RESEARCH PROGRAM ON Livestock and Fish

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More meat, milk and fish by and for the poor

CGIAR Research Program on Livestock and Fish
2014 Performance Monitoring Report

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ICARDA Science for Better Livelihoods in Dry Areas

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CGIAR is a global partnership that unites organizations engaged in research for a food secure future. The CGIAR Research Program on Livestock and Fish aims to increase the productivity of small-scale livestock and fish systems in sustainable ways, making meat, milk and fish more available and affordable across the developing world. The Program brings together four CGIAR Centers: the International Livestock Research Institute (ILRI) with a mandate on livestock; WorldFish with a mandate on aquaculture; the International Center for Tropical Agriculture (CIAT), which works on forages; and the International Center for Research in the Dry Areas (ICARDA), which works on small ruminants. http://livestockfish.cgiar.org

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Acronyms

AAS	CGIAR Research Program on Aquatic Agricultural Systems
A4NH	CGIAR Research Program on Agriculture for Nutrition and Health
BMP	Best management practices
CBPP	Contagious bovine pleuro-pneumonia
CIAT	International Center for Tropical Agriculture
CRP	CGIAR Research Program
ECF	East Coast fever
FEAST	Feed Assessment Tool
GAAP	Gender, Agriculture and Assets Project
GIFT	Genetic Improvement in Farmed Tilapia
GIZ	Deutsche Gesellschaft für International Zusammenarbeit
GTA	Gender transformative approaches
ICARDA	International Center for Agricultural Research in the Dry Areas
IDO	Intermediate development outcomes
IEIDEAS	Improving employment and incomes through development of Egypt's aquaculture sector project
ILRI	International Livestock Research Institute
KIT	Royal Tropical Institute (Netherlands)
M&E	Monitoring and Evaluation
NIRS	Near-Infrared Spectroscopy
OCS	One Corporate System
PCR	Polymerase chain reaction
SDC	Swiss Development Corporation
SLU	Swedish Agricultural University
SNV	Netherlands Development Organization
SoFT	Selection of Forages for the Tropics
SPAC	Science and Partnership Advisory Committee
TechFit	A tool for feed technology prioritization
TOSA	Tools for systems analysis

A. Key messages

A.1 Progress and challenges

The CGIAR Research Program (CRP) on Livestock and Fish maintains a vision for the health, livelihoods and future prospects of the poor and vulnerable, especially women and children, to be transformed through two pathways: through consumption of adequate amounts of meat, milk and fish, and through benefits from improved incomes and livelihood by participating in the associated animal-source food value chains. The program seeks to achieve this vision by increasing the productivity of small-scale livestock and fish production systems and improving the performance of their associated value chains.

The program proposed an ambitious new model to enhance the relevance, urgency and impact of its research. It is designed to bring together collective capacity with CGIAR and other partners to develop and deliver appropriate integrated solutions for the pro-poor transformation of selected livestock/animal-source food value chains. As part of the model, the program is exploring how to work with development partners to translate these solutions into large development interventions likely to achieve sustainable impact at scale. The process also defines longer-term research to prepare future breakthroughs to ensure the continued viability and growth of these value chains. This model is a new way of working for the CGIAR that has required reorienting capacity, testing novel approaches, mobilizing new resources and establishing new types of partnerships and capacity to engage effectively in the selected value chains.

In its third year in 2014, the program maintained its steady output of research results from its technology platforms to support sustainable livestock and aquaculture intensification, and began reviewing the lessons learned so far in implementing its value chain approach for enhancing impact. Upstream, new capacity to support research on fish health and feeds has created exciting opportunities for synergies on technical research across the species reflected in a presentation at a fish health meeting and interactions to align the development of processes and procedures in the repository and data system between WorldFish with those at ILRI. The genetics team succeeded in securing major funding from the Bill & Melinda Gates Foundation for two new projects on dairy and chicken genetics that seek to demonstrate how new advances and tools in genomics can deliver better-suited breeds to farmers in a shorter time frame. Downstream, activities were successfully initiated in the Bangladesh aquaculture value chain, strongly complementing the existing work of the Aquatic Agricultural Systems (AAS) CRP there. In the better-established sites in Ethiopia, Uganda, Egypt and Tanzania, effort shifted from a focus on assessment to testing of technological and institutional innovations. A CRP-commissioned external evaluation of the program's value chain approach endorsed the value of the approach and progress achieved, and offered guidance on addressing many of the challenges that remain to fully realize the potential of the approach.

The program has continued to address the challenges cited in the 2013 report, namely adaptively managing the under-resourced components in the ambitious plan of work described in the program proposal, nurturing interdisciplinarity—including mainstreaming gender dimensions—as part of the value chain approach, and establishing a monitoring and evaluation system based on the program's Theory of Change and appropriate for research-for-development. To improve integration both across disciplines and between the discovery and delivery components, three of the CRP Themes (Value Chain Development; Targeting Sustainable Innovation; Gender & Learning) were re-organized into two Flagships: Systems Analysis for Sustainable Intensification and Value Chain Transformation & Scaling. This new structure enhances integration of the various cross-cutting, mainly social science activities to work more closely together within the Systems Analysis Flagship, while giving more emphasis to the role of the value chain teams and their engagement with development partners as the Value Chain Flagship. The new Flagships were prepared during 2014 and came into effect in January 2015.

A.2 Two most significant achievements/success stories

Evidence on the impact of aquaculture for nutritional security in Bangladesh: A paper published in World Development provided compelling evidence supporting the program's Theory of Change that pro-poor development of animal-source food value chains can enhance nutritional security of low-income consumers. The paper, entitled "*Is aquaculture pro-poor? Empirical Evidence of Impacts on Fish Consumption in Bangladesh*" is a joint output of AAS with funding from GIZ. The paper explores the long suspected link between aquaculture and poverty reduction. By analyzing changes in fish consumption in Bangladesh 2000-2010, it shows that growth in aquaculture has led to greater fish consumption among the poorest consumers in Bangladesh. Following three decades of sustained growth, aquaculture now accounts for 53% of reported fish production in Bangladesh. Analysis of nationally representative data indicates

that in 2000 and 2005, the majority of fish consumed by extreme and moderate poor households originated from inland capture fisheries. By 2010, however, aquaculture contributed the greater proportion of fish consumed. The article describes how total fish consumption by extreme poor and moderate poor households remained more or less constant from 2000 to 2005 but from 2005 to 2010 grew 0.7 kg (8%) for extreme poor households and 0.5 kg (4%) for the moderate poor, with the rate of consumption growth was fastest among extreme poor consumers. Over this period, the supply of fish from inland capture fisheries declined sharply, compensated by growth in aquaculture's contribution. The authors consider the dramatic impact on consumption among the poor under a counterfactual that aquaculture had not grown. The contribution of aquaculture both to increased supply and lower relative retail prices for fish is highlighted and shown to be relatively more significant for low-income households, and especially the extreme poor. During the food price crisis beginning in 2007, average fish prices increased in line with global peak food prices, but the real price of fish from aquaculture did not rise, with the increase in aquaculture fish supply appearing to have lessened upward price pressure on inland capture fisheries. Aquaculture in Bangladesh has been depicted as unlikely to benefit low-income consumers because of a tendency to produce large, high value fish. This new evidence demonstrates clearly that this has not proven to be the case.

Linking gender analysis to action: The study "From gender analysis to transforming gender norms: using empowerment pathways to enhance gender equity and food security in Tanzania" was reported at the International Food Security Dialogue in Canada. The study analyzed the impact of a crop and goat intervention on household gender relations among the participating livestock keepers and agriculturalists and in the framework of food security. The findings show that the introduction of the dairy goats increased the workload of women and children, had positive impacts on the independence and perceived food security of both women and men, and increased women's decision-making. However, these changes were limited in depth and scope, and did not question or challenge normative perceptions of gender-based roles. The study suggests the adoption of participatory and transformative approaches to gender analysis that builds empowerment pathways from the ground up while simultaneously working to influence the social environment in which movement along those pathways can be realized. The study is an important step in establishing an evidence base supporting CGIAR gender research on gender transformative approaches (GTA). Based on these findings, a GTA-based social media strategy was developed to support the program's dairy value chain work in Tanzania.

A.3 Financial summary

The program executed USD 31.8 million (90%) of the total 2014 USD 35.5 million budget. Gender research accounted for 10.7% of expenditures.

B. Impact pathways and intermediate development outcomes (IDOs)

The overall program impact pathway and theory of change is described in the program's **Results Strategy Framework and Intermediate Development Outcomes (IDOs) (v.3)** (http://livestock-fish.wikispaces.com/IDO) and summarized in the program's extension proposal. The six IDOs adopted by program are:

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

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

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

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

IDO5: Lower environmental impacts in the target value chains

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

Indicators for the IDOs and methodology for estimating their target and actual values are described in an **IDO Indicator Manual.** During the year, it became evident that a revised, standard set of IDOs and sub-IDOs would be introduced under the new CGIAR Strategy and Results Framework, so it is anticipated that the indicators and methodology for their estimation will need to be revised. Work was initiated in 2014 to define how the monitoring and evaluation framework will be operationalized in practice, including the appropriate use of benchmarking, baselines and dedicated data collection. To date, the program is relying on situation analyses that have been prepared in the selected value chain countries that describe a range of indicators of the current status of the target pro-poor value chain based largely on secondary data in the public domain. More detailed baseline information is being collected as bilateral projects are funded and implemented in each value chain.

C. Progress along the impact pathways

The following summaries are derived from detailed annual reports by value chain and CGIAR center, and synthesis reports by program Theme; these can be accessed at: http://livestock-fish.wikispaces.com/2014_AnnualReports.

C.1 Progress towards outputs

The program has been structured in six Themes, three of which support the principal technology drivers of productivity and intensification in livestock and aquaculture systems: animal health, animal genetics and feeds and forages. The other Themes (gender, learning and impact; targeting sustainable interventions; value chain development,) apply a combination of relevant biological and social science to address key dimensions associated with pro-poor value chain development and intensification and ensuring more effective agricultural research-for-development that translates into impact.

Theme 1 - Animal health: This Theme generates data and materials to improve the pro-poor management of animal health and food safety in the selected value chains.

Rapid assessments of animal health constraints were completed in Tanzania, Uganda and Ethiopia. These will inform the design of in-depth studies to look more closely at individual diseases and their interactions. The value of longitudinal study design that capture disease interactions has been highlighted in a series of analyses published from an earlier intensive, longitudinal study in calves in western Kenya. These analyses have revealed the impact of co-infections on the survival of indigenous calves, the sources of variation in strongyle infections, and relative chronicity of haemoparasite infections, each of which has important implications for improving disease control in cattle. Progress in the detection and characterization of the cytotoxic T lymphocytes (CTL) response in immune cattle, which is the key protective mechanism and will form the basis of an improved East Coast fever vaccine, was made with the production of peptide-major histocompatibility complex (p-MHC) class I tetramers. In addition, research was completed which showed that the biomarker perforin can be used as an indicator for CTL activity, which will remove the need for costly and time-consuming cellular killing assays which are necessary to identify and evaluate potential vaccine molecules.

The role of a key *T. parva* surface protein, the polymorphic immunodominant molecule, was elucidated and indicates that it is important in the entry of the infective stage of the parasite into the host cells. As such, it offers a potential vaccine candidate since antibodies against the protein may prevent the establishment of infection. Work aimed at the development of an improved vaccine against contagious bovine pleuropneumonia (CBPP) was also advanced through the development of technology to alter the genome of mycoplasma organisms. By allowing the introduction or deletion of selected genes, this approach will allow researchers to identify, for example, gene products which are essential for virulence of the organism. Selective removal of such genes may result in a safe, non-pathogenic strain to be used as a vaccine. In a complementary line of research, proteomics analysis revealed surface proteins which are potential vaccine antigens given the likelihood that they are involved in host pathogen interactions. Disruption of such interactions by vaccine-induced antibodies may lead to protection against the disease.

To understand the role of vaccine in the control of CBPP, a model was developed to assess optimal intervention strategies. The model showed that a combination of effective vaccination together with improved testing and elimination of animals would significantly reduce the burden of the disease. It improves on previous work by determining quantitatively the extent of intervention that would be required to eliminate the disease. The model also estimates the minimal performance requirements for improved vaccines and diagnostic assays, which will guide the development and commercialization of such tools. A study on the willingness of farmers to pay for a CBPP vaccine indicated that participation levels in vaccination programs are lower than required to interrupt transmission of CBPP, and suggests that substantial sensitization will need to precede such programs. This finding was further supported by a participatory study assessing the knowledge, attitudes, perceptions and practices associated with CBPP vaccination and showing that farmers are not fully aware of the prevention measures available. The study also warned of the danger of adverse post-vaccinal reactions seen with the current vaccines which discourages uptake.

Aquatic animal health research got underway with a study on “Fish health interventions for sustainable tilapia value chain development in Egypt and Bangladesh” engaging the private sector (Merck/MSD) on emerging tilapia diseases. An aquatic animal health and food safety rapid assessment tool kit contextualized for Bangladesh was developed.

The strong cross-CRP synergy established with Agriculture for Nutrition and Health CRP (A4NH) generated a number of findings reported under A4NH but which directly contribute to ensuring appropriate development of Livestock & Fish value chains, including: assessing risks associated with Ebola in pigs in Uganda, with water quality and milk in Ethiopia

and with the pork chain in Nagaland, India; integrated health and nutrition assessments in the small ruminant chain in Ethiopia and tilapia chain in Egypt; spatial and temporal patterns of Rift Valley fever outbreaks in Tanzania; and a brief on animal-source food safety policy engagement in East Africa.

Theme 2 - Animal genetics: This Theme targets improved strains and breeding strategies that sustainably improve animal productivity.

In Bangladesh, fish genetics work on rohu carp was initiated with 210 families produced from wild stocks. The breeding program in Egypt, Malaysia and Bangladesh successfully produced next generations of their improved strain of Nile tilapia and those on blue tilapia and catfish were maintained. How research supported the seed dissemination strategy in Egypt was described.

Robust ICT tools have been developed to speed the efficiency of selective breeding and to gain information on the performance of livestock under farm conditions, such as "*Ng'ombe* planner", a new cell phone-based system for capturing and feeding back cattle performance on real time basis being trialed in Kenya. (*Ng'ombe* means 'cow' in kiSwahili.) These tools are being used to establish large data sets for informing breeding choices, the first of which has been created for dairy genetics in East Africa. Findings were reported supporting planning and optimization of community-based sheep breeding programs by proving the feasibility of pedigree recording and selection in village sheep flocks, simulating bio-economic efficiencies of various breeding structures (community based breeding programs versus nucleus breeding programs versus a combination), estimating genetic gains and profits under different scenarios of farmers participation, intensity of selection, duration of ram use, flock size of cooperatives and ewe to ram mating ratio in such programs, and reviewing the latest knowledge on estimates of genetic parameters for growth and reproduction in sheep.

Theme 3 - Feeds and forages: This Theme develops superior feed and forage options that respond to current and evolving demands to increase meat, milk and fish production while reducing the ecological footprint. An initial focus has been to establish a common assessment platform using Near Infrared Spectroscopy (NIRS) for feed quality lab analysis and developing a set of tools for field assessment. The NIRS network in South Asia, East Africa and Latin and Central America developed an updated NIRS equation for Bracharia and generated new equations for pig feeds (Uganda), pulses (lentils, chickpea, faba bean and field pea), fish feeds, hydrocyanic acid (HCN) in forages, non-protein nitrogen in compound feeds, and amino acid contents in monogastric, fish and ruminant compound feeds and feed ingredients (Africa and Asia). A new mobile handheld NIRS version extended the platform's phenotyping capability and was pre-tested for prediction of protein and fat content in aqua feeds. A shared CGIAR capacity now exists to cater to most feed advisory and analytical demands.

Assessments of existing feed resources inform their better use. Improved versions of the FEAST and TechFit tools, which have become the focus for supporting better assessment of available resources and options to improve their use, were developed in collaboration with the Systems CRPs. FEAST applications were combined with new Participatory GIS approaches and household surveys to propose baskets of feed options. TechFit was further parameterized based on expert views, and 30 factsheets were developed describing and characterizing representative feed interventions. The tools are benefiting from increasing application in a range of different contexts and geographies. Proof-of-concept of key feed interventions for making better use of existing feed resources such as feed processing, feed substitution, ration balancing and creation of small scale business enterprises was achieved in value chains in Tanzania and India. In Bangladesh, certain feed interventions have been scaled out through a USAID project. In collaboration with the Indian National Dairy Development Board, an international workshop at Patancheru introduced the concept of increasing accessibility to ration balancing tools to mitigate the high investment currently required to establish and maintain this type of individualized advice service for farmers.

