



# INCEPTION REPORT

APRIL 2015

## Evaluation of the CGIAR Research Programme on Livestock and Fish

*More meat, milk and fish by and for the poor*

Anni McLeod (Team Leader)  
Sophie Zimm (IEA)

With contributions from  
Rex Dunham, John Morton,  
Peter Udén, Felix von Sury,  
Ed Rege & Brian Perry



Independent  
Evaluation  
Arrangement

## Table of contents

LIST OF ABBREVIATIONS .....	iv
Executive summary .....	v
1. Introduction .....	1
1.1. Origins of the evaluation .....	1
1.2. Evaluation purpose and clients .....	2
1.3. Purpose and structure of the inception report .....	3
2. Background .....	4
2.1. Context of CGIAR Reform .....	4
2.2. Context of Livestock and Fish Research .....	5
2.3. Background to the CRP on Livestock and Fish (L&F) .....	13
2.4. Portfolio of the CRP on Livestock and Fish .....	18
2.5. Evaluability .....	22
3. Scope and analytical framework .....	23
4. Evaluation criteria and questions .....	25
4.1. Overarching questions .....	25
4.2. Evaluation criteria and questions .....	26
4.2.1. Relevance .....	27
4.2.2. Quality of Science .....	27
4.2.3. Effectiveness .....	27
4.2.4. Efficiency .....	28
4.2.5. Impact .....	28
4.2.6. Sustainability .....	29
4.2.7. Cross cutting issues .....	29
4.2.8. Organizational Performance .....	31
4.3. Interface between overarching questions and sub questions under the IEA evaluation criteria .....	32
4.4. Emerging issues .....	33
5. Evaluation approach and Methodology .....	33
5.1. Evaluation approach .....	33

5.2.	Sources of information and data.....	34
5.3.	Methods .....	35
5.3.1.	Preparatory phase .....	35
5.3.2.	Inception phase.....	35
5.3.3.	Inquiry phase .....	36
5.3.4.	Reporting phase .....	42
5.4.	Main limitations of the evaluation.....	43
6.	Organisation and Timing of the Evaluation .....	43
6.1.	Team composition and responsibilities .....	43
6.2.	Evaluation governance/roles and responsibilities .....	44
6.3.	Quality Assurance.....	46
6.4.	Timeline.....	46
6.5.	Deliverables and dissemination plans.....	48
6.6.	Feedback and Responses to the Evaluation.....	48
ANNEX A. -	ToR for the independent evaluation of Livestock and Fish .....	50
ANNEX B. -	Conclusions from the ISPC Commissioned White Paper on Livestock Research undertaken by the CGIAR.....	51
ANNEX C. -	EVALUATION TEAM .....	54
ANNEX D. -	WORK PLAN .....	57
ANNEX E. -	ORGANISATIONAL PERFORMANCE TOOLS AND CRITERIA.....	59
ANNEX F. -	PROVISIONAL STRUCTURE OF THE FINAL REPORT.....	60
ANNEX G. -	L&F FLAGSHIP AND CLUSTERS OF ACTIVITIES – POWB 2015.....	61

## Tables and figures

Table 1:	CRP evaluation stakeholders.....	3
Table 2:	L&F overview of bilateral and W3 funded projects .....	19
Table 3:	Projects with total budgets more than USD 2 million.....	20
Table 5:	Relationship between overarching questions and IEA criteria .....	32
Table 6:	Publication analysis criteria.....	39
Table 7:	Evaluation team members .....	43
Table 8:	L&F Evaluation RG members.....	45
Table 9:	Evaluation Timetable and Tentative Deliverables.....	46
Table 10:	Centre and field visit timeline .....	47
Figure 1:	L&F flagships .....	14

---

Figure 2: L&F expenditures until 2014.....	17
Figure 3: L&F POWB 2015.....	21

## LIST OF ABBREVIATIONS

AAS	CGIAR Research Program on Aquatic Agricultural Systems
ACIAR	Australian Centre for International Agricultural Research
ASF	Animal source food
CCEE	CRP-Commissioned Independent External Evaluation
CIAT	Centro Internacional de Agricultura Tropical / International Center for Tropical Agriculture
CO	Consortium Office
CoA	Cluster of Activities (CGIAR)
CRP	CGIAR Research Program
EPMR	External Program and Management Review (CGIAR)
FAO	Food and Agricultural Organization of the United Nations
FP	Flagship Project (CGIAR)
FTF AIN	Feed the Future: Aquaculture for Income and Nutrition (WorldFish project)
ICARDA	International Centre for Research in the Dry Areas
IDO	Intermediate Development Outcome
IEA	Independent Evaluation Arrangement (Rome)
IFAD	International Fund for Agricultural Development
ILCA	International Livestock Centre for Africa
ILRAD	International Laboratory for Research on Animal Diseases
ISPC	Independent Science and Partnership Council
IWMI	International Water Management Institute
L&F	Livestock and Fish CRP
NGO	Non-governmental organization (general)
NRM	Natural resource management
POWB	Program of Work and Budget
RG	Evaluation Reference Group
RinD	Research in Development
SASI	Flagship on Systems Analysis for Sustainable Innovation (L&F)
SPAC	Science and Partnership Advisory Committee
SRF	Strategy and Results Framework (CGIAR)
SLO	System-Level Outcome (CGIAR)
TOC	Theory of Change
ToR	Terms of Reference
VCTS	Flagship on Value Chain Transformation and Scaling (L&F)
W1	Window 1 funding type (CGIAR)
W2	Window 2 funding type (CGIAR)
W3	Window 3 funding type (CGIAR)

## EXECUTIVE SUMMARY

This Inception Report sets out the background to, and planning and programming for, an independent evaluation of the CGIAR Research Programme entitled Livestock and Fish, led by the International Livestock Research Institute (ILRI), in partnership with the International Center for Tropical Agriculture (CIAT), WorldFish and the International Centre for Research in the Dry Areas (ICARDA).

The Livestock and Fish (L&F) CRP is one of 15 multi-partner research programmes implemented by the CGIAR. It was initiated and has evolved in the context of a CGIAR-wide reform process being undertaken to ensure that CGIAR centres engage in high quality research of direct relevance to developing countries, while at the same having clear pathways for impact at the level of its key beneficiaries. The report reviews the evolution of livestock research within the CGIAR, and more specifically the objectives and approaches being taken by Livestock and Fish since its launch in January 2012. The current research portfolio and budget is presented, along with the programme structure and management arrangement.

The L&F CRP was launched in January 2012, with an initial three-year budget of USD 99.5 million, comprising a yearly budget of approximately USD 30 million rising to USD 36 million in the third year of operation. The CRP currently operates under five “Flagships”, four of which (Animal Health, Genetics, Feed and Forages, and Systems Analysis for Sustainable Innovation) are categorised as discovery projects, and one of which (Value Chain Transformation and Scaling (VCTS)) is categorised as a delivery project. Under the latter Flagship are nine value chain programmes addressing different livestock and fish commodities (dairy in Nicaragua, India and Tanzania; pork in Uganda and Vietnam; small ruminants in Ethiopia and Burkina Faso; and aquaculture in Egypt and Bangladesh).

The evaluation will cover two main dimensions of L&F’s activities, namely research performance and organisational performance. In research performance the evaluation will consider the progress and performance of L&F at four distinct, but interconnecting, levels and context. These are:

- Global scope: the research needs at the global level that relate to developing country livestock and aquaculture, and the role and comparative advantage of the CGIAR and its CRPs and Centres.
- The context and positioning of L&F in responding to these global needs.
- Past performance of L&F in meeting its stated objectives.
- Future pathways: the positioning and vision of L&F in addressing the livestock and fish research agenda for the post-2017 era.

As previously mentioned, the evaluation is being undertaken at a time when the CRP is adjusting its programme design in accordance with guidance from the CGIAR Consortium Office, and defining Intermediate Development Outcomes (IDOs) with target achievement goals for the medium-term (a 10-year time span), assigning measurable indicators for progress and results. The evaluation will assess the revised programmatic approach and the theories of change as a basis for the future framework of the CRP, examining the likelihood of its effectiveness to contribute to the CGIAR Strategic Research Framework (SRF) vision and System Level Outcomes (SLOs) as defined in the results framework. With regard to organisational performance, the evaluation will scrutinise governance and management structures and processes in place, and assess their cost-effectiveness.

The evaluation team has defined a dual analytical and reporting framework consisting of a) overarching questions addressing major issues and b) the evaluation criteria required by the IEA for all CRP evaluations. Thirteen overarching questions drive the evaluation. They are of two types; the first ten focus on the performance of the current programme, while the last three address the relevance of the programme portfolio to the global context of livestock and fish research, anticipating the call for the second round of CRPs.

1. Is the maxim “more meat, milk & fish – by & for the poor” credible and realistic? Two sub components of this question will be explored:
  - a. Does experience to date substantiate L&F’s objective to “increase productivity of small-scale livestock and fish systems so as to increase availability and affordability of meat, milk and fish for poor consumers and, in doing so, to reduce poverty through greater participation by the poor along animal source food value chains”?
  - b. Is it appropriate and useful to conflate the two objectives of improved nutrition and provision of animal source foods (ASF) by the poor?
  - c. How well is the programme addressing the issue of upscaling and outscaling its research outputs?
2. CRP Flagship coherence: is there a valid, demonstrable and logical contribution of the discovery flagships to the broader value chain-centred delivery flagship, and vice versa? Sub components of this question are:
  - a. Does the delivery flagship articulate and communicate demand for research to the discovery flagships?
  - b. Do the discovery flagships adequately capture demand articulated in the delivery flagship?
3. Does L&F have sufficient capacity (in all senses) to deliver on the promise of a whole value chain approach to enhancing the roles of livestock and fish?
4. What has been the added value (if any) of integrating previous livestock and fish research programmes into the CRP?
5. Does L&F have the appropriate partners for research on value chains, and is it using the right partnership models and principles?
6. How is explicitly integrated into the CRP to enhance impact?
7. To what extent has L&F leveraged capacity across the CGIAR centres?
8. How does L&F contribute to global poverty reduction through livestock and fish research?
9. How well has L&F delivered to date against planned outputs?
10. To what extent do governance and management arrangements in L&F help or hinder in reaching the program’s SLOs and IDOs?
11. Does L&F adequately cover poultry research (given the documented demand, nutritional value and opportunities offered by poultry)?
12. Does L&F adequately cover NRM and environmental issues associated with livestock and fish that are not captured within other CRPs?
13. Does L&F adequately cover post-harvest opportunities for value addition and loss avoidance that are not captured by livestock and fish research in other CRPs?

The report then goes on to identify the key areas of inquiry under the recognised IEA evaluation headings of science quality, relevance, effectiveness, efficiency, impact and sustainability, in addition to consideration of cross-cutting issues such as partnerships, capacity building, gender,

environment/natural resource management, and governance and management. Each of these criteria have a set of specific questions associated with them, and these are cross-tabulated with the overarching questions presented above.

To address these criteria and questions, the report sets out an evaluation approach and methodology, together with a timeline of activities and events which will constitute the evaluation process. The evaluation will visit and interact with senior management of the host institution ILRI, and with senior management and CRP-engaged scientists from the collaborating centres CIAT, WorldFish and ICARDA. The team will conduct an overview synthesis of research progress in each of the five Flagships, and will then undertake in depth analysis of a series of selected case studies in the Animal Health, Genetics and Feeds and Forages Flagships. These will be selected in consultation with CRP scientists and other stakeholders to obtain a cross section of research themes, participating centres and funding sources, as well as perceived successes and challenges. The evaluation will also undertake case studies of selected value chains, choosing one from each commodity group (dairy in Tanzania, dual purpose cattle in Nicaragua, aquaculture in Bangladesh, pork in Vietnam and small ruminants in Ethiopia). The evaluation will exploit a wide variety of tools to conduct the analysis, including extensive report compilation, literature review, semi-structured interviews, electronic questionnaire surveys, focus group panel discussions, and one day workshops. When planning visits to value chains the team will refer to the report of the CRP-commissioned evaluation of the value chain approach of L&F published in 2014.

The inception report presents the programme for the evaluation process. The Inquiry phase of the evaluation will run from March to August 2015, and a draft report will be developed by October 2015. Following circulation for comments and clarifications, the final report will be presented in December 2015, following which the CRP and Centre leadership will be invited to respond. It is anticipated that the final report will be available for public distribution later in January 2016.



## 1. INTRODUCTION

### 1.1. Origins of the evaluation

Research in the CGIAR is guided by the Strategy and Results Framework (SRF), which sets forth the System's common goals in terms of development impact (System-Level Outcomes [SLOs])<sup>1</sup>, strategic objectives and results, in terms of outputs and outcomes. The SRF was first approved in 2011 and is currently being updated. The CGIAR's research agenda is implemented by the CGIAR Centres and their partners through 15 multi-partner CGIAR Research Programmes (CRPs), along with additional work undertaken by the Centres directly. Research is funded through a pooled funding mechanism in the Fund<sup>2</sup>, and through bilateral funding to Centres. In the SRF Management Update under preparation, a set of Intermediate Development Outcomes (IDOs) linked to the high level impact goals will be defined to form the operational results framework for the CRPs.

In the CGIAR, the Independent Evaluation Arrangement (IEA) Office<sup>3</sup> is responsible for System-level Independent External Evaluations. The mandate of the IEA is to facilitate the implementation of the CGIAR Policy<sup>4</sup> for Independent External Evaluations, through strategic evaluations of the CRPs and institutional elements of the CGIAR, and through the development of a coordinated, harmonized and cost-effective evaluation system in the CGIAR.

The IEA's Rolling Work Plan for 2014-17, approved in November 2013 by the Fund Council, foresees the evaluation of up to 10 CRPs over the 2013-2015 period. The order in which the CRPs will be evaluated was established on the basis of different criteria, such as the size of the CRP, its starting date, the extent to which it carries on past Centre research, and the time elapsed since the lead Centre was evaluated through an External Programme and Management Review (EPMR). The CGIAR Research Programme on Livestock and Fish<sup>5</sup> is one of the CRPs to be evaluated in 2015<sup>6</sup>. The programme is currently in its first phase and has just submitted its Extension Proposal for 2015-2016<sup>7</sup>, which has been reviewed by the ISPC and the Consortium Office, and responded to by the CRP<sup>8</sup>. This is an intermediate step; the second phase of CRPs, which will start in 2017, may involve more substantive changes.

<sup>1</sup> Defined as four System-Level Outcomes: reduction of poverty, improvement of food security, increasing nutrition and health; and more sustainable management of natural resources.

<sup>2</sup> The CGIAR Fund is a multi-donor, multi-year funding mechanism that provides funding to (i) CRPs through two "Windows"; Window 1 across CRPs as per Consortium decision and Window 2 to donor-specified CRP; and to (ii) donor-specified Centres through Window 3.

<sup>3</sup> <http://iea.cgiar.org/>

<sup>4</sup> [http://www.cgiarfund.org/sites/cgiarfund.org/files/Documents/PDF/CGIAR\\_evaluation\\_policy\\_jan2012.pdf](http://www.cgiarfund.org/sites/cgiarfund.org/files/Documents/PDF/CGIAR_evaluation_policy_jan2012.pdf)

<sup>5</sup> <http://livestockfish.cgiar.org/>

<sup>6</sup> The CRPs which are going to be evaluated in 2015 are: Climate Change, Agriculture and Food Security (CAAFS), Rice, known as the Global Rice Science Partnership (GRiSP), Water, Land and Ecosystems (WLE).

<sup>7</sup> <https://library.cgiar.org/bitstream/handle/10947/3322/1-Livestock%20%26%20Fish%20Extension%20Request%20Proposal%2028Apr14.pdf?sequence=1>

<sup>8</sup> <http://library.cgiar.org/bitstream/handle/10947/3327/6-LF%20Response%20to%20extension%20proposal%20comments%20PDF.pdf?sequence=4>

## 1.2. Evaluation purpose and clients

---

The principal purpose of this evaluation, a forward looking process, is to enhance the contribution that L&F is likely to make to reaching CGIAR goals, in particular food and nutrition security, and the programme objective of increasing productivity of small-scale livestock and fish production systems and performance of associated value chains.

As for all CRP evaluations, the purpose of the evaluation of L&F is to inform decision-making and planning by programme management, supervisory bodies, CRP sponsors, partners and other stakeholders with respect to programme performance and the potential options for the future. This might relate to programme context, programme structuring, partnerships, elements of expansion or reduction of components, or other potential adjustments in programme to improve its performance. In November 2013, the Fund Council of the CGIAR agreed that the call for the second round of CRPs and full proposal development will not be initiated until all current CRPs have undergone some form of external evaluation. The evaluation of L&F is therefore expected to provide information to assist decisions on the programme formulation and selection in the second funding call in 2016. Taking into account the stage of the programme, and given its nature and timelines for results, the evaluation aims to provide an overview and critical analysis of the relevance of the programme and its achievements to date and/or progress towards their achievement.

The evaluation provides both accountability, re-enforcing the principle of mutual accountability and responsibility among programme, donors and partners, and learning among the CRP and its stakeholders for improving the likelihood of programme relevance, effectiveness, efficiency, impacts and sustainable results. It will look at the extent to which L&F, within its mandate, is responding to the key aspirations underlying the CGIAR reform related to vision and focus, delivery orientation, synergy through efficient and effective partnerships and accountability.

The main stakeholders of this evaluation are the management of L&F, all participating Centres (CIAT, ICARDA, ILRI, WorldFish), partners associated with the Programme, the CGIAR Fund Council, and the Consortium Board (see Table 1 below).

**Table 1: CRP evaluation stakeholders**

Type of stakeholder	Role in CRP	Interest in evaluation
<b>CRP level</b>		
ILRI Board	Legal contractual responsibility for L&F	Consistency with responsible budgetary management and ILRI strategic plan.
L&F PPMC and management team	Management of L&F	Lessons learned to increase performance of L&F
SPAC	Oversight of L&F Strategic advice for L&F	Accountability L&F performance Lessons learned about effectiveness of Governance committees
L&F Researchers	Carry out research	Research performance
<b>Centre level</b>		
ILRI management and Board and management of participating centres	Management of L&F Fiduciary responsibility Oversight of the CRP Oversight of L&F activities carried out by each centre	Organizational performance Comparative advantage Accountability and oversight
<b>CGIAR level</b>		
CGIAR Fund Council	Oversight on use of funds for L&F	Accountability CRP performance Decision making for resource allocation
Donors of bilateral projects	Funding source	Accountability L&F performance Decision making for resource allocation
CGIAR Consortium	Integrating L&F research with other CRPs, strategic alignment of CRPs, coordinating between CRPs	Lessons learned to increase the effectiveness and relevance of the work of the CGIAR; Lessons learned to increase the efficiency and accountability of the CGIAR.
<b>Partners</b>		
Research partners	Participate in the design and conduct of L&F research	Research Performance Collaboration mechanisms, Capacity development
Development and Boundary Partners	Targeted stakeholders for implementing change	Relevance of L&F and its research, Research Performance, Collaboration mechanisms, Capacity development
Beneficiaries; e.g. policy-makers, farmers	Targeted clientele for development oriented research	Relevance, effectiveness and impact of L&F and its research

*Source: IEA.*

## 1.3. Purpose and structure of the inception report

The inception report is intended to lay out the scope and framework of the evaluation and to outline the approach and methods proposed; these are subject to refinement up to and during the first formal meeting of the team, planned for early 2015. It builds substantially on the Terms of Reference (ANNEX A), providing substantial detail on the evaluation process and the lines of inquiry.

Section 2 provides background material on the CGIAR reform process and the development of the Livestock and Fish programme. Section 3 outlines the scope of the evaluation and clarifies what it will and will not cover. Sections 4 and 5 describe the approach and methods that the evaluation team will employ, while Section 6 covers the logistics of the evaluation. Additional detail is provided in annexes.

## 2. BACKGROUND

### 2.1. Context of CGIAR Reform

The latest round of CGIAR reform was initiated in 2008. The CGIAR donors, in a Joint Declaration, agreed on the following main principles for the reform:

- 1) "To harmonize our approach to funding and implementing international agricultural research for development through the CGIAR Fund (the Fund), The Strategy and Results Framework (SRF) and the consortium established by the Centres (the Consortium), respectively;
- 2) To manage for results in accordance with the agreed SRF and the Mega Programs that derive from the SRF;
- 3) To ensure effective governance and efficient operations in the provision and use of our resources; and
- 4) To collaborate and partner with and among funders, implementers, and users of SRF research, as well as other external partners supporting the SRF."

