	• New projects designed and funded through FA1 • To test NRUE improvement in areas with particularly high potential for social, economic and environmental gains	• Specific methodological exchange for improving the EM • Opening new fields of monitoring and evaluation activities	• which can use the FA1 platform for funding and implementation • Targeted inputs and support to the development of new pilots and projects.

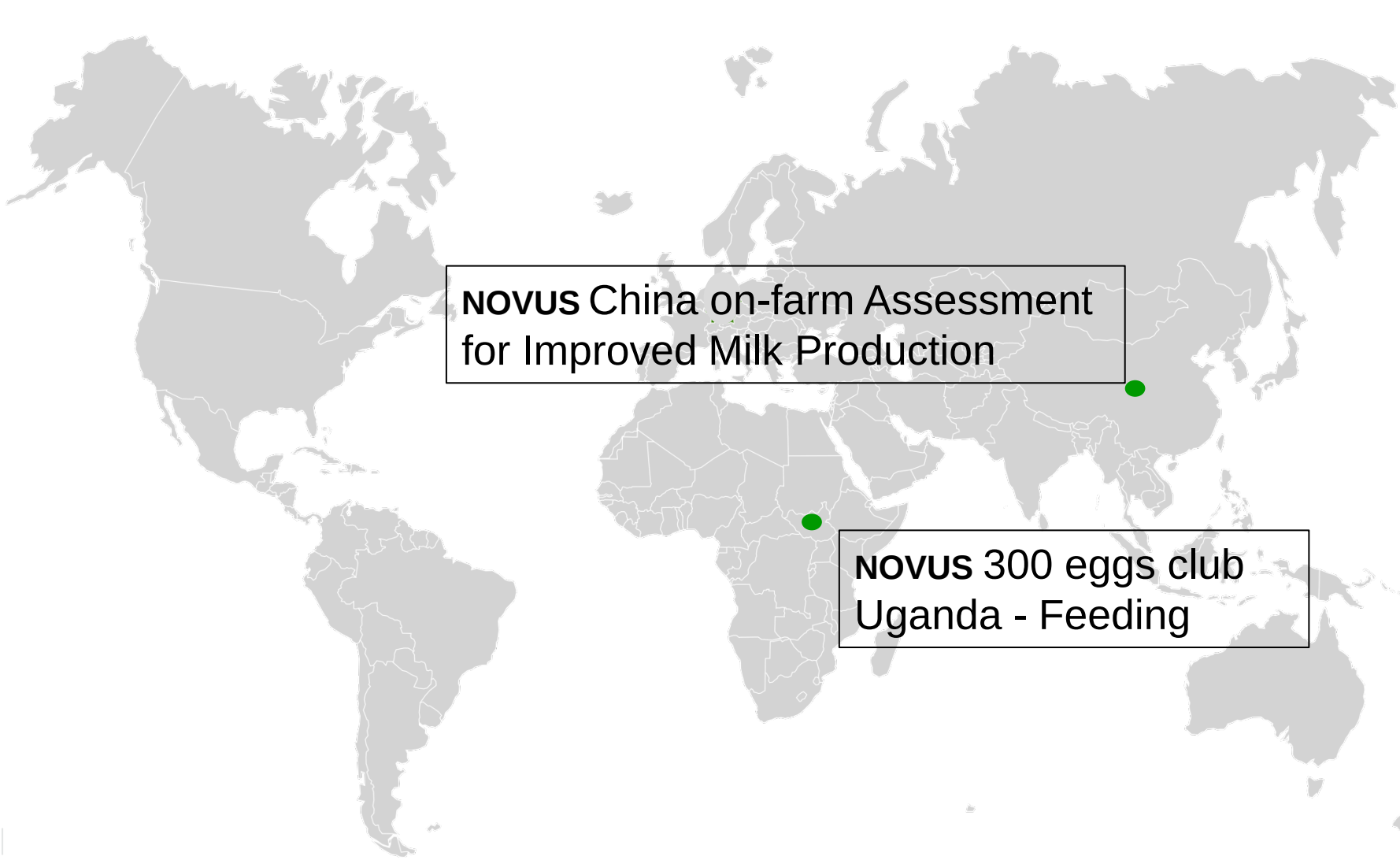
GLOBAL AGENDA

4. FA1 pilots – Criteria list

1. Focalization	The project is mainly addressing NRUE issues
2. Possibility of intervention	The project has clear possibilities to a FA1 intervention in terms of win-win relationship, elements to complement, availability of results and information exchange
3. Regional and livestock biodiversity	Project coverage in terms of production systems and regions
4. Capacity building	Stakeholders involved and stakeholders benefited
5. Impact	Possibilities of scaling up the process
6. Implementacion capacity	Availability of resources (e.g. funding and services)
7. Synergies	Complementary synergies with other FAs of the Agenda