With regards to reducing feed–mediated negative environmental footprints, an analysis was completed of the structure and performance of the fish feed value chain in Egypt, with a number of opportunities identified to increase efficiency in feed supply. A major study undertaken with the World Resource Institute offered a global perspective on the various environmental trade-offs associated with projected growth of world aquaculture under a range of scenarios, including implications for different feed strategies. The analysis highlights the need for alternative feed technologies. For livestock, systematic investigations of feed-price quality relationships in Tanzania confirmed regulatory mechanisms for feed quality were lacking or insufficient with significant impact on willingness to invest in feed supplements and feed concentrates.

With respect to improved feed and forage materials, options for upgrading of lignocellulosic biomass for animal feed were described in practical collaboration with private sector. A range of grass and legume forages were tested off station in Uganda for increasing feed biomass for ruminants and monogastrics in difficult production environments while at the same time mitigating the negative environmental footprint.

Theme 4 - Value chain development: This Theme develops and applies methods and tools to assess and engage in pro-poor value chains for animal-source foods. It simultaneously generates evidence about the appropriateness of the technologies and institutional innovations in designing integrated gender-sensitive interventions to take to scale. In 2014, this work was transitioning from assessment to testing of intervention components. Situational analysis reports are available for all selected value chains and indicating a range of candidate best bet technologies and strategies, as well as opportunities for poor households and pre-commercial actors to respond to increasing demand for animal products. These analyses reinforce evidence that high input costs, low output prices, lack of standards and grades, poor market information and inadequate coordination of the value chains are serious constraints. Benchmarking is being undertaken to prepare testing of candidate technologies: in Ethiopia the benchmarking toolkit under development was adapted to sheep and goats value chains and translated to enable mobile recording, with lessons documented. Use of commercial feeds in Tanzania was documented through a survey of the commercial feed sector.

A wide range of best bet technologies and strategies have been identified and are at various stages of prioritization, piloting and validation. A protocol was established to guide the selection and evaluation of candidate technologies. In Uganda, to improve standards and grades, algorithms based on two body measurements to get reliable predictions of body weight and improve the bargaining power of small scale pig farmers when selling pigs to traders were developed through collaboration with Iowa State University. In Egypt, the piloting of six women fish retailer groups under an SDC-funded project was documented.

The focus on preparing scaling out of interventions through engagement with strategic stakeholders continued, including communication training for staff of the Dairy Development Forum in Tanzania and facilitating the development of regional and village-level dairy innovation platforms in Tanga and Morogoro, Tanzania. An Aquaculture Innovation Platform was launched in Egypt and best management practices (BMP) training materials widely disseminated there, as well as transferred to Bangladesh working through AAS. . Activities were successfully initiated in the Bangladesh aquaculture value chain following approval of the Bangladesh value chain business case as a replacement for the Uganda fish value chain.

Theme 5 - Targeting for sustainable interventions: This Theme ensures that the program focuses on the appropriate value chains, sites, beneficiaries and solutions that will generate the most impact with the best environmental outcomes. Using the protocol developed by the program, site selection exercises were completed in Bihar (India) and Burkina Faso. In collaboration with the Humidtropics CRP, an online and open access-compliant data base was established for Tools for Systems Analysis (TOSA), which is being expanded as a repository for other types of tools, including those related to gender and value chain assessment. This platform facilitates access to the tools by external users and encourages better documentation of their use. Gender is one important dimension being searchable through the web portal, with metadata differentiated between gender strategic, gender integrated and gender neutral tools. As a key resource for targeting research, improved global livestock population density maps and methodology used to generate them were published and made available on the Livestock Geo-Wiki.

Work on the environment agenda produced a framework for environmental impact assessment in livestock value chains that considers environmental sustainability in terms of water, soil and biodiversity as well as greenhouse gas impacts, was reported at the 6th All Africa Conference on Animal Agriculture; the framework has been applied in Tanzania. A new research line on improving measurement of greenhouse gas emissions from livestock was initiated and an early publication highlighted the need for such data to improve the representation of livestock in nitrogen budgeting for Africa. A new agenda was also started on the role of animal-source foods for human nutrition, generating an infographic regarding fish and nutrition in Egypt and blogs on the contribution of fish to nutrition in Africa and in developing countries more generally to begin raising awareness.

Theme 6 – Gender and Learning: This Theme contributes to two program outcomes: the first ensuring that women, men and marginalized groups have more equitable access to affordable and nutritious animal-source foods through gender equitable interventions; the second supporting monitoring, evaluation and more active capturing and internalization of lessons learned.

The program's agenda on research is guided by its Gender Strategy which identifies four main areas of focus. To address the first on capacity development, Lessons from applying a simple tool to access partners' gender capacity development needs in Nicaragua, Tanzania, Ethiopia, and Uganda were reported. It informed training on gender in value chains conducted in Mozambique, Nicaragua and Ethiopia, as well as the development of a second generation assessment tool in collaboration with Transition International. Related to the second focus of the gender strategy on gender in value chains, publications based on earlier work documented the very low access of women to pump irrigation technologies and gender differentiated control of irrigated activities, provided evidence that feminist

evaluation can enhance effectiveness and equity of interventions meant for empowerment of small-scale in Syria. A study assessing the role of livestock in pathways out of poverty from a gender perspective found that the limited rights women generally have over livestock may relate to their informal means of acquisition (e.g. inheritance, gifts, etc.) that entail less rights when compared to outright purchase. Also, women's lack of access to complementary assets or service (e.g. health, marketing, etc.) reduces the viability of livestock as a pathway out of poverty for them. A Gender, Agriculture and Assets Project (GAAP) conceptual framework was developed to assess how gender and assets affect household and individual well-being. To confirm whether gender research priorities are appropriate and sufficiently comprehensive, reviews of previous experiences and lessons learned regarding gender were completed in Tanzania, Uganda and Ethiopia. In India, two studies found that although women and men have equivalent levels of ownership and access to assets and incomes, low literacy levels among women prevented them from active participation in the dairy cooperatives. A set of five research briefs summarized key gender research findings regarding cattle vaccine use, dairy producer organizations, microcredit, measuring empowerment, and indigenous poultry keeping. New tools to support gender analysis were developed for value chains and public health (aflatoxins, in collaboration with A4NH), with training provided in Uganda for one. The third gender strategy focus is gender and society. A case study on the role of gender analysis was reported at a major food security conference. The study assesses the impact of a crop and goat intervention in Tanzania on household gender relations and concluded that gender analysis may be insufficient if not supported by gender transformative approaches. As the result, two gender transformative social media strategies were developed for the Tanzania dairy value chain. An in-depth review of how to understand drivers of norm change in Bangladesh found considerable information on how trends such as climate change and commercial aquaculture are acting upon women and men dependent on agricultural livelihoods, but concluded that relational aspects of gender and how gender relations are evolving in response is not fully captured: better understanding is needed of how women and men, particularly among the most poor, are expressing and working with agency. A modular tool for Gender Transformative Analysis was prepared to assess changes in gender norms overtime. The final gender strategy focus considers equity in animal-source food consumption and nutrition. Work was initiated in this area with a gendered analysis of consumption in Ethiopia which identified norms and cultural factors restricting women's access to meat and milk. An in-depth study of animal-source food consumption in Egypt analyzed the role of prices, perceptions and preferences in consumer decision making.

To provide the basis for program and research evaluation, the program's monitoring, evaluation and learning framework was finalized, together with a manual for measuring the program's Intermediate Development Outcome (IDO) indicators. These indicators will need to be revised given the new IDOs adopted as part of the CGIAR Strategy and Results Framework. Work was initiated to design an M&E system appropriate for the type of research-for-development undertaken by the program, with two commissioned reviews completed that explore how such a system could be developed within the Theory of Change approach adopted by the program, and based on the impact pathway narratives being developed for each of the program's target value chains; narratives for India-Bihar, Ethiopia and Burkina Faso were completed in 2014. The program undertook its first CRP-Commissioned External Evaluation, which reviewed the program's value chain approach. A number of actions will be implemented in 2015 to respond to the recommendations from the evaluation. Lessons learned implementing such an evaluation were documented in the evaluation report. A major impact assessment study was reported presenting evidence on the links between aquaculture and food and nutritional security among low-income households in Bangladesh, highlighted above as one of the success stories for the year.

C.2 Progress towards the achievement of research outcomes and IDOs

The program devotes science to generating novel technologies and effective strategies that support pro-poor livestock and fish value chain development and transformation. At this stage in the program, much of the emphasis is on improving productivity, so research outcomes being observed are mostly related to this first IDO: Increased productivity.

The introduction of technology for reducing shrimp disease in Bangladesh translated into 448 million PCR-tested, WSSV-free shrimp post larvae shrimp being delivered from 23 hatcheries to around 23,000 small scale farmers (all men).[1] The Department of Fisheries is supporting wider uptake by making it mandatory for all shrimp hatcheries to supply only PCR-tested negative seed to farmers.

The remaining stocks of the live East Coast fever vaccine produced by ILRI were provided to vaccine distributors in Tanzania, Malawi, Kenya and Uganda, and the production technology has been transferred to the Centre for Tick and

[1] Technical report, USAID AIN Project. The report is not publicly accessible as WorldFish no longer uploads donor reports to the web since these types of reports usually are neither formally edited nor proofread. The report is available upon request.

Tick Borne Disease Control in Malawi. Increasing uptake of the vaccine contributed to successful engagement of national authorities and other stakeholders in the region in a workshop by ILRI and GALVmed to define the agenda for research and resource mobilization to further improve the vaccine, including removing cold chain requirements and the need for the antibiotic oxytetracycline as a necessary component of the vaccine procedure.

The Abbassa strain of Nile tilapia *(Oreochromis niloticus)* is now being used in at least 1200 fish farms in Egypt; 2,000 farmers and pond workers (men) received training on best management practices (BMP) there with initial assessments suggesting immediate changes in fish farm practices. A total of seven tilapia breeding nuclei have now been established in Bangladesh, six using the 11th generation of the GIFT strain from the WorldFish Jitra Station, Malaysia. Four Tilapia Satellite Hatcheries established with the support of the USAID Agriculture for Income and Nutrition project, have distributed more than 22 million improved seeds to 25,000 grow-out farmers (mostly men) throughout Bangladesh.[2] An estimated 488,426 farmers are now applying new technologies or management practices.

The Dairy Genetics East Africa project outputs provided evidence that helped leverage new investments to plan large research for-development programs on providing dairy cattle and associated breeding services in Tanzania through sustainable, long term business models.

The FEAST and TechFit tools for identifying feed needs and options are increasingly being requestedby research and development practitioners, both within the program's target value chains and within the systems and environmental CRPs. The resulting high demand for training made it a priority to develop a web-based tool and instructional program that supports users designing their own training sessions, including evaluations of reports and synthesis and use of key information. This approach is expected to accelerate uptake of the tools and systematic evaluation for improving efficiency of feed use in livestock and aquaculture value chains.

The SoFT tool now has now more than 250 000 visits per year, ranging from researchers, technicians, development workers to educational institutions.

As evidenced by the attention given to crop residue fodder traits in current planning in crop commodity CRPs, proof-of-concept work on dual purpose food-feed cultivars has demonstrably influenced international and national, private and public crop improvement to include crop residue quantitative and qualitative fodder traits in multidimensional crop improvement. The intermediate outcome from these changed research paradigms will be that crops will be increasingly improved from a whole plant optimization perspective, rather than for a single trait.

In Vietnam, tools for value chain assessment and benchmarking have been taken up by partners for their own programs.

C.3 Progress towards impact

Some initial evidence was generated regarding potential and realized impact. The study on impacts of aquaculture on food consumption among lower income consumers in Bangladesh, highlighted as one of the success stories showed a clear link between aquaculture development and nutrition security, underpinning the rational of increasing efficiency of farmed fish production, including genetic improvement, to increase access of the poor to nutritious animal-source foods in Bangladesh.

initial extrapolations from a review of the SDC-funded IEIDEAS project found that as the use of the improved Abbassa tilapia strain spreads and more farmers adopt Best Management Practices (BMP) including farm level biosecurity practices to reduce the incidence of disease, aquaculture production will continue to grow, generating more jobs along the value chain. Net incomes for fish farmers implementing BMPs are expected to have increased by around $17 million (an 11% increase in profitability) by the end of 2014 just due to improved feed efficiency while further gains are likely to have accrued to other value chain actors. The review also concluded that the adoption and application of BMPs in Egyptian aquaculture result in significant improvements in efficiency particularly with respect to feed use where the food conversion ratio was reduced to 1.4 compared to 1.8, improving profitability.

The impact of interventions from feed and forage research were estimated by ex-ante assessment of the value addition to feed and fodder moving along feed and fodder value chains. A first assessment in a Bill and Melinda Gates Foundation-funded scoping study estimated interventions improving the quality of the basal diet from crop residue and forages to double average daily milk yields to about 10 kg at feed costs amounting to about 50% of farm gate produce sales price. A second assessment found feed interventions reducing water requirements for dairy buffalo in India on byproduct based feeding systems by 75%, significantly mitigating its potential environmental impact. In Latin America, sales data indicate that another 70 000 ha were sown in 2014 with Brachiaria hybrids generated from the forage breeding program. Significant spill-over of new forages into East Africa was observed with an estimated 30 000 farmer having adopted Brachiaria hybrids.

D.Gender research achievements

As clearly indicated by the number and distribution of research achievements by the program's gender team described in section C.1 under the Gender & Learning Theme, the team made solid progress across all four objectives of the program gender strategy. This progress was achieved in a context in which the program's gender agenda was facing important challenges. Concerns had been raised both internally and externally that insufficient attention was being given to strengthening the program's gender research capacity and to ensuring that gender was adequately mainstreamed across the breadth of the program. These concerns were heightened when the senior gender researcher resigned due to family reasons and difficulties were experienced in recruiting a replacement. In response, the program initiated a gender action plan for gender mainstreaming, of which a central feature has been the engagement of the Royal Tropical Institute (KIT) to strengthen gender integration within the program and to allow the gender team to deliver on its strategic gender research. A team of KIT researchers undertook an assessment of gender mainstreaming opportunities within each of the program Themes, consulting with a range of researchers outside of the gender team. This effort culminated in a writeshop in Kenya in November 2014 in which over 25 researchers were introduced to gender mainstreaming concepts and coached in developing proposals for applying those concepts to their own research. The result was a set of 23 proposals, a number of which were to be funded subsequently by the program and others to be funded through other bilateral funding sources. This strategy has established a core of Gender Fellows within the program interested in integrating gender analysis and perspectives into their own research and who are expected to serve as champions for making such integration best practice. The KIT team, in collaboration with the ILRI gender team, is continuing to coach the researchers whose proposals are funded. The restructuring of the existing Themes into Flagships during the extension period also could have impacted negatively on the visibility of the gender research agenda; this has been addressed by establishing a cross-cutting Gender Initiative to be led by the senior gender specialist when recruited.

By engaging with KIT to lead the gender mainstreaming effort, the short-staffed gender team was able to continue its focus on implementing the program's gender strategy. While specific achievements are described in section c.1, their contribution to the gender strategy is summarized here. In terms of the first objective of the strategy for gender capacity development, needs assessments were conducted that informed the organization of several training events in Mozambique, Nicaragua and Ethiopia where training tools under development were applied. Lessons from those initial experiences led to the development of a more refined tool for partners' gender needs assessments. External expertise from Transition International was engaged to support this process. Addressing the gender in value chains objective continued its focus on assessment issues, by providing overviews of emerging gender issues in the CRP's value chains; exploring gendered priorities in cattle vaccine use and poultry keeping, and gendered impact of microcredit and dairy organisations; studying the gender aspects of assets and livestock. Particular attention has been given to how the issue of ownership is treated in gendered assessments: local understanding of ownership can vary greatly, and this has resulted in often superficial characterization of ownership patterns when using standard data collection tools. This work is leading to a shift from questions about 'who owns what' to more concrete and discrete questions about resource management and benefit sharing. The third gender strategy objective on gender and society was advanced through development of a manual on gender transformative approaches and a case study motivating the need for gender analysis to be complemented by interventions to promote empowerment (highlighted as a success story). Finally, work was successfully initiated to address the fourth objective on gender and nutrition by focusing on consumption in Egypt and Ethiopia through gendered assessments in collaboration with A4NH.