The SRF was approved in 2011 at a time when the Centre-led CRPs had already been developed, and two of them had been approved. The current CRPs did not therefore emerge as a direct response to the SRF, although the SRF is intended to provide the broad rationale and context for the development, implementation and evaluation of all CRPs. In the current SRF, one of the areas for developing or strengthening competence was research on production systems.

The concept of innovation systems was recognized as important in the changing institutional landscape of agricultural research. Subsequently three "systems" CRPs were approved: drylands, humid tropics and aquatic agricultural systems.

The CRPs were developed and appraised following a set of common criteria that addressed the (i) strategic programme coherence; (ii) focus on delivering outcomes and impacts towards the SLOs; (iii) quality of science; (iv), management of partnerships, including both research and development partners; (v) efficiency of programme management; and (vi) accountability, sound financial planning and efficiency of governance.

Under Consortium Office coordination and instructions, since 2012 a set of Intermediate Development Outcomes (IDOs) has been developed. The IDOs link the CGIAR research to the SLOs and should facilitate priority setting, again both at the CGIAR and CRP levels. Simultaneously, CRPs have been instructed to use the notion of Flagship Projects (FPs) to restructure their programmes, with clusters of activities being set within each FP. In principle, each FP should contribute to one or more IDOs, and thereby to the SLOs. The articulation of theories of change and impact pathways – leading from research activities to the achievement of the IDOs – was also required. Specifically the CRPs were instructed to define the IDOs in terms of clear target domains (agro-ecologies and end user groups) and measurable results at the outcome level. Importantly the CGIAR (and CRP) IDOs are

still considered as work in progress. The major purpose of the work done in 2013 and 2014 was to get the CRPs focused on outcomes, to identify how to measure progress against these outcomes, and to better understand what is required to achieve these. These insights will inform the design of the next phase of CRPs (2017 onwards) and contribute to developing a Results-based Management System.

### **Box 1: Major Sources of Funding in the CGIAR System**

To maximize coordination and harmonization of funding, donors to CGIAR are strongly encouraged to channel their resources through the CGIAR Fund. Donors to the Fund may designate their contributions to one or more of three funding “windows”:

- Contributions to **Window 1** (W1) are the least restricted, leaving to the Fund Council how these funds are allocated to CGIAR Research Programs, used to pay system costs or otherwise applied to achieving the CGIAR mission.
- Contributions to **Window 2** (W2) are designated by Fund donors to specific CGIAR Research Programmes.
- Contributions to **Window 3** (W3) are allocated by Fund donors to specific CGIAR Centres and mostly for specific projects; they resemble bilateral contributions except that they are routed through the CGIAR which stays with a service charge of 2%.

Participating Centres also mobilize financial resources for specific activities directly from donors as **bilateral funding** and negotiate agreements with their respective donors for the use of these resources.

Source: CGIAR website: <http://www.cgiar.org/who-we-are/cgiar-fund/>

The funding sources available to CRPs in the reformed CGIAR are shown in Box 1.

The W1/W2 components of the budget are the least restricted. Their initial level was set on the basis of the core funding in the period preceding the CRP (i.e. 2010).

The internal reform context has also involved development of guidelines and templates for annual reporting to the Consortium regarding all sources of funding. In parallel, bilateral funders have their own specific reporting requirements. Given that bilateral funding remains a significant proportion of all funding, the reform does not appear to have yet reduced the reporting burden significantly.

Most CRPs were initially approved for a three-year period to run in parallel to the SRF. As the evaluation of L&F is beginning, an updated SRF is being prepared by the Consortium Office to include system-level research funding priorities. At the same time, L&F, as all CRPs, has applied for extension funding for 2015-16. A proposal was submitted in April 2014 and approved after responding to Consortium comments. Finally, a process for the 2<sup>nd</sup> call of CRPs is in preparation, and a CGIAR Mid-Term Review is being completed to provide assessment of and guidance for the reform. This rapid schedule in the implementation of the reform is putting pressure on the CRPs and their partners. It also has implications for the L&F evaluation in terms of the evolving CGIAR and CRP context.

## **2.2. Context of Livestock and Fish Research**

This section summarises the major global drivers of research in livestock and fish, particularly from the perspective of the growing demands for animal source foods (ASF) including those from both livestock and fish, and the contributions that livestock and fish make to food and nutrition security and livelihoods, and reviews the historical contributions to such research by the CGIAR.

- (i) **The global human population** will likely grow from 7 to 9 billion people by 2050, but the rate of growth is slowing, and the proportion of the population that is hungry continues to decrease significantly. A major correlate of the deceleration in population growth is increased wealth and purchasing power, which is associated with higher consumption of, and greater demand for, meat, dairy products, eggs and fish (see for example Godfray et al. 2010<sup>9</sup>). This is of particular importance in developing countries, and African meat and milk markets in particular represent a major business opportunity for livestock producers (see Livestock Data Innovation in Africa Project 2013<sup>10</sup>). Furthermore, the pattern of consumption in developing countries is changing, with a substantial increase in the proportion of poultry meat in most areas of Asia and Africa (Herrero et al. 2014<sup>11</sup>). Consumption of fish has been growing at a rate of 3.6% per year since 1961 (FAO 2012<sup>12</sup>). The global wild fish supply peaked 20 years ago, has remained stagnant and has been at maximum sustainable yield (FAO 2014<sup>13</sup>, Waite et al. 2014<sup>14</sup>). With the human population increasing, farmed fish and shellfish production will need to increase 133 percent by 2050 to meet projected fish demand worldwide (FAO 2014, Waite et al. 2014). Currently, aquaculture is increasing 6.2 % per year with the fastest rate of growth, 10-11%, in Africa, the Caribbean and Latin America (FAO 2014). Aquaculture production is now broadly equal in tonnage to fish landings from commercial fisheries.
- (ii) **Trade patterns** have a strong influence on livestock sector development. Growth in demand has provided rapidly increasing national, regional and international market opportunities for livestock products produced in developing countries (see for example Alexandratos and Bruinsma 2012<sup>15</sup>). The livestock sector is increasingly organized in long market chains that employ at least 1.3 billion people globally and directly support the livelihoods of 600 million poor smallholder farmers in the developing world (Thornton et al. 2006<sup>16</sup>). Fish is the most traded commodity in the world (FAO 2014), and in developing countries sometimes accounts for 50% of the value of traded commodities and 10% of total agriculture exports. Export of fish and fishery products from Asia is growing, particularly from China, Thailand and Viet Nam, with the developed world the main importer (FAO 2014<sup>17</sup>). Since 1961, *per capita*

<sup>9</sup> Godfray et al., 2010. Food Security; the challenge of feeding 9 billion people. *Science* **327**, 812- 818

<sup>10</sup> Investing in African Livestock: business opportunities in 2030-2050

<http://www.fao.org/docrep/018/al757e/al757e.pdf>

<sup>11</sup> Herrero, M., Havlik, P., McIntire, J., Palazzo, A. and Valin, H. 2014. African Livestock Futures: Realizing the Potential of Livestock for Food Security, Poverty Reduction and the Environment in Sub-Saharan Africa. Office of the Special Representative of the UN Secretary General for Food Security and Nutrition and the United Nations System Influenza Coordination (UNSIC), Geneva, Switzerland, 118 p. [http://un-influenza.org/sites/default/files/alf/LiveStock\\_Report\\_ENG\\_20140725\\_02\\_web.pdf](http://un-influenza.org/sites/default/files/alf/LiveStock_Report_ENG_20140725_02_web.pdf)

<sup>12</sup> FAO. 2012. State of World Fisheries and Aquaculture, Rome, FAO.

<sup>13</sup> FAO. 2014. State of World Fisheries and Aquaculture, Rome, FAO

<sup>14</sup> Waite, R., M. Beveridge, R. Brummett, S. Castine, N. Chaiyawannakarn, S. Caushik, R. Mungkung, S. Nawapakpilai and M. Phillips. 2014. Installment 5 of "creating a sustainable food future" improving productivity and environmental performance of aquaculture. World Research Institute Working Paper. Washington, DC, USA. Accessible at [www.worldresourcesreport.org](http://www.worldresourcesreport.org)

<sup>15</sup> Alexandratos, N. & Bruinsma, J. 2012. World agriculture towards 2030/2050: the 2012 revision. ESA Working paper No. 12-03. Rome, FAO.

[http://www.fao.org/fileadmin/templates/esa/Global\\_persepctives/world\\_ag\\_2030\\_50\\_2012\\_rev.pdf](http://www.fao.org/fileadmin/templates/esa/Global_persepctives/world_ag_2030_50_2012_rev.pdf)

<sup>16</sup> Thornton, P. K. et al. 2006 Mapping climate vulnerability and poverty in Africa. Nairobi, Kenya: ILRI. See <http://www.dfid.gov.uk/research/mapping-climate.pdf>

<sup>17</sup> FAO. 2014. State of World Fisheries and Aquaculture, Rome, FAO.

consumption of fish has risen from 19.7 kg to 28.7 kg for industrialized countries, a growth rate close to 1% per year. Since aquaculture and fisheries production has decreased in developed countries (down 10 percent in the period 2000–2010), this presents an excellent trade opportunity for developing countries, providing an income source for the poor. Imports from developing countries are projected to continue to grow. The animal health and food safety requirements of market chains involving large retailers and international trade increase the cost of marketing and affect investment patterns and smallholder market access.

- (iii) **Animal source foods (ASF)** provide a critical supplement and diversity to staple plant-based diets (see for example Murphy and Allen 2003; FAO 2014<sup>18</sup>). ASF are particularly appropriate for combating malnutrition and a range of nutritional deficiencies (see for example Randolph et al. 2007<sup>19</sup>). They are energy-dense and good sources of protein and a large number of key micronutrients. ASF can measurably enhance quality in diets, especially for nutritionally vulnerable groups such as young children and pregnant and lactating women. Nutrients in ASF (e.g., iron and zinc) often exhibit greater bioavailability than those from plant sources. ASF consumption is very low in undernourished populations; under these circumstances moderate increases in ASF consumption provide critical nutritional benefits with little potential of crossing the threshold of significant risk for chronic disease. The high nutrient density of ASF makes them attractive as a food-based intervention for populations that have difficulty consuming large volumes of food, including very young children and people living with HIV/AIDS. Approximately, one billion people rely on fish as their main source of animal proteins. The contribution of fish to total animal protein intake is almost 20% for low-income deficit countries (FAO 2012) with three billion people obtaining 20 percent of their average per capita intake of animal protein from fish and 4.3 billion people with 15 percent of their animal protein intake from fish.

Fish proteins can be especially crucial part of the diet in some densely populated countries where total protein intake levels may be low (FAO 2014). In these cases, fish may be the only affordable animal protein, but also the preferred traditional food. In some small island developing states, Bangladesh, Cambodia, Ghana, the Gambia, Indonesia, Sierra Leone and Sri Lanka, fish provides up to, or exceeds, 50 percent of total animal protein intake. Not only does fish provide protein, but they contain micronutrients and omega-3 fatty acids essential for child and maternal health, brain development and health in general (Cheng et al. 2014<sup>20</sup>, Waite et al. 2014).

- (iv) **Income generation.** Livestock products themselves, employment in service to livestock enterprises, or employment at various points along animal source food value chains in most developing countries contributes to food security by providing income that can be used to purchase staple food (for example, McDermott et al. 1999<sup>21</sup>; Perry and Grace 2009<sup>22</sup>; FAO

<sup>18</sup> Murphy, S. P., and L. H. Allen. 2003. Nutritional importance of animal source foods. *J. Nutr.* 133(11S-II):3932S-3935S; FAO op cit.

<sup>19</sup> T. F. Randolph, E. Schelling, D. Grace, C. F. Nicholson, J. L. Leroy, D. C. Cole, M. W. Demment, A. Omoro, J. Zinsstag, and M. Ruel (2007). Role of livestock in human nutrition and health for poverty reduction in developing countries. *J. Anim. Sci.* 2007. 85:2788–2800 doi:10.2527/jas.2007-0467

[http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1082&context=agb\\_fac](http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1082&context=agb_fac)

<sup>20</sup> Cheng, Q., B. Su, Z. Qin, C.-C. Weng, F. Yin, Y. Zhou, M. Fobes, D. A. Perera, M. Shang, F. Soller, Z. Shi, A. Davis and R. A. Dunham. 2014. Interaction of diet and the masou salmon delta5-desaturase transgene on delta 6-desaturase and stearyl-coa desaturase gene expression and n-3 fatty acid level in common carp (*Cyprinus carpio*). *Transgenic Research*. (DOI) 10.1007/s11248-014-9812-1.

<sup>21</sup> McDermott, J.J., Randolph, T.F., Staal, S.J. (1999). The economics of optimal health and productivity

2009<sup>23</sup> and FAO 2011<sup>24</sup>). The primary sector for fisheries and aquaculture employs 58.3 million people with 18.9 million in aquaculture (FAO 2014). The employment sector is growing faster than the world population and of those in the aquaculture sector, 84% are employed in Asia, 10% in Africa and 3.9% in Caribbean and Latin America. Women represent 15% of the employment in the primary sector. All sectors combined, fisheries and aquaculture provide livelihood (full-time and/or part-time) for 10-12 % of the world's population (FAO 2014).

Value chain development is important in fisheries and aquaculture. A total of 46% of fish are sold live, fresh or chilled and 54% are used for further processing (FAO 2014). Additionally, consumption of frozen products has increased from 10-24% during the past 20 years in developing country while processed fish are the vast majority of fish consumed in developed countries. Exports of fish products total 129 billion dollars worldwide. The increasing demand for fish is outstripping supply and fish prices are rising 10-12% per year, stimulating increased investment in aquaculture (FAO 2013<sup>25</sup>). Additionally, the secondary sector has important implications for gender equity as women sometimes represent upwards to 90% of the employees, especially in processing (FAO 2014), although men usually dominate the higher management.

- (v) **Providing Manure.** Livestock waste is often an important input for maintaining soil fertility, and so contributes to greater crop production for food and income. In some areas, dung is also used as a fuel. Dung for fertilizer, fuel, and building material is often a marketable commodity (reviewed by Randolph et al. 2007). It is estimated that globally livestock manure supplies up to 12% of gross nitrogen input for cropping and up to 23% in mixed crop–livestock systems in developing countries (Liu et al. 2010<sup>26</sup>). One mechanism for reducing pollution from aquaculture and turning that waste to a beneficial product is through harvesting algae and converting it into feed, oil or biodiesel (Halim et al. 2012<sup>27</sup>). These systems are becoming more feasible (Wiley et al. 2009<sup>28</sup>). Technology needs improvement for economic harvest of algae (Singh et al. 2010<sup>29</sup>). Additionally, plants can be grown with waste water, aquaponics (Rakocy et al. 2006<sup>30</sup>).
- (vi) **Exploiting crop residues for feed.** In many mixed small-scale crop–livestock systems in Africa and Asia the main animal feed comprises crop residues (Erenstein et al. 2013<sup>31</sup>). This enables

---

in smallholder livestock systems in developing countries. *Rev. sci. tech. Off. int. Epiz.*, 1999.18 (2), 399-424.

<sup>22</sup> Perry, B.D. and Grace, D. (2009). The impacts of livestock diseases and their control on growth and development processes that are pro-poor. *Philosophical Transactions of the Royal Society, B*, 364, 2643 - 2655.

<sup>23</sup> FAO (2009). *Livestock in the Balance. The State of Food and Agriculture Series*, FAO, Rome, 166 pp.

<sup>24</sup> FAO. 2011b. *World Livestock 2011 – Livestock in food security*. Rome  
<http://www.fao.org/docrep/019/i3440e/i3440e.pdf>.

<sup>25</sup> FAO. 2013. *State of World Fisheries and Aquaculture*, Rome, FAO.

<sup>26</sup> Liu, J. et al., 2010. A high-resolution assessment on global nitrogen flows in cropland. *Proc Natl Acad Sci U S A*. 107(17): 8035–8040 <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2867927/>

<sup>27</sup> Halim, R., M. K. Danquah and P. A. Webley. 2012. Extraction of oil from microalgae for biodiesel production: A review. *Biotechnology Advances*. 30: 709-732.

<sup>28</sup> Wiley, P. E., K. J. Breneman and A. E. Jacobson. 2009. Improved algal harvesting using suspended air flotation. *Water Environment Research*. 81: 702-708.

<sup>29</sup> Singh, A., P. S. Nigam and J. D. Murphy. 2010 Mechanism and challenges in commercialisation of algal biofuels. *Bioresource Technology*. 01/2011; 102(1):26-34. DOI: 10.1016/j.biortech.2010.06.057

<sup>30</sup> Rakocy, J.E., M. P. Masser and T. M. Losordo. 2006. *Recirculating Aquaculture Tank Production Systems: Integrating Fish*. SRAC publication 454. SRAC, Stoneville, MS, USA

<sup>31</sup> Erenstein, Blummel, Grings 2013. Special Edition of *Field Crops Research* 153 (2013)

<http://www.sciencedirect.com/science/journal/03784290/153/supp/C>



- animal source foods to be produced without competing with people for food. Integrated crop-livestock-fish systems efficiently utilize resources (Edwards et al. 1988<sup>32</sup>), although total production is limited in these systems.
- (vii) **Producing Power.** In many mixed crop-livestock systems, cattle provide traction power for transportation and crop production, for domestic use and for hire (Kaumbutho et al. (eds) 2000<sup>33</sup>, Scoones and Wolmer (eds.) 2002<sup>34</sup>).
  - (viii) **Serving as Financial Instruments.** Access to credit and finance is a major constraint to food security in many developing countries. Livestock may offer options for conversion into cash to enable expenditure on food and non-food goods and services, savings, capital accumulation, consumption-smoothing and insurance, providing assets that can be sold in times of crisis (Dorward et al. 2005, Kitalyi et al. 2005<sup>35</sup>).
  - (ix) **Social and Cultural Value.** In many societies possession of livestock serves to enhance the social status of individuals, but also to build social ties or social capital in the community at large, through institutions such as traditional stock loans and stock friendships, and bridewealth payments (Morton and Meadows 2000, Kitalyi et al. 2005<sup>36</sup>). In pastoral and some other societies livestock also have a profound cultural and aesthetic value.
  - (x) **Opportunities for empowering women.** Women are likely, in a great variety of livestock and fish production systems worldwide, to be disproportionately associated with the ownership and management of small ruminants, poultry and farmed fish. A growing body of evidence suggests that increasing women's control over assets, has positive effects on food security, child nutrition, and education, as well as women's wellbeing (see for example IDRC 2013<sup>37</sup>). Appropriate livestock and aquaculture development can thus contribute to MDG 3 on increasing gender equality and empowering women, and to the corresponding SDGs.
  - (xi) **Concerns about climate change, natural resource conservation and environmental sustainability.** Climate change poses multiple and complex threats to livestock production and health both through increasing climate variability and projected changes in mean temperature and precipitation (Thornton et al. 2009<sup>38</sup>). Provision of reliable and reasonably priced water and energy supplies continues to be a challenge, and may be particularly problematic for developing countries that cannot invest in advanced technology. At the same time there is increased concern about the negative impacts of livestock on many domains of the environment, and especially the contribution of livestock production to

<sup>32</sup> Edwards, P., R.S. V. Pullin and J. A. Gartner. 1988. Research and education for development of integrated crop- livestock-fish farming systems in the tropics. ICLARM Studies and Reviews 16, 53p. International Center for Living Aquatic Resources Management, Manila, Philippines. ICLARM Contribution 470.

<sup>33</sup> Kaumbutho, P., Pearson, R. and Simalenga, T. (eds.) *Empowering farmers with animal traction*, Animal Traction Network for East and Southern Africa (2000).