GLOBAL AGENDA

4. FA1 pilots

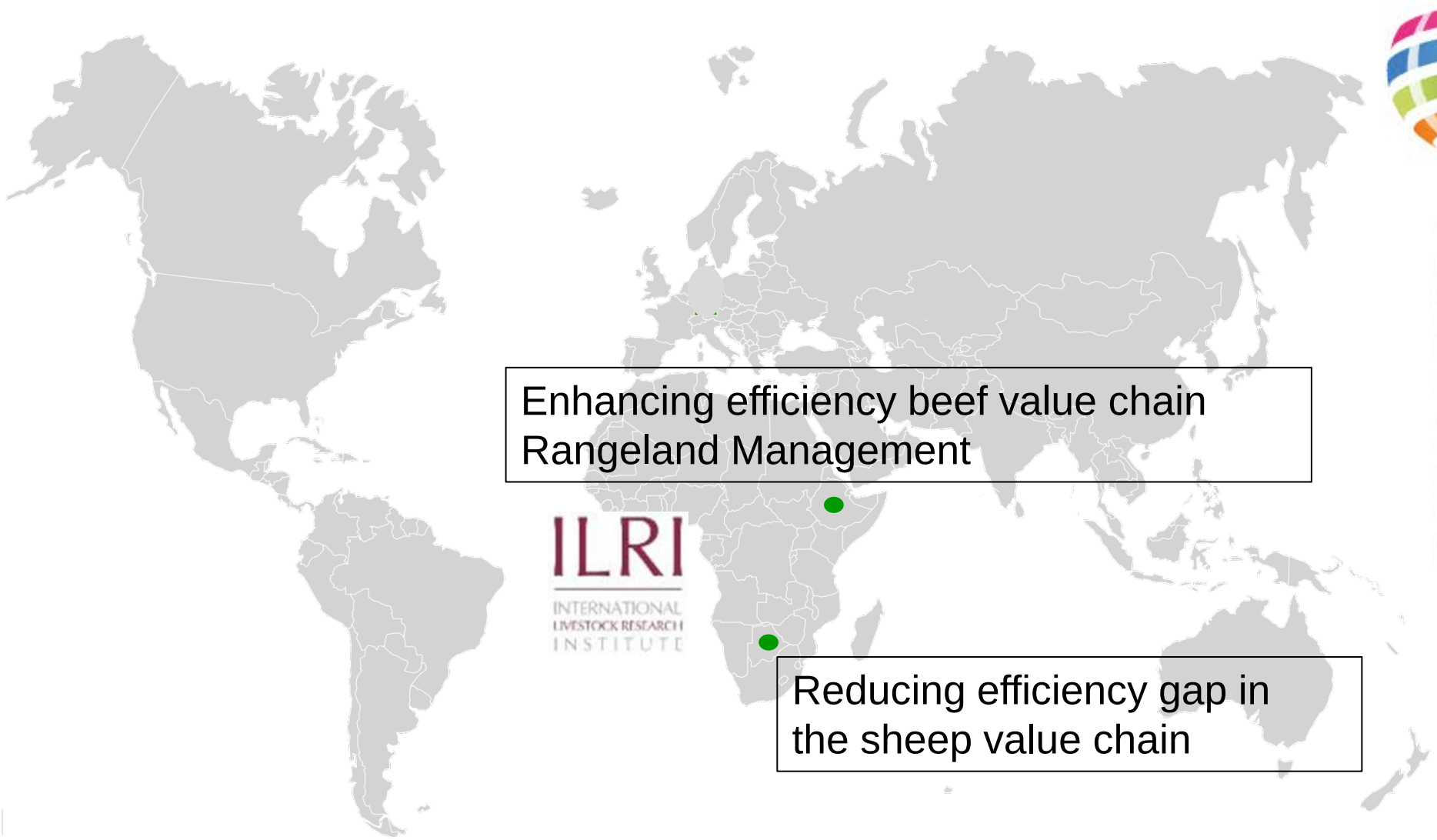


NOVUS China on-farm Assessment for Improved Milk Production