E. Partnerships building achievements

The program continued developing strategic partnerships at program, Theme and value chain site levels. At program level, the focus has been on developing full partnership with selected aligned academic institutions, namely the Swedish University of Agricultural Sciences (SLU) and Wageningen University Research, and development bodies: SNV, CARE and GIZ. The two universities offer a broad range of capacity and development-oriented research that either strengthens or addresses gaps in existing CGIAR capacity. Consultations were held within each university to identify priority areas for developing a joint program as the basis for institutional agreements formalizing partnership commitments. Similar consultations were held between ILRI and SNV after signing a memorandum of understanding; these have led to increased collaboration on CRP activities in several countries and to SNV involvement in a major new dairy genetics project in East Africa. The relationship with CARE in Egypt offers a telling example of the benefits that appropriate partnership with development actors can generate; based on their successful collaboration with the program on a major SDC-funded project, CARE is leading a new project that will scale out the aquaculture lessons from the earlier project to Upper Egypt.

The arrangement between CIAT, Dow Agrosciences and Papalotla (Tropical Seed) for commercial distribution of forage seed expanded for the first time out of Latin America and into Africa as Papalotla registered to operate in Kenya; this has important implications for accelerating uptake of improved Brachiaria varieties in Africa. New collaborations were initiated with the international private sector. Merck (MSD) Animal Health began working with WorldFish in assessing tilapia diseases in Egypt and Bangladesh. Also in Egypt, Skretting Feeds and Aller Aqua have begun joint development of fish feeds and producer training with WorldFish.

At country level, the value chain teams have continued to support partner alliances through local and national platforms. In Ethiopia, the team was invited to join the livestock development working group convened by the newly established State Minister of Livestock.

F. Capacity building achievements

Training activities are embedded throughout the program and a list of the various events is provided in the Performance Indicator Table in annex. A total of 5,127 people, 27% of them women, were involved in short-term training events over the course of the year. The program also hosted 45 degree students, nearly half of whom (47%) were women. To be more systematic and strategic in targeting capacity development efforts to support the implementation of the best bet innovations and integrated value chain interventions, work to design and test capacity assessment tools was initiated. Preliminary assessments of capacity needs were completed in Uganda, Tanzania and Ethiopia. An immediate priority identified in Tanzania was addressed through training in knowledge management and communication for the national dairy development forum. Particular attention was then given to methods for assessing capacity to address gender-related issues (as reported above under section C.1). An instructional design approach was applied in Uganda in collaboration with SNV and BRAC to develop a process for modular content for training materials to support smallholder pig producers and value chain actors.

G. Risk management

The three major risks that may hinder the expected delivery of results by the program include two identified in previous years:

1) **Maintaining stable funding**: The program relies on securing restricted project grants to fund half of the overall program budget, especially those portions supporting operational costs. The program has made progress in mobilizing bilateral funding, but has not achieved the levels required to implement fully the originally proposed agenda. This has been partly addressed through additional W2 funding commitments that the program has attracted. The program sought to smooth the expenditure from year to year to match the ability of the program to absorb the large fluctuations in W2 commitments and maintain steady growth, but an unanticipated change in finance rules resulted in $8.1 million in W2 funding being unexpectedly withdrawn from the program. The program now faces a much higher risk of funding shortfalls over the extension period.

2) **Planning uncertainty:** The uncertainty generated by the various processes undertaken by the Consortium and its stakeholders to design the second phase of the CRPs limits the ability of the program to engage with partners and ultimately beneficiaries in medium and longer-term planning, including entering into agreements that involve financial or programmatic commitments. The program cannot guarantee that the various components of the current research agenda will be maintained under a revised CRP portfolio, or that commitments by bilateral donors can be appropriately aligned to the new agenda. An additional exacerbating factor is the challenge the program faces in managing multi-year financial commitments with partners given that funds cannot be carried over between years.
3) **Weak program management systems:** The development of the CGIAR 'one corporate system' (OCS) was expected to address the need for better performing systems, but its implementation among the partners has been staggered, with the Lead Centre planning to come online only in the second half of 2015. The delays have constrained the program's ability to adopt results-based management strategies.

H.Lessons learned

H.1 Confidence of indicators

The indicators reported in Table 1 are derived from detailed data presented in the various background reports, which cite the supporting evidence. The program is more confident this year in the quality of the indicator data supplied because of the development and use of a simple database to capture and aggregate the data across the nine value chains, four centers and six Themes. This allowed for duplications to be more easily detected and resolved. The program also initiated a mid-year update of indicator data which has contributed to more exhaustive reporting. There is still a lack of clarity about the definition of some of the indicators that may lead to inconsistency in reporting the numbers across CRPs and that the Consortium should resolve ahead of the next Annual Report.

H.2 Changes in research direction

The effort to strengthen gender mainstreaming across the program through the collaboration with KIT represented the most significant change in the research agenda. It has already provided evidence of promoting wider integration of gender-relevant analysis within each of the Themes. Preliminary trials of tank-based catfish production as a complementary backyard system to the existing commercial tilapia pond aquaculture were not encouraging, so this line of research was terminated. With the development of aquaculture value chain work in Bangladesh, the previous exclusive focus on tilapia breeding was expanded to consider the role of breeding of other fish used in production systems there, and particularly the interesting challenge of breeding for polyculture systems. Breeding stocks were established to initiate rohu carp breeding, and successful breeding of two wild indigenous species, tengra and mullet, was achieved with national research partners. Studies were also initiated on a small indigenous species especially strategic for human nutrition: the mola.

H.3 Lessons learned from evaluation

The program relies on several different forms of evaluation, including the Consortium reporting exercise and indicators, regular review by the Science and Partnership Advisory Committee, a CRP-Commissioned External Evaluation on the value chain approach, and internal reflection by the Program Planning and Management Committee. Three main messages to date regarding the program's implementation have emerged consistently across these sources; to a large degree, these reflect fundamental challenges set by the CGIAR reform process. The first challenge is the continuing need to sharpen the logic and articulation of how research activities are leading to the targeted outcomes. The program is trying to address this by designing an M&E system directly founded within the program's Theory of Change that will provide a framework more familiar and relevant to scientists while maintaining a focus on development objectives. Framing our research as 'product lines' is also intended to sharpen our collective ability to track better the progress of specific research efforts. The second challenge has been integrating better research capacity and activities within the program, across Themes, centres, and research disciplines. The program continues to experiment with mechanisms to address this, with a current focus on improving the integration between the discovery Themes and the value chain teams within the delivery Theme. Investment is being made in establishing joint objectives, responsibilities and work plans to enhance joint planning and implementation. This challenge extends into the value chain teams where more effort is needed to develop methods and nurture a culture of multidisciplinarity. The final challenge relates to achieving the program vision of a more effective interface between research and development to both improve the relevance of research priorities and facilitate and accelerate research into use. The program has increasingly appreciated the need to create a space and bridging mechanism for learning how research and development can work together while respecting and strengthening their respective comparative advantages. These evaluation messages have informed actions to be implemented in the program during the extension period.

I. Financial report

The financial reports are attached as Annex 3.

Annex 1. Program indicators of progress

Detailed explanation for the source of the indicators can be found on the wiki in the various Theme, center and value chain reports posted there. Explanatory notes at the bottom of the table are provided for selected indicators.

Indicator	Deviation narrative (if actual is more than 10% away from target)	2013		2014		2015
		Target	Actual	Target	Actual	Target
KNOWLEDGE, TOOLS, DATA						
1. Number of flagship "products" produced by CRP			4	5	None	
2. % of flagship products produced that have explicit target of women farmers/NRM managers			0%	Not set	N/A	
3. % of flagship products produced that have been assessed for likely gender-disaggregated impact			25%	Not set	N/A	
4. Number of tools produced by the CRP			11	25	N = 40 (* = output shared with CRP A4NH and ** = output shared with CRP AAS) Aquaculture Hatchery best management practices training manual, Egypt: http://livestock-fish.wikispaces.com/file/detail/Best%20Management%20Practices%20of%20Egyptian%20Tilapia%20Hatcheries.pdf Gender Transformative Approach tool for Value Chain Assessment, Bangladesh: http://livestock-fish.wikispaces.com/VC_Toolkit#x-Gender/GTA Training manual for DREMS (Data recording and management system for breeding program, Ethiopia: http://srvgen.cnpc.embrapa.br/drems/start.php Gender-responsive participatory assessment of the community based sheep breeding programs, Ethiopia: http://livestock-fish.wikispaces.com/file/detail/ethiopia_cbbp_gender_framework.docx Tools for Gender Integration into community based sheep fattening, Ethiopia: http://livestock-fish.wikispaces.com/file/detail/ethiopia_cbbp_gender_tool.docx Quantitative Value Chain Assessment Benchmarking tools for small ruminant value chains	

					including application for mobile data recording, Ethiopia: http://livestock-fish.wikispaces.com/VCD+Ethiopia Tools for assessing women's ownership perceptions, Nicaragua: https://www.dropbox.com/sh/h265qp8auk6t8cu/AACnIABLmzF6NSFtBVO9SJi7a Farmer Value Chain Assessment Tool, Nicaragua: http://livestock-fish.wikispaces.com/nicaragua Gendered benchmarking tools, Nicaragua: http://data.ilri.org/portal/dataset/adanicbaseline Guidelines for site specific planning, Tanzania: http://moremilkit.wikispaces.com/Outputs+and+reports Monitoring learning and evaluation tool for Tanzania dairy value chain, Tanzania: http://moremilkit.wikispaces.com/Project+Review+and+Planning%2C+and+Steering+Committee+Meeting%2C+March+17+%E2%80%93+19%2C+2014 Monitoring survey for Tanzania dairy value chain, Tanzania: http://moremilkit.wikispaces.com/Outputs+and+reports Training need assessment for Tanzania dairy value chain, Tanzania: http://moremilkit.wikispaces.com/Outputs+and+reports Adapting dairy market hubs for pro-poor smallholder dairy value chains in Tanzania, Tanzania: http://moremilkit.wikispaces.com/Outputs+and+reports Gender capacity assessment guide, Tanzania: http://livestock-fish.wikispaces.com/capdev Pig producer benchmarking survey, Uganda: http: www.livestock-fish.wikispaces.com/VCD+Uganda Choice experiment tool with live pig trader, Uganda: http://livestock-fish.wikispaces.com/file/detail/SPVCD_Choice%20experiment%20tool%20with%20live%20pig%20traders.docx Food demand and intra-household dietary survey with a focus on animal-source foods, Uganda: http://livestock-fish.wikispaces.com/file/detail/IrishAidUg-Socio-DemoPartSectionA-F_Final.docx Business planning and finance tools in smallholder pig value chains, Uganda: https://cgspace.cgiar.org/handle/10568/56822 Marketing and institution strengthening tools in the smallholder pig value chains, Uganda: https://cgspace.cgiar.org/handle/10568/56688 Value chain assessment tools for investigation of adoption benefit and constraints of using diets validated in pig feed trials, Uganda: http://livestock-fish.wikispaces.com/file/detail/Report%20on%20the%20Smallholder%20Pig%20Value%20Chains%20Development%20Project%20Pig%20Feeding%20Training%20and%20Feedback%20Workshop.doc Training manual for the bio-security protocol for preventing the spread of African Swine Fever at farm level, Uganda: http://livestock-fish.wikispaces.com/file/detail/Training%20module%20on%20African%20Swine%20Fever%20control.pdf Training manual on pig management and husbandry practices, Uganda: https://cgspace.cgiar.org/handle/10568/64960 Training manual pig parasite control, Uganda: https://cgspace.cgiar.org/handle/10568/56639	

					Tools to measure Knowledge Attitude Practices Capacities and incentives of value chain actors on bio-security for the control of African Swine Fever, Uganda: http://livestock-fish.wikispaces.com/VCD+Uganda Tools for a qualitative assessment of risk of African Swine Fever along the pig value chain, Uganda: http://livestock-fish.wikispaces.com/VCD+Uganda Questionnaire to ascertain factors influencing successful inclusion of smallholder farmers in inclusive value chains in the Lake Victoria basin, Uganda: http://livestock-fish.wikispaces.com/VCD+Uganda Questionnaire to assess the competitiveness of the pig enterprise amongst integrated smallholder crop livestock systems in peri-urban and rural Mukono district, Uganda: http://livestock-fish.wikispaces.com/VCD+Uganda Baseline survey/tools for health risks in pig value chain in Nghe An province, Vietnam: http://livestock-fish.wikispaces.com/file/view/Database_VNpigproducers.xlsx Tools for value chain assessment benchmarking for company pig producers, households, pig producers, consumers, retailers, feed traders, Vietnam: http://livestock-fish.wikispaces.com/VCD+Vietnan Value Chain Assessment questionnaire for pig traders, boar breeders, village veterinarians, traders and input suppliers, Vietnam: http://livestock-fish.wikispaces.com/VCD+Vietnam Baseline survey tools for producers, consumers, input suppliers, meat traders, meat processors, slaughter houses and pig traders, Vietnam: http://livestock-fish.wikispaces.com/Survey+Questionaires Tools for gender transformative analysis of the value chain, version 1.0, Global: http://livestock-fish.wikispaces.com/file/view/Introduction%20to%20the%20gender%20VCA%20module.docx/513110212/ Value chain assessment and benchmarking toolkit, Global: http://livestock-fish.wikispaces.com/VC_Toolkit Survey tools for assessing food demand and intra-household diets, Uganda: http://livestock-fish.wikispaces.com/VCD+Uganda Review of gender and value chain analysis, development and evaluation toolkits, Global: https://cgspace.cgiar.org/handle/10568/35656 A Toolkit on Collecting Gender & Assets Data in Qualitative & Quantitative Program Evaluations, Global: http://gaap.ifpri.info/files/2010/12/GAAP_Toolkit_Update_FINAL.pdf L&F CRP core and medium term Intermediate Development Outcomes (IDO) indicator manual, Global: http://hdl.handle.net/10568/42448 Mini-survey tool for the rapid quantification of gender-differentiated food security indicators, Global: https://mahider.cgiar.org/handle/10568/56694 Ng'ombe Planner, East Africa: http://biolives.wordpress.com/2014/08/11/filling-the-milk-glass-east-african-farmers-to-gain-from-new-recording-device/	
5. % of tools that have an explicit target of women farmers			27%	Not set	N = 24 (60%) Gender Transformative Approach tool for Value Chain Assessment, Bangladesh: http://livestock-fish.wikispaces.com/VC_Toolkit#x-Gender/GTA Gender-responsive participatory assessment of the community based sheep breeding	

					programs, Ethiopia: http://livestock-fish.wikispaces.com/file/detail/ethiopia_cbbp_gender_framework.docx Tools for Gender Integration into community based sheep fattening, Ethiopia: http://livestock-fish.wikispaces.com/file/detail/ethiopia_cbbp_gender_tool.docx Tools for assessing women's ownership perceptions, Nicaragua: https://www.dropbox.com/sh/h265qp8auk6t8cu/AACnIABLmzF6NSFtBVO9SJi7a Farmer Value Chain Assessment Tool, Nicaragua: http://livestock-fish.wikispaces.com/file/view/3.1.-%20GUIA%20PARA%20REALIZACI%C3%93N%20DE%20GRUPOS%20FOCALES%20%2528MEJORADA%2529.docx/478780456/3.1.-%20GUIA%20PARA%20REALIZACI%C3%93N%20DE%20GRUPOS%20FOCALES%20%2528MEJORADA%2529.docx Gendered benchmarking tools, Nicaragua: http://data.ilri.org/portal/dataset/adanicbaseline Guidelines for site specific planning, Tanzania: http://moremilkit.wikispaces.com/Outputs+and+reports Monitoring learning and evaluation tool for Tanzania dairy value chain, Tanzania: http://moremilkit.wikispaces.com/Project+Review+and+Planning%2C+and+Steering+Committee+Meeting%2C+March+17+%E2%80%93+19%2C+2014 Monitoring survey for Tanzania dairy value chain, Tanzania: http://moremilkit.wikispaces.com/Outputs+and+reports Training need assessment for Tanzania dairy value chain, Tanzania: http://moremilkit.wikispaces.com/Outputs+and+reports Adapting dairy market hubs for pro-poor smallholder dairy value chains in Tanzania, Tanzania: http://moremilkit.wikispaces.com/Outputs+and+reports Gender capacity assessment guide, Tanzania: http://livestock-fish.wikispaces.com/capdev Tools to measure Knowledge Attitude Practices Capacities and incentives of value chain actors on bio-security for the control of African Swine Fever, Uganda: http://livestock-fish.wikispaces.com/VCD+Uganda Tools for a qualitative assessment of risk of African Swine Fever along the pig value chain, Uganda: http://livestock-fish.wikispaces.com/VCD+Uganda Questionnaire to ascertain factors influencing successful inclusion of smallholder farmers in inclusive value chains in the Lake Victoria basin, Uganda: http://livestock-fish.wikispaces.com/VCD+Uganda Baseline survey/tools for health risks in pig value chain in Nghe An province, Vietnam: http://livestock-fish.wikispaces.com/file/view/Database_VNpigproducers.xlsx Tools for value chain assessment benchmarking for company pig producers, HH pig producers, consumers, retailers, feed traders, Vietnam: http://livestock-fish.wikispaces.com/VCD+Vietnan Value Chain Assessment questionnaire for pig traders, boar breeders, village veterinarians, traders and input suppliers, Vietnam: http://livestock-fish.wikispaces.com/VCD+Vietnam Tools for gender transformative analysis of the value chain, version 1.0, Global: http://livestock-fish.wikispaces.com/file/view/Introduction%20to%20the%20gender%20VCA%20module.docx/513110212/	