<sup>34</sup> Scoones, and Wolmer, W. (eds.) *Pathways of change in Africa: crops, livestock & livelihoods in Mali, Ethiopia & Zimbabwe*, James Currey (2000)

<sup>35</sup> Dorward A., Anderson S., Nava, Y., Pattison, J., Paz, R., Rushton, J. and Sanchez Vera, E. *A guide to indicators and methods for assessing the contribution of livestock keeping to the livelihoods of the poor.* Department of Agricultural Sciences, Imperial College London (2005). Kitalyi, A et al. "Why Keep Livestock if You Are Poor? In E. Owen et al. (eds.) *Livestock and Wealth Creation*. Nottingham UP (2005)

<sup>36</sup> Morton, J. and Meadows, N. *Pastoralism and Sustainable Livelihoods: an Emerging Agenda*. NRI Policy Series 11 <http://www.nri.org/projects/publications/policyseries/PolicySeriesNo11.pdf> (2000). Kitalyi et al. *op.cit.*

<sup>37</sup> IDRC, 2013. Women, livestock ownership and markets. <http://www.idrc.ca/EN/Resources/Publications/Pages/IDRCBookDetails.aspx?PublicationID=1258>

<sup>38</sup> Thornton, P. et al. The impacts of climate change on livestock and livestock systems in developing countries: a review of what we know and what we need to know. *Agricultural Systems* 101: 113-127

greenhouse gas emissions (Steinfeld et al. 2006<sup>39</sup>).

Fish are produced relatively efficiently and are comparable to poultry in that regard (Hall et al. 2011<sup>40</sup>; Waite et al. 2014); a large amount of protein can be grown on a small land area. For example, typical production levels for many species are approximately 10,000 kg/ha (Tucker and Robinson 1990<sup>41</sup>). However, use of air breathers such as *Pangasius catfish* can raise production levels to as much as an incredible million kg/ha/yr (Griffiths et al., 2015) as an exceptional crop of 500,000 kg/ha can be grown in 6 months or less and in a tropical climate, 2 crops can be produced in a year. (Griffiths et al. 2015<sup>42</sup>). The downside of this high level of production is pollution, significant CO<sub>2</sub> footprints, high water use and high input feeds, but research continues to address technologies and policies that greatly increase sustainability (Hall et al. 2011; Waite et al. 2014). This level of productivity can reduce pressure for expansion of both terrestrial and aquatic areas for food production, protecting our ecosystems and natural landscapes for enjoyment, preservation of biodiversity and habitat, and quality of life for future generations. Additionally, many wild stocks are overfished and intensive aquaculture production may reduce the pressure on these populations to allow their recovery (FAO 2014, Waite et al. 2014).

Livestock development research is considered by the ISPC to be a cross-cutting theme deserving scrutiny, and was recently selected for a strategic overview, which has been published as a White Paper<sup>43</sup> on livestock research across the CGIAR. Traditionally this research has been led and largely undertaken by the one CGIAR Centre with a specific mandate for livestock research, namely the International Livestock Research Centre (ILRI) with its headquarters in Nairobi, Kenya. The CGIAR Consortium now has 15 CRPs addressing different aspects of agricultural research. They are subdivided in broad terms into three groupings. These are

- Systems (drylands, humid tropics and aquatic)
- Commodities (wheat; maize; rice; roots, tubers and bananas; grain legumes; dryland cereals; and livestock and fish)
- Natural resource management and policy (specifically these are: policies, institutions and markets; agriculture for improved nutrition and health; water, land and ecosystems; forestry, trees and agroforestry; and climate change agriculture and food security).

Within the portfolio of CRPs, there is only one which focusses in its entirety on livestock, and this (Livestock and Fish; More Meat, Milk and Fish by and for the Poor) is led by ILRI. There are several other CRPs which have elements of livestock as well as fish research in them, and indeed several of

<sup>39</sup> Steinfeld, H, P Gerber, T Wassenaar, V Castel, M Rosales and C de Haan. 2006. Livestock's long shadow: Environmental issues and options. FAO. Rome, Italy. 390 pp. Accessible online at:

<http://www.fao.org/docrep/010/a0701e/a0701e00.HTM>

<sup>40</sup> Hall, S.J., A. Delaporte, M. J. Phillips, M. Beveridge and M. O'Keefe. 2011. Blue Frontiers: Managing the Environmental Costs of Aquaculture. The WorldFish Center, Penang, Malaysia.

<sup>41</sup> Tucker, C.C. and E. H. Robinson, E.H., 1990. Channel catfish farming handbook. Van Nostrand Reinhold, New York, NY.

<sup>42</sup> Griffiths, D., P. V. Khanh and T. Q. Trong. 2015. FAO 2010-2015. Cultured Aquatic Species Information Programme. *Pangasius hypophthalmus*. Cultured Aquatic Species Information Programme. In: FAO Fisheries and Aquaculture Department [online]. Rome. Updated 14 January 2010. [Cited 16 February 2015]. [http://www.fao.org/fishery/culturedspecies/Pangasius\\_hypophthalmus/en](http://www.fao.org/fishery/culturedspecies/Pangasius_hypophthalmus/en)

<sup>43</sup> Perry, B.D., Morton, J., Stur, W. (2014). A strategic overview of livestock research undertaken by the Consultative Group for International Agricultural Research (CGIAR) Consortium, 64 pp.

[http://www.sciencecouncil.cgiar.org/system/files\\_force/ISPC\\_WhitePaper\\_StrategicReviewLivestock.pdf?download=1](http://www.sciencecouncil.cgiar.org/system/files_force/ISPC_WhitePaper_StrategicReviewLivestock.pdf?download=1)

the 15 CGIAR Centres now work on issues relevant to the role of livestock and fish in agricultural development and natural resource management in developing countries.

Livestock research under the auspices of the CGIAR has been underway for almost 40 years, initiated through two then separate institutions, the International Livestock Centre for Africa (ILCA, based in Addis Ababa, Ethiopia) and the International Laboratory for Research on Animal Diseases (ILRAD, based in Nairobi, Kenya) in Africa, as well as the International Center for Tropical Agriculture (CIAT) in Latin America (which had a livestock and forages programme during the 1970s). Livestock research has also been undertaken historically at IITA and ICARDA, and livestock forages work continues at ICRISAT. In the early days many of these institutions benefitted from regular substantial annual core investments from the World Bank, from several other funding organisations such as the Rockefeller Foundation (instrumental in the founding of ILRAD), and from international and bilateral donors. ILCA played a unique role in field-based systems research in many regions of Africa, while ILRAD specialised in lab-based biotechnology research on the development of vaccines against two vector-borne diseases of cattle, tsetse-transmitted trypanosomiasis and tick-transmitted theileriosis (known as East Coast fever). In 1995 these two institutions merged under the name of the International Livestock Research Institute (ILRI), while maintaining two separate campuses in Nairobi and Addis Ababa. The Second External and Program Monitoring Review (EPMR) commented that it displayed a “heterosis which was accompanied by identifiable traits of each parent, such that one Theme looks a little like ILRAD and one can see ILCA in other Themes<sup>44</sup>”. The review added that “since 1999, ILRI has been slowly metamorphosing into a new institution with a different mission and approach to that of its antecedents”. In 2002 ILRI emerged from this period under new leadership and with a revised strategy and introduced a new programming structure.

Fish research in the CGIAR is led by a single centre, WorldFish, formerly known as the International Centre for Living Aquatic Resources Management (ICLARM), founded in 1975. WorldFish and its partners have raised incomes for millions of poor people by integrating aquaculture with agriculture, and were instrumental in recognizing and documenting the dynamics of the world’s over-exploited fish populations and their consequences. They have empowered poor communities to be active participants in the sustainable management of their fisheries and aquaculture resources and developed widely-used global databases. WorldFish has developed genetically improved tilapia in the Philippines and in Egypt that have had impact around the world. In Malawi, WorldFish research allowed integrated aquaculture-agriculture which greatly improved incomes, reduced childhood malnutrition, and helped HIV/AIDS-affected families. Management practices implemented in Bangladesh are increasing biodiversity, doubling incomes and empowering women.

The CG Consortium has had earlier initiatives to promote cross-centre collaboration, and focus on particular topics and eco-regions<sup>45</sup>. The System Wide and Ecoregional Programs<sup>46</sup> (SWEPs) were established in 1994, and included the Systemwide Livestock Program<sup>47</sup>, which played a role in determining global livestock research priorities for the CGIAR, initiating its first set of funded research programmes in 1998. Next came the Challenge Programs<sup>48</sup>, which are being progressively

---

<sup>44</sup> [http://www.sciencecouncil.cgiar.org/fileadmin/templates/ispc/documents/Publications/2d-Publications\\_Reviews\\_EPMRs/SC\\_EPMR-2\\_ILRI\\_Jan2008.pdf](http://www.sciencecouncil.cgiar.org/fileadmin/templates/ispc/documents/Publications/2d-Publications_Reviews_EPMRs/SC_EPMR-2_ILRI_Jan2008.pdf) see page 11

<sup>45</sup> CGIAR (2011)

<sup>46</sup> CGIAR (2005)

<sup>47</sup> CGIAR SLP (2013)

<sup>48</sup> CGIAR Challenge Programs were the early precursors of the CRPs, and conceived in the late 1990s to build complementarities, synergies, and collective action among Research Centers. They introduced a new model for

integrated into the new CRPs.

As indicated above, the demand for ASFs and other livestock products is growing rapidly, and will continue to grow over the next three decades in most developing regions<sup>49</sup>. This opportunity has extraordinary potential as a development tool in processes of equitable economic growth and poverty reduction, and brings well documented nutritional benefits, particularly to children. But at the same time, animal agriculture and its intensification are cursed by many<sup>50</sup>, seen as contributing to the erosion of natural resources through land degradation, the decline and pollution of water resources, the emission of greenhouse gases<sup>51</sup>, the erosion of biodiversity, and for introducing new human health threats, both direct and indirect<sup>52, 53</sup>. Many of these issues were captured by FAO in the 2009 State of Food and Agriculture (SOFA) report entitled *Livestock in the Balance*<sup>54</sup>, and are discussed by Herrero et al. (2012)<sup>55</sup>.

The development of the CGIAR's SRF in 2011 has been a key milestone in addressing the challenges and opportunities in agricultural research for development, and it provides the blueprint by which CRPs and Centres will make their impact. The four system-level outcomes (SLOs) of the SRF are:

1. **Reducing rural poverty (SLO1).** Agricultural growth through improved productivity, markets and incomes has been shown to be a particularly effective contributor to reducing poverty especially in the initial stages of development;
2. **Improving food security (SLO2).** Access to affordable food is a problem for millions of poor people in urban and rural communities and it requires increasing global and regional supply of key staples and containing potential price increases and price volatility;
3. **Improving nutrition and health (SLO3).** Poor populations suffer particularly from diets which are insufficient in micronutrients affecting health and development, particularly in women and children;
4. **Sustainable management of natural resources (SLO4).** Agriculture demands better management of natural resources to ensure both sustainable food production and provision of ecosystem services to the poor, particularly in light of climate change.

Importantly, the SRF is currently under revision, so adjustments in the SLOs are likely to be made during the period of this evaluation.

The recent ISPC commissioned White Paper<sup>56</sup> on livestock research across the CGIAR drew several

---

collaborative research. All Challenge Programs are being integrated and mainstreamed into appropriate CRPs. When all the CRPs are fully approved and are operational, the Challenge Programs will be fully mainstreamed.

<sup>49</sup> LDIA Project (2013)

<sup>50</sup> A particularly extreme example is R Goodland and J Anhang "Livestock and climate change: what if the key actors in climate change are... cows, pigs, and chickens?"

<http://www.worldwatch.org/files/pdf/Livestock%20and%20Climate%20Change.pdf>

<sup>51</sup> Steinfeld *et al.* (2006)

<sup>52</sup> Grace *et al.* (2012)

<sup>53</sup> Daszak *et al.* (2000)

<sup>54</sup> FAO (2009)

<sup>55</sup> Herrero, M., Thornton, P.K., Notenbaert, A., Msangi, S., Wood, S., Kruska, R., Dixon, J. Bossio, J., van de Steeg, J., Freeman, H.A, Li X. & ParthasarathyRao, P. 2012. Drivers of change in crop-livestock systems and their potential impacts on agro-ecosystems services and human wellbeing to 2030. A study commissioned by the CGIAR Systemwide Livestock Programme. Nairobi, ILRI at <http://tinyurl.com/kupbsau>

<sup>56</sup> Perry, B.D., Morton, J., Stur, W. (2014). A strategic overview of livestock research undertaken by the Consultative Group for International Agricultural Research (CGIAR) Consortium, 64 pp.

conclusions which are relevant to this evaluation, and which will be considered by the evaluation team. These are listed in ANNEX B. The White Paper also concluded that the Livestock and Fish CRP is well placed to tackle the central driver of smallholder intensification in four important value chains distributed in Africa, Asia and Latin America. The review considered that the CRP reflects ILRI's attempt to bring together the species, value chains and regions in which livestock are reported to make a difference to the poor.

### 2.3. Background to the CRP on Livestock and Fish (L&F)

---

The Livestock and Fish CRP (L&F) is led by the International Livestock Research Institute (ILRI, with headquarters in Nairobi, Kenya) with the participation of WorldFish (headquarters in Penang, Malaysia), the International Centre for Agricultural Research in the Dry Areas (ICARDA, with administrative headquarters currently in Lebanon and a field office in Addis Ababa, Ethiopia) and the International Centre for Tropical Agriculture (CIAT, with headquarters in Cali, Colombia).

An initial CRP proposal (based on various stakeholder consultations) was submitted to the Consortium Board in September 2010, and after feedback and revisions the revised proposal (content, total budget and components) was approved with adjustments at the 5<sup>th</sup> Fund Council meeting in Washington DC in July 2011; it was officially launched in January 2012.

The overall goal of L&F (as outlined in the Proposal document of 2011<sup>57</sup>) is *“to increase productivity of small-scale livestock and fish production systems and performance of associated value chains so as to increase availability and affordability of meat, milk and fish for poor consumers and, in doing so, to reduce poverty through greater participation by the poor along animal source food value chains”*.

L&F aims to achieve this by addressing key constraints to, and opportunities from, targeted animal source food value chains. L&F proposes to combine upstream (global) research with research for development aspects which addresses identified challenges in selected value chains. The value chains were selected based on a set of criteria (which included market opportunity, pro-poor potential, researchable supply constraints, enabling environment and the presence of existing momentum<sup>58</sup>).

#### Structure of the CRP on Livestock and Fish

Initially L&F was structured around three different Research Themes with nine components:

1. Improved technologies to sustainably increase productivity and efficiency of livestock and fish production (short-term adaptive research for development and longer-term upstream research)
2. Development strategies for pro-poor, gender-equitable value chains for livestock and fish

---

[http://www.sciencecouncil.cgiar.org/system/files\\_force/ISPC\\_WhitePaper\\_StrategicReviewLivestock.pdf?download=1](http://www.sciencecouncil.cgiar.org/system/files_force/ISPC_WhitePaper_StrategicReviewLivestock.pdf?download=1)

<sup>57</sup> ILRI/CIAT/ICARDA/WorldFish (2011). CGIAR Research Program 3.7 More meat, milk and fish by and for the poor. Proposal submitted to the CGIAR Consortium, 5 March 2011

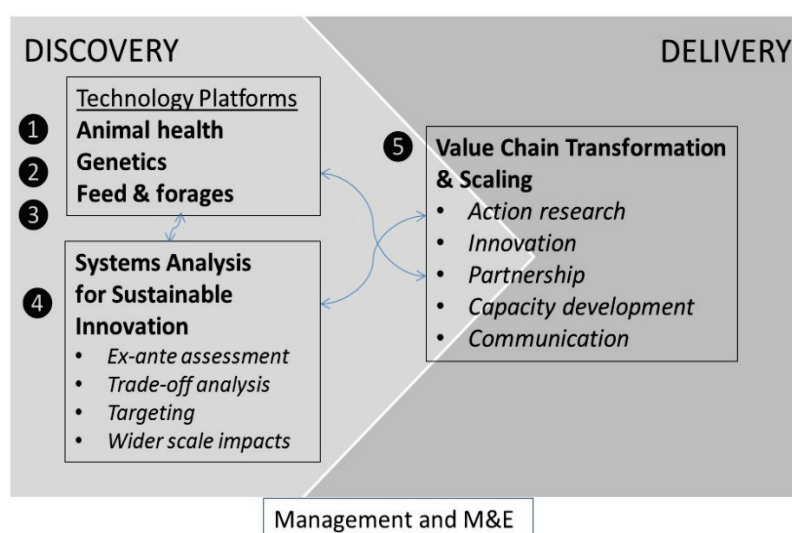
<sup>58</sup> The selected value chains in the Proposal were: tilapia and African catfish in Uganda and Egypt; sheep meat in Ethiopia; goat meat in Mali; milk in India and Tanzania; milk and meat in Nicaragua (dual purpose cattle); pig meat in Vietnam and Uganda.

- products (more downstream, improving delivery systems, and developing value chains)
3. Targeting, gender and impact assessment (priority setting, planning strategies for translating outputs into outcomes, gender analysis and integration, and monitoring progress and assessing impact).

In 2012 (the first year of operation), L&F streamlined its structure, reducing the original three Themes to a new structure of six Themes (without Components). The six themes were animal health, genetics, nutrition (these three were originally part of the Technology Development theme), value chain development (VCD), targeting for sustainable interventions (TSI) and gender.

The programme has recently undergone a further streamlining. This has comprised reducing the six Research Themes to five, and renaming the Themes to Flagships in accordance with Consortium Office guidelines (which all now include a set of “clusters of activities”<sup>59</sup>). Gender is no longer a separate theme/flagship, and is intended to be addressed as a cross-cutting issue across the CRP. The structure at the initiation of the evaluation is as follows:

**Figure 1: L&F flagships**



Source: L&F Extension Proposal (April 2014).

One of the main changes relates to the creation of a new Flagship called “Systems Analysis for Sustainable Innovation” (SASI), which is a merger of different components of several previous research themes: TSI, VCD and M&E and gender components. This Flagship started operations in January 2015.

### Theory of Change in the Livestock and Fish CRP

The Theory of Change has also evolved since the programme began. A TOC is a conceptual description of the process by which a programme expects to achieve a proposed impact. Ideally it

<sup>59</sup> According to the CGIAR Guidance Note for the Second Call of Proposals (Dec 2014): **Flagship Project (FP)**: “Each FP has specific objectives and may produce several outputs and research outcomes in order to achieve in due course two or three Intermediate Development Outcomes or IDOs (rarely more).” **Cluster of Activities CAs**: “Each FP is broken-down in a defined number of Cluster of Activities which are sub-projects (in general 5 to 8). A CA has its own objectives and produces outputs and research outcomes. A CA can be decomposed into further sub-components as necessary for CRP management.”

will include a graphic or tabular presentation of the pathways that link programme outputs to impact as well as a narrative discussion of assumptions behind the pathways and the relationships and power dynamics that can affect them. The (fairly recent) adoption of TOC by the CGIAR appears to have been motivated by the concern that “linear” approaches to results-based management were insufficient for complex research programmes where attribution could not easily be measured. The concept is not yet fully embedded in the CG system, and the changing nature of L&F’s TOC reflects this.

The original programme proposal (ILRI/CIAT/ICARDA/WorldFish 2011<sup>60</sup>) used the term “impact pathways” which preceded “theory of change” in the CGIAR’s language. The proposal showed two pathways from research outputs to impacts, in one of which the CRP acted as a catalyst while in the other had the role of a knowledge partner.

The Programme Proposal and Theory of Change presented to donors in 2013<sup>61</sup> introduced a Theory of Change diagram and outlined two revised impact pathways. Within the first impact pathway L&F focused on selected value chains and worked with development partners to identify and implement more relevant Research for Development. The second impact pathway set out a series of International Public Goods (IPGs) to be further communicated and adapted to local needs, and out-scaled. Impact pathways are a component of a theory of change, but in this proposal they were discussed somewhat separately.

In the programme’s extension proposal (CRP Livestock and Fish 2014a<sup>62</sup>) the Theory of Change was described in detail for the first time. The proposal showed a ToC flow diagram from research outputs to SLOs that included two pathways, one for commodities and the other for value chains. This version of the TOC also discussed the assumptions that underpinned it and included feedback loops indicating that learning and iteration would be part of the programme.

The management team’s response to comments by the CO and the ISPC made in August 2014 (CRP Livestock and Fish 2014b<sup>63</sup>) has resulted in a substantially revised and somewhat expanded ToC. It is summarised by a series of flow diagrams that link the elements of the research programme to four SLOs. In this version a ToC is described for the whole programme and one for each of the five flagships, all with the same overall structure but varying in detail. The assumptions have mostly been removed from the diagram and narrative (although it is noted that they are to be reinstated) and feedback loops are no longer in evidence.