NOVUS 300 eggs club Uganda - Feeding

GLOBAL AGENDA

4. FA1 pilots



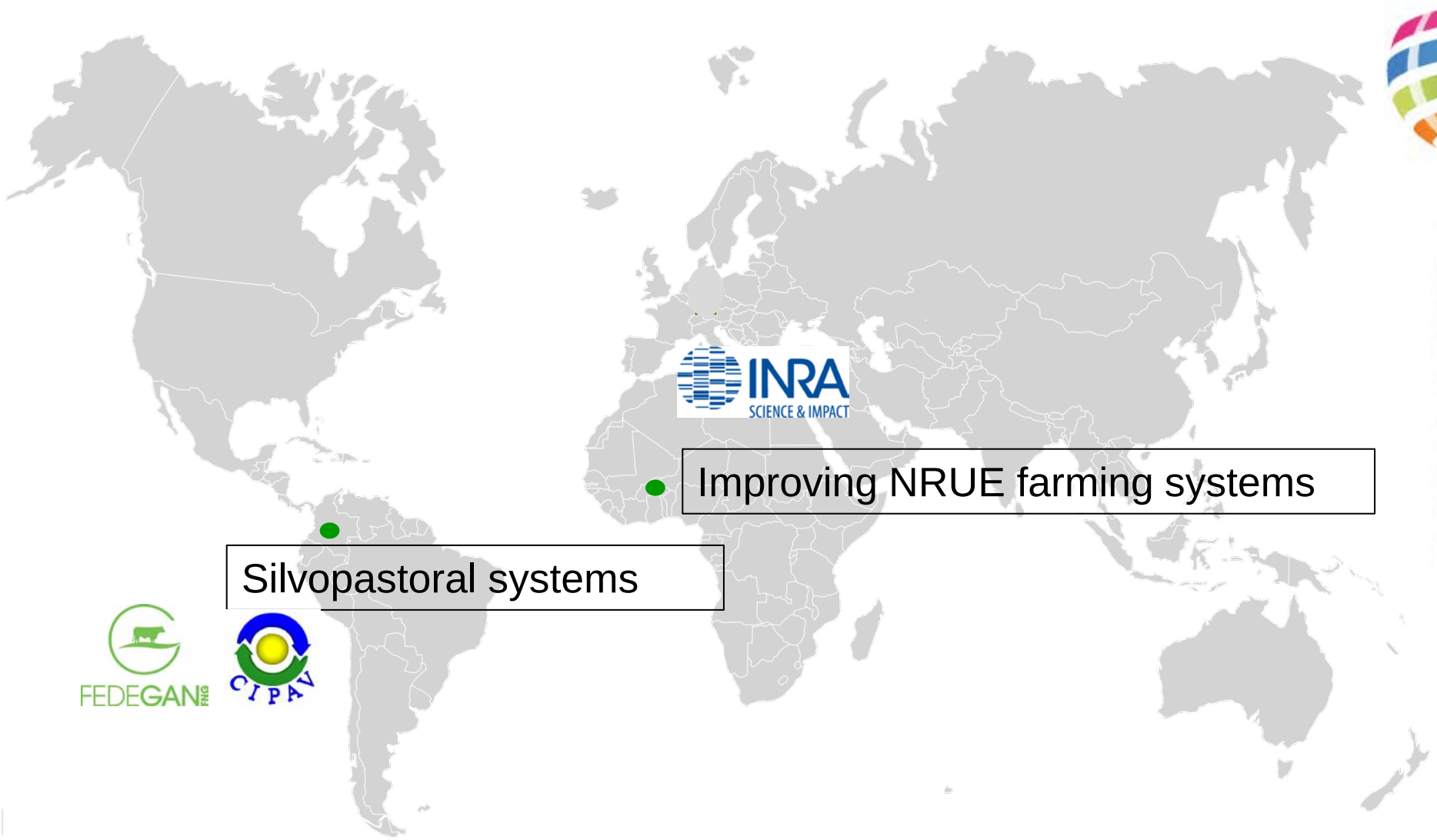
Enhancing efficiency beef value chain
Rangeland Management