					Value chain assessment and benchmarking toolkit, Global: http://livestock-fish.wikispaces.com/VC_Toolkit Survey tools for assessing food demand and intra-household diets, Uganda: http://livestock-fish.wikispaces.com/VCD+Uganda Review of gender and value chain analysis, development and evaluation toolkits, Global: https://cgspace.cgiar.org/handle/10568/35656 A Toolkit on Collecting Gender & Assets Data in Qualitative & Quantitative Program Evaluations, Global: http://gaap.ifpri.info/files/2010/12/GAAP_Toolkit_Update_FINAL.pdf Mini-survey tool for the rapid quantification of gender-differentiated food security indicators, Global: https://mahider.cgiar.org/handle/10568/56694	
6. % of tools assessed for likely gender-disaggregated impact			27%	Not set	N = 12 (30%) Tools for assessing women's ownership perceptions, Nicaragua: https://www.dropbox.com/sh/h265qp8auk6t8cu/AACnIABLmzF6NSFtBVO9SJi7a Farmer Value Chain Assessment Tool, Nicaragua: http://livestock-fish.wikispaces.com/file/view/3.1.-%20GUIA%20PARA%20REALIZACI%C3%93N%20DE%20GRUPOS%20FOCALES%20%2528MEJORADA%2529.docx/478780456/3.1.-%20GUIA%20PARA%20REALIZACI%C3%93N%20DE%20GRUPOS%20FOCALES%20%2528MEJORADA%2529.docx Gendered benchmarking tools, Nicaragua: http://data.ilri.org/portal/dataset/adanicbaseline Tools for a qualitative assessment of risk of African Swine Fever along the pig value chain, Uganda: http://livestock-fish.wikispaces.com/VCD+Uganda Questionnaire to ascertain factors influencing successful inclusion of smallholder farmers in inclusive value chains in the Lake Victoria basin, Uganda: http://livestock-fish.wikispaces.com/VCD+Uganda Baseline survey/tools for health risks in pig value chain in Nghe An province, Vietnam: http://livestock-fish.wikispaces.com/file/view/Database_VNpigproducers.xlsx Tools for value chain assessment benchmarking for company pig producers, HH pig producers, consumers, retailers, feed traders, Vietnam: http://livestock-fish.wikispaces.com/VCD+Vietnan Tools for gender transformative analysis of the value chain, version 1.0, Global: http://livestock-fish.wikispaces.com/file/view/Introduction%20to%20the%20gender%20VCA%20module.docx/513110212/ Value chain assessment and benchmarking toolkit, Global: http://livestock-fish.wikispaces.com/VC_Toolkit Survey tools for assessing food demand and intra-household diets, Uganda: http://livestock-fish.wikispaces.com/VCD+Uganda Review of gender and value chain analysis, development and evaluation toolkits, Global: https://cgspace.cgiar.org/handle/10568/35656 A Toolkit on Collecting Gender & Assets Data in Qualitative & Quantitative Program Evaluations, Global: http://gaap.ifpri.info/files/2010/12/GAAP_Toolkit_Update_FINAL.pdf	

7. Number of open access databases maintained by CRP			5	6	N = 7 GIS layers MoreMilkiT scenarios: Spatial practicalities and implications for Tanzania dairy value chain: http://ilri-cleaned.wikispaces.com/file/view/GeoPortalPGISlayers.zip/539341912/GeoPortalPGISlayers.zip Animal Feeds Analysis Application: http://temp.icarda.org/afawa SoFT Tropical Forage Selection: http://www.tropicalforages.info DAGRIS (origin, distribution, diversity, present use and status of indigenous farm animal genetic resources) dagris.info AZIZI Bio-repository http://azizi.ilri.cgiar.org Animal Genetic Training Resources http://agtr.ilri.cgiar.org TparvaDB: A database to support Theileria parva vaccine development: http://igs-ilri.igs.umaryland.edu/ http://data.ilri.org hosts data from various projects linked to the program, and from the program itself, eg: • L&F 'benchmarking' survey small ruminants Ethiopia (locked) DGEA1 – baseline, longitudinal monitoring, animal performance (open) ADA Nicaragua – baseline (locked) SDG – baseline, longitudinal monitoring, WTP, etc. (locked) Evaluation of Tz Dairy Development Forum – IP work for Jo's student (locked) MilkIT project evaluation of IP – as above (open) MorePork – nutrition study (locked) EADD2 – Cost of Production survey (locked) ImGoats Mozambique – data used for gender analysis (open) MoreMilkIT – monitoring surveys (locked) https://cgspace.cgiar.org/handle/10568/3112 lists all published information products of te program, as well as of projects linked to it.	
8. Total number of users of these open access databases			364,497	Not set	n = 244,268 244,268 (Tropical Forage Selection)	

9. Number of publications in ISI journals produced by CRP			77	57	N = 47 (see List at end of this Annex)	
10. Number of strategic value chains analyzed by CRP			9	9	N= 14 (* = shared output with CRP A4NH) Bangladesh small and medium-scale aquaculture value chain development: Past trends, current status and likely future directions: https://cgspace.cgiar.org/handle/10568/41726 Chaines de valeur des petits ruminants au Burkina Faso : Analyse de situation: https://hdl.handle.net/10568/66361 Egypt small and medium-scale aquaculture value chain development: Past trends, current status and likely future directions: https://cgspace.cgiar.org/handle/10568/41882 Vietnam: Smallholder pig value chain development in Vietnam: Situation analysis and trends: https://cgspace.cgiar.org/handle/10568/53935 Scoping study on pig value chains in Dak Lak and Dak Nong, Vietnam: https://cgspace.cgiar.org/handle/10568/67770 Dual-purpose milk and beef value chain development in Nicaragua: Past trends, current status and likely future directions: https://cgspace.cgiar.org/handle/10568/66467 Pre-commercial Tanzanian dairy value chains: https://cgspace.cgiar.org/handle/10568/34851 Commercial Tanzanian dairy value chains: https://cgspace.cgiar.org/handle/10568/34850 Quick assessment of Assam dairy value chain (India): https://cgspace.cgiar.org/handle/10568/52326 Smallholder dairy value chain development in India and selected states (Assam and Bihar): Situation analysis and trends: https://cgspace.cgiar.org/handle/10568/35469 Goat Value Chain, India: https://cgspace.cgiar.org/handle/10568/29060 Uganda smallholder pigs value chain development: Situation analysis and trends: https://cgspace.cgiar.org/handle/10568/34090 Smallholder pig value chains in three districts of Uganda (Mukono, Kamuli and Masaka): http://livestock-fish.wikispaces.com/file/detail/Pig%20Value%20chain%20benchmarking%20Report_First%20Draft.docx Scoping and pig value chain assessments in Hoima, Kibaale and Lira, Uganda: https://cgspace.cgiar.org/handle/10568/45980	
CAPACITY ENHANCEMENT AND INNOVATION PLATFORMS						
13. Number of trainees in short-term programs facilitated by CRP (male)			3,756	5,976	N = 5,339 (* = shared output with CRP A4NH) 57 Good management practices for ghers, homestead ponds and commercial ponds, Khulna Hub, Bangladesh http://www.bangladeshshomoy.com/archive2.php?id=16444&nid=22429&page=24&archive=2014-08-24 1,210 Business skills and management training for Bangladesh aquaculture value chain actors, Khulna Hub, Bangladesh:	

					http://www.bangladeshshomoy.com/archive2.php?id=16444&nid=22429&page=24&archive=2014-08-24 1,882 Aquaculture and hatchery Best Management Practices, Kafr el Sheikh, Behera, Sharkia, Fayoum, El Mineya, Egypt: http://livestock-fish.wikispaces.com/file/detail/Third%20Operational%20Report-final.pdf 15 Integrating Feeding Strategies into the Community-based Sheep Breeding Program in Ethiopia, Addis Ababa: http://livestock-fish.wikispaces.com/Workshop+on+Integrating+Feeding+Strategies+into+the+Community-based+Sheep+Breeding+Program+in+Ethiopia%2C+Addis+Ababa%2C+23-24+July%2C+2014 40 On the job training of NARS partners on mobile data collection for benchmarking, Doyogana, Horro, Borana, Ethiopia: http://livestock-fish.wikispaces.com/VCD+Ethiopia 3 Integrating Gender into Agricultural Programming, Addis Ababa, Ethiopia: http://africa-rising.wikispaces.com/Integrating+Gender+into+Agricultural+Programming 17 Training on small Ruminants Reproduction, DebreBirhan, Ethiopia: http://livestock-fish.wikispaces.com/Ethiopia-small+ruminant+reproduction 664 Training on hygienic milk production and handling, Assam, India: https://cgspace.cgiar.org/bitstream/handle/10568/56716/TrainingCourseReport-MilkHygiene-Jorhat2014.pdf?sequence=1 37 Forage seed production, Madriz, Matagalpa, Jinotega, Nueva Segovia, Nicaragua: http://livestock-fish.wikispaces.com/file/detail/Informe%20trimestral_Julio-Sept%202014.docx 422 Farmer Field Schools on livestock-related best practices (silvo-pastoral systems, Camoapa, Matiguás, Nicaragua: http://livestock-fish.wikispaces.com/file/detail/INFORME I TRIMESTRE A%C3%91OS 2 HEIFER GANASOL5 30 sep.doc 445 Sustainable livestock production, silvo-pastoral systems, ration balancing, forage production, animal health, infrastructure and feeding to improve milk quality, Nicaragua: http://livestock-fish.wikispaces.com/file/detail/Individual%20Semester%20Project%20Progress%20Report%20Jan%202015%20Sustainable%20Livestock-Nicaragua%20150115.docx 4 Milk quality testing, Moshi, Tanzania: https://cgspace.cgiar.org/handle/10568/41594 3 Tanzania Dairy Development Forum partners' training in communications approaches and tools, Nairobi, Kenya: http://livestockfish.cgiar.org/2014/05/26/ddf-comms/ 107 Dairy Innovation platform functioning, Tanga and Morogoro, Tanzania: http://milkit.wikispaces.com/Tanga+Village+IPs and http://milkit.wikispaces.com/Morogoro+Village+IPs 133 Feeds & feeding, feed conservation; general animal husbandry of dairy cattle, Tanga and Morogoro, Tanzania: http://milkit.wikispaces.com/Tanga+Village+IPs and http://milkit.wikispaces.com/Morogoro+Village+IPs 4 Tanzania Dairy Genetics enumerators; Household selection, Morogoro, Tanzania: http://tdg.ilri.org/ 14 Tanzania Dairy Genetics enumerators; Baseline survey, Morogoro, Tanzania: http://tdg.ilri.org/ 12 Tanzania Dairy Genetics enumerators; Blood sampling, Arusha, Tanzania: http://tdg.ilri.org/	

					8 Writeshop for pig value chain training module developers, Kampala, Uganda: http://livestockfish.cgiar.org/2014/04/03/capdev-uganda-pigs/ 23 Training-of-Trainers (Extension staff) on Delivery Methods for the Uganda Pig value chain, Kampala, Uganda: http://livestock-fish.wikispaces.com/ugandaToT_apr2014 31 Test of training 4 pig training modules, Masaka and Kampala, Uganda: http://www.slideshare.net/ILRI/capacity-development-in-the-uganda-smallholder-pig-value-chain-development 20 Extrapolate Tool Workshop, Mukono, Uganda: http://livestock-fish.wikispaces.com/file/detail/Elements%20for%20the%20EXTRAPOLATE%20application.pdf 99 Pig farmers training, Wakiso and Mukono, Uganda: http://livestockfish.cgiar.org/2014/02/19/uganda-pigs-profile/ and http://livestock-fish.wikispaces.com/file/detail/Report%20on%20Pig%20farmer%20training%202014.docx 2 Training on assessment of knowledge, practices and perception of Uganda pig Value Chain actors and stakeholders and recommendation for biosecurity protocols, Masaka, Uganda: http://livestockfish.cgiar.org/2014/10/21/pigs-asf/ 37 Training of facilitators in use of tablets in data entry for field survey, PRA tools and nutrition data collection, Hoima, Lira and Kampala, Uganda: http://livestockfish.cgiar.org/2014/09/22/uganda-nutrition-surveys and http://livestock-fish.wikispaces.com/file/detail/Facilitators%20training%20Report-%20Hoima.docx and http://livestockfish.cgiar.org/2014/09/22/uganda-nutrition-surveys 15 Training in use of the FEAST Tool, Kampala, Uganda: http://livestockfish.cgiar.org/2015/01/28/feast-uganda/ 19 pig feeding using local feed resources, Masaka, Uganda: http://livestock-fish.wikispaces.com/file/view/Report+on+the+SPVCD+Project+Pig+Feeding+Training+and+Feedback+Workshop.doc/542215948/Report%20on%20the%20SPVCD%20Project%20Pig%20Feeding%20Training%20and%20Feedback%20Workshop.doc * 6 Training on System Dynamics model building for value chain transformation, Hanoi, Vietnam: http://livestock-fish.wikispaces.com/Final+Program+and+outputs%2C+SD+Training 10 Ration Balancing Program, Hyderabad, India: http://ilrihyd.wikispaces.com/Training+on+Ration+Balancing+Program+%28RBP%29+2014	
14. Number of trainees in short-term programs facilitated by CRP (female)			1,371	5,666	N = 1,883 (* = shared output with CRP A4NH) 69 Good management practices for ghers, homestead ponds and commercial ponds, Khulna, Bangladesh http://www.bangladeshshomoy.com/archive2.php?id=16444&nid=22429&page=24&archive=2014-08-24 10 Aquaculture and hatchery Best Management Practices, Kafr el Sheikh, Behera, Sharkia, Fayoum, El Mineya, Egypt: http://livestock-fish.wikispaces.com/file/detail/Third%20Operational%20Report-final.pdf 1,125 Capacity building for women retailers, Kafr el Sheikh, Behera, Sharkia, Fayoum, El Mineya, Egypt:http://livestock-fish.wikispaces.com/file/detail/Third%20Operational%20Report-final.pdf	