The November 2014 ToC is regarded as the current version by the CRP management.<sup>64</sup> It shows a progression, mostly in one direction, from the flagship programmes to IDOs and then SLOs. For the purposes of discussion it can be divided into four stages:

---

<sup>60</sup> ILRI/CIAT/ICARDA/WorldFish (2011). CGIAR Research Program 3.7 More meat, milk and fish by and for the poor. Proposal submitted to the CGIAR Consortium, 5 March 2011.

<sup>61</sup> Results Strategy Framework and Intermediate Development Outcomes (IDOs) for the Livestock and Fish Research Programme (March 2013), presented at donor meeting in June 2013

<sup>62</sup> CRP Livestock and Fish (2014a). Extension Request 2015 – 2016 CRP 3.7 Livestock and Fish. Submitted April 2014.

<sup>63</sup> CRP Livestock and Fish (2014b). Response to the CO and ISPC comments to the Livestock and Fish CRP regarding the 2015-2016 Livestock and Fish CRP extension proposal. Working document submitted to the CGIAR Fund Council held in November 2014.

<sup>64</sup> Confirmed during the evaluation team’s inception meeting held in Nairobi in February 2015, during which the team met with ILRI and CRP management

- i) The research programme, and links within it
- ii) Uptake by farmers and other value chain actors
- iii) Impact at IDO level, which is shown in two streams: “for the poor” and “by the poor”
- iv) Impact at SLO level, which list the relevant SLOs.

Stages iii) and iv) are identical in all of the ToC flow charts, while stages i) and ii) are specific to each. Stage i) should be fully under the control of the core programme partners; stage ii) requires commitment from delivery partners who are not part of the core programme team, such as extension services, veterinary field services, NGOs and private companies who will scale up and deliver research outputs. Stages iii) and iv) require supporting government policy and private sector strategy to create an environment in which uptake of technology can result in beneficial impacts.

The TOC is likely to evolve further during the period of the evaluation, as the CRP is organising a workshop facilitated by external consultants at which the TOC will be discussed by a broad group of CRP researchers<sup>65</sup>.

The CRP aims to meet six key Intermediate Development Outcomes (IDOs) on productivity, food supply, nutrition and health, income and employment, environment, policy and investment environment<sup>66</sup>.

### **Budget and expenditures**

The initial three-year budget was USD 99.5 million (including institutional overhead), with an initial yearly budget of approximately USD 30 million, rising to USD 36 million in the third year of operation. It was envisaged that 35 % of funding would come from the CGIAR Fund and the remaining part was to be sourced from restricted donor programmes (bilateral projects) and other income (not defined). ILRI was planned to have a share of 65 %, followed by WorldFish with 25 % and small shares for CIAT and ICARDA (7 and 3 % respectively). Partner centers signed up to the first 3-year period (2012-2014) based on their initial submissions. The four centres have very different ratios of W1 and 2 to bilateral funds.

The expenditure by L&F was USD 40.8 million at the end of 2013 (after two years of operation) and expected to be a total of USD 25 million for 2014<sup>67</sup>. Taking into consideration 2014 budget figures, L&F will have spent a total of around USD 66.6 million until the end of 2014, of which around 48% came from W1/2 funding and the remaining 52% from bilateral and W3 projects. Comparing this to the expected budget for the first three years from the Proposal, there was a shortfall, explained by lower than expected Window 3 and bilateral funding.

Until the end of 2014 the expenditures 2012 and 2013 and expected budget for 2014 distributed over research themes has been as follows:

---

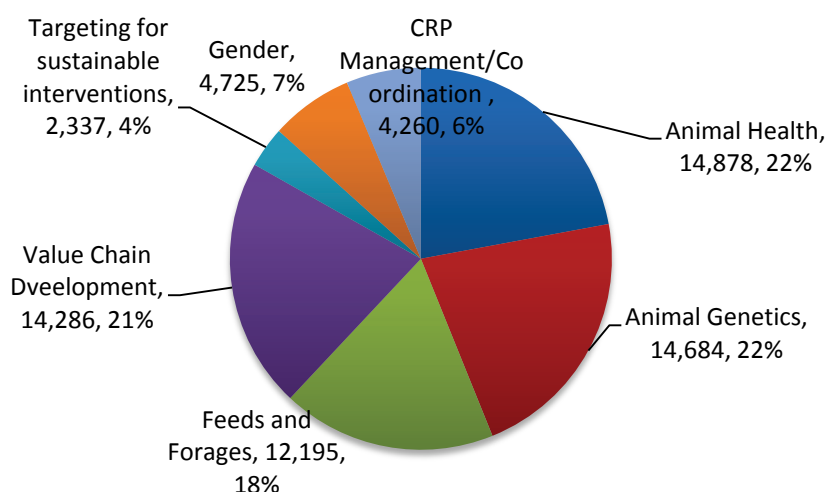
<sup>65</sup> This will be the first time that there has been such broad engagement of CRP researchers. Previous versions of the Toc appear to have been developed mostly by the CRP management team with input from the ILRI\_-based monitoring, learning and evaluation team.

<sup>66</sup> These six IDOs have been maintained for both the Programme of Work and Budget 2014 and Extension Proposal 2015-2016 and will be the ones to which the evaluation refers. In 2015 they will be replaced by those being proposed under a donor-defined Results Framework as part of the revised SRF.

<sup>67</sup> According to L&F POWB 2014. Final financial figures for 2014 are only expected in April 2014.



**Figure 2: L&F expenditures until 2014<sup>68</sup>**



*Source: L&F Financial Report 2013.*

### Progress to date

The first year of implementation focused on establishing the institutional and scientific frameworks and initiating value chain assessments. Two of the targeted value chains were dropped (aquaculture in Uganda and small ruminants in Mali) and resources were re-directed to aquaculture in Bangladesh and small ruminants in Burkina Faso (neither of which were mentioned in the Proposal). The current list of value chains is: Bangladesh (small and medium-scale aquaculture); Egypt (small and medium-scale aquaculture); Ethiopia (small ruminant in mixed crop-livestock systems) Burkina Faso (small ruminant in mixed crop-livestock systems); India, selected states (smallholder dairy); Nicaragua/Honduras (dual-purpose cattle); Tanzania (smallholder dairy); Vietnam (smallholder pigs); Uganda (smallholder pigs). Governance and management structures were set up by 2013, comprising a management unit and Program Planning and Management Committee (PPMC) supplemented by an advisory role of the Science and Partnership Advisory Committee (SPAC).

In 2014, L&F has concentrated on the nine value chains where activities have been initiated, and has completed assessments in most value chains to inform research priorities for the discovery flagships. Furthermore stakeholder participation and strategic research and development partnerships have been strengthened. However, the value chains remain in different stages of development, with Uganda, Tanzania, Egypt and Ethiopia being most advanced while work in the remaining value chains advanced at a more modest pace, due in part to lower than expected bilateral funding for certain value chains and the recent introduction of new value chains.

### Governance and management

As for all CRPs, L&F is governed by three different levels of contractual agreements which provide for programmatic and fiduciary oversight of the W1-2 funds provided to the programme:

1. Between the CGIAR Fund Council (donor) and the Consortium a **Joint Agreement** was signed which governs the submission and approval of CRP proposals and the transfer and use of W1-2 funds to CRPs. The Consortium Performance Agreement in relation to L&F, in which the Consortium assumes overall financial and programmatic responsibility for the implementation of L&F.

<sup>68</sup> 2014 figures are based on L&F POWB 2014 and need to be confirmed

2. Between the CGIAR Consortium and the Lead Centre, ILRI a **Programme Implementation Agreement** was signed in which ILRI assumes responsibility to the Consortium for the use of W1-2 funds transferred to it and for the satisfactory performance of L&F.
3. Between ILRI and each of the three participating Centres a **Programme Participant Agreement** exists, in which each Centre is responsible to ILRI for the use of W1-2 funds transferred to it and for the satisfactory performance of its activities in relation to L&F.

The CRP is managed by a small **Management Unit**, which is located at ILRI in Nairobi. It is composed of a Programme Director, a Head of Development Partnership, a Programme Support Coordinator, a Programme Administrative Assistant, and has received significant contributions from an Impact Assessment and Learning Officer (particularly in 2014), who holds other responsibilities at ILRI. The Programme Director reports directly to the ILRI Director General. The CRP management unit prepares annual work plans and budgets and annual reports for submission to the Consortium Office

Each of the five Flagships is led by a Flagship Leader with responsibility for planning, supervision and reporting of the FP research agenda.<sup>69</sup> In addition there are nine value chain coordinators, who are responsible for the implementation in the target value chains.

The **Programme Planning & Management Committee** (PPMC) oversees the planning, management and implementation of the CRP and ensures that the Programme Implementation Agreement for the CRP between ILRI and the Consortium Board is being effectively delivered<sup>70</sup>. It includes the CRP management team, two Science Leaders, the ILRI Finance Leader and four centre representatives.

A **Leadership Team** was established which includes the PPMC members as well as the Flagship leaders and to some degree the Value Chain leaders.

L&F also has an advisory body, the **Science and Partnership Advisory Committee** (SPAC) which provides advisory support and guidance through the Programme Planning & Management Committee (PPMC) to help orientate the programme strategically. It currently has six external members and provides a report annually to the ILRI DG with its recommendations and guidance. The PPMC provides a response to that report, which when accepted by the ILRI DG is submitted to the ILRI Board of Trustees for information..

### 2.4. Portfolio of the CRP on Livestock and Fish

---

The L&F portfolio is composed of programme-level activities which are mostly funded through a combination of L&F core funding (W1/2) and bilateral/W3 funded projects. All participating centres have matched projects funded by bilateral donors to the L&F programme. Some of the projects are classified as so called “legacy research”, meaning they started before L&F was initiated, whereas other projects are classified as “new”. Also, the portfolio includes active as well as closed projects which are not operational anymore at the time of the evaluation.

The main sources of information on the L&F portfolio for this inception report have been:

- A master list of bilateral and W3 funded project (“project master list”) compiled from all four

---

<sup>69</sup> Animal Health, Feeds and Forages and Value Chain Transformation and Scaling are led by ILRI, Animal Genetics by WorldFish and System Analysis for Sustainability by CIAT.

<sup>70</sup> It is composed of the CRP Director, representatives of the four partner centres, the CRP Head of Development Partnerships and three science leaders and the ILRI Director of Corporate Services.

participating centres

- The Programme of Work and Budget (POWB) for 2015, which outlines programme level outputs and activities and includes information on W1/2 funding as well as co-funding through bilateral/W3 projects

The POWB 2015 gives a more accurate description of the portfolio since it also includes W1/2 funding which contributes almost half of the budget and it is structured at a much more disaggregate level.

### *Bilateral and W3 funded projects*

The **project master list** contains 129 project grants, of which 66 have not had any activities in 2014 and three grants initiated early 2015 and thus included in the database. 55 projects have been classified as “legacy” grants with the remaining 74 projects being new research. ILRI maps the highest number of bilateral projects to L&F, followed by WorldFish and CIAT and very few projects from ICARDA.

Table 2 below gives an overview of the number of projects by theme and centre. Although – as mentioned above – this is a simplistic view, it shows the “centre driven” work in each theme. While ILRI is active in all research themes, WorldFish’s work concentrates on animal genetics and gender, impact and learning, CIAT maps its projects to feeds and forages and ICARDA has small ruminant-focused projects in the animal genetics theme.

**Table 2: L&F overview of bilateral and W3 funded projects<sup>71</sup>**

FLAGSHIP	ILRI		WF		CIAT		ICARDA		TOTAL
	Legacy	new	Legacy	new	Legacy	new	Legacy	new	
Animal Health	10	11	1						23
Animal Genetics	8	14	10	14			2	2	50
Feeds & Forages	6	4		1	6	13			29
SASI	4	3	3	2					12
VCTS	3	6	1	2				2 <sup>72</sup>	14
AG, FF, VCTS					1				1
<b>Grand Total</b>	<b>31</b>	<b>38</b>	<b>15</b>	<b>19</b>	<b>7</b>	<b>13</b>	<b>2</b>	<b>4</b>	<b>129</b>

*Source: L&F project database, as of 20 Feb 2015.*

Looking at the distribution over different countries/regions, the highest bilateral/W3 budgets in 2014 were allocated to Nicaragua, Global, Pakistan, Egypt, regional Africa projects (mainly ILRI) and Bangladesh (more than USD 1 million). Pakistan is not a target value chain country and the high budget is surprising. It refers to one large USAID project, the Agricultural Innovation Program, led by CIMMYT and launched in 2013.

The largest projects in terms of total budgets mapped to L&F are shown in Table 3; the majority are WorldFish-led projects:

<sup>71</sup> The WorldFish project FTF: Aquaculture for Income and Nutrition (AIN) is split up into two grants, one mapped to FP 1 and one to FP2. The Cereal System Initiative for South Asia (CSISA)- Phase 2 project is split up into three different grants, all in FP 3.

<sup>72</sup> This includes an ICARDA/ILRI grant on sheep and goat value chains in Ethiopia.

**Table 3: Projects with total budgets more than USD 2 million**

Title	Donor	Centre	Start	End	Total budget	Budget 2014	Type
Improved vaccines for the control of East coast fever in cattle in Africa	BMGF	ILRI	01/10/2013	21/08/2017	10,999,924	0	New
Improving employment and income through development of Egypt's aquaculture sector	SDC	WF	01/12/2011	31/12/2014	4,153,166	1,378,615	Legacy
Agriculture and Nutrition Extension Project (ANEP)	EC	WF	01/01/2012	16/12/2014	3,644,677	0	new
EC-Genetics	EC	WF	01/01/2013	31/12/2014	2,647,442	900,004	new
FTF: Aquaculture for Income and Nutrition (AIN) <sup>73</sup>	USAID	WF	01/10/2011	31/12/2014	2,386,778	1,169,202	Legacy
Agricultural Innovation Program	USAID-CIMMYT	ILRI	01/03/2013	09/30/2014	2,052,901	1,493,960	new

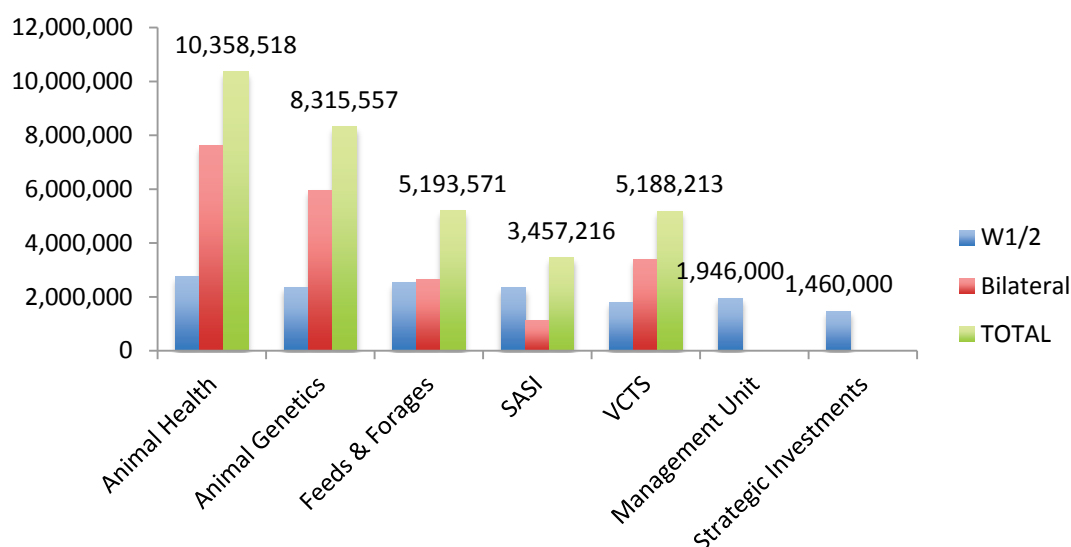
*Source: L&F masterlist of bilateral and W3 funded projects.*

### **Current portfolio and activities**

The POWB gives a more holistic view on the programme as it also includes W1/2 funding. The POWB 2015 is structured along the five Flagships, each of which has several clusters of activities (in total there are 17). Figure 3 below gives an overview of the different Flagships and their budget allocations. More detailed information is provided in ANNEX G.

<sup>73</sup> Split up in two grants

**Figure 3: L&F POWB 2015**



*Source: POWB 2015 budget overview from L&F management.*

FP 1 on Animal Health is by far the largest Flagship, with a very high budget coming from bilaterally funded vaccine development projects (Cluster 1.3. Disease Diagnostics and Vaccines) implemented by ILRI. Cluster 1.1. on Animal Health Assessment and Prioritization is almost exclusively funded by W1/2 and includes activities in smallholder systems in Tanzania dairy, Ethiopian SR and Uganda pigs VCs as well as the fish value chains in Bangladesh and Egypt.

FP 2 on Animal Genetics has received considerable funding from bilateral projects, particularly in cluster 2.1. (System, Strategy and Genome Assessment). Projects mapped to FP 2 are the WorldFish projects EC-Genetics (Egypt and Bangladesh), FTF Aquaculture for Income and Nutrition (FTF AIN - Bangladesh), dairy genetics and dual-purpose cattle projects by ILRI.

FP 3 on Feeds and Forages is the technology Flagship with the least contribution from bilateral funding. It includes a feed technology platform (Cluster 3.1. funded by W1/2) and various activities relating to the Feed Assessment Tool (FEAST). Several of the large bilateral projects which CIAT implements (Nicaragua mostly) are mapped to this Flagship. Also, the Cereal System Initiative for South Asia (CSISA)-Phase 2 project, led by CIMMYT and funded by USAID and BMGF, has activities relating to forage cultivation mapped and co-funded by W1/2 to this Theme.

FP 4 on SASI, which started operations in 2015, is the smallest Flagship and received little contribution from bilateral funding. It has by far the highest allocation of budget to gender, which is used for capacity building, development of gender assessment tools and the integration of gender activities along the value chains (planned for the Tanzania value chain). Other activities relate for example to the research on issues like nutrition, natural resources and the environment.

FP 5 on VCTS includes the development of tools for value chain assessments, and the identification and piloting of so-called “best bet interventions” in the targeted value chains (cluster 5.1.). Cluster 5.2. deals with the scaling of interventions and therefore includes a lot of partnership and capacity development activities. The third cluster relates to monitoring, measurement of impact and learning. Two large ILRI projects are mapped to this Flagship: the now-completed “Catalysing the emerging

smallholders pig value chains in Uganda to increase rural income and assets” (EC/IFAD funded) and “More Milk by and for the poor-Adapting dairy market hubs for pro-poor smallholders value chains in Tanzania” (Ireland).

### 2.5. Evaluability

---

The evaluation team was asked to consider whether L&F could be evaluated using a framework derived from its TOC (including impact pathways). The team’s assessment was done in two stages.

a) The first stage was conceptual: could an analytical framework provided by a well-defined TOC provide sufficient information to evaluate the programme’s progress and likely impact, as well as report against predefined CG evaluation criteria (relevance, quality of science, effectiveness, efficiency, capacity building and sustainability)? The team considered that a comprehensive and well defined TOC could provide a sound framework for assessing progress and possible impact. It would not automatically provide all of the information needed to report against the other evaluation criteria; for example, an evaluation of relevance requires the reviewer to consider all global needs related to the sector, including those that the CRP (and hence the TOC) does not currently address. The conclusion of the team was that a framework could potentially be designed against a TOC, provided that the TOC was sufficiently comprehensive, but it would be important to ensure all of the evaluation criteria were given due attention.

b) The second stage focussed on L&F and asked the following question: assuming that it is theoretically possible to design an evaluation framework based on a TOC, is L&F’s TOC sufficiently comprehensive and clearly articulated to provide such a framework? The answer to this question was “not yet”, for the following reasons:

- **L&F’s TOC is a rapidly moving target.** As described in section 2.3, it has been revised several times recently, and is considered by the programme’s management to be a work in progress. An important criterion for a good TOC is that it outlines pathways in ways that the dynamics of change are intrinsically built in. It is expected that the TOC will continue to evolve, as it is meant to reflect a dynamic reality, and moreover it must allow for an adaptive programme implementation.
- **The current version is not fully “joined up” on paper or in the minds of the research team.** For example, during the inception visit to ILRI, the research team and ILRI management talked of impact pathways and the TOC as if they were separate entities.
- **The current documented version of the TOC lacks important information.** For example, it contains very little information on the assumptions made, which are critical in assessing potential impact. It also contains very little information about change processes, partnerships or relationships, and explicit reference to lesson-learning and adaptive programme execution, all of which are important aspects of effectiveness and will strongly affect the programme’s ability to deliver impact. During the inception visit, some of the L&F team were able to articulate ideas related to all of these issues, but these are not reflected in the documented ToC, and neither are they equally understood by all of the scientists with whom the team interacted.
- **L&F does not report against the TOC.** The most recent documents produced for the November 2014 Fund Council meeting contain a fairly detailed and quantified description of indicators, including IDOs (the deliverable impact of the project) and “targeted outcomes” (the deliverable outputs of each flagship). However the description and quantification has

only very recently been completed. L&F appears to report progress mostly against the PWB, which is not clearly mapped to the TOC.

