



# GLOBAL AGENDA OF ACTION

IN SUPPORT OF SUSTAINABLE LIVESTOCK SECTOR DEVELOPMENT

## Focus Area 1: Closing the efficiency gap

### Livestock projects

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# 1. Background – 1st Guiding Group meeting (Rome, June 2013)

1. Scoping for existing examples of resource efficiency in livestock production; what is resource efficiency
2. Identify, list, and document projects and systems with best practices; extract lessons for road forward
3. Review of existing projects with which we can link/ build upon/learn from
4. Screening of project(s) for initial study

## 2. Objectives

### Objectives and expected outcomes

1. Explore within the FA1 members, current livestock projects where efficiency and NRU have been measured or evaluated
2. Define criteria for selecting and compiling livestock projects which can be linked to the FA1
3. Discuss how can the FA1 be linked to these L. Projects and vice versa

# 3. What we have? Feedback from the FA1

	Name of the project	Sector coverage and efficiency working areas	Start and end dates of the project	Brief description of the project objectives	Main project's results in relation to FA1	Availability of project's results
<b>ATB</b>	AgroHyd	dairy farming (feed, feeding strategies, milk performance, replacement rate); beef cattle (feed, feeding strategies)	April 2011 - March 2014	To build a database of water indicators from various regions for evaluating differences in water productivity between farm systems and regions. The database can be used as a reference for farmers and other decision makers to develop strategies to improve local water productivity.	The water productivity is calculated which describes the relation of the yield per m <sup>3</sup> water. To analyse the influence of the management strategies at the farm scale different scenarios are calculated and assessed. E.g. the calculations show that an increasing milk yield improves the water productivity, but this effect is changing at milk yields from 10000kg FCM.	
<b>Novus Internatioal Inc and the University of British Columbia</b>	Novus C.O.W.S. Program	Dairy cattle, productivity, management, lameness, skin injuries, animal health and welfare (well-being)	May 2010 - present	The primary goal is to improve the welfare of dairy cattle and the economic well-being of farmers through the identification of challenges and bottlenecks in dairy production through an objective on farm evaluation of management, facility design, and cow comfort factors. To facilitate change by creating regional benchmarks across North America	Metrics used to evaluate efficiency of the program include re-assessments of participating farms. Working collaboratively with the owner, nutrition consultants, herd veterinarians and any other stakeholders involved. It is well established that improved health and welfare (e.g. reduced lameness) will have a positive impact on production, feed efficiency, and reproduction.	The entire project from its inception to its application is grounded in science. This practical on farm tool has also contributed significantly to the scientific literature.
<b>Novus Brasil--Globoaves--SEBRAE--Alagoas State Government</b>	Small Farmer Poultry Production (PAF)	To produce more affordable protein, both meat and eggs, for improving the quality of life. Public-private partnership(Alagoas State Govern., SEBRAE, a State agency for micro business development, Universidade Estadual de Alagoas (UNEAL), Globoaves, Brasil's largest producer of day-old chicks and fertilized eggs and Novus Brasil	The PAF started in 2009 and has grown to 500 families. The program goal is to include 3,000 families in 15 municipalities in the next two years	To leverage poultry production as a driver for improving livelihood of small farmers for increased egg and poultry meat production. The program also helps producers to get organized in micro cooperatives for improving scale.	The main measurement for success is family income that has increased to USD500 per family per cycle. Also it is important to note that families have used part of their profits for buying new flocks of chicks and feeds to maintain production. Family exit from the program is minimal	The project resulted in several publications in scientific magazines focusing on the nutritional value of cassava (Poultry Science, Revista Brasileira de Zootecnia). There was also an abstract on the economical feasibility of the project presented at the 22nd Brazilian Poultry Congress in 2013. All research was conducted by the Animal Science Department of the UNEAL

# 3. What we have? Other approaches – AHDB/EBLEX

	Name of the project	Sector coverage and efficiency working areas	Brief description of the project objectives
AHDB/EBLEX	MANNER NPK	livestock manure efficiency calculator	easy estimation of nutrient availability and losses for crop production
	UK Greenhouse gas action plan		description of activities and focus for reducing GHG from English agricultural production
EBLEX		beef, sheep, general	
	sheep parasite control measure	Review of sheep parasite control measures with reference to climate change	
	Climate change generic projects	forage and legumes production, water and nutrient use. LCA beef and sheep production, water footprinting and bio diversity, carbon costs	
DairyCo	Range of production efficiency projects	dairy feeding, GHG emissions related to soil compaction and loosening,	
DairyCo	Environment related projects	carbon footprinting of dairy systems	includes nitrogen use, water & carbon footprint
HGCA	Environmental roadmap	GHG assessment of UK cereal and oilseed production	
BPEX	Environment Roadmap	English pig production, indoor and outdoor systems	identify current status and efficiency improvements to 2020
BPEX	Evaluation of onfarm carbon foot printing of pig production	assessment of farm carbon foot prints to assess ease of measurement and variation	to assess value of individual farm footprints
BPEX	Lifecycle assessment of English pig production - roadmap update	assessment of improvements in production KPI's since 2010	To ascertain if Roadmap targets are on course or to be met
BPEX	Greenpig project	evaluation of home grown protein crops to imported Soya bean meal	to establish feasibility of home grown protein crop production as a substitute to imported SBM
BPEX	Reduction in energy usage and environmental footprint using biological growth models	optimisation of animal nutrition, manure management and genetics in pig production	establish benefits and interaction of improvements
BPEX	Demonstrating environmental and economic benefits of reducing phosphorus excretion in pigs	studies of sows and finisher pigs	establishing optimum levels of P inclusion in pig diets to maintain growth and reduce excretion
	Energy measurement in commercial pig production	measuring energy use on commercial pig farms all production stages	establish energy use
BPEX	low protein diets for pig production		establishing lowest practical levels of protein inclusions for growing and finishing pigs
EC Joint R.C.	Intensive rearing of poultry and pigs, best available techniques reference document (bref)	intensive rearing of pigs and poultry within EU member states	to identify BAT for pig and poultry rearing to reduce emissions, includes feeding, housing and manure handling with emission factors and predicted reductions for each technique.