					1 Integrating Feeding Strategies into the Community-based Sheep Breeding Program in Ethiopia, Addis Ababa: http://livestock-fish.wikispaces.com/Workshop+on+Integrating+Feeding+Strategies+into+the+Community-based+Sheep+Breeding+Program+in+Ethiopia%2C+Addis+Ababa%2C+23-24+July%2C+2014 2 On-the-job training of NARS partners on mobile data collection for benchmarking, Doyogana, Horro, Borana, Ethiopia: http://livestock-fish.wikispaces.com/VCD+Ethiopia 1 Training on Small Ruminants Reproduction, DebreBirhan, Ethiopia: http://livestock-fish.wikispaces.com/Ethiopia-small+ruminant+reproduction 98 Training on hygienic milk production and handling, Assam, India: https://cgspace.cgiar.org/bitstream/handle/10568/56716/TrainingCourseReport-MilkHygiene-Jorhat2014.pdf?sequence=1 20 Dairy processing, Waslala, Yali, Nicaragua: http://livestock-fish.wikispaces.com/file/detail/Informe%20trimestral_Julio-Sept%202014.docxc 22 Good practices in milk processing, Matagalpa, Nicaragua: http://livestock-fish.wikispaces.com/file/detail/Informe%20trimestral_Julio-Sept%202014.docx 3 Forage seed production, Madriz, Matagalpa, Jinotega, Nueva Segovia, Nicaragua: http://livestock-fish.wikispaces.com/file/detail/Informe%20trimestral_Julio-Sept%202014.docx 78 Farmer Field Schools on livestock related best practices (silvo-pastoral systems, Camoapa, Matiguás, Nicaragua: http://livestock-fish.wikispaces.com/file/detail/INFORME I TRIMESTRE A%C3%91OS 2 HEIFER GANASOL5 30 sep.doc 75 Sustainable livestock production, silvo-pastoral systems, ration balancing, forage production, animal health, infrastructure and feeding to improve milk quality, Nicaragua: http://livestock-fish.wikispaces.com/file/detail/Individual%20Semester%20Project%20Progress%20Report%20Jan%202015%20Sustainable%20Livestock-Nicaragua%20150115.docx 3 Milk quality testing, Moshi, Tanzania: https://cgspace.cgiar.org/handle/10568/41594 2 Tanzania Dairy Development Forum partners' training in communications approaches and tools, Nairobi, Kenya: http://livestockfish.cgiar.org/2014/05/26/ddf-comms/ 72 Innovation platform functioning, Tanga and Morogoro, Tanzania: http://milkit.wikispaces.com/Tanga+Village+IPs and http://milkit.wikispaces.com/Morogoro+Village+IPs 86 Feeds & feeding, feed conservation; general animal husbandry of dairy cattle, Tanga and Morogoro, Tanzania: http://milkit.wikispaces.com/Tanga+Village+IPs and http://milkit.wikispaces.com/Morogoro+Village+IPs 3 Tanzania Dairy Genetics enumerators - Household selection, Morogoro, Tanzania: http://tdg.ilri.org/ 7 Tanzania Dairy Genetics enumerators - Baseline survey, Morogoro, Tanzania: http://tdg.ilri.org/ 6 Tanzania Dairy Genetics enumerators - Blood sampling, Arusha, Tanzania: http://tdg.ilri.org/ 5 Writeshop for training pig value chain module developers, Kampala, Uganda: http://livestockfish.cgiar.org/2014/04/03/capdev-uganda-pigs/ 9 Training-of-Trainers (Extension staff) on Delivery Methods for the Uganda Pig value chain,	

					Kampala, Uganda: http://livestock-fish.wikispaces.com/ugandaToT_apr2014 9 Test of 4 pig training modules, Masaka and Kampala, Uganda: http://www.slideshare.net/ILRI/capacity-development-in-the-uganda-smallholder-pig-value-chain-development 61 Pig farmers training, Wakiso and Mukono, Uganda: http://livestockfish.cgiar.org/2014/02/19/uganda-pigs-profile/ and http://livestock-fish.wikispaces.com/file/detail/Report%20on%20Pig%20farmer%20training%202014.docx 9 Extrapolate Tool Workshop, Mukono, Uganda: http://livestock-fish.wikispaces.com/file/detail/Elements%20for%20the%20EXTRAPOLATE%20application.pdf 2 Training on assessment of knowledge, practices and perception of Uganda pig Value Chain actors and stakeholders and recommendation for biosecurity protocols, Masaka, Uganda: http://livestockfish.cgiar.org/2014/10/21/pigs-asf/ 24 Training of facilitators in use of tablets in data entry for field survey, PRA tools and nutrition data collection, Hoima, Lira and Kampala, Uganda: http://livestockfish.cgiar.org/2014/09/22/uganda-nutrition-surveys and http://livestock-fish.wikispaces.com/file/detail/Facilitators%20training%20Report-%20Hoima.docx and http://livestockfish.cgiar.org/2014/09/22/uganda-nutrition-surveys 3 Training in use of the FEAST Tool, Kampala, Uganda: http://livestockfish.cgiar.org/2015/01/28/feast-uganda/ 1 Bio-informatics training, Nairobi, Kenya: http://livestockfish.cgiar.org/2014/09/12/ugandan-pig-disease-researcher-joyce-akol-receives-bioinformatics-training/ 69 pig feeding using local feed resources, Masaka, Uganda: http://livestock-fish.wikispaces.com/file/view/Report+on+the+SPVCD+Project+Pig+Feeding+Training+and+Feedback+Workshop.doc/542215948/Report%20on%20the%20SPVCD%20Project%20Pig%20Feeding%20Training%20and%20Feedback%20Workshop.doc * 6 Training on System Dynamics model building for value chain transformation, Hanoi, Vietnam: http://livestock-fish.wikispaces.com/Final+Program+and+outputs%2C+SD+Training 2 Ration Balancing Program, Hyderabad, India: http://ilrihyd.wikispaces.com/Training+on+Ration+Balancing+Program+%28RBP%29+2014	
15. Number of trainees in long-term programs facilitated by CRP (male)			24	7	N = 50 (of which, 11 Bachelor and 4 Masters candidates shared with CRP A4NH) 13 Bachelors Program 22 Masters Program 8 PhD 3 Post Doctoral 2 Fellowship 2 Other	
16.Number of trainees in long-term programs facilitated by CRP			21	10	N = 54 (of which, 12 Bachelor, 1 Masters and 1 PhD candidates shared with CRP A4NH) 16 Bachelors Program	

(female)					15 Masters Program 22 PhD 1 Fellowship	
TECHNOLOGIES/PRACTICES IN VARIOUS STAGES OF DEVELOPMENT						
18. Number of technologies/NRM practices under research in the CRP (Phase I)			44	32	N = 22 **Biological** Morphometry, breeding and larval development of Mola, (*Amblypharyngodon mola)* (Hamilton, 1822), Bangladesh; http://www.worldfishcenter.org/resource_centre/Progress-Report-on-mola-research-Manos.pdf Breeding tengra (B*atasio batasio*) and mullet (Lisa family) fish species, Bangladesh: http://www.alokitobangladesh.com/last-page/2014/03/31/62915 Tilapia breeding program using mass selection to improve growth while preventing high levels of inbreeding, Bangladesh: http://www.thefishsite.com/articles/1885/progress-and-the-future-for-tilapia-farming-and-seed-production-in-bangladesh Pro-poor fish production, Egypt: http://livestock-fish.wikispaces.com/file/detail/Final%20report%20-%20Developing%20a%20pro-poor%20aquaculture%20tank_Jacqueline%20Kazembe%20%283%29.doc Biological Nitrification Inhibition, Colombia and Nicaragua: https://www.dropbox.com/s/xiqv3hv6zskmqf9/Output%205%20-%20Bi-parental%20B_Jacobo%20BNI.pptx?dl=0 and http://livestock-fish.wikispaces.com/file/detail/BMZ-GIZ-BNI-Project%20Report-Year%203%20%282015%29%20final.docx Brachiaria hybrid breeding, Colombia: https://www.dropbox.com/s/qhfl1nmh1f1sjiq/Output%201%20-%20BR12_internalreport.xlsx?dl=0 Genetic improvement of dual-purpose cattle, Nicaragua: http://livestock-fish.wikispaces.com/file/detail /ADA-Report-2013-fin.pdf and http://livestock-fish.wikispaces.com/file/detail/EFS30-TR-15-06-2014.pdf and http://livestock-fish.wikispaces.com/file/detail/ADA-Better%20Breeds%20Report-%202014.pdf Feed technologies for improving dry-season feed reserves, Tanzania: http://milkit.wikispaces.com/Feed+interventions Improved forage cultivars for zero-grazing), Tanzania: http://milkit.wikispaces.com/Feed+interventions Hay + silage making, Tanzania: http://milkit.wikispaces.com/Feed+interventions Feeding strategies for different pig genotypes, Uganda: http://livestock-fish.wikispaces.com/file/detail/Report%20on%20the%20SPVCD%20Project%20Pig%20Feeding%20Training%20and%20Feedback%20Workshop.doc Pig waste management at the slaughter node, Uganda: http://livestockfish.cgiar.org/2015/03/10/biogas-kampala/ **Management and Cultural** Women fish retailers approaches, Egypt: http://livestock-fish.wikispaces.com/file/detail/Women%20retailers%20documentation%20report.pdf Pro-poor fish production - multiple crops of small fish, Egypt: http://livestock-	

					fish.wikispaces.com/file/detail/Third%20Operational%20Report-final.pdf Silvo-pastoral "best practices, Nicaragua: http://livestock-fish.wikispaces.com/file/detail/Individual Semester Project Progress Report Jun 2014 Sustainable Livestock-Nicaragua 060714.docx Carbon insetting incentive mechanisms, Nicaragua: http://livestock-fish.wikispaces.com/file/detail/Carbon Insetting CIAT small grant proposal.pdf and http://livestock-fish.wikispaces.com/file/detail/GIZ%20Carbon%20Insetting%20Progress%20report%20Feb%202015.pdf Forage quality by season and maturity stage, Nicaragua: http://livestock-fish.wikispaces.com/file/detail/FY2014%20Annual%20Report%20Linkage%20Program%20Reporting%20Template%20Nicaragua-UF-MSSTATE-CIAT.docx Dairy market hubs revolving around chilling plants that provide both outputs marketing and inputs and services through check-off procedure, Tanzania: http://moremilkit.wikispaces.com/ Dairy market hubs revolving around check-offs for inputs and services provided through milk traders, Tanzania: http://moremilkit.wikispaces.com/ National innovation platform (Dairy Development Forum, Tanzania: http://ddftz.wikispaces.com Local area innovation platforms (regional and villages), Tanzania: http://milkit.wikispaces.com/Innovation+platforms Assessing designs for a pig slaughter house in Masaka, Uganda: http://livestock-fish.wikispaces.com/file/view/MASAKA%20ABATTOIR%20Report.pdf/542219212/MASAKA%20ABATTOIR%20Report.pdf	
19. % of technologies under research that have an explicit target of women farmers			18%	Not set	N = 12 (60%) **Biological** Genetic improvement of dual-purpose cattle, Nicaragua: http://livestock-fish.wikispaces.com/file/detail /ADA-Report-2013-fin.pdf and http://livestock-fish.wikispaces.com/file/detail/EFS30-TR-15-06-2014.pdf and http://livestock-fish.wikispaces.com/file/detail/ADA-Better%20Breeds%20Report-%202014.pdf Feed technologies for improving dry-season feed reserves, Tanzania: http://milkit.wikispaces.com/Feed+interventions Improved forage cultivars for zero-grazing), Tanzania: http://milkit.wikispaces.com/Feed+interventions Hay + silage making, Tanzania: http://milkit.wikispaces.com/Feed+interventions Feeding strategies for different pig genotypes, Uganda: http://livestock-fish.wikispaces.com/file/detail/Report%20on%20the%20SPVCD%20Project%20Pig%20Feeding%20Training%20and%20Feedback%20Workshop.doc **Management and Cultural** Women fish retailers approaches, Egypt: http://livestock-fish.wikispaces.com/file/detail/Women%20retailers%20documentation%20report.pdf Silvo-pastoral "best practices, Nicaragua: http://livestock-	

					fish.wikispaces.com/file/detail/Individual Semester Project Progress Report Jun 2014 Sustainable Livestock-Nicaragua 060714.docx Carbon insetting incentive mechanisms, Nicaragua: http://livestock-fish.wikispaces.com/file/detail/Carbon Insetting CIAT small grant proposal.pdf and http://livestock-fish.wikispaces.com/file/detail/GIZ%20Carbon%20Insetting%20Progress%20report%20Feb%202015.pdf Dairy market hubs revolving around chilling plants that provide both outputs marketing and inputs and services through check-off procedure, Tanzania: http://moremilkit.wikispaces.com/ Dairy market hubs revolving around check-offs for inputs and services provided through milk traders, Tanzania: http://moremilkit.wikispaces.com/ National innovation platform (Dairy Development Forum, Tanzania: http://ddftz.wikispaces.com Local area innovation platforms (regional and villages), Tanzania: http://milkit.wikispaces.com/Innovation+platforms	
20. % of technologies under research that have been assessed for likely gender-disaggregated impact			9%	Not set	N = 0 (0 %)	
23. Number of technologies /NRM practices field tested (phase II)			25	16	N = 22 Tengra fish seed distributed for hatcheries and farmers, Khulna hub, S-W Bangladesh: http://www.risingbd.com/detailsnews.php?nssl=43270 Tilapia seed broods, Khulna hub, S-W Bangladesh: http://www.thefishsite.com/articles/1885/progress-and-the-future-for-tilapia-farming-and-seed-production-in-bangladesh Dissemination of improved strains, Egypt: http://livestock-fish.wikispaces.com/file/detail/Third%20Operational%20Report-final.pdf Best Aquaculture Management Practices, Egypt: http://livestock-fish.wikispaces.com/file/detail/Third%20Operational%20Report-final.pdf Interventions to support pilot-scale women retailer groups, El Fayoum, Egypt: http://livestock-fish.wikispaces.com/file/detail/Women%20retailers%20documentation%20report.pdf Interventions to support new fish farms in El Mineya, Egypt: http://livestock-fish.wikispaces.com/file/detail/Third%20Operational%20Report-final.pdf Sheep breeding programs at 2 new sites, Ethiopia: http://livestock-fish.wikispaces.com/file/view/bestbet_CBBP_implementation.docx/541794826/bestbet_CBBP_implementation.docx Training and formalising the informal dairy sector, Assam, India: http://www.ilri.org/ilrinews/index.php/archives/tag/assam-directorate-of-dairy-	

					development Managing mastitis and increased productivity, Assam, India: http://www.ilri.org/ilrinews/index.php/archives/tag/assam-directorate-of-dairy-development Balance concentrate feeding for dairy, Bihar, India: http://ilri-ple.wikispaces.com/file/view/Self%20prepared%20balanced%20concentrate%20feed%20leaflet_english%20%282%29.pdf/545092620/Self%20prepared%20balanced%20concentrate%20feed%20leaflet_english%20%282%29.pdf Efficient use of maize stover for dairy, Bihar, India: http://ilri-ple.wikispaces.com/file/view/Urea%20treated%20maize%20stover%20for%20dairy%20animals_english%20%282%29.pdf/545092422/Urea%20treated%20maize%20stover%20for%20dairy%20animals_english%20%282%29.pdf Mineral mixture feeding practices for dairy, Bihar, India: http://ilri-ple.wikispaces.com/file/view/Mineral%20mixture%20leaflet_english.pdf/544979142/Mineral%20mixture%20leaflet_english.pdf Dual purpose food feed crops, Uttarakhand and Nagaland, India: http://www.himmotthan.in/UserFiles/files/green_fodder_from_dual_purpose_wheat_research_5_3_15.pdf Production of nutritionally balanced feeds, Uttarakhand and Nagaland, India: http://www.himmotthan.in/UserFiles/files/feasibility_study_of_mini_feed_mixing_unit_at_chirag_report_5_3_15.pdf Prevention and control of classical swine fever, Uttarakhand and Nagaland, India: http://www.ilri.org/node/33212 Biological Nitrification Inhibition with *B. humidicola*, Camoapa, Nueva Guinea, Nicaragua: http://livestock-fish.wikispaces.com/file/detail/BMZ-GIZ-BNI-Project%20Report-Year%203%20%282015%29%20final.docx.AND http://livestock-fish.wikispaces.com/file/detail/BMZ-GIZ-BNI-Project%20Report-Year%202%20%282014%29%20final%20RvdH.docx. Silvo-pastoral practices related to sustainable livestock production and carbon insetting, Camoapa, Matiguás, Nicaragua: http://livestock-fish.wikispaces.com/file/detail/Individual%20Semester%20Project%20Progress%20Report%20Jan% Training and certification of informal milk traders, Arusha and Mwanza, Tanzania: http://www.ifama.org/i4a/pages/index.cfm?pageID=3349 Feeding strategies for different pig genotypes (local vs improved breeds, Uganda: http://livestock-fish.wikispaces.com/file/detail/Report%20on%20the%20SPVCD%20Project%20Pig%20Feeding%20Training%20and%20Feedback%20Workshop.doc Pig waste management at the slaughter node, Uganda: http://livestockfish.cgiar.org/2015/03/10/biogas-kampala/ Improved biosecurity protocols for control of African Swine Fever, Uganda: https://cgspace.cgiar.org/bitstream/handle/10568/56789/manual14.pdf?sequence=1 Improved deworming and hygiene practices for parasite control, Uganda: https://cgspace.cgiar.org/handle/10568/64960	