- **The current TOC acknowledges the problem of attribution but does not provide a mechanism for dealing with it.** Delivery of each IDO will rely on contributions from more than one flagship, and from several centres and partners, and this makes attribution difficult. It is proposed that “contribution” will replace “attribution” as a more suitable expression of the way that research leads to development impact, but neither the TOC discussion nor L&F’s MEL group have yet articulated how this notion can be used in practice.

Given the incompleteness of the current TOC, the team was faced with three options:

- Revise the TOC to make it suitable as an evaluation framework. This would be inappropriate for many reasons and was rejected as an option.
- Wait until L&F produces a further revised TOC from a planning workshop and attempt to produce an evaluation framework based on the new TOC. This is a tempting course to pursue as the revised TOC will, for the first time, include inputs from a wide range of the scientists working in L&F. However it is not realistic within the deadlines of the evaluation and was rejected as infeasible.
- Interact with the L&F team as the TOC evolves and provide constructive comment and critique in the evaluation report. This is the most realistic option, and the one selected by the evaluation team.

For the reasons outlined above, the team intends to treat the TOC as something to be evaluated rather than a framework for evaluation. The proposed analytical framework is discussed in section 3.

### 3. SCOPE AND ANALYTICAL FRAMEWORK

The evaluation will cover all research activities that are included in the L&F CRP, and the processes related to its implementation.

To this end, the evaluation will bear in mind that while several L&F activities are fully funded through the unrestricted funding channels (Windows 1 and 2), L&F also includes project-specific bilateral grant contracts between the implementing centres and donors, as documented in section 2.4 above. Furthermore, even though L&F started in January 2012, some of the research carried out by centres, now included under the L&F umbrella, has been underway for a number of years<sup>74</sup>, generally termed **legacy projects**. Therefore, L&F is made up of research projects with multiple timeframes.

The last CGIAR evaluation which covered livestock research was published in 2008 for ILRI, while fish research in WorldFish was reviewed in 2007<sup>75</sup>. The scope of the evaluation includes assessment of the results of **past research**, which is continuing within L&F. This part of the **summative** dimension will determine to what extent results at the outcome- and impact-levels have been achieved from such legacy research, providing that the required information is available.

L&F is a global research programme with projects and activities that are global, regional, multi-

---

<sup>74</sup> For example, the USDA-funded International Cooperation in Animal Diseases project and the Cereal Systems Initiative for South Asia (which CIMMYT leads) has been ongoing for about six and five years.

<sup>75</sup> See CGIAR Science Council (2008) Report of the Second External Program and Management Review (EPMR) of the International Livestock Research Institute (ILRI) and CGIAR Science Council (2007) Report of the Third External Program and Management Review of the WorldFish Center

country and country-level in scope. Its research for development approach uses “localized” interventions, but aims to achieve outcomes at both value chain and global levels. Therefore the overall **geographic scope** of the evaluation is global, while the in-depth analyses will cover five different target value chain countries (on three different continents).

As designated in the TORs, the evaluation will cover L&F’s overall performance with regards to the six key evaluation criteria outlined in Section 5 under two broad headings, namely research performance and organisational performance.

### Research performance:

➤ *the extent to which L&F has been/will be able to deliver research results against the IDOs it has defined*

To this end, the evaluation will consider the progress and research performance of L&F at four distinct, but interconnecting, levels and context. These are:

- Global scope: the research needs in livestock at the global level, and the role and comparative advantage of the CGIAR and its CRPs and Centres, an issue that was explored in the ISPC-commissioned White Paper.
- The context and positioning of L&F in responding to these global needs.
- Past performance of L&F in meeting its stated objectives.
- Future pathways: the positioning and vision of L&F in addressing the livestock and fish research agenda for the post-2017 era.

The evaluation will cover all research activities that are part of L&F and processes related to its implementation. This includes research projects with multiple timeframes, including both “transferred” or “legacy” research and new lines of research.

With regards to research outputs and outcomes, the evaluation will use a timeframe subsequent to the last EPMR (i.e. since 2008), but with a focus on the period since L&F started (i.e. 2012 until mid-2015). Importantly, the evaluation will bear in mind that the goal posts have moved on several occasions with regard to the structure, performance and monitoring of CRPs generally, and as such the evaluation will not be about re-writing the past, but will be forward looking.

The evaluation is being undertaken at a time when the CRP is adjusting its programme design in accordance with guidance from the CGIAR Consortium Office, and defining Intermediate Development Outcomes (IDOs) with target achievement goals for the medium-term (a 10-year time span), assigning measurable indicators for progress and results. The evaluation will assess the revised programmatic approach and the theories of change as a basis for the future framework of the CRP, examining the likelihood of its effectiveness to contribute to the CGIAR SRF vision, SLOs and outcomes as defined in the results framework.

### Organizational performance

➤ *the way that the CRP is governed and managed, deals with research management, human resources finances and risks and monitors what it does*

This part of the analysis will look at governance and management structures and processes in place, and assess cost-effectiveness. Since this refers to the implementation of the CRP, the timeframe will be from 2012 until the time of the evaluation.



In this regards, the evaluation will consider the funding complexities of the programme, with multiple funding sources and reporting mechanisms, and the implications of these on performance and productivity.

The evaluation will also examine the institutional context of L&F and its relation to other CRPs. This will include assessing the effectiveness and efficiency of the institutional structure, governance and management systems of the CRP, and the extent to which L&F incentivizes high quality research orientated towards tangible outcomes.

\* \* \*

As discussed in section 2.5, the current ToC does not provide an adequate framework against which to evaluate L&F. After considerable discussion of possible analytical frameworks the evaluation team proposes to use a dual analytical and reporting framework, consisting of:

- Overarching questions addressing major issues. Based on the analysis done to date a list of these questions has been drawn up and is provided in section 4.1 It is possible that during the early stages of the evaluation additional questions may be identified from the emerging issues listed in section 4.4.
- Evaluation criteria required by the IEA. These consist of: relevance; quality of science; effectiveness; efficiency; impact, sustainability and cross-cutting issues (partnership, governance, capacity building, gender and environment). These are described in section 4.2

The two frameworks are related but not identical. An indicative list of exploratory questions has been developed to guide the information-gathering done by the team that covers both frameworks. The list will be further refined during the early stages of the evaluation and in advance of the first centre and field visits carried out by the team. These questions are shown in section 4.2 while 4.3 provides a table that maps each question to both analytical frameworks, the outcome of a validation exercise carried out by the team.

## 4. EVALUATION CRITERIA AND QUESTIONS

### 4.1. Overarching questions

The L&F CRP has picked up the challenge of adopting a research for development approach, building on the CGIAR comparative advantage in delivering international public goods, while at the same time working to achieve impacts in the development sphere. Under this mantle, the evaluation will pose the following overarching questions.

The overarching questions are of two types. The majority of them focus on the performance of the current programme:

1. Is the maxim “more meat, milk & fish – by & for the poor” credible and realistic? Two sub components of this question will be explored:
  - a. Does experience to date substantiate L&F’s objective to “increase productivity of small-scale livestock and fish systems so as to increase availability and affordability of meat, milk and fish for poor consumers and, in doing so, to reduce poverty through greater participation by the poor along animal source food value chains”?
  - b. Is it appropriate and useful to conflate the two objectives of improved nutrition and improved livelihoods?

- c. How well is the programme addressing the issue of upscaling and outscaling its research outputs?
  2. CRP Flagship coherence: is there a valid, demonstrable and logical contribution of the discovery flagships to the broader value chain-centred delivery flagship, and vice versa? Sub components of this question are:
    - a. Does the delivery flagship articulate and communicate demand for research to the discovery flagships?
    - b. Do the discovery flagships adequately capture demand articulated in the delivery flagship?
  3. Does L&F have sufficient capacity (in all senses) to deliver on the promise of a value chain approach to enhancing the roles of livestock and fish?
  4. What has been the added value (if any) of integrating previous livestock and fish research programmes into the CRP?
  5. Does L&F have the appropriate partners for research on value chains, and is it using the right partnership models and principles?
  6. How is gender explicitly integrated into the CRP to enhance impact?
  7. To what extent has L&F leveraged capacity across the CGIAR centres?
  8. How does L&F contribute to global poverty reduction through livestock and fish research?
  9. How well has L&F delivered to date against planned outputs?
  10. To what extent do governance and management arrangements in L&F help it to reach its SLOs and IDOs?

Three questions address the relevance of the programme portfolio to the global context of livestock and fish research discussed in section 2.2. These questions anticipate the call for the second round of CRPs.

11. Does L&F adequately cover poultry research (given the documented demand, nutritional value and opportunities offered by poultry)?
12. Does L&F adequately cover NRM and environmental issues associated with livestock and fish that are not captured within other CRPs?
13. Does L&F adequately cover post-harvest opportunities for value addition and loss avoidance that are not captured by livestock and fish research in other CRPs?

The evaluation will also address the six standard evaluation criteria; relevance, efficiency, effectiveness, impact, sustainability and quality of science through a set of evaluation questions<sup>76</sup>. Inevitably there is overlap between the two frameworks, which the team views as a constructive way to enhance the inquiry process.

### 4.2. Evaluation criteria and questions

---

The team proposes to evaluate and report against the standard IEA lines of enquiry. The questions listed under each criterion are an indicative list designed to cover the needs of both the evaluation criteria and the over-arching questions listed in 4.1.

---

<sup>76</sup> See IEA/CGIAR Standards for Independent External Evaluation <http://iea.cgiar.org/sites/default/files/CGIAR%20Standards%20for%20Independent%20External%20Evaluation%202014%200.pdf>

### 4.2.1. Relevance

This criterion addresses the positioning of the L&F portfolio within the global development environment. When L&F was designed and approved, consideration was given to the relevance of its portfolio taking into account global needs at the time, the comparative advantage of the CGIAR to carry out research in certain areas, and the livestock and fish research proposed in other CRPS. The evaluation will revisit the portfolio to assess whether its composition should be adjusted in light of current and anticipated requirements.

1. What is the relevance of the L&F portfolio, research products and development outcomes to global development issues identified in section 2.2 and in overarching questions 1, 2, 11, 12, and 13?
2. How well do L&F objectives and impact pathways respond to the needs of users and beneficiaries of the CRP research products? In particular, does L&F respond to the development challenges and opportunities faced by small-scale livestock and aquaculture systems?
3. What is the relevance of the current animal health, livestock and fish genetics and livestock and fish feeds flagship portfolios to value chain transformation for scaling in each of the study sites?
4. What is the relevance of the value chain approach to livestock research and development strategies of the countries and regions hosting case studies?
5. How relevant are the current partnerships to achieving the anticipated outcomes? [also relevant to Partnerships under Cross-cutting issues]
6. How relevant is the L&F portfolio and approach to more equitable gender and social impacts at different levels? [see also Gender under Cross-cutting issues]
7. How coherent and consistent are L&F's objectives with the main goals and SLOs presented in the CGIAR's SRF?

### 4.2.2. Quality of Science

The evaluation will examine the appropriateness and amenability of research conditions in the institutions, the laboratories and in the field for the development of high quality scientific outputs. This will include physical, financial and human resource issues necessary under the prevailing conditions at different levels. The evaluation will also assess the incentives for high quality scientific output, and will assess the processes for selecting research priorities and for assuring quality, the quality of the research inputs, the quality of the research outputs as well as perceptions of quality. Some specific lines of enquiry are presented below:

1. Does L&F provide an adequate and appropriate framework for delivering high quality research? How are the standards for such a framework set?
2. What are the key research outputs and outcomes of L&F and how is the quality of products assured?
3. Has there been any change (improvement, deterioration) in research output quantity and/or quality compared to pre-CRP research, and if so, what has influenced this?
4. Which are the areas of research and research processes which present the greatest opportunity for improving research quality, and how can this be achieved?
5. What actions have been, or are being taken to address research quality on an ongoing basis?

### 4.2.3. Effectiveness

Effectiveness refers to the ability of the programme to deliver. It will be assessed mainly on the likely effectiveness of the current restructured programme, in particular the programme design, but will also refer to log frames and other planning tools to ascertain how effective past research has been,

and evaluate any trends in effectiveness. Some specific lines of inquiry under effectiveness are provided below:

1. To what extent does the L&F Theory of Change provide an adequate framework for effective programme delivery? How is it being used by the L&F management team and research team leaders as a tool for strategy and management?
2. To what extent were the planned outputs and outcomes achieved or are likely to be achieved?
3. If there were differences in the performance of different types of programme activities (Flagships), or across value chains, what caused them and what lessons can be learned from this, and what mechanisms are in place to accommodate such lesson-learning?
4. What kind of factors influenced L&F's implementation positively or negatively?
5. To what extent has the funding structure helped or impeded effectiveness? What lessons can be learned? [also relevant to governance and management]
6. Are there any programme elements or activities that should be modified, discontinued or added to improve L&F's effectiveness?
7. What factors have influenced the achievement or non-achievement of legacy activities?
8. How have the activities' objectives and strategies evolved, if they have, in response to (a) learning from experience, and (b) emerging risks and opportunities?

#### 4.2.4. Efficiency

Efficiency is defined by IEA as "the extent to which the program has converted, or is expected to convert, its resources/inputs (such as funds, expertise, time, etc.) economically into [research] results." The efficiency of L&F will be evaluated from two perspectives:

- Administrative efficiency. This is defined as the extent to which the CRP has established good management, financial and monitoring systems that allow it to allocate resources cost-effectively and manage transactions costs.
- Research efficiency. This is defined as efficient use of resources through interaction and communication between flagships and value chains to promote sharing of expertise, methods and results.

The team considers administrative efficiency to be an element of organizational performance, which is discussed below. Specific lines of enquiry related to research efficiency include:

1. To what extent have clear lines of communication been established between discovery and delivery flagships that promote the efficient use of research expertise and sharing of results?
2. Is there evidence that capacity is being leveraged across centres, value chains and flagships?

#### 4.2.5. Impact

Impacts in the context of the L&F evaluation addresses achievement of the IDOs as a result of CRP research, as well as the potential for scaling up and out of current programme results. This evaluation will not undertake detailed *ex post* impact assessments of individual activities or clusters of activities, but will rather draw on available and ongoing studies to make an overall judgment on achieved impacts from past and continuing research. The evaluation will also examine the extent to which L&F addresses the challenges of linking research outputs to development outcomes—and of scaling out promising results for greater impact.

1. How effective is the current L&F Theory of Change in defining the programme's expected impact and how valid is the logic behind it?
2. What are the key legacy projects currently operating under the different flagships? What impact have these had, in terms of development, partnership, knowledge brokering, scientific advancement, etc.? How have these impacts been exploited?

3. To what extent does L&F's Theory of Change adequately address the challenge of scaling up or out research outputs generated by the programme?
4. With specific reference to the selected value chains, what is the potential to scale up or out research outputs generated in the delivery flagship?
5. What has been the response of the CRP to the conclusions (see ANNEX B) of the ISPC White Paper on livestock research across the CGIAR of January 2014? In particular the role of cross-CRP dialogue and collaboration, and the identified gaps and enhancing impact in the area of post-harvest losses in each of the commodities chains.

### 4.2.6. Sustainability

Since L&F has only been in existence for three years, sustainability will be a difficult parameter to measure in terms of long lasting impacts and achievement of development targets. Nevertheless the evaluation will explore the extent to which elements of sustainability have been put in place. The evaluation will explore the likelihood that actual and anticipated results will be sustained beyond L&F's lifetime. This will involve consideration of the following:

1. To what extent have results and impacts from legacy research been sustained, and what does this imply for future sustainability? Are there already indications that research outputs are being adopted by boundary partners, scaled-up or are influencing policy?
2. To what extent did L&F anticipate the challenges of sustainability in programme design, choice of partners, funding, etc., and how effective have any sustainability-targeted measures been?
3. How well has the institutional and human resource capacity of beneficiary countries been taken into account in partnerships, capacity building initiatives, leadership roles, etc.?
4. What are the key functions and processes that will improve sustainability of emerging research products, and who are the key actors that have or will contribute to this?

### 4.2.7. Cross cutting issues

#### Partnerships

Partnerships constitute the core of the innovation systems in which the L&F programme operates, according to the original Research Proposal of 2011. L&F classifies its partners as strategic programme partners<sup>77</sup> and value chain partners, located at the grassroots level and incorporating individuals and organizations working along the value chain, including farmers, processors and traders. A Development Partnerships Strategy was drafted in December 2013 and outlines the main activities for 2014 and 2015 with regards to partnerships for L&F<sup>78</sup>. The evaluation will explore a variety of effectiveness, impact and sustainability issues associated with partnerships, which will include the following:

1. What are the fundamental principles of the L&F partnerships strategy? How has the partnership strategy affected the evolving CRP design, and how has the effectiveness of partnerships been measured?
2. What are the deliberate approaches and practices deployed for effective partnerships?
  - a. How are partners identified?
  - b. Are partnership principles and practices consistent with commitment to

---

<sup>77</sup> Currently these are mainly developed country partners with whom L&F is developing a long-term relationship and expects to carry out a range of collaborative activities. They include Wageningen University and ANV.

<sup>78</sup> Development Partnerships Strategy (Stuart Worsley) – Draft December 2013

sustainability

- c. How are the relationships between the CG centres and their NGO and private partners managed?
3. How effective is the partnership with governments in each of the study countries, and how well is the L&F programme aligned with government policies and strategies? Are there any areas of major disagreement, and if so, how have these been handled?
4. To what extent are the L&F's partnerships being designed to increase the sustainability of the programme deliverables, and what lessons are being learned from this?
5. How cost-effective are L&F's partnerships? Does investment in partnerships add value, and if so, how is this measured?
6. What is the connection between L&F's partnerships and the sustainability of products, impacts and outcomes?

### Capacity building

L&F works with a wide variety of actors within its different flagships, and these differ substantially between the discovery and delivery flagships. L&F's role includes building of capacity in programme partners to design and conduct research. What consideration has been given in programme design and implementation to institutional capacity building versus individual capacity building, and what have been the grounds for these choices? The following components of these questions will be further explored:

1. Do the capacity building activities of L&F respond to identified needs of the key stakeholders? What are these, how were they identified, and how effective has the response been?
2. What is the comparative advantage of L&F in the capacity building initiatives it has fostered? How can this be further improved?
3. How do L&F's capacity building activities affect programme effectiveness?
4. How do the L&F capacity building initiatives affect the adoption of the programme's products, impacts and outcomes?

### Gender

The integration of gender issues in both the discovery and delivery flagships of L&F is a central and high priority developmental target. The L&F gender strategy, published in July 2013 (and inspired by ILRI's gender work and that undertaken by the CRP on Aquatic Agricultural Systems) approaches gender as both a research component of the programme, as well as a cross-cutting thematic area which informs other Research Themes.<sup>79</sup> The strategy distinguishes between gender accommodating approaches and gender transformative approaches, and defines four categories of outputs<sup>80</sup>:

- Gender capabilities across system actors
- Gender and value chains
- Gender and society
- Gender and consumption.

Consistent with this the evaluation considers gender as a research theme, and as such part of the research outputs and outcomes. In addition, the following issues will be considered:

---

<sup>79</sup> See CGIAR Research Programme on Livestock and Fish. 2013. *Gender strategy of the CGIAR Research Programme on Livestock and Fish*. Nairobi, Kenya: ILRI.

<sup>80</sup> According to members of the SASI flagship, in which gender is currently housed, the 2013 strategy is considered current

1. How relevant are the approaches (research theme versus cross-cutting issue) suggested by the L&F gender strategy? What are the potential advantages and disadvantages of removing gender as a separately identified theme?
2. How has gender been operationally mainstreamed within L&F?
3. Is the composition of the L&F team adequate for the work to be done, with respect to experience and gender balance?
4. Has gender-specific research been effective? What have been the products? Are results and products being used across flagships? [also relevant to effectiveness]
5. What have been the outputs and outcomes of the gender strategy? What impacts have these had on development outputs and outcomes?