# 3. What we have? Other approaches – agri benchmark - network

Country	Species	Name of the project	Working areas	Impact areas	Main actions
Namibia	Cattle	Livestock farmers mentorship program in the northern communal areas of Namibia	<ul style="list-style-type: none"> <li>▶ Low living standard of farmers</li> <li>▶ Overgrazing and land degradation</li> <li>▶ High livestock mortality</li> <li>▶ Low offtake rate</li> </ul>	<ul style="list-style-type: none"> <li>▶ Sustainable grazing systems established</li> <li>▶ Large numbers of animals marketed</li> <li>▶ Higher income from cattle sales</li> <li>▶ Improved living standard of farmers</li> </ul>	<ul style="list-style-type: none"> <li>▶ Adoption of improved husbandry practices</li> <li>▶ Balancing cattle numbers with grazing available</li> <li>▶ Adoption of animal health schemes</li> <li>▶ Selection and adquisition of improved breeding cattle</li> </ul>
Uruguay	Cattle	Improving management practices for a better rearing of cow-calf replacements	<ul style="list-style-type: none"> <li>▶ Low cow-calf replacement rates</li> <li>▶ Low fertility rates on cattle herds</li> <li>▶ Poor feeding management of female replacements</li> </ul>	<ul style="list-style-type: none"> <li>▶ Cow-calf fertility rates improved</li> <li>▶ Large number of animals marketed</li> <li>▶ Better socioeconomic conditions for farmers</li> </ul>	<ul style="list-style-type: none"> <li>▶ Revising and testing female rearing techniques</li> <li>▶ Adoption of improved fertility practices for herds</li> <li>▶ Improving the rearing period of cow-calf replacements</li> </ul>
Uruguay	Cattle	Monitoring forage productivity on cattle farms, using GIS programs	<ul style="list-style-type: none"> <li>▶ Variability on forage productivity on cattle farms</li> <li>▶ Overgrazing and land degradation</li> <li>▶ Short and medium term decisions on balancing numbers of animals and grass availability</li> </ul>	<ul style="list-style-type: none"> <li>▶ Improving forage use by livestock herds on grazing systems</li> <li>▶ Improving Cattle productivity</li> <li>▶ Improving socioeconomic conditions for livestock farmers</li> </ul>	<ul style="list-style-type: none"> <li>▶ Detailed monitoring program on forage productivity at the farm level</li> <li>▶ Forecasting forage productivity at the farm level</li> <li>▶ Balancing animal stock, according to forage availability</li> </ul>
China	Sheep	Sustainable Livestock Grazing Systems on Chinese Temperate Grasslands	<ul style="list-style-type: none"> <li>▶ Grasland persistence and resilience</li> <li>▶ Grasland management</li> <li>▶ Housing and breeding management</li> <li>▶ Herds management practices</li> <li>▶ Soil fertility and erosion</li> </ul>	<ul style="list-style-type: none"> <li>▶ Household welfare</li> <li>▶ Improving livestock productivity</li> <li>▶ Improving soil quality</li> <li>▶ Improving forage use by livestock herds</li> <li>▶ Improving forage productivity</li> </ul>	<ul style="list-style-type: none"> <li>▶ Monitoring grassland performance used by livestock herds</li> <li>▶ Measuring land degradation on livestock farms</li> <li>▶ Implementing land management practices for improving livestock productivity</li> </ul>
Colombia	Cattle	Introducing silvopastoral systems on cattle farms for climate change mitigation and poverty reduction	<ul style="list-style-type: none"> <li>▶ Low animal performance on tropical regions</li> <li>▶ Overgrazing</li> <li>▶ Low land productivity</li> <li>▶ Expansion of production to natural areas</li> </ul>	<ul style="list-style-type: none"> <li>▶ Increase livestock productivity</li> <li>▶ Improve forage production efficiency</li> <li>▶ Improve forage availability on tropical areas</li> <li>▶ Reduce production expansion to natural areas</li> <li>▶ Climate change, biodiversity</li> </ul>	<ul style="list-style-type: none"> <li>▶ Introduction of silvopastoral systems on tropical regions used by cattle farms</li> <li>▶ Improve soil fertility</li> <li>▶ Adoption and adaptation of silvopastoral management programs</li> </ul>

### **3. What we have?** Other approaches – ILRI

#### **ILRI**

- 1. Livestock and fish value chain approach – regional projects**
- 2. Specific in country projects (Botswana, Africa)**



# 5. Presenting livestock projects in relation to FA1

1. ILRI

2. agri benchmark

3. AHDB/EBLEX

4. NOVUS

5. ATB

# 4. Discussion

1. Criteria for selecting and compiling livestock projects

NRU + efficiency

LCA

Livestock+environment

Productivity

Animal species coverage

Methodological assessment

Regional coverage

2. What can we do with these projects?

Project data bank

Platforms for FA1 issues

Expanding piloting activities

3. How to link these projects to the Agenda (FA1)

How to approach

What sort of linkages

What can we offer to them

4. Do we have to expand the scope of this exercise ?

Other FAs/MSP

Approach to other agencies