27. Number of technologies/NRM practices released by public and private sector partners globally (phase III)			4	11	N = 7 Dissemination of the Abbassa Improved Strain of Nile tilapia, Kafr el Sheikh, Behera, Sharkia, Fayoum, El Mineya, Egypt: http://livestock-fish.wikispaces.com/file/detail/Third%20Operational%20Report-final.pdf Tilapia seed broods distributed to hatcheries, Khulna hub, S-W Bangladesh: http://www.thefishsite.com/articles/1885/progress-and-the-future-for-tilapia-farming-and-seed-production-in-bangladesh Tengra fish seed distributed for hatcheries and farmers, Khulna Hub, S-W Bangladesh: http://www.risingbd.com/detailsnews.php?nssl=43270 Best Management Practice training for fish farmers and hatcheries, Kafr el Sheikh, Behera, Sharkia, Fayoum, El Mineya, Egypt: http://livestock-fish.wikispaces.com/file/detail/Third%20Operational%20Report-final.pdf Training and certification of informal milk traders, Arusha and Mwanza, Tanzania: http://www.ifama.org/i4a/pages/index.cfm?pageID=3349 Managing mastitis and increased productivity, Assam, India: http://www.ilri.org/ilrinews/index.php/archives/tag/assam-directorate-of-dairy-development Training and formalising the informal dairy sector, Assam, India: http://www.ilri.org/ilrinews/index.php/archives/tag/assam-directorate-of-dairy-development	
POLICIES IN VARIOUS STAGES OF DEVELOPMENT						
28. Numbers of Policies/ Regulations/ Administrative Procedures Analyzed (Stage 1)			2	4	N =	
29. Number of policies / regulations / administrative procedures drafted and presented for public/stakeholder consultation (Stage 2)			2	0	N =	
30. Number of policies / regulations / administrative procedures presented for legislation(Stage 3)			0	5	N =	
31. Number of policies / regulations / administrative procedures prepared			0	0	N =	

passed/approved (Stage 4)						
32. Number of policies / regulations / administrative procedures passed for which implementation has begun (Stage 5)			1	0	N =	
OUTCOMES ON THE GROUND						
33. Number of hectares under improved technologies or management practices as a result of CRP research			331,070	n = 232,148ha (162,352 ha new + 69,796 ha continued)	N = 112,882 hectares (continuing) and 40,347 hectares (new areas) and 479,000 hectares not categorized. 12,000 hectares (continuing areas) and 6, 000 hectares (new areas) under best management practices for aquaculture, Kafr el Sheikh, Behera, Sharkia, Fayoum, El Mineya, Egypt: http://livestock-fish.wikispaces.com/file/detail/Third%20Operational%20Report-final.pdf 34,347 Hectares (new areas) under improved fish husbandry, Khulna Hub, Southwestern Bangladesh: http://worldfishcenter.org/content/training-helps-bangladeshi-families-grow-more-fish-vegetables 100,882 hectares (continuing areas) under improved fish seed, Khulna Hub, south western Bangladesh: http://worldfishcenter.org/content/training-helps-bangladeshi-families-grow-more-fish-vegetables 479,000 hectares (new and continuing) under Brachiaria hybrids globally: Royalty reports to CIAT (est. at rate of 7kg/ha sowing rate)	
34. Number of farmers and others who have applied new technologies or management practices as a result of CRP research			2,471	n = 2,040 (1,520 male + 520 female)	N = 70, 818 female farmers and 417,538 male farmers 45,038 female and 43,309 male farmers using improved fish husbandry, Southwestern Bangladesh: http://worldfishcenter.org/content/training-helps-bangladeshi-families-grow-more-fish-vegetables 25,780 female and 374,229 male farmers using improved fish seed, Khulna Hub, south western Bangladesh: http://worldfishcenter.org/content/training-helps-bangladeshi-families-grow-more-fish-vegetables	

Annex Table 1A: List of publications in ISI journals, supplement to Indictor 9.

Title	Year of Pub.	Authors	Journal Name	URL	Flagship	Value Chain
Beyond Net Deficits: New Priorities for an Aqua-cultural Geography	2014	Ben Belton and Simon R. Bush	Geographical Journal	http://hdl.handle.net/10568/65128	Value Chain Development	Bangladesh Value Chain
Enhancing farming system water productivity through alternative land use and water management in vertisol areas of Ethiopian Blue Nile Basin (Abay)	2014	T. Erkossa, A. Haileslassie, C. MacAlister	Agricultural Water Management	http://hdl.handle.net/10568/34107	Feeds & Forages	
Farm-scale trade-offs between legume use as forage vs. green manure: The case of *Canavalia brasiliensis*	2014	Douxchamps, S., I. M. Rao, M. Peters, R. van der Hoek, A. Schmidt, S. Martens, J. Polania, M. Mena, C. Binder, R. Scholl, A. Mosimann, F. Holman, M. Quintero, M. Kreuzer, E. Frossard and A. Oberson	Agroecology and Sustainable Food Systems	http://hdl.handle.net/10568/42160	Feeds & Forages	
Livestock water productivity: feed resourcing, feeding and coupled feed-water resource data bases	2014	Michael Blümmel, Amare Haileslassie, Anandan Samireddypalle, Vincent Vadez and An Notenbaert	Animal Production Science	http://hdl.handle.net/10568/42266	Feeds & Forages	
Efficiency of selection for body weight in a cooperative village breeding program of Menz sheep under smallholder farming system	2014	S. Gizaw, T. Getachew, S. Goshme, A. Valle-Zárate, J. A. M. van Arendonk, S. Kemp, A. O. Mwai and T. Dessie	Animal,	http://hdl.handle.net/10568/67367	Genetics	Ethiopia value chain
Waterlogging-induced changes in root architecture of germplasm accessions of the tropical forage grass, *Brachiaria humidicola*	2014	Cardoso, J. A., J. C. Jimenez and I. M. Rao	AoB PLANTS	http://hdl.handle.net/10568/42286	Feeds & Forages	
Technical characteristics and economic performance of commercial tilapia hatcheries applying different management systems in Egypt	2014	Ahmed Mohamed Nasr-Allah, Malcolm William Dickson, Diaa Abdel Reheem Al-Kenawy, Mohamed Fathi Mohamed Ahmed, Gamal Othman El-Naggar	Aquaculture	http://hdl.handle.net/10568/56963	Value Chain Development	Egypt Value Chain
TREC-IN: gene knock-in genetic tool for genomes cloned in yeast	2014	Suchismita Chandran, Vladimir Noskov, Thomas H. Segall-Shapiro, Li Ma, Caitlin Whiteis, Carole Lartigue, Joerg Jores, Sanjay Vashee, Ray-Yuan Chuang	BMC Genomics	http://hdl.handle.net/10568/67384	Animal Health	
Beyond Tariffs: The Role of Non-Tariff Barriers in Dairy Trade in the East African Community Free Trade Area	2014	Gelan, A and Omore, A.	Development Policy Review	http://hdl.handle.net/10568/42174	Value Chain Development	Tanzania Value Chain
Antibodies against MERS Coronavirus in Dromedary Camels, Kenya, 1992–2013	2014	Victor Max Corman, Joerg Jores, Benjamin Meyer, Mario Younan, Anne Liljander, Mohammed Yahya Said, Ilona Gluecks, Erik Lattwein, Berend-Jan Bosch, Jan Felix Drexler, Set Bornstein, Christian Drosten, Marcel A.	Emerging Infectious Diseases	http://hdl.handle.net/10568/43743	Animal Health	

		Müller				
Reducing uncertainty in nitrogen budgets for African livestock systems	2014	M C Rufino, P Brandt, M Herrero and K Butterbach-Bahl	Environmental Research Letters	http://hdl.handle.net/10568/51797	Targeting Sustainable interventions	
Genome-wide analysis reveals the ancient and recent admixture history of East African Shorthorn Zebu from Western Kenya	2014	Mbole-Kariuki, M.N., Sonstegard, T., Orth, A., Thumbi, S.M., Bronsvoort, B.M. de C., Kiara, H., Toye, P.G., Conradie, I., Jennings, A., Coetzer, K., Woolhouse, M.E.J., Hanotte, O., Tapio, M	Heredity	http://hdl.handle.net/10568/35610	Genetics	
Breeding programmes for smallholder sheep farming systems: II. Optimization of cooperative village breeding schemes	2014	Gizaw, S., van Arendonk, J.A., Valle-Zárate, A., Haile, A., Rischkowsky, B., Dessie, T., Mwai. A.O.	J Anim Breed Genet	http://hdl.handle.net/10568/67387	Genetics	Ethiopia Value Chain
Breeding programs for smallholder sheep farming systems: I. Evaluation of alternative designs of breeding schemes	2014	Gizaw, S., Rischkowsky, B., Valle-Zárate, A, Haile, A., van Arendonk, J.A.M., Mwai, A. O., Dessie, T.	J Anim Breed Genet	http://hdl.handle.net/10568/67393	Genetics	Ethiopia Value Chain
A longitudinal assessment of the serological response to Theileria parva and other tick-borne parasites from birth to one year in a cohort of indigenous calves in western Kenya	2014	Amy Jennings, Henry Kiara, Phil Toye, Mark Bronsvoort, Ian Handle, Jane Pole, Mark Woolhouse, Ilana Conradie, Olivier Hanotte, Mary Ndila	Parasitology	http://hdl.handle.net/10568/67394	Animal Health	
Assessing the resistance of Brachiaria hybrids to pathogenic Rhizoctonia	2014	Alvarez, E., Latorre, M., Bonilla, X., Sotelo, G., and Miles, J. W.	Plant Disease	http://hdl.handle.net/10568/35017	Feeds & Forages	
Parasite co-infections and their impact on survival of indigenous cattle.	2014	Thumbi SM, Bronsvoort BM, Poole EJ, Kiara H, Toye PG, Mbole-Kariuki MN, Conradie I, Jennings A, Handel IG, Coetzer JA, Steyl JC, Hanotte O, Woolhouse ME.	PLOS ONE	http://hdl.handle.net/10568/67377	Animal Health	
Control of Contagious Bovine Pleuropneumonia: Knowledge, attitudes, perceptions and practices in Narok District of Kenya	2014	Kairu-Wanyoike, S.W., Kiara, H., Heffernan, C., Kaitibie, S., Gitau, G.K.,McKeever, D., Taylor, N.M.	Preventive Veterinary Medicine	http://hdl.handle.net/10568/35358	Genetics	
Willingness to pay for Contagious Bovine Pleuropneumonia vaccination in Narok, South District of Kenya	2014	Kairu-Wanyoike, S.W., Kaitibie, S., Heffernan, C., Taylor, N.M., Gitau, G.K., Kiara, H., McKeever, D	Preventive Veterinary Medicine	http://hdl.handle.net/10568/35356	Animal Health	
Participatory assessment of animal health and husbandry practices in smallholder pig production systems in three high poverty districts of Uganda.	2014	M.M. Dione, Emily A. Ouma, Kristina Roesel, Joseph Kungu, Peter Lule and Danilo Pezo (2014	Preventive Veterinary Medicine	http://hdl.handle.net/10568/51612	Value Chain Development	Uganda Value Chain
Price and quality of livestock feeds in peri-urban markets in the West Africa Sahel	2014	A.A. Ayantunde, M. Blümmel, E. Grings and A.J. Duncan	Revue d'elevage et de medicine veterinaire des pays tropicaux	http://hdl.handle.net/10568/56746	Feeds & Forages	

Effect of feeding differently processed sweet sorghum (Sorghum bicolor L. Moench) bagasse based complete diet on nutrient utilization and microbial N supply in growing ram lambs	2014	N. Nalini Kumaria, Y. Ramana Reddy, M. Blummel, D. Nagalakshmi,T. Monika, B.V.S. Reddy, A. Ashok Kumar	Small Ruminant Research	http://hdl.handle.net/10568/34421	Feeds & Forages	
Feasibility of pedigree recording and genetic selection in village sheep flocks of smallholder farmers	2014	Gizaw, S., Goshme, S., Getachew, T., Haile, A., Rischkowsky, B., van Arendonk, J.A., Valle-Zárate, A., Dessie, T., Mwai, A.O	Tropical Animal Health and Production	http://hdl.handle.net/10568/67379	Genetics	Ethiopia Value Chain
Fatty acid content, health and risk indices, physicochemical composition, and somatic cell counts of milk from organic and conventional farming systems in tropical south-eastern Mexico	2014	Claudia Delgadillo-Puga,	Tropical Animal Health and Production	http://hdl.handle.net/10568/42304	Feeds & Forages	
Characterization of the in vitro core surface proteome of *Mycoplasma mycoides subsp. mycoides*, the causative agent of contagious bovine pleuropneumonia.	2014	Krasteva I, Liljander A, Fischer A, Smith DG, Inglis NF, et al.	Veterinary Microbiology	http://hdl.handle.net/10568/34406	Animal Health	
Use of "one-pot, mix-and-read" peptide-MHC class I tetramers and predictive algorithms to improve detection of cytotoxic T lymphocyte responses in cattle	2014	Svitek N, Hansen AM, Steinaa L, Saya R, Awino E, Nielsen M., Buus S., Nene V	Veterinary Research	http://hdl.handle.net/10568/41612	Animal Health	
Is Aquaculture Pro-Poor? Empirical Evidence of Impact on Fish Consumption from Bangladesh	2014	Kazi Ali Toufique and Ben Belton	World Development	http://hdl.handle.net/10568/41925	Value Chain Development	Bangladesh Value Chain
Development and Testing of a Field Diagnostic Assay for *Peste des Petits Ruminants* Virus.	2014	J. Baron, E. Fishbourne, E. Couacy-Hyman, M. Abubakar, B. A. Jones, L. Frost, R. Herbert, T. R. Chibssa, G. van't Klooster, M. Afzal, C. Ayebazibwe, P. Toye, J. Bashiruddin and M. D. Baron. 2014.	Transboundary and Emerging Diseases	http://hdl.handle.net/10568/67396	Animal Health	
Identification and Sequence Characterization of novel *Theileria* genotypes from the Waterbuck (*Kobus defassa*) in a *Theileria parva*-endemic area in Kenya.	2014	Githaka, N., Konnai, S, Bishop, R., Odongo, D., Lekolool, I., Kariuki, E., Gakuya., S, Kamau, L., Isezaki, M., Murat,S.and Ohashi, K.	Veterinary Parasitology	http://hdl.handle.net/10568/35658	Animal Health	
Characterizing feeds and feed availability in Sud-Kivu province, DR Congo.	2014	Bacigale, Samy B.; Paul, Birthe K.; Muhimuzi-Lwaboshi, Fabrice; Mapenzi, Neville; Peters, Michael; Maass, Brigitte, L..	Tropical Grasslands - Forrajes Tropicales	http://hdl.handle.net/10568/42319	Feeds & Forages	
Adaptive responses of Brachiaria grasses to hypoxia stress.	2014	Cardoso, Juan Andrés; Jiménez, Juan; Ricón, Joisse; Rao, Idupulapati Madhusudana	Tropical Grasslands - Forrajes Tropicales	http://hdl.handle.net/10568/56798	Feeds & Forages	