### Environment and Natural Resource Management

1. Does IDO 5 (lower environmental impacts per unit of commodity produced) require rewording?
2. By what institutional mechanisms does the CRP ensure it works towards IDO5 (or a reworded version), in Flagships and value chains? How could these mechanisms be improved?
3. What are the research areas which best demonstrate positive achievements or the potential for positive achievements?

#### 4.2.8. **Organizational Performance**

### Governance and management

In order to facilitate the understanding and consistency across the CGIAR, this part of the evaluation will wherever possible and appropriate use the same terminology and criteria as the “Review of CGIAR Research Programs’ Governance and Management” (Final Report, March 2014<sup>81</sup>). In line with this cross-CRP review, the following review criteria will be addressed: (i) legitimacy and participation, (ii) accountability, (iii) fairness and equity, (iv) transparency, (v) efficiency, (vi) effectiveness and (vii) independence.

With these criteria in mind, the evaluation will examine how and by whom in L&F the following governance functions are ensured (i) management and science oversight; (ii) stakeholder participation, (iii) fiduciary responsibility (iv) risk management, (v) conflict management and (vi) audit and evaluation. The evaluation will in particular take position on how in the case of L&F the recommendations of the CRP Governance and Management Review should be implemented.

1. Do the governance and management arrangements and functions, including the lived reality, conform to the programme partnership requirements of independence, accountability, transparency, legitimacy, and fairness, effectiveness and efficiency?
2. Have the governance and management structures and procedures been able to take into account risks related to the CRP implementation?

In relation to management the evaluation will focus on: (i) priority setting and planning, (ii) monitoring, reviewing and reporting, (iii) internal and external communication and relationships, (iv)

---

<sup>81</sup><https://cgspace.cgiar.org/bitstream/handle/10568/35454/Final%20report%20CRP%20G%26M%201%20April%202014.pdf>

financial management, (v) human resource management, development (inclusive staff performance assessment) and learning (vi) regulatory compliance, (vii) administrative efficiency.

Administrative efficiency and cost-effectiveness relate to the economical use of limited financial resources and to the extent to which the programme has achieved or is expected to achieve its results at a lower cost and in less time compared with alternatives.

Scientific efficiency and effectiveness relates to the extent to which L&F has converted or is expected to convert its resources (funds, expertise, time etc.) into research outputs leading to IDOs. The evaluation will take into account the exploratory nature and risk inherent to research. Scientific efficiency and effectiveness will be dealt with in the chapter on “Science Quality”

The specific lines of inquiry for management aspects include:

1. Are the programme management arrangements as they are described and implemented, inclusive, transparent, coherent, consistent, efficient and effective and do they contribute to learning?
2. Are the financial management structures and procedures transparent, safe, timely, consistent and effective? Do they take into account the multi-source and multi-fund-allocation nature of the CRP and its relationship with other CRPs and Centres?
3. Are the HR management arrangements as they are described and lived equitable and fair, transparent, efficient and consistent and are they conducive to continuous learning? Do they take into account the multi-centre, multi-location and multi-disciplinary nature of the CRP?
4. Are staff and consultant recruitment and procurement processes efficient and transparent?

For governance and management aspects, the evaluation will take into account the phase I results of the assessment of the Internal Audit Unit of the CGIAR. Phase I is a consultancy assignment and not an audit; it will focus on the Lead Centre ILRI and take place between February and April 2015. IAU and IEA will inform each other on their work plans and findings and will as far as possible avoid duplications.

### 4.3. Interface between overarching questions and sub questions under the IEA evaluation criteria

The 13 overarching questions are all explored further under the IEA criteria of relevance, science quality, effectiveness, impact, sustainability, the cross-cutting criteria of partnerships, capacity building and gender, and the operational performance criteria. This is illustrated in the matrix table below.

**Table 4. Relationship between overarching questions and IEA criteria**

Overarching question number	Relevance	Science Quality	Effectiveness	Efficiency	Impact	Sustainability	Cross Cutting
1	1,7	X	1		1,3	1	P,G,E
2	1,3		1	1	1,2		C,O,P
3	5		2,4				
4			9				
5		X	1,5,7			3,4	P,C
6			7				G
7		X	2,4,5	2	5	2	P,C



8	2,3,4	X			3,5		G,E
9		X	2,3,4		3	1,2	E
10			6,9			4	OP
11	1		7				
12	1		7				E
13			7				

*P=partnerships, G=gender, E=environment, C=capacity, OP=organizational performance*

## 4.4. Emerging issues

Some key emerging issues identified so far are itemised below. These will be reviewed and supplemented as the evaluation gets underway.

- The importance of partners and the management of partnerships is evident in many elements of the evaluation. Relationships and power dynamics between the CG Centres and their partners in L&F have not been well described in L&F proposals and other documents to date. This is an issue that the evaluation team will wish to explore further in centre and field visits. It will be important to find mechanisms to include partners in the reference group and feedback process.
- Consideration of gender within the programme structure. Does treating gender as a cross-cutting theme, rather than a separate flagship, help to mainstream it, or simply allow it to be forgotten?
- Knowledge-sharing among different elements of the programme. It is probably safe to assume that where the same scientists are involved in more than one activity, methods and ideas will be shared between them – this point has already been made by L&F management in relation to social scientists. But what of activities that do not share the same researchers. It may be useful to map the network of researcher involvement against programme activities.

## 5. EVALUATION APPROACH AND METHODOLOGY

### 5.1. Evaluation approach

The evaluation process will be participatory and forward looking. In developing findings, conclusions and recommendations, there will be wide consultation among a range of stakeholders in order to capture a representative range of viewpoints. The evaluation team will ensure that the findings are informed by evidence; perceptions, hypotheses and assertions obtained from interviews will be validated through secondary filtering, cross checking and triangulation.

The evaluation process will take account of the structure of L&F, with research carried out on technologies, within value chains and at systems level. It will ensure that the cross-cutting issues – gender, capacity development, environment/NRM and partnerships – will be integrated in the design of the data collection tools and instruments as well as in the analytical frameworks.

The methodology developed for the evaluation is in line with other CRP evaluations carried out by the IEA. It includes elements of both qualitative and quantitative data collection tools, and evidence will be generated at different levels: more broadly at the **overall programme level**, as well as through **an in-depth analysis of samples** of programme components (case studies).

## 5.2. Sources of information and data

---

The evaluation will draw its primary information and data from the following sources:

- **Published documentation**

The evaluation team, supported by the IEA, will undertake a comprehensive review of all documentation generated by L&F, including SPAC reports and management responses, with a view to understanding and tracking the programme development and implementation, reviewing the partnerships involved at institution, country and community levels, and assembling a comprehensive overview of the CRP's achievements.

- **Databases**

The evaluation will also draw on information contained in project, research and financial management databases of the participating centres. The team's preferred modus operandi will be to obtain connection to these databases, in order to allow for timely access and to avoid burdening the centres' information systems managers with repeated requests.

- **Expert knowledge of researchers and other and stakeholders**

The evaluation team will exploit the experience and understandings of CRP researchers and of key partner researchers to discuss and understand the backgrounds to, and progress in, the various research activities of the CRP. Among other techniques, the team will conduct interviews to obtain views on various aspects, including the following: the relevance and quality of research, the products of the research, and the likely impacts of research, as well as the quality of and management of research partnerships. The evaluation team will conduct visits to selected value chain countries as well as to the participating centre's offices, with two team members visiting each site wherever possible. Detailed interviews will be conducted as part of the Centre visits and field visits. Interviews will also be conducted with other stakeholders, both directly and through virtual means where appropriate. Interviews will cover representatives from a wide range of different stakeholder groups. The team will develop a list and categorisation of the persons to be interviewed, as well as interview guidelines for the different types of respondents, which will be completed by the end of March 2015. Detailed notes of each interview will be taken. The team will not attribute comments and opinions to any one individual, and respect the right of any interviewee to remain entirely anonymous. To the extent possible, personal interviews will be held during the visits to ILRI, CIAT and WorldFish, during the country visits or using other opportunities. Where this is not possible, interviews will be held by skype or phone, and these interviews will be timed mostly after the team has had the opportunity to observe L&F activities in the field.

The formative element of the review will employ methods that foster innovative thinking by the L&F research team on programme synergies and the delivery of impact. For example, research leaders in livestock and fish nutrition (an area where it is reported that the programme has made an effort to establish synergies) could be asked to make a joint presentation highlighting areas where ILRI and WorldFish are learning from each other. A facilitated discussion among researchers working on livestock vaccines, value chains and sustainable innovations could be used to explore the way in which the programme's work on vaccines relates to the Theory of Change for the Animal Health Flagship.

Interview templates will be developed for each category of stakeholder (partners, researchers, donors, international peers, farmer representatives), specifying the context and the purpose for the interview (e.g. programmatic in general, quality of science, gender, management, governance).

- **Surveys**

In addition two online surveys will be carried out: (i) one targeting L&F researchers and covering programmatic aspects of L&F as well as the working environment; (ii) another survey will target L&F partners, to obtain their views on L&F as a partner and their partnerships.

- **Expert knowledge of team members and peer reviewers**

The areas of expertise of the team members are described in ANNEX C. The evaluation will map and interview recognized peer researchers and institutions in all research domains of L&F to tap into expert knowledge outside of the evaluation team where required. It should be ensured that external expertise covers a broad range of perspectives (from different types of institutions and different geographic zones).

### 5.3. Methods

---

The evaluation has four phases, two of which are completed. The methodology is described separately for each phase, with the greatest detail devoted to the inquiry phase in which the bulk of the work will take place:

#### 5.3.1. Preparatory phase

---

The preparatory phase is now completed. It has had the following elements:

- A structured review by IEA of all key L&F documentation, and a mapping of all the CRP activities, carefully identifying funding sources, timelines, agreed deliverables and products. Much of this is summarized earlier in this report;
- The compilation by IEA of an inventory of all projects associated with each of the L&F flagships and research themes;
- The recruitment of the Team Leader by IEA, and in partnership with him, the identification of team members;
- The development of the Terms of Reference (TOR) for the Team Leader and the various team members;
- The assembly of preliminary information on the CRP and its partners;
- The review of existing evaluation material relevant to the work carried out under L&F;
- The specific review of the CRP commissioned evaluation of the value chain approach;
- The establishment of a Reference Group for the evaluation;
- The establishment of a peer review panel to review the draft inception report.

#### 5.3.2. Inception phase

---

This report summarises the now completed inception phase, during which the evaluation's scope, focus, key evaluation questions, approaches and methods have been defined, discussed among the team, and presented in this report. Additional activities that have been completed during this phase are:

- A review and synthesis by IEA of monitoring and reporting information pertaining to L&F;

- An evaluability assessment of the Programme, including the extent to which the ToC constitutes an adequate framework for the evaluation; this is presented under section 2.5 above;
- The development of an analytical framework based on the key evaluation questions, as described in section 4.
- An outline of the data collection methods and other instruments to be used in the evaluation (presented in this section);
- Elaboration of a draft evaluation timetable, including the travel plan of the team (site and centre visits, as well as other travel);
- Development of indicative evaluation report outline, and division of roles and responsibilities among the team;
- A review of the report by two external peer reviewers and the whole of the evaluation team.

### 5.3.3. Inquiry phase

The Evaluation will enter the inquiry phase in March 2015. The phase will have the following components:

#### A. Portfolio analysis

*Level of analysis: overall program level*

*Objective: To “unpack” the various components and levels at which L&F works and to assess coherence and identify gaps*

In addition to work already done for the inception report (please see section 2.4.) the evaluation will analyse the projects and activities mapped to L&F according to various characteristics to “the various components and levels at which L&F works and to assess coherence and identify gaps. This will be done on the basis of both, the bilateral project portfolio as well as the POWB 2015, which also includes W1/2 funded activities.

#### B. Coherence analysis of the L&F programme

*Level of analysis: a representative sample (covering around 70% of total budgets) of selected bilateral and W3 funded projects, with a focus on active and recently approved projects*

*Objective: to assess relevance and coherence; identify gaps; assess to what extent bilateral and W3 funded projects’ objectives match Flagship- level objectives and L&F overall program objectives; assess the extent to which cross-cutting issues have been considered in the projects.*

This analysis will be mostly desk review based and will include a review of project documentation and project level Theory of Change/impact pathways/logframes (if available). A template will be developed which will include rating scales as well as short narrative assessments by team members.

#### C. Output analysis

*Level of analysis: all Flagships (former Research Themes)*

*Objective: to review progress to date against work plans.*

This will primarily be done through desk review and might include follow up interviews with senior scientists

Information will be drawn from programme as well as Flagship level reports, which include a traffic light system to illustrate progress. The analysis will also consider information provided on why outputs have been achieved or not and what factors explain programme results.

### D. Review of the Theory of Change

*Level of analysis: overall program and flagship level*

*Objective: to assess the extent to which the ToC contributes to programme strategy and management for effectiveness and learning.*

This will be done through literature review and interviews with scientists and partners at Centres and field sites.

### E. Case studies of value chains

*Level of analysis: five purposively selected value chains*

*Objective: assess the range of activities in place, the interaction, both direct and indirect, with the discovery flagships, the relevance to the Value Chain Transformation and Scaling Flagship, the relevance to the Systems Analysis for Sustainable Interventions (SASI) flagship, and the interaction between the last two mentioned flagships, as well as the relevance and effectiveness of different partnerships undertaken by the value chain scientists. This contributes to quality of science, effectiveness, efficiency, gender and partnerships.*

Five value chains will be reviewed. The following are proposed, comprising one value chain of each species/commodity cluster:

- Small ruminants in Ethiopia
- Dairy in Tanzania<sup>82</sup>
- Pigs in Vietnam
- Dual purpose cattle (meat and milk) in Nicaragua
- Aquaculture value chain in Bangladesh

The proposed list includes three value chains not visited in the recent CRP-commissioned evaluation of the value chain approach of L&F, namely Nicaragua dual purpose cattle, Vietnam pigs and Bangladesh aquaculture. During the visit to small ruminants in Ethiopia, the interaction with ICARDA, which has devolved some of its activities to Addis Ababa, will be evaluated. The visit to aquaculture in Bangladesh will draw on the recent evaluation of AAS and explore the interaction of AAS and L&F, selecting a different set of partners and beneficiaries than the AAS evaluation.

The assessment will require:

- Review of documentation to compile a map of the value chain in question and identify key issues and stakeholders
- Review of information generated by the M&E system

<sup>82</sup> <http://www.pim.cgiar.org/2014/11/17/african-dairy-value-chain-seminar-lessons-tools-approaches-to-african-dairy-development/>

- Field visits to review. These can be expected to include interviews with key informants and focus groups along the value chain, interviews with key individuals in partner organizations, and visits to research sites to observe field conditions.
- Prior to the field visits, a checklist will be developed which covers the key areas of inquiry, and the types of information to be sought from different categories of stakeholder.

In developing the checklists for value chain study visits to team will refer to the results of the CRP-commissioned evaluation of the value chain approach of L&F. The team also proposes to consult the authors of the report.

Importantly, Centre and value chain study visits will be closely coordinated to limit travel to the minimum necessary, and team constitution of the visits will be based on the priority technical, funding type or other issues associated with the flagships concerned.

### **F. Review and synthesis studies of animal health, genetics and feed and forage flagships**

*Level of analysis: Flagship level*

*Objectives: to catalogue the range and nature of research underway, and to evaluate the overall progress of each Flagship.*

There will be two stages of this component of the evaluation. The first broad element will develop a synthesis of all activities under each of the three flagships, analysing areas of work, design, products, partnerships and linkages. This element will also explore the linkages and interactions with the delivery orientated flagships, and the logic of these interactions with the ToC. Contributes to quality of science, effectiveness, efficiency, gender and partnerships.

The second stage of this component of the evaluation will purposively select at least two case studies of clusters of activities in each of the discovery Flagships to explore in more depth their evolution, progress, linkages, partnerships and impacts. Case studies will be selected to cover a range of research themes, participating centres and funding sources.

The assessment will require

- Review of documentation
- Interviews with scientists and partners
- Observation of work in progress

### **G. Case studies of legacy projects**

*Level of analysis: a section of legacy projects from the bilateral project database*

*Objectives: to assess the extent to which research activities nearing completion or already completed are generating outcomes, and the extent to which the legacy projects have been integrated with the structure and ToC of the L&F.*

This will require

- Review of documentation including any evaluation and impact assessment reports
- Review of M&E information
- Interviews with scientists and partners

- Interviews with donors funding the legacy projects

## H. Quality of science analysis

The evaluation will use the framework for qualitative assessment of quality of science which has been developed for CRP evaluations by the IEA. The assessment will require:

- **Peer review scoring of a random sample of publications**

*Level of analysis: random selection of publications between 2008 and 2015 with a focus on the CRP period (2012-2015).*

Team members shall assess each publication according to the following standardized criteria and approach:

**Table 5: Publication analysis criteria**

<i>Criterion</i>	<i>Assessment approach</i>
methodological rigor and coherence of data analysis	Scale <sup>83</sup>
comprehensiveness of research narrative	Scale
innovativeness; novelty	Observation: would novelty be expected, if yes what kind of novelty was observed
quality (and appropriateness) of publication venue	Observation of low-quality or inappropriate venue relative to subject and quality of paper
collaboration (especially co-authorship) evident	Observation of extent of authorship and with whom
“fit” with CRP objectives	Observation of outliers
overall quality of publication (including additional criteria at evaluator discretion)	Brief narrative

- **Additional scoring of case study research activities**

*Level of analysis: value chains selected for case study analysis*

A qualitative review of a sample of value chain and discovery case study activity research outputs will assess the following aspects of research quality:

- clarity of researchable issues and testable hypotheses
- State of the art methodology
- Coherence with L&F research for development approach
- Relevance to the L&F program
- Evidence that research findings have been integrated into L&F activities
- Quality of research outputs

- **Review of quality of inputs**

*Level of analysis: all flagships*

This assessment will be done at the level of the Flagships and cover both activities funded under the W1/W2 windows as well as bilaterally-funded projects. The case studies, the desk review and the

<sup>83</sup> Scale of 4 (1=poor; 2=mediocre; 3=good; 4=excellent) or 6 (1=poor; 2=quite poor; 3=adequate; 4=quite good; 5=good; 6=excellent). Eventually evaluation findings should not have too many scales.

researcher survey will play an important role in this regard. The assessment aims to identify variability within the CRP, highlighting areas of excellence and identifying areas where improvements could be made. The analysis will take the specific requirements of the L&F research for development approach into account and focus on the following aspects:

- Track record and competence of team leaders (using, for example, h-index);
- Composition and competence of teams;
- Quality of research proposals; appropriateness and innovativeness of research designs; and
- Quality of data collection and management.

For research staff employed by the CGIAR centres who spend a substantial share of their time on L&F (to be specified, depending on the available information), information will also be collected from CVs. This information will include education (level, discipline) and length of professional experience. Together with information from the staff survey, this will contribute to assessing the human resource capacity available for L&F.

Review of processes and practices at L&F/Centres to promote and ensure science quality

Internal CGIAR processes for assuring science quality likely occur at the centre level, but may in some cases have CRP-wide (or Flagship-level) systems. These science quality assurance processes include:

- Internal peer review practices (at centre level, or at L&F level)
- Internal research meetings
- Incentives for researchers (e.g. performance assessment;
- Data management (internal curation and external usability/availability/access of data)
- Technological infrastructure and support (laboratories, computers, research space, equipment, technical support and maintenance)

Information to be gathered primarily through interviews (including program leaders) and researcher survey

- **Review of past evaluative assessments on quality of science**

*Level of analysis: overall program level as well as assessments of L&F related research since 2008*

The findings of past evaluative studies on quality of science may give indications of quality of science of CRP/participating Centres. These past studies include:

- ISPC and Consortium comments on L&F proposal
- ISPC and Consortium comments on L&F extension proposal
- Other external evaluations (CCERs, donor-commissioned)
- Recent Elsevier study on Centre publishing track record for period prior CRP

The IEA analyst will extract information available.