ILRI
INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

Reducing efficiency gap in the sheep value chain

GLOBAL AGENDA

4. FA1 pilots



GLOBAL AGENDA

4. FA1 pilots

Environmental sustainability roadmap for the pig industry

BPEX

GLOBAL AGENDA

4. FA1 pilots

Agrohyd - water resource management – farm level

ATB
Leibniz-Institut für Agrartechnik
Potsdam-Bornim e.V.

GLOBAL AGENDA

3. FA1 pilots

ILRI
INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

Enhancing efficiency of the beef value chain improving rangeland management in Botswana

Reducing efficiency gap in the sheep value chain through a sustainable fattening system and smart marketing in Ethiopia

NOVUS

Novus 300 eggs club in Uganda

NOVUS C.O.W.S Cows-Oxidative balance-Well being-Sustainability. Comprehensive On-Farm Assessment for Improved Milk Production

INRA
SCIENCE & IMPACT

Narrowing efficiency gaps in the natural resources use of West Africa farming systems: the case of Burkina Faso

BPEX

P-BLEX Roadmap for the environmental sustainability of the English Pig Industry

ATB
Leibniz-Institut für Agrartechnik Potsdam-Bornim e.V.

AgroHyd World food consumption and water resources: an agro-hydrological perspective

FEDEGAN FNG

CIPAV

Mainstreaming Biodiversity in Sustainable Cattle ranching

GLOBAL AGENDA

thank you!

GLOBAL AGENDA FOR SUSTAINABLE LIVESTOCK

Name	Institution	Region
Luis Azevedo	Novus do Brasil	South America-Africa
Philippe Becquet	DSM Nutritional Products Europe Ltd	Switzerland
Sophie Bertrand	Centre Nat. Interprof. de l'Economie Laitière	EU - France
Julián Chará	The Nature Conservancy - CIPAV Foundation	South America - Colombia
Sune Jin Christensen	Danish Bacon & Meat Council	EU - Denmark
Claus Deblitz	Thunen Inst. of Farm Economics-*agri benchmark*	Global
Jeroen Dijkman	FAO-AGAL	Global
Pierre Gerber	FAO-AGAL	Global
Eliel Gonzalez	INRA - PHASE	EU - France
Hsin Huang	International Meat Secretariat	Global
Lesley Lambert	World Society for the Protection of Animals	EU - UK
Norman Leask	European Coordination Via Campesina	EU - UK
Philippe Lecompte	CIRAD INRA SupAgro	EU - France
Judy Libra	*ATB* - Leibniz Instit. for Agricultural Engineering	EU- Germany
Ulf Magnusson	Swedish University of Agricultural Sciences	EU - Sweden
Nicolas Martin	European Feed Manufacturer's Federation	EU - Belgium
Nigel Penlington	Agric. & Hortic. Development Board - BPEX	EU - UK
Ernesto Reyes	*agri benchmark*	Global
Mathieu Vigne	CIRAD INRA SupAgro	EU - France
Henk Westhoek	PBL - Netherlands Env. Assessment Agency	EU - Netherlands