Comparative study of the reproductive performance and White Spot Syndrome Virus (WSSV) status of black tiger shrimp (Penaeus monodon) collected from the Bay of Bengal.	2014	Debnath, P., Karim, M., Belton, B.	Aquaculture	http://hdl.handle.net/10568/65117	Value Chain Development	
Climate-smart Brachiaria grasses for improving livestock production in East Africa.	2014	Djikeng, A., Rao, I.M., Njarui, D., Mutimura, M., Caradus, J., Ghimire, S.R., Johnson, L., Cardoso, J.A., Ahonsi, M. and Kelemu, S.	Tropical Grasslands - Forrajes Tropicales	http://hdl.handle.net/10568/41580	Feeds & Forages	
Genetic parameters and correlated responses in female reproductive traits in the GIFT strain.	2014	Hamzah, A., Nguyen Hong Nguyen, Mekkawy, W., Hooi Ling Khaw, Hoong Yip Yee, Abu Bakar, K.R., Ponzoni, R. W. and Mohd Nor, S.A.	Aquaculture Research	http://hdl.handle.net/10568/56952	Genetics	
Flesh characteristics: Estimation of genetic parameters and correlated responses to selection for growth rate in the GIFT strain.	2014	Hamzah, A., Nguyen Hong Nguyen, Mekkawy, W., Ponzoni, R.W., Hooi Ling Khaw, Hoong Yip Yee, Abu Bakar, K.R. and Mohd Nor, S.A.	Aquaculture Research	http://hdl.handle.net/10568/65125	Genetics	
Climate change mitigation through livestock system transitions	2014	Havlík, P., Valin, H., Herrero, M., Obersteiner, M., Schmid, E., Rufino, M.C., Mosnier, A., Thornton, P.K., Böttcher, H., Conant, R.T., Frank, S., Fritz, S., Fuss, S., Kraxner, F. and Notenbaert, A.	PNAS	http://hdl.handle.net/10568/35050	Targeting Sustainable interventions	
Indirect genetic effects and inbreeding: Consequences of BLUP selection for socially affected traits on rate of inbreeding.	2014	Hooi Ling Khaw, Ponzoni, R.W. and Bijma, P.	Genetics Selection Evolution	http://hdl.handle.net/10568/56953	Genetics	
What shapes food value chains? Lessons from aquaculture in Asia	2014	Jespersen, K.S., Kelling, I., Ponte, S. and Kruijssen, F.	Food Policy	http://hdl.handle.net/10568/65123	Value Chain Development	
Agro-ecological adaptation and participatory evaluation of multipurpose tree and shrub legumes in mid altitudes of Sud-Kivu, D.R. Congo.	2014	Katunga Musale, Dieudonné; Muhigwa, B.J.B.; Kashala, KJ.C.; Kambuyi, M.; Nyongombe, N.; Maass, Brigitte L.; Peters, Michael.	American Journal of Plant Sciences	http://hdl.handle.net/10568/43655	Feeds & Forages	
Effect of ensiling treatment on secondary compounds and amino acid profile of tropical forage legumes, and implications for their pig feeding potential.	2014	Martens SD, Hoedtke S, Avila P, Heinritz S, Zeyner A.	Journal of the Science of Food and Agriculture	http://hdl.handle.net/10568/42151	Feeds & Forages	
Biological nitrification inhibition (BNI) in Brachiaria pastures: A novel strategy to improve eco-efficiency of crop-livestock systems and to mitigate climate change.	2014	Moreta, Danilo; Arango, Jacobo; Sotelo, Mauricio; Vergara, Daniel; Rincón, Alvaro; Ishitani, Manabu; Castro, Aracely; Miles, John; Peters, Michael; Tohme, Joe; Subbarao, Guntur V.; Rao, Idupulapati Madhusudana	Tropical Grasslands - Forrajes Tropicales	http://hdl.handle.net/10568/56815	Feeds & Forages	

Integrating livestock feeds and production systems into agricultural multi-market models: The example of IMPACT.	2014	Msangi, S., Enahoro, D., Herrero, M., Magnan, N., Havlik, P., Notenbaert, A. and Nelgen, S.	Food Policy	http://hdl.handle.net/10568/51384	Feeds & Forages	
A qualitative assessment of gender and irrigation technology in Kenya and Tanzania.	2014	Njuki, J., Waithanji, E., Sakwa, B., Kariuki, J., Mukewa, E and Ngige, J.	Gender, Technology and Development	http://hdl.handle.net/10568/51801	Targeting Sustainable interventions	
The blue revolution in Asia: Upgrading and governance in aquaculture value chains.	2014	Ponte, S., Kelling, I., Jespersen, K.S. and Kruijssen, F.	World Development	http://hdl.handle.net/10568/65116	Value Chain Development	
Climate-smart crop-livestock systems for smallholders in the tropics: Integration of new forage hybrids to intensify agriculture and to mitigate climate change through regulation of nitrification in soil.	2014	Rao, Idupulapati Madhusudana; Ishitani, Manabu; Miles, John; Peters, Michael; Tohme, Joseph M.; Arango, Jacobo; Moreta, Danilo E.; Lopez, Hernán; Castro, Aracely; Van der Hoek, Rein; Martens, Siriwan; Hyman, Glenn; Tapasco, Jeimar; Duitama, Jorge; Suárez, Harold; Borrero, Gonzalo; Núñez, Jonathan; Hartmann, Katharina; Domínguez, Moralba; Sotelo, Mauricio; Vergara, Daniel; Lavelle, Patrick; Subbarao, Guntur v.; Rincon, Alvaro; Plazas, Camilo; Mendoza, Reynaldo; Rathjen, Lena; Karwat, Hannes; Cadisch, Georg.	Tropical Grasslands - Forrajes Tropicales	http://hdl.handle.net/10568/56812	Feeds & Forages	
Does aquaculture add resilience to the global food system?	2014	Troell, M., Naylor, R.L., Metian, M., Beveridge, M., Tyedmers, P.H., Folke, C., Arrow, K.J., Barrett, S., Crépin, A.-S., Ehrlich, P.R., Gren, Å. , Kautsky, N., Levin, S.A., Nyborg, K., Österblom, H., Polasky, S., Scheffer, M., Walker, B.H., Xepapadeas, T., and Zeeuw, A. de.	PNAS	http://hdl.handle.net/10568/65121	Value Chain Development	
Perforin expression in Theileria parva specific Cytotoxic T Cells correlates with Cytotoxicity.	2014	Wendoh, J., Waihenya, R., Saya, R., Awino, E., Nene, V. and Steinaa, L.	Open Journal of Immunology	http://hdl.handle.net/10568/56588	Animal Health	

Annex 2. Performance indicators for gender mainstreaming with targets defined

• **Performance Indicator**	**CRP performance approaches requirements**	• **CRP performance meets requirements**	• **CRP performance exceeds requirements**
1. Gender inequality targets defined	Sex-disaggregated social data is being collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations	Sex-disaggregated social data collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations And The CRP has defined and collected baseline data on the main dimensions of gender inequality in the CRP's main target populations relevant to its expected outcomes (IDOs) *Teams in the program's value chain countries have conducted (in Tanzania) or are conducting gender analyses and/or gender integrated baseline data collection (in Egypt, Ethiopia, Uganda, Nicaragua) to identify relevant gender based constraints operating among key populations in the chains. These efforts go beyond collecting sex disaggregated data in most instances, in line with the value chain analysis tools being tested in the CRP. These tools aim to integrate gender, and even 'transformative' issues around gender norms and attitudes, in value chain analysis to provide data needed to design gender responsive and transformative interventions. Therefore, the tools aim to identify drivers of gender inequality.*	Sex-disaggregated social data collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations And The CRP has defined and collected baseline data on the main dimensions of gender inequality in the CRP's main target populations relevant to its expected outcomes (IDOs) And CRP targets changes in levels of gender inequality to which the CRP is or plans to contribute, with related numbers of men and women beneficiaries in main target populations
• **Performance Indicator**	**CRP performance approaches requirements**	• **CRP performance meets requirements**	• **CRP performance exceeds requirements**

2. Institutional architecture for integration of gender is in place	- CRP scientists and managers with responsibility for gender in the CRP's outputs are appointed, have written TORS. - Procedures defined to report use of available diagnostic or baseline knowledge on gender routinely for assessment of the gender equality implications of the CRP's flagship research products as per the Gender Strategy -CRP M&E system has protocol for tracking progress on integration of gender in research *The Gender Theme currently has two full-time gender scientists and one gender research technician with clear TORs and work plans. We also have the equivalent of one additional full-time gender position but split across three countries.* *The Gender Theme has drafted process indicators to monitor and evaluate progress on the Gender Strategy, and is working with the M&E team to draft gender -appropriate IDOs.* *The Gender team (in conjunction with the CG Gender Network) has begun to define standards for assessing the gender implications of the CRP flagship projects.*	- CRP scientists and managers with responsibility for gender in the CRP's outputs are appointed, have written TORS and funds allocated to support their interaction. - Procedures defined to report use of available diagnostic or baseline knowledge on gender routinely for assessment of the gender equality implications of the CRP's flagship research products as per the Gender Strategy -CRP M&E system has protocol for tracking progress on integration of gender in research And A CRP plan approved for capacity development in gender analysis	CRP scientists and managers with responsibility for gender in the CRP's outputs are appointed, have written TORS and funds allocated to support their interaction. - Procedures defined to report use of available diagnostic or baseline knowledge on gender routinely for assessment of the gender equality implications of the CRP's flagship research products as per the Gender Strategy -CRP M&E system has protocol for tracking progress on integration of gender in research And A CRP plan approved for capacity development in gender analysis And The CRP uses feedback provided by its M&E system to improve its integration of gender into research

Annex 3. Financial reports

GIAR TEMPLATE: L101

CRP No. 3.7 - "Livestock and Fish"
Period: 01/01/2012 - 12/31/2013
Amounts in USD (000's)

Cumulative Financial Summary

Report Description

Name of Report:	Cumuative Financial Summary
Frequency/Period:	Annual
Deadline:	Every April 15th

Summary Report - by CG Partners	(a) Total POWB budget since inception					(b) Actual cumulative Expenses					(c) Variance / Balance				
	Windows 1 & 2	Window 3	Bilateral Funding	Center funds	Total Funding	Windows 1 & 2	Window 3	Bilateral Funding	Center funds	Total Funding	Windows 1 & 2	Window 3	Bilateral Funding	Center funds	Total Funding
1. AFRICA RICE					-					-	-	-	-	-	-
2. BIOVERSITY					-					-	-	-	-	-	-
3. CIAT	2,537	677	4,234		7,448	2,472	189	2,998	-	5,658	65	489	1,237	-	1,790
4. CIFOR	-	-	-		-	-	-	-	-	-	-	-	-	-	-
5. CIMMYT	-	-	-		-	-	-	-	-	-	-	-	-	-	-
6. CIP	-	-	-		-	-	-	-	-	-	-	-	-	-	-
7. ICARDA	967	40	308		1,315	918	22	291	-	1,230	49	18	17	-	85
8. ICRAF	-	-	-		-	-	-	-	-	-	-	-	-	-	-
9. ICRISAT	-	-	-		-	-	-	-	-	-	-	-	-	-	-
10. IFPRI	-	-	-		-	-	-	-	-	-	-	-	-	-	-
11. IITA	-	-	-		-	-	-	-	-	-	-	-	-	-	-
12. ILRI	16,270	2,022	10,469	-	28,760	13,394	1,999	9,935	-	25,329	2,876	22	534	-	3,431
13. IRRI	-	-	-		-	-	-	-	-	-	-	-	-	-	-
14. IWMI	-	-	-		-	-	-	-	-	-	-	-	-	-	-
15. WORLDFISH	2,440	558	4,259		7,257	2,319	2,704	3,519	59	8,601	121	(2,146)	740	(59)	(1,344)
Total for CRP	**22,214**	**3,297**	**19,270**	**-**	**44,781**	**19,104**	**4,914**	**16,742**	**59**	**40,818**	**3,110**	**(1,617)**	**2,528**	**(59)**	**3,963**
	50%	**7%**	**43%**	**0%**	**100%**	**47%**	**12%**	**41%**	**0%**	**100%**	**78%**	**-41%**	**64%**	**-1%**	**100%**

CGIAR TEMPLATE: L106

CRP :	**"3.7" - "Livestock and Fish"**	**Annual Funding**			
Period:	**31-Dec-13**				
Amounts in USD (000's)					
Report Description					
Name of Report: Annual Funding Summary					
Frequency/Period: Annual					
Deadline:	Every April 15th				

PART 1 - Annual FINANCE PLAN (Totals for Windows 1 and 2 combined)

Approved Level for Year - Initial Approval (as per PIA)	
Approved Level for Year - Final Amount	

PART 2 - Funding Summary for Year

		2013 Actual Funding			
		Windows 1&2	**Window 3**	**Bilateral Funding**	**Total Funding**
1	CGIAR Fund	11,386	-	-	11,386
2	ACIAR	-	-	220	220
3	ARC Egypt	-	-	51	51
4	ASARECA	-	-	47	47
5	AWARD	-	-	9	9
6	BBSRC	-	-	187	187
7	BMGF	-	121	237	358
8	DOW	-	-	269	269
9	EC	-	1,280	69	1,350
10	EC/ IFAD	-	1,155	-	1,155
11	EMBRAPA	-	-	49	49
12	Finland	-	-	457	457
13	FMD	-	-	12	12
14	Ford Foundation	-	-	100	100
15	GIZ	-	-	1,193	1,193
16	Heifer International	-	-	297	297
17	IFAD	-	-	495	495
18	IFPRI	-	-	185	185
19	ILRI	-	-	156	156
20	INIA	-	74	-	74
21	INIFAP	-	-	76	76
22	Irish Aid	-	-	508	508
23	JCV	-	-	129	129
25	KARI	-	-	331	331
26	KU	-	5	-	5
27	LOL	-	-	3	3
28	MAFF/JAPAN	-	156	-	156
29	Mexican	-	150	-	150
30	MEXICO	-	28	50	77
31	New York University	-	-	148	148
34	RDA	-	-	191	191
35	RGCA	-	-	40	40
36	RLF	-	-	3	3
37	SDC	-	-	1,355	1,355
38	SUA	-	-	103	103
39	UNEP	-	-	635	635
40	University of New England	-	-	183	183
41	University of Vermont	-	-	136	136
42	USAID	-	1,295	490	1,785
43	USDA	-	-	92	92
44	UWA	-	-	8	8
45	Others< 50K	-	95	243	338
Total for CRP "X.X"		**11,386**	**4,359**	**8,758**	**24,502**

GIAR TEMPLATE: L111

CRP No. "3.7" - "Livestock and Fish"
31-Dec-13
Amounts in USD (000's)

Annual Financial Summary by Centers

Report Description

Name of Report:	Annual Financial Summary by Centers & Other Participants
Frequency/Period:	Annual
Deadline:	Every April 15th

Summary Report - by CG Partners	(a) CRP 2013 POWB approved budget					(b) CRP 2013 Expenditure					(c) Variance this Year				
	Windows 1 & 2	Window 3	Bilateral Funding	Center funds	Total Funding	Windows 1 & 2	Window 3	Bilateral Funding	Center funds	Total Funding	Windows 1 & 2	Window 3	Bilateral Funding	Center funds	Total Funding
1. AFRICA RICE					-					-	-	-	-	-	-
2. BIOVERSITY	-	-	-	-	-					-	-	-	-	-	-
3. CIAT	1,362	677	2,740	-	4,779	1,297	189	1,503	-	2,989	65	489	1,237	-	1,790
4. CIFOR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5. CIMMYT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6. CIP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7. ICARDA	546	40	196	-	782	497	22	179	-	698	49	18	17	-	84
8. ICRAF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9. ICRISAT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10. IFPRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11. IITA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12. ILRI	11,284	1,228	5,888	-	18,400	8,407	1,386	5,430	-	15,223	2,877	(158)	458	-	3,177
13. IRRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14. IWMI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15. WORLDFISH	1,305	411	2,195	-	3,911	1,184	2,704	1,646	59	5,593	121	(2,293)	549	(59)	(1,682)
Total for CRP	**14,497**	**2,356**	**11,018**	**-**	**27,871**	**11,386**	**4,300**	**8,758**	**59**	**24,502**	**3,111**	**(1,944)**	**2,261**	**(59)**	**3,369**
	52%	**8%**	**40%**	**0%**	**100%**	**46%**	**18%**	**36%**	**0%**	**100%**	**92%**	**-58%**	**67%**	**-2%**	**100%**

Note -

The budget includes the 2012 carryover of $2,615; IRLI of $2,585; CIAT OF $1; ICARDA $29.