Assessment: Science quality assessment in the final evaluation report will combine qualitative assessment (in this note) and quantitative assessment (bibliometric and staff analysis) and should contain and overall assessment and assessment of the four components identified in the Inception Report (processes, input, output, and perceptions). It is prepared on the basis of team members' assessments (including evaluative scores and observations for publications and case study research activities, feed-back from interviews and other analytical narrative on quality of science within Flagship (or area of CRP for which the team member is responsible). Survey data will be used as complementary evidence when applicable.



## I. Review of governance, management and leadership

**Level of analysis:** Overall program level

**Objective:** to explore both governance (e.g. oversight, stakeholder participation and risk and conflict resolution) and management (planning, reporting, finance and human resource management, the quality and co-operation of leadership, the interactions between centres, and the interface between CRP related research and other livestock research underway).

This will involve interaction with centre directors and staff, with partners, stakeholders and beneficiaries. Centres will include:

- The lead centre, ILRI, in both Nairobi, Kenya and Addis Ababa, Ethiopia
- WorldFish in Penang, Malaysia
- CIAT in Cali, Colombia
- ICARDA in Addis Ababa

It will require:

- Analysis of current G&M structures and processes (ToR, interrelationships, reporting lines, etc)
- Desk review of documents including PPMC and SPAC meeting documentations, ILRI Board of Trustees minutes, programme proposals and annual L&F reports
- Review of M&E outputs
- Visits to Centres for interview with management and researchers and observation of processes.

Organizational performance tools and criteria, which will be used are outlined in ANNEX E.

## J. L&F Researcher survey (possibly - to be decided)

**Level of analysis:** Overall program, all researchers contributing more than 20% of their time to L&F (assuming this provides a large enough sample – otherwise the time requirement will be reduced).

**Objective:** To get the views of a broad range of internal stakeholders in this evaluation on issues around management effectiveness and efficiency, quality of science, etc

If this survey is considered to be useful it will be conducted towards the end of the inquiry phase when some emerging issues can be tested and validated. It will be conducted through an online based survey system and will be piloted in advance. The survey will be sent to researchers who contribute to L&F with more than 20% of their time.

## K. Analysis of L&F's comparative advantage

**Level of analysis:** Overall program and value chain case studies

**Objective:** To assess the comparative advantage of L&F and its strategic positioning within the context of livestock and fish research

The evaluation will initially map the stakeholders and external peer/experts which are working within the program context. Based on this list and recommendations from the L&F Evaluation Reference Group the evaluation team will conduct interviews during country visits as well as through

skype. Interviewees will be asked about their views on the program and the strengths and weaknesses of L&F at the program level, but also within value chains.

### **L. Team organization and involvement of stakeholders**

#### **• Preparation of briefing notes for the evaluation**

Given that all team members will not be able to travel to all sites, but their specific expertise will be needed in every evaluation component, a set of briefing notes will be prepared by mid-March 2015 for use by team members on each study visit. The responsibilities for these are set out below:

Governance and Management: Felix von Sury

Value chain assessments: John Morton and Anni McLeod

Animal Genetics: Will be assigned to the animal genetics expert

Fish Genetics: Rex Dunham

Animal Health: Will be assigned to the animal health expert

Feeds and Forages: Peter Udén

Gender: Anni McLeod

Environment and NRM: John Morton

These notes will be shared to all team members before the end of March.

#### **• Stakeholder feedback following each site visit**

The evaluation will set as standard procedure a debriefing session at the end of each study visit<sup>84</sup>. This will entail a formal presentation to the CRP scientists by the evaluation team member(s) of the key observations made during the visit, and a feedback session to solicit comments on the observations from CRP scientists. Importantly, these observations are for information and discussion, and will not extend to conclusions or recommendations.

If appropriate, and if agreeable to the CRP scientists, the debriefing session may be open to partner scientists, organisations, donors and other key stakeholders involved in the research. In some cases it may be necessary to set up a separate debriefing session with this group of stakeholders to elicit comments from a wider group of actors without inclusion of observations critical of the CRP.

### **5.3.4. Reporting phase**

The structure (outline) of the final report will be drafted and agreed between the team and IEA at the start of the inquiry phase. A draft outline is presented in ANNEX F.

A draft report will be progressively compiled as the inquiry phase progresses, with contributions from each team member under a set of clearly articulated responsibilities and deadlines. The evaluation team will conduct a WriteShop in October 2015, which brings the team members together, and reviews and distils the various products of the evaluation, setting up team responsibilities for the final writing phase. All team members will contribute as requested to the analysis and to the subsequent preparation of text. Writing assignments will be completed by early October 2015, and a draft report submitted to IEA by 15<sup>th</sup> October. The team leader will co-ordinate

---

<sup>84</sup> For the purposes of this evaluation, a Study Visit refers to a country visit (for value chain assessment) and a Centre visit (to ILRI, WorldFish and CIAT), in which inquiries and interviews have taken place over several days.

this last stage of report writing with guidance from IEA and according to standard requirements for CRP evaluation reports.

## 5.4. Main limitations of the evaluation

Due to the limited time that the CRP has been in operation, the evaluation covers only a relatively short period for assessing programme performance and achievements to-date. The evaluation's ability to assess achievements and impacts from past research relevant to the current CRP may be limited by the lack of evaluative information across programme areas. The size and geographic spread of the CRP, as well as the large number and diversity of partner organisations, may limit the scope of the evaluation which will need to select suitable methods to assess the CRP for example, through representative sampling.

There is a moving target nature of L&F, which has evolved considerably during its short life. Changes have included alterations in the structure, the ToC, the way that gender is handled, among other adjustments. In addition the CRP has had to accommodate changes in the demands placed on it by CGIAR management. This is one reason why the formative element of the evaluation will be important.

## 6. ORGANISATION AND TIMING OF THE EVALUATION

### 6.1. Team composition and responsibilities

The evaluation will be undertaken by a multidisciplinary team covering a wide range of disciplines, areas of expertise and experience. The inception report was developed by a team of seven members with a broad range of evaluation and disciplinary experience. Two team members have withdrawn and are being replaced with high-calibre experts for the remainder of the evaluation.

The Evaluation Team Leader has broad experience of programme implementation and evaluation at the international level, and is supported by a team of experts who have between them extensive and proven experience at a variety of different levels, working for international and development agencies, on issues, programmes and policies related to L&F's activities.

Table 7 below summarises the responsibilities of each team member.

**Table 6: Evaluation team members**

Name	Background and expertise	Responsibilities in the evaluation	Field and centre engagement required
Anni McLeod	Socioeconomic impacts of livestock research and development; policy; organisational strategy and management; partnerships; value chain economics; sociological and gender dimensions; food security.	Team leader, overall evaluation leadership; Inter-CRP and Inter Centre research and partnership in Livestock and Fish research, Systems Analysis for Sustainable Interventions (SASI), Theories of Change,	<ul style="list-style-type: none"> <li>Centre visits (ILRI, Nairobi; CIAT, Cali) to explore CRP and Centre commitment to L&amp;F, cross-CRP and cross Centre collaboration, technical interaction and performance of Flagships, and conceptualisations of future L&amp;F research.</li> </ul>

## Evaluation of L&F, Inception Report, April 2015

		gender, and contributions to pork and dairy value chain assessments	<ul style="list-style-type: none"> <li>• Overview of SASI at ILRI</li> <li>• Three value chain visits (dairy, Tanzania; pork Vietnam; dual purpose cattle Nicaragua)</li> </ul>
Animal health expert	Expected to include but not be limited to: Livestock health research methods; global demands in animal health; implementation of multi-disciplinary research; research quality assessment	Animal Health, overview of value chain research and interface between discovery and delivery flagships, contribution to value chain assessments	<ul style="list-style-type: none"> <li>• Overview of animal health research at ILRI, supported by selected case study assessments</li> <li>• One value chain visit (small ruminants in Ethiopia or pork value chains in Vietnam)</li> </ul>
Animal genetics expert	Expected to include but not be limited to: Genetics research; research methods; research for development; capacity building.	Animal Genetics capacity building, contributions to small ruminant value chain assessments	<ul style="list-style-type: none"> <li>• Overview of genetics research at ILRI, supported by selected case study assessments</li> <li>• One value chain visit (small ruminants, Ethiopia) as case study of genetics research</li> </ul>
Felix von Sury	CRP and Centre effectiveness and efficiency; programme governance, organization and management, including financial management;	Governance, management and administration of the CRP	<ul style="list-style-type: none"> <li>• One value chain visit (small ruminants Ethiopia), combined with assessment of governance and management of ICARDA contributions at ILRI, Addis Ababa</li> <li>• Centre visits to ILRI and CIAT Nairobi</li> </ul>
John Morton	Institutional and policy analysis in the context of development; climate change; research planning, methods and management; livestock policy	Value Chain transformation and scaling, interface between discovery and delivery flagships, climate change and natural resource management impacts, contribution to fish and small ruminant value chains	<ul style="list-style-type: none"> <li>• Centre visit to WorldFish, Penang to review interaction between flagship and value chain work and social science elements of aquaculture program.</li> <li>• Two value chain visits (aquaculture, Bangladesh and small ruminants, Ethiopia) as case studies of value chain research, and case studies of climate change and NRM issues encountered, and the social science contributions to research.</li> </ul>
Peter Udén	Livestock nutrition/feed and forages research; interface between L&F and feeds CRPs	Feeds and Forages, contribution to dairy and dual purpose livestock value chains	<ul style="list-style-type: none"> <li>• Centre visit to CIAT, coordinator of feeds and forages research in the CRP</li> <li>• Two value chain visits (dual purpose livestock in Nicaragua, and dairy in Tanzania) as case studies of feeds and forage research in value chains</li> </ul>
Rex Dunham	Aquaculture; fish genetics; interface between fish genetics, feed and health; interface between L&F and AAS CRPs; capacity building	Aquaculture, and Fish Genetics, contribution to fish value chain assessment	<ul style="list-style-type: none"> <li>• Centre visit to WorldFish to conduct an overview of the fish genetics and aquaculture research of the CRP</li> <li>• One value chain visit to Bangladesh as a case study of aquaculture value chain research</li> </ul>

### 6.2. Evaluation governance/roles and responsibilities

The Evaluation will be conducted by a team of independent external experts which is led by a team

leader. The Team Leader has final responsibility for the evaluation report and all findings and recommendations, subject to adherence to CGIAR Evaluation Standards. The Evaluation Team is responsible for submitting the deliverables as outlined in more detail below.

**The IEA** is responsible for planning, designing, initiating, and managing the evaluation. The IEA will also be responsible for the quality assurance of the evaluation process and outputs, and for the dissemination of the results. The IEA will take an active role in the preparatory phase of the evaluation by collecting background data and information and by carrying out preliminary analysis on L&F. An Evaluation Manager, supported by an Evaluation Analyst, will provide support to the team throughout the evaluation.

**L&F management** plays a key role in helping provide for the evaluation team's informational needs. It provides documentation and data, information on all L&F activities, access to staff for engagement with the evaluators, and information on partners and stakeholders. It facilitates arrangement of site visits and appointments within the lead Centre and other stakeholders. L&F management is also responsible for giving factual feedback on the Draft Report and for preparing the Management Response to the Final Report. It assists in dissemination of the report and its finding and lessons and it acts on the accepted recommendations. While the evaluation is coordinated with L&F management, ILRI as the lead Centre is a key stakeholder in the evaluation. It hosts visits to the Centre and its leadership and board are expected to make themselves available for consultations during the evaluation process.

A **Reference Group** has been set-up to work with the IEA Evaluation Manager and Team Leader to ensure good communication with, learning by, and appropriate accountability to primary evaluation clients and key stakeholders, while preserving the independence of evaluators. The Reference Group provides views and inputs at key decision stages in the evaluation design and implementation process, including for the Terms of Reference, the Inception Report and the Draft Report. The Reference Group may also play an important role in leading evaluators to key people and documents. The reference group consists of eight representatives, listed in Table 8

**Table 7: L&F Evaluation RG members**

NAME	POSITION	ORG
Lindsay Falvey	Faculty of Veterinary and Agricultural Science ILRI BoT member	University of Melbourne
Michael Peters	Tropical Forages Program Leader	CIAT
Michael Phillips	Director, Aquaculture and Genetic Improvement	WorldFish
Tom Randolph	CRP Director	ILRI
Antonio Rota	Senior Technical Adviser Livestock and Farming Systems	IFAD
Sarah Simons Jurjen Draaijer	Global Sector Coordinator for Agriculture Global Dairy Coordinator, SNV	SNV
Henk van der Mheen	Programme manager	Wageningen University
Martin Webber	Executive Vice President and Partner SPAC member	J.E Austin

## 6.3. Quality Assurance

In order to ensure evaluation rigor, the following quality assurance will be implemented during the evaluation exercise.

The IEA, as manager of the Evaluation, will play a crucial role in assuring its quality. The IEA will work closely with the Evaluation Team throughout the evaluation, and will ensure that the tools and methodologies, as well as the process followed, are in line with the CGIAR Evaluation Policy and Standards as well as with those used in other ongoing CRP evaluation.

**External peer review:** The IEA quality assurance of evaluations include the peer review for each CRP evaluation by two external peer reviewers at two stages in the evaluation process: the draft inception report and the draft evaluation report. The primary function is not ex-post quality control but represents an additional quality review to the IEA evaluation managers. It is timed so that it can help improving the outputs (whether the inception or the evaluation report) and make them in line with CGIAR-IEA standards. Guidance for inception report and evaluation report as well as an outline for external peer reviewers to conduct the peer review have been developed in that respect.

The external peer reviewers selected for this evaluation are Prof. Regina Birner (University of Hohenheim) and Burt Perrin (independent evaluation consultant).

## 6.4. Timeline

The schedule for deliverables and work is indicated in Table 9 below.

**Table 8: Evaluation Timetable and Tentative Deliverables**

Phase	Period	Main outputs	Responsibility
<b>Preparatory Phase</b>	Jul – Oct 2014	Final ToR Evaluation team recruited	IEA
<b>Inception Phase</b>	Oct 2014 – Mar 2015	<b>Inception Report</b>	Evaluation team leader with support from IEA
<b>Inquiry phase</b>	Mar – Sep 2015	Centre and field visits Data collection and analysis Desk review, quality of science analysis Structured interviews and focus groups, including group interviews through electronic media Portfolio and matching analysis	Evaluation team with support from IEA
Presentation of preliminary findings	Oct 2015	Presentation of preliminary findings Feedback from main stakeholders	Evaluation team IEA
<b>Reporting phase</b>	Oct-Dec 2015		
Drafting of Report	Oct 2015	<b>Draft Evaluation Report</b>	Evaluation team

## Evaluation of L&F, Inception Report, April 2015

Feedback on draft report	Nov 2015	Feedback and comments	CRP Management and other stakeholders
Final Evaluation Report	Dec 2015	<b>Final Evaluation Report</b>	Evaluation team
Management Response	Jan 2016	Management Response	CRP Management
<b>Dissemination phase</b>	From Jan 2016	Communications products	IEA Team leader CRP Management

### Centre and field visit timeline

A Tentative schedule for inquiry travel to centres, flagships and value chains is provided below. This draft, discussed and revised during the first team meeting in February 2015, tries to balance the requirements for credible coverage of CRP activities, the expertise required at different sites visited, together with budgetary considerations. The travel schedule of the evaluation analyst has not been included, and will be discussed in February 2015.

**Table 9: Centre and field visit timeline**

Country	Date	Travel purpose	Team involvement	Flagship focus
Kenya	1 – 7 Feb 2015	Inception meeting Interaction with CRP and ILRI management	All + IEA	All
Malaysia	March/April	Interface with WF in Penang	RD, JM	Centre visit
Bangladesh	March/April	Interface with aquaculture value chain	RD, JM	Value Chain transformation and Scaling
Ethiopia	TBD – ideally May/June	Interface with small ruminant value chain	JM, Genetics	Value Chain transformation and Scaling
Tanzania	May/June	Interface with dairy value chain	PU, AM	Value Chain transformation and Scaling
Kenya	TBD – ideally June	Interface with ILRI and health and genetics flagships	AM, Animal Health, Genetics	Centre visit
Kenya	TBD – ideally July	Interface with ILRI and CIAT Nairobi	FvS,	Centre visit
Ethiopia	TBD – ideally July	Interface with ICARDAI	FvS,	Centre visit
Vietnam	TBD – ideally June/July	Interface with pig value chain	AM, Animal health	Value Chain transformation and Scaling
Colombia and	Early July	Interface with CIAT	AM, PU	Centre visit

Nicaragua		Interface with dual purpose cattle value chain		Value Chain transformation and Scaling
Italy	October	Synthesis thinking	All + IEA	All

## 6.5. Deliverables and dissemination plans

This **Inception Report** builds on the original Evaluation Terms of Reference and constitutes the guide for conducting the evaluation, by detailing (a) the scope of the evaluation (see Chapter 3); (b) the analytical frameworks which will be utilized by the evaluation (see Chapter 4); (c) the methodological tools (see Chapter 5), and (d); a work plan for the evaluation (ANNEX D).

The **Evaluation Report** — the main output of this evaluation — will describe findings, conclusions and recommendations based on the evidence collected within the framework of the evaluation questions defined in the evaluation matrix. The recommendations will be derived from the findings, provide alternatives as appropriate, be actionable, and indicate where possible the responsibility for implementation. They will be prioritized and addressed to the different stakeholders responsible for their implementation. The main findings, conclusions and recommendations will be summarized in an executive summary.

**Presentations** will be prepared by the Team Leader and the IEA for disseminating the Report to a targeted audience. A dissemination strategy will be developed during the inception phase<sup>85</sup>.

Several events will be organized to disseminate the evaluation results, including but not limited to:

- Webinars with L&F management and staff/Reference Group at the end of the Evaluation Team Meeting to present preliminary findings (Sept 2015);
- Presentations of the Draft Report to L&F Reference Group, L&F governance Bodies; ILRI Management and Board; Consortium (November 2015);
- Presentation of the Final Report to the Evaluation and Impact Assessment Committee (EIAC) and the Fund Council (Dec 2015).

## 6.6. Feedback and Responses to the Evaluation

Adequate consultations with L&F stakeholders will be ensured throughout the process, with debriefings on key findings held at various stages of the evaluation. Preliminary findings will be presented to the Reference Group and L&F management. The draft report will be presented to several different stakeholder groups. The final report will be presented to the Fund Council Evaluation and Impact Assessment Committee (EIAC). Following this, the IEA will interact with the management of L&F during the preparation of the management response.

L&F Management will prepare a response to the evaluation for the consideration of the Consortium Board. The **Management Response** will contain both an overall response to the evaluation, as well as response by recommendation—addressing each recommendation in the order presented in the Evaluation Report. The Consortium (Consortium Office, with approval of the Consortium Board) will

<sup>85</sup> See also the IEA document: CRP Evaluation: Process for Finalization, Feedback and Decision-making



review the Evaluation Report and L&F Management Response and provide their response on the Evaluation Report recommendations, Management Response and Action Plan.

The Final Evaluation Report, L&F Management Response and the Consortium Board Response will be considered by the Fund Council **Evaluation and Impact Assessment Committee (EIAC)**. As the final step of the Evaluation Report process, the Fund Council will consider the findings and recommendations of the Evaluation Report and the answers of the L&F Management Response and Consortium Board Response, then provide decision support and endorsement of the evaluation, responses, action plans and proposed follow-up.

## **ANNEX A. - TOR FOR THE INDEPENDENT EVALUATION OF LIVESTOCK AND FISH**

Terms of reference are to be found on the following link.

[http://iea.cgiar.org/sites/default/files/TORs%20L%26F%2028%20OCT%202014\\_FINAL.pdf](http://iea.cgiar.org/sites/default/files/TORs%20L%26F%2028%20OCT%202014_FINAL.pdf)

## **ANNEX B. - CONCLUSIONS FROM THE ISPC COMMISSIONED WHITE PAPER ON LIVESTOCK RESEARCH UNDERTAKEN BY THE CGIAR**

- Livestock research by the CG Consortium remains a priority area for reducing rural poverty, improving food security, improving nutrition and health and contributing to sustainable management of natural resources, outcomes which constitute the System Level Outcomes of the CG's Strategy and Results Framework.
- Livestock research is multifaceted and transdisciplinary, and benefits from the wide range of expertise offered by the CG Consortium under the 15 CRPs, and by their partners outside the CG Consortium.
- There are many research questions relevant to livestock: bio-physical, socio-economic, methodological and policy-related, that are being addressed in different CRPs. However, there are also many that are not receiving the attention they deserve. This is due in part to the opportunistic way in which the CRPs were created, without the development of a needs framework. It is also due to the multifunctionality of livestock and multiple production objectives of small-scale livestock keepers.
- The flagship livestock CRP 3.7 is well placed to tackle the central driver of smallholder intensification in four important value chains distributed in Africa, Asia and Latin America. The CRP reflects ILRI's attempt to become smarter in bringing together the species, value chains and regions in which livestock really will make a difference to the poor. The major gaps and opportunities identified in this CRP are in the area of post-harvest losses in each of the commodities, and in undertaking a transregional analysis which would help to put the selected value chains in a wider global context, giving a better understanding of the extrapolation potential of the results obtained from this limited cluster. Key to the success of the CRP concept for livestock is good cross-CRP dialogue and collaboration. While CRP 3.7 has built strong partnerships with several other CRPs, and with national, regional and northern partners, the challenge will be to engage effectively with the broader natural resource management, climate, water and policy CRPs to ensure that it does indeed contribute to all four SLOs.
- CRP 4 effectively brings the human health implications of the intensification process to the fore, as well as adding a broader global perspective of zoonotic and emerging diseases to the CG Consortium agenda.
- Systems CRPs. Livestock issues are being considered in two of the three systems CRPs (1.1 and 1.2). The methodological approach and geographical focus of 1.3 also offer potential for the inclusion of livestock in the strengthening of community resilience, improvements in markets and productivity, improvement of service institutions and support of livestock policies, particularly in Bangladesh, Cambodia and Zambia.
- CRP 1.1 considers the specific roles of livestock in vulnerability reduction and progressive crop-livestock integration under suitable circumstances, and has what appears to be a

- functional interface with CRP 3.7 (exploring small ruminant value chains) and CRP 7 (exploring payment for environmental services). Areas which may be under-represented in drylands livestock research include rangeland ecology dynamics, the role of women in market access, and land rights, conflict and broader policy issues, including the voice and representation of dryland dwellers.
- CRP 1.2 should provide the vision and broad conceptual framework with which all commodity CRPs should be able to identify and interface. The authors of this analysis consider it to have its own independent research outputs which did not appear to be easily compatible with the outputs of the commodity CRPs. It also appeared to have the smallholder farmer as the main unit of analysis, potentially limiting exploration of system evolution.
  - CRP 2 brings together policy analysis activities across the whole span of food security and agriculture issues. However, it does not capture some of the important specificities of livestock-related policy issues, especially the multiple and shifting objectives of governments in respect to livestock development, the problems of livestock service delivery, and the systemic issues of risk and high transaction costs in livestock product value chains.
  - Feed research is situated to varying degrees in many CRPs, which is related to the wide variety of forages and crops that constitute livestock feeds. This fragmentation poses considerable challenges for facilitating cross-CRP learning and collaboration, which has not been sufficiently addressed. There is an urgent need to develop a more formal mechanism for discussing and addressing feed needs in the different value chains, livestock systems and target environments, and encourage the various 'feed suppliers' to conduct research that addresses these needs (e.g. develop new fodder crops for identified needs).
  - The systems-oriented research of many Crop CRPs, which includes feed and livestock research, is somewhat isolated from the 'main-stream' feed and livestock research of CRP 3.7 and CRPs 1.1 and 1.2. Several critical linkages need to be forged to ensure effective collaboration and joint research on feed (and livestock) research among CRPs. These include links between CRP 3.7 value chains, the systems-oriented research in CRPs 1.1 and 1.2, and the livestock-related systems research in Crop CRPs. In the CRP proposals, many linkages were identified but few were funded, or were partially funded through existing projects. Apart from discussing options on how to collaborate more effectively, there is a need to specifically allocate budgets for collaborative research activities to encourage these cross-CRP linkages.
  - CRP 7 represents the CG Consortium's initiative to research climate change in an agricultural context, including both adaptation and mitigation strategies. Livestock-specific issues are under-emphasised, including disease risk, possible change in rangeland composition, developments in estimating and managing livestock contributions to greenhouse gas emissions, and win-win scenarios in adaptation and mitigation in livestock systems.
  - Other research gaps. We conclude that there are some additional research gaps, discussed above in section 3. These include the need for greater capacity in epidemiology and impact assessment, in animal health service delivery models, options and policies, and in the role of the private sector in the intensification of smallholder systems. In addition there is a strong need for partnership with NGOs and socio-economic research capacity within non-CG research institutes both northern and southern in order to keep the systems CRPs and commodity CRPs

- in tune with the dynamics of rural development.
- The CG livestock research agenda and ILRI's strategy. The concept note developed for this strategic overview states "The cross-CRP analysis on livestock interactions needs to be set in the context of the new strategy of the CGIAR's livestock centre (ILRI) on one hand and the global needs and capability for livestock research on the other hand". ILRI's new strategy, in its current form, does not provide the strategic Consortium-wide leadership necessary to form the blueprint for a CGIAR approach to livestock research. It is very generic, it takes a Centre-based approach, and does not articulate adequately the roles of other CRPs and Centres. It appears that the emerging Operational Business Plan might provide greater clarification, but without wider consultation with other CRP leaders and Centres, which we understand is not currently planned in the process, the emerging product is unlikely to meet the needs of the CG Consortium as a whole.
  - The need for a strategic framework of livestock research across CRPs and Centres. As noted in the introduction to this strategic overview, the process of CRP development was not one which clearly mapped out the major agricultural research challenges and allocated them, with accompanying adequate funding, to the relevant scientists or centres of expertise. Rather it was a somewhat opportunistic and to a degree competitive process. There is therefore an urgent need to develop a strategic framework for livestock research across the CG Consortium in order to ensure that priority issues are being addressed, that they are being addressed in the Centres and CRPs holding the scientific capacity and comparative advantage, and that funding gaps can be identified and clearly articulated.

## ANNEX C. - EVALUATION TEAM

### Team leader: Anni McLeod

---

**Dr Anni McLeod** is an independent consultant based in Edinburgh, UK, who specialises in livestock economics and policy and the management of organisations and projects. She has worked for 30 years with governments, international agencies and research systems worldwide.

For seven years Anni was the Senior Livestock Policy Officer in the Animal Production and Health Division of FAO, where her portfolio covered many aspects of livestock sector analysis, policy advice and organisational strategy. She managed the socio-economics programme for the Emergency Centre for Transboundary Animal Diseases, which advised on compensation strategies for avian influenza and the socio-economic impacts of disease control strategies. She also co-led FAO's culture change initiative and contributed to the strategy for the gender programme. Until 2003 she was a staff member of PAN Livestock Services and the Veterinary Epidemiology and Economics Research Unit at the University of Reading, carrying out consultancies and field research in Africa, Asia, Latin America and the UK. For four years she was based at the Kenya Agricultural Research Institute as leader of the socio-economics skills group for a DFID-funded project.

Recent assignments have covered economic impacts of infectious diseases of livestock in Viet Nam, costs and benefits of a disease-free zone in Zambia, socio-economic and market consequences of FMD control strategies in Namibia, strategy advice to FAO's animal health programme, advice to GALVmed on impact assessment and monitoring, implications of livestock sector trends for animal welfare, gender issues in smallholder dairy market chains. Anni is currently a peer reviewer for the British Biotechnology and Biological Sciences Research Council's Zoonoses in Emerging Livestock Systems programme and a member of its independent advisory group. She contributed to the review of extension proposals of CGIAR research programmes conducted by the Independent Science and Partnership Council.

### Team members

---

#### **Rex Dunham**

**Dr Rex Dunham**, a Professor in the School of Fisheries, Aquaculture and Aquatic Sciences Auburn University, USA has 38 years of experience in the area of Aquaculture and Fisheries Genetics. He lives in the USA and lived for two years in the Philippines where he served as the Program Leader/Senior Scientist, Genetic Enhancement and Breeding Program, International Center for Living Aquatic Resources Management. His areas of expertise include quantitative genetics and selective breeding, genetic biotechnology, genetic engineering, genomics, population genetics, aquaculture and reproduction. He has directed research projects in the USA, Philippines, Vietnam, Indonesia, Thailand, China, Bangladesh, India, Egypt, Ghana and Ivory Coast. He has been a consultant, taught, or served on review teams and panels in the USA, Canada, Philippines, Brazil, Taiwan, India, Indonesia, Spain, Italy and Vietnam.

Rex has published more than 300 scholarly works, including 159 peer reviewed journal articles as well as refereed symposium papers, book chapters and major reports. He has directed 50 graduate theses/dissertations (26 were international students). He has sole authored two books, Aquaculture

and Fisheries Biotechnology: Genetic Approaches, editions 1 and 2. Rex has won numerous research awards and recognitions, and has served as the President of the International Association of Genetics in Aquaculture during 2009-2012. He has considerable experience in assisting in the transfer and utilization of improved fish germplasm in developed and developing countries, and his research on genetics, selection and reproduction of catfish and hybrid catfish has been widely applied in the US catfish industry. Rex served on the Board of Trustees, GIFT (Genetic Improvement of Farmed Tilapia) Foundation International, Philippines and led the final stages of the GIFT project.

### **John Morton**

**Professor John Morton** has a BA from the University of Cambridge and a PhD from the University of Hull, both in social anthropology, the latter for a study of semi-nomadic pastoralists in north-eastern Sudan. He has worked for twenty years at the Natural Resources Institute of the University of Greenwich, where he is now Professor of Development Anthropology and Head of the Livelihood and Institutions Department. John has extensive experience in research and consultancy on social, institutional and policy aspects of livestock development for a variety of international donors, working in pastoral, mixed-crop livestock and smallholder dairy system. From 1995 to 2006 he was Socio-Economic Adviser, then Regional Dissemination, Promotion and Uptake Co-ordinator, for DFID's Livestock Production Research Programme. Recent work includes responsibility for the institutional and policy component of DFID's impact assessment and learning from the Ugandan Stamp Out Sleeping Sickness Campaign, being Team Leader of DFID's Strategic Review of the Democracy, Growth and Peace for Pastoralists Project in Ethiopia, and being a Team Member for the Strategic Overview of Livestock Research Undertaken by the CGIAR. John also has expertise on climate change impacts and adaptation and was Co-ordinating Lead Author for the Chapter on Rural Areas of the IPCC's Fifth Assessment Report.

### **Peter Udén**

**Dr Peter Udén** received his PhD from Cornell University 1978 in Animal Science/Animal Nutrition and became senior lecturer 1980 at the Department of Animal Nutrition and Management at the Swedish University of Agricultural Sciences (SLU). In 1992, he also became an Associate Professor at the Department. Since 2007, he is the Head of the Feed Science Division within the Department but is presently employed at 20% of full time by the University.

He has written some 100 research articles and also been Editor in Chief for some 10 years for the Animal Feed Science and Technology journal. In the area of animal nutrition, he has worked with the study of feed resources in Sweden, Tanzania and Vietnam while supervising PhD students in their sandwich programs at SLU. He has also supervised MSc students from countries such as Tanzania, Ethiopia, Zimbabwe, Zambia and Vietnam.

### **Felix von Sury**

**Dr Felix von Sury** is a pasture agronomist by training and has a PhD in Agricultural Science from ETH Zurich. Dr von Sury has extensive experience in international and development cooperation. He served for 13 years in the SDC, Swiss Agency for Development and Cooperation, Swiss Foreign Ministry. In the 1990 he was Programme Officer in the SDC Agricultural Service looking after a variety of research programmes, also of the CGIAR. Later he became SDC's Country Director for Nepal and Division Head for Eastern Europe. From 2000 until 2011 he was Executive Director of Intercooperation, a major Swiss development NGO active mainly in the fields of renewable natural resources, agriculture, forestry and climate change. Long-term assignments have taken Dr von Sury to Peru, Australia, India and Nepal. Since 2012 he has been a freelance consultant and led and participated in several evaluations and reviews, among others of the Bolivian Agricultural Innovation

and Services Programme, PISA, and of the AAS CRP. Dr von Sury is an independent expert for the Research for Development Programme of the Swiss Science Foundation; he sits on the Stakeholder Committee of the Swiss Aquatic Research Institute and is a member of the Board of the International Institute for Sustainable Development, IISD.

**Animal health expert:** to be recruited

**Livestock genetics expert:** to be recruited



**ANNEX D. - WORK PLAN**

MAIN TASKS	START	END	TEAM MEMBERS
<b>INCEPTION</b>			
Finalize Inception Report		28/02/2015	
Meeting with RG	beginning of March		
Final inception report		17/03/2015	
<b>PREPARATION</b>		<b>31/03/2015</b>	
Mapping institutions/main stakeholders		22/03/2015	
Compiling documentation request/identify documents needed		20/03/2015	
Development of tools		31/03/2015	
<i>Interview guides</i>		31/03/2015	
<i>Country visit protocol</i>		31/03/2015	
<i>Case study protocol</i>		31/03/2015	
<i>Discovery flagship analysis</i>		31/03/2015	
<i>Matching analysis</i>		15/04/2015	
<i>Publication assessment</i>		15/04/2015	
<b>INQUIRY</b>		<b>01/09/2015</b>	
Documentation Review	ongoing		
Collect and synthesis of relevant evaluations and IAs		30/04/2015	
<b>Field visits</b>		30/06/2015	
<i>Penang WF HQ</i>	30/03/2015	04/04/2015	JM, RD
<i>Bangladesh</i>	05/04/2015	10/04/2015	RD, JM
<i>Ethiopia (tentative)</i>	24/05/2015	03/06/2015	JM, Genetics
<i>Tanzania</i>	24/05/2015	03/06/2014	PU, AM
<b>Centre visits</b>			
<i>ILRI (tentative)</i>	June		AM, AHealth, Genetics
<i>ILRI Nairobi/ ICARDA Ethiopia (tentative)</i>	July		FvS
<i>Viet Nam (tentative)</i>	June		AM, AHealth
<i>Nicaragua and CIAT HQ (tentative)</i>	06/05/2015	15/05/2015	PU, AMP
<i>Mission reports</i>	Within 2 weeks of end of visit		
Interviews (non=field or centre visit related)	ongoing		
Staff survey		31/07/2015	
<i>Design</i>			
<i>Pilot</i>			
<i>Administration</i>			
Analysis of survey results		15/09/2015	
<b>ANALYSIS</b>		<b>01/09/2015</b>	

## Evaluation of L&F, Inception Report, April 2015

Matching analysis	ongoing	31/08/2015	
VC Case study reports		31/07/2015	
Flagship Analysis incl Output analysis		31/07/2015	
Quality of Science components		31/08/2015	
<i>Peer review scoring of publications</i>			
<i>Bibliometric analysis</i>			
<i>Review of processes and practices</i>			
<i>Review of evaluatve assessments</i>			
Governance and management		31/08/2015	
<b>REPORTING</b>			
Mission reports	Within 2 weeks of end of each missions		
Emerging findings note	Ongoing		
Team Skype discussion on emerging findings	Monthly		
Skype conference with L&F staff on emerging findings	Timing to be decided		
Team WriteShop to draft report	October – 1 week		
QA by IEA			
Draft report for circulation			
Incorporation of comments			
<b>Final report</b>		<b>01/12/2015</b>	

## ANNEX E. - ORGANISATIONAL PERFORMANCE TOOLS AND CRITERIA

Collected information, tools and assessment criteria:

<b>Governance</b>	<b>Facts</b>	<b>Tools</b>	<b>Assessment Criteria</b>
	ILRI BoT Views and Functioning	Interviews and minutes	<ul style="list-style-type: none"> <li>- Legitimacy</li> <li>- Accountability</li> <li>- Transparency</li> <li>- Equity/Fairness</li> <li>- Effectiveness</li> <li>- Efficiency</li> <li>- Independence</li> </ul>
	BoT/SPAC Composition	CVs	
	SPAC Views and Functioning	Interviews and minutes	
	ILRI DG Views	Interview	
	L&F leader view	Interview	
	Other centres views	Interviews	
<b>Project Management</b>	Priority Setting	Minutes? Interviews	<ul style="list-style-type: none"> <li>- Inclusiveness</li> <li>- Transparency</li> <li>- Efficiency</li> <li>- Effectiveness</li> <li>- Consistency</li> <li>- Learning</li> </ul>
	Planning	Activity plans? Science initiatives?	
	Resource Allocation	POWB	
	Monitoring	MEL framework and implementation	
	Reporting	Reports	
	Evaluation	Reports	
<b>Finance Management</b>	Budgeting	OCS-BUS	<ul style="list-style-type: none"> <li>- Effectiveness</li> <li>- Transparency</li> <li>- Safety</li> <li>- Timeliness</li> <li>- Consistency</li> </ul>
	Fund Flows	Contracts	
	Financial Reporting	Reports	
	Audits	Report IAU	
<b>HR Management</b>	Staff composition and turnover	Staff-Roll (gender, national/international, degree, location, duration)	<ul style="list-style-type: none"> <li>- Equity</li> <li>- Transparency</li> <li>- Participation</li> <li>- Efficiency</li> <li>- Learning</li> <li>- Consistency</li> </ul>
	Recruitment	Manuals, minutes, interviews	
	Performance Ass.	Examples	
	Salary	Salary schemes	
	HR Development	HR-manual, staff survey	

## **ANNEX F. - PROVISIONAL STRUCTURE OF THE FINAL REPORT**

1. Background to the evaluation
2. Methodology and approach
3. Analysis
4. Major findings
5. Results against overarching questions
6. Results against IEA criteria
8. Conclusions and recommendations

## ANNEX G. - L&F FLAGSHIP AND CLUSTERS OF ACTIVITIES – POWB 2015

FP	No	Clusters	W1/2	Bilateral	TOTAL	% of W1/2
Animal Health (AH)	1.1.	Animal Health Assessment and Prioritization	413,685	70,625	484,310	85%
	1.2.	Animal Population Health and Food Safety	202,106	202,106	404,211	50%
	1.3.	Disease Diagnostics and Vaccines	1,758,429	6,935,280	8,693,709	20%
	1.4.	Delivery Systems	382,065	394,222	776,287	49%
		<b>TOTAL AH</b>	<b>2,756,285</b>	<b>7,602,233</b>	<b>10,358,518</b>	<b>27%</b>
Animal Genetics (AG)	2.1.	System, Strategy and Genome Assessment	747,216	4,170,098	4,917,314	15%
	2.2.	Improved Breeds and Strains	566,913	764,199	1,331,112	43%
	2.3.	Delivery and Use Systems	480,290	545,548	1,025,837	47%
	2.4.	Breakthrough Technologies and Information Systems	561,858	479,436	1,041,295	54%
		<b>TOTAL AG</b>	<b>2,356,277</b>	<b>5,959,281</b>	<b>8,315,557</b>	<b>28%</b>
Feeds & Forages (FF)	3.1.	Feed Technology Platform	787,438	288,707	1,076,145	73%
	3.2.	Feed Resource Assessment	386,495	260,001	646,496	60%
	3.3.	More and Higher Quality Feeds and Fodders	1,360,570	2,110,360	3,470,930	39%
		<b>TOTAL FF</b>	<b>2,534,502</b>	<b>2,659,068</b>	<b>5,193,571</b>	<b>49%</b>
Systems Analysis for Sustainable Interventions (SASI)	4.1.	Conduct system component research and identify promising innovations	1,454,575	459,565	1,914,139	76%
	4.2.	Conduct systems analysis guiding the design and development of integrated intervention packages for the VCs	529,734	0	529,734	100%
	4.3.	Learn lessons and adapt VC and CRP operations and activities	354,691	658,652	1,013,343	35%
		<b>TOTAL SASI</b>	<b>2,339,000</b>	<b>1,118,217</b>	<b>3,457,216</b>	<b>68%</b>
Value Chain Transformation and Scaling (VCTS)	5.1.	Piloting and validating best-bet interventions	901,955	1,265,890	2,167,844	42%
	5.2.	Implementation of innovations at scale	472,322	1,414,491	1,886,814	25%
	5.3.	Value chain transformation learning	423,549	710,006	1,133,556	37%
		<b>TOTAL VCTS</b>	<b>1,797,826</b>	<b>3,390,387</b>	<b>5,188,213</b>	<b>35%</b>
MANAGEMENT		Management Unit	1,946,000	0	1,946,000	100%
		Strategic Investments	1,460,000	0	1,460,000	100%
		<b>TOTAL BUDGET 2015</b>	<b>15,189,890</b>	<b>20,729,186</b>	<b>32,513,075</b>	<b>42%</b>