Annual Financial Summary by Natural Classification

CRP No. "3.7" - "Livestock and Fish"
31-Dec-13
Amounts in USD 000's

Report Description
Name of Report: Financial Summary by Natural Classification lines
Frequency/Period: Annual
Deadline: Every April 15th

Total CRP"3.7"	POWB Approved Budget					Actual					Unspent/Variance				
	Windows 1 & 2	Window 3	Bilateral Funding	Center Funds	Total Funding	Windows 1 & 2	Window 3	Bilateral Funding	Center Funds	Total Funding	Windows 1 & 2	Window 3	Bilateral Funding	Center Funds	Total Funding
Personnel	5,983	826	3,628	-	10,438	5,062	1,733	3,202	-	9,997	921	(907)	426	-	441
Collaborators Costs - CGIAR Centers	301	127	-	-	428	-	-	-	-	-	301	127	-	-	428
Collaborator Costs - Partners	30	97	1,775	-	1,902	157	308	1,386	-	1,850	(127)	(211)	389	-	52
Supplies and services	5,516	703	3,705	-	9,924	3,515	1,411	2,699	-	7,625	2,001	(708)	1,006	-	2,298
Operational Travel	874	233	589	-	1,697	557	239	639	-	1,436	317	(6)	(50)	-	261
Depreciation	5	42	44	-	91	98	119	0	59	277	(93)	(78)	44	(59)	(186)
Sub-total of Direct Costs	**12,710**	**2,027**	**9,742**	**-**	**24,479**	**9,390**	**3,811**	**7,926**	**59**	**21,186**	**3,320**	**(1,784)**	**1,816**	**(59)**	**3,293**
Indirect Costs	1,787	328	1,277	-	3,392	1,996	489	832	-	3,317	(209)	(160)	445	-	76
Total - All Costs	14,497	2,356	11,018	-	27,871	11,386	4,300	8,758	59	24,502	3,111	(1,944)	2,261	(59)	3,369
LESS Coll Costs CGIAR Centers	(301)	**(127)**	-	-	**(428)**	-	-	-	-	-	**(301)**	**(127)**	-	-	**(428)**
Total Net Costs	14,196	2,229	11,018	-	27,443	11,386	4,300	8,758	59	24,502	2,810	(2,071)	2,261	(59)	2,941

Amounts for each participating center below:

CIAT	POWB Approved Budget					Actual					Unspent/Variance				
Personnel	720	181	515		1,416	609	40	465		1,114	111	141	50	-	302
Collaborators Costs - CGIAR Centers	-	-	-		-	-	-	-		-	-	-	-	-	-
Collaborator Costs - Partners	-	-	724		724	-	-	385		385	-	-	339	-	339
Supplies and services	440	262	1,027		1,729	478	85	362		925	(38)	178	665	-	804
Operational Travel	20	110	118		248	39	28	123		191	(19)	81	(5)	-	57
Depreciation	5	25	40		70	2	10	-		12	3	15	40	-	58
Sub-total of Direct Costs	**1,185**	**578**	**2,424**	**-**	**4,188**	**1,128**	**163**	**1,335**	**-**	**2,626**	**57**	**415**	**1,089**	**-**	**1,561**
Indirect Costs	177	99	315		591	169	25	168		362	8	74	147	-	229
Total - All Costs	**1,362**	**677**	**2,740**	**-**	**4,779**	**1,297**	**189**	**1,503**	**-**	**2,989**	**65**	**489**	**1,237**	**-**	**1,790**
LESS Coll Costs CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Net Costs	**1,362**	**677**	**2,740**	**-**	**4,779**	**1,297**	**189**	**1,503**	**-**	**2,989**	**65**	**489**	**1,237**	**-**	**1,790**

ICARDA	POWB Approved Budget					Actual					Unspent/Variance				
Personnel	291	-	6		297	242	-	6		248	48	-	-	-	48
Collaborators Costs - CGIAR Centers	-	-	-		-	-	-	-		-	-	-	-	-	-
Collaborator Costs - Partners	-	13	17		30	35	21	37		93	(35)	(8)	(20)	-	(63)
Supplies and services	92	7	123		221	89	1	79		169	2	6	44	-	52
Operational Travel	73	13	27		113	48	-	38		86	25	13	(11)	-	27
Depreciation	-	7	2		9	-	-	-		-	-	7	2	-	9
Sub-total of Direct Costs	455	40	175	-	**670**	**414**	**22**	**160**	-	**596**	**41**	**18**	**15**	-	**74**
Indirect Costs	91	-	21		112	83	-	19		102	8	-	2	-	10
Total - All Costs	**546**	**40**	**196**	-	**782**	**497**	**22**	**179**	-	**698**	**49**	**18**	**17**	-	**84**
LESS Coll Costs CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Net Costs	**546**	**40**	**196**	-	**782**	**497**	**22**	**179**	-	**698**	**49**	**18**	**17**	-	**84**

ILRI	POWB Approved Budget					Actual					Unspent/Variance				
Personnel	3,221	501	2,282		6,003	2,599	610	1,987		5,196	622	(109)	294	-	807
Collaborators Costs - CGIAR Centers	50	127	-		177	-	-	-		-	50	127	-	-	177
Collaborator Costs - Partners	30	45	633		708	116	115	692		923	(86)	(70)	(59)	-	(215)
Supplies and services	4,644	290	1,993		6,928	2,630	388	1,860		4,878	2,015	(98)	133	-	2,049
Operational Travel	163	104	283		550	283	73	410		766	(120)	31	(127)	-	(217)
Depreciation	-	-	-		-	0	-	-		0	(0)	-	-	-	(0)
Sub-total of Direct Costs	**8,108**	**1,066**	**5,191**	-	**14,365**	**5,628**	**1,186**	**4,950**	-	**11,764**	**2,480**	**(120)**	**241**	-	**2,601**
Indirect Costs	1,063	161	697		1,921	1,410	200	480		2,090	(347)	(38)	217	-	(169)
Total - All Costs	**9,171**	**1,228**	**5,888**	-	**16,286**	**7,038**	**1,386**	**5,430**	-	**13,854**	**2,132**	**(158)**	**458**	-	**2,432**
LESS Coll Costs CGIAR Centers	(50)	**(127)**	-	-	**(177)**	-	-	-	-	-	**(50)**	**(127)**	-	-	**(177)**
Total Net Costs	**9,121**	**1,101**	**5,888**	-	**16,110**	**7,038**	**1,386**	**5,430**	-	**13,854**	**2,082**	**(285)**	**458**	-	**2,256**

	Windows 1 & 2	Window 3	Bilateral Funding	Center Funds	Total Funding	Windows 1 & 2	Window 3	Bilateral Funding	Center Funds	Total Funding	Windows 1 & 2	Window 3	Bilateral Funding	Center Funds	Total Funding
WORLDFISH	**POWB Approved Budget**					**Actual**					**Unspent/Variance**				
Personnel	907	145	826		1,877	843	1,084	744	-	2,671	64	(939)	82	-	(793)
Collaborators Costs - CGIAR Centers	-	-	-		-	-	-	-	-	-	-	-	-	-	-
Collaborator Costs - Partners	-	39	401		440	6	172	272	-	449	(6)	(133)	129	-	(9)
Supplies and services	123	144	562		828	21	938	398	-	1,356	101	(794)	164	-	(528)
Operational Travel	96	6	161		264	47	138	68	-	252	49	(132)	93	-	11
Depreciation	-	9	2		11	96	109	0	59	264	(96)	(100)	2	(59)	(253)
Sub-total of Direct Costs	**1,126**	**343**	**1,951**	**-**	**3,420**	**1,013**	**2,440**	**1,481**	**59**	**4,993**	**113**	**(2,097)**	**470**	**(59)**	**(1,573)**
Indirect Costs	179	68	244		491	171	264	165		600	8	(196)	79	-	(110)
Total - All Costs	**1,305**	**411**	**2,195**	**-**	**3,911**	**1,184**	**2,704**	**1,646**	**59**	**5,593**	**121**	**(2,293)**	**549**	**(59)**	**(1,682)**
LESS Coll Costs CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Net Costs	**1,305**	**411**	**2,195**	**-**	**3,911**	**1,184**	**2,704**	**1,646**	**59**	**5,593**	**121**	**(2,293)**	**549**	**(59)**	**(1,682)**

PMU	**POWB Approved Budget**					**Actual**					**Unspent/Variance**				
Personnel	845	-	-	-	845	769	-	-	-	769	76	-	-	-	76
Collaborators Costs - CGIAR Centers	251	-	-	-	251	-	-	-	-	-	251	-	-	-	251
Collaborator Costs - Partners	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Supplies and services	218	-	-	-	218	297	-	-	-	297	(79)	-	-	-	(79)
Operational Travel	522	-	-	-	522	140	-	-	-	140	382	-	-	-	382
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total of Direct Costs	**1,836**	**-**	**-**	**-**	**1,836**	**1,206**	**-**	**-**	**-**	**1,206**	**630**	**-**	**-**	**-**	**630**
Indirect Costs	277				277	163				163	115	-	-	-	115
Total - All Costs	**2,113**	**-**	**-**	**-**	**2,113**	**1,369**	**-**	**-**	**-**	**1,369**	**745**	**-**	**-**	**-**	**745**
LESS Coll Costs CGIAR Centers	(251)	-	-	-	(251)	-	-	-	-	-	(251)	-	-	-	(251)
Total Net Costs	**1,862**	**-**	**-**	**-**	**1,862**	**1,369**	**-**	**-**	**-**	**1,369**	**493**	**-**	**-**	**-**	**493**

CGIAR TEMPLATE: L131

CRP No. "3.7" - "Livestock and Fish"
Period: 12/31/2013
Amounts in USD 000's

Annual Financial Summary by Themes

CGIAR
Science for a food secure future

Report Description

Name of Report:	Financial Summary by Themes
Frequency/Period:	Annual
Deadline:	Every April 15th

	POWB Approved	Current Year Actual Expenditures	Unspent Budget
Summary Report - by Themes			
Theme 1: Animal Health	4,833	4,883	(50)
Theme 2: Animal Genetics	4,357	6,213	(1,856)
Theme 3: Feeds and Forages	6,331	4,021	2,309
Theme 4: Value Chain Development	6,246	5,495	751
Theme 5: Targeting Sustainable Interventions	1,505	822	683
Gender Strategies	2,487	1,700	787
CRP Management/Coordination	2,113	1,369	745
Total - All Costs	**27,871**	**24,502**	**3,369**
CIAT			
Theme 1: Animal Health			-
Theme 2: Animal Genetics			-
Theme 3: Feeds and Forages	3,695	2,328	1,367
Theme 4: Value Chain Development	840	528	313
Theme 5: Targeting Sustainable Interventions	-	-	-
Gender Strategies	244	133	111
CRP Management/Coordination			-
Total - All Costs	4,779	2,989	1,790
ICARDA			
Theme 1: Animal Health			-
Theme 2: Animal Genetics	385	414	(29)
Theme 3: Feeds and Forages	119	46	73
Theme 4: Value Chain Development	278	238	40
Theme 5: Targeting Sustainable Interventions	-	-	-
Gender Strategies	-	-	-
CRP Management/Coordination			-
Total - All Costs	782	698	84
ILRI			
Theme 1: Animal Health	4,737	4,445	292
Theme 2: Animal Genetics	2,872	2,889	(16)
Theme 3: Feeds and Forages	2,468	1,588	880
Theme 4: Value Chain Development	3,512	3,273	239
Theme 5: Targeting Sustainable Interventions	1,095	497	597
Gender Strategies	1,602	1,161	441
CRP Management/Coordination	2,113	1,369	745
Total - All Costs	18,400	15,223	3,177
WORLDFISH			
Theme 1: Animal Health	96	438	(342)
Theme 2: Animal Genetics	1,099	2,910	(1,811)
Theme 3: Feeds and Forages	49	60	(11)
Theme 4: Value Chain Development	1,616	1,456	160
Theme 5: Targeting Sustainable Interventions	410	324	86
Gender Strategies	641	405	236
CRP Management/Coordination	-	-	-
Total - All Costs	3,911	5,593	(1,682)

CGIAR TEMPLATE: L131

Annual Financial Summary of Gender by Flagship Project

CRP No. 3.7 - "Livestock & Fish"
Period: 01/01/2014 - 12/31/2014
Amounts in USD 000's

Report Description

Name of Report:	Financial Summary of Gender Expenditure by Flagship Project
Frequency/Period:	Annual
Deadline:	Every April 15th

	POWB Approved	Current Year Actual Expenditures	Unspent Budget
Summary Gender Report - by Flagship Project			
Theme 1: Animal Health	236	215	21
Theme 2: Animal Genetics	462	462	-
Theme 3: Feeds and Forages	270	141	129
Theme 4: Value Chain Development	696	770	(74)
Theme 5: Targeting Sustainable Interventions	69	115	(45)
Theme 6: Gender, Impact & Learning	1,851	1,706	145
CRP Management/Coordination	-	-	-
Total - All Costs	**3,584**	**3,408**	**175**
CIAT			
Theme 1: Animal Health			-
Theme 2: Animal Genetics			-
Theme 3: Feeds and Forages	155	89	66
Theme 4: Value Chain Development	175	265	(90)
Theme 5: Targeting Sustainable Interventions	2	2	1
Theme 6: Gender, Impact & Learning	307	233	74
CRP Management/Coordination	-		-
Total - All Costs	640	589	51
ICARDA			
Theme 1: Animal Health			-
Theme 2: Animal Genetics		-	-
Theme 3: Feeds and Forages	-	5	(5)
Theme 4: Value Chain Development	68	60	8
Theme 5: Targeting Sustainable Interventions	-	-	-
Theme 6: Gender, Impact & Learning		-	-
CRP Management/Coordination			-
Total - All Costs	68	65	3
ILRI			
Theme 1: Animal Health	236	215	21
Theme 2: Animal Genetics	462	462	-
Theme 3: Feeds and Forages	115	46	68
Theme 4: Value Chain Development	295	365	(70)
Theme 5: Targeting Sustainable Interventions	67	57	10
Theme 6: Gender, Impact & Learning	1,089	1,018	71
CRP Management/Coordination			-
Total - All Costs	2,263	2,163	100
WORLDFISH			
Theme 1: Animal Health	-	-	-
Theme 2: Animal Genetics	-	-	-
Theme 3: Feeds and Forages	-	-	-
Theme 4: Value Chain Development	158	80	78
Theme 5: Targeting Sustainable Interventions	-	56	(56)
Theme 6: Gender, Impact & Learning	455	455	-
CRP Management/Coordination	-	-	-
Total - All Costs	613	591	21

CRP No. "3.7" - "More Meat, Milk and Fish"
Period: **01/01/2013 to 12/31/2013**
Amounts in USD 000's

CRP Partnership Report

Report Description

Name of Report: CRP Partnerships Report
Frequency/Period: Annual
Deadline: Every April 15th

TOTAL FOR CRP "X.X"

Item	Institute Acronym	Institute Name	Country	Actual Expenses - This Year: Windows 1 & 2	Window 3	Bilateral	Center Funds	TOTAL
1	UG	University of Goettingen	Germany	-	-	11	-	**11**
2	RAB	Rwanda Agriculture Board (RAB)	Rwanda	-	-	16	-	**16**
3	NARO	National Agricultural Research Organization (NARO)	Uganda	-	-	8	-	**8**
4		NARS (CSIRO, AUS; Univ. Of Murdoch, AUS; MORU, THA, ...)	Laos	-	-	83	-	**83**
5		CORPOICA	Colombia	-	-	6	-	**6**
6	UH	University of Hohenheim	Germany	-	-	25	-	**25**
7	NAFRI	National Agriculture and Forestry Research Institute - Ministry of A	Cambodia/Laos/Vietnam	-	-	169	-	**169**
8	DAPH	Department of Animal Production and Health (DAPH)	Combodia	-	-	37	-	**37**
9	RUA	RUA Royal University of Agriculture	Combodia	-	-	22	-	**22**
10	NARS	NARS		-	-	9	-	**9**
11	APRI	Animal Production Research Institute	Egypt	-	-	37	-	**37**
12	OSU	Oregon State University	USA	-	21	-	-	**21**
13	IMAU	Inner Mongolia Agriculture University	China	21	-	-	-	**21**
14	BARC	Bako Agricultural Research Center	Ethiopia	7	-	-	-	**7**
15	DBARC	Debre Birhan Agricultural Research Center	Ethiopia	7	-	-	-	**7**
16	BAU	Bangladesh Agricultural University	Bangladesh	-	-	18	-	**18**
17	CIAT	International Centre for Tropical Agriculture	Colombia	-	64	-	-	**64**
18	CHIRAG	Central Himalayan Rural Action Group	India	-	25	-	-	**25**
19	CVL	CENTRAL VETERINARY LABORATORY, WINDHOEK	Namibia	-	-	61	-	**61**
20	EISMV	Ecole Inter-Ettats des Sciences et Medicine Veterinaires	Senegal	-	-	152	-	**152**
21	EIAR	Ethiopian Institute of Agricultural Research	Ethiopia	-	-	17	-	**17**
22	FORWARD Nepal	FORWARD Nepal	Nepal	-	-	8	-	**8**
23	FLI	FRIEDRICH-LOFFLER-INSTITUTE	Germany	-	-	112	-	**112**
24	HI	Heifer International	Tanzania	-	-	40	-	**40**
25	INHERE	Institute of Himalayan Environmental Research and Education	India	-	26	-	-	**26**
26	KARI	Kenya Agricultural Research Institute	Kenya	-	-	14	-	**14**
27	NIAH	National Institute of Animal Husbundry	Vietnam	-	-	48	-	**48**
28	NLU	Nong Lam University	Vietnam	-	-	9	-	**9**
29	SUA	Sokoine University of Agriculture	Tanzania	26	-	37	-	**63**
30		University of Peradeniya	Sri Lanka	-	-	15	-	**15**
31	TDB	Tanzania Dairy Board	Tanzania	-	-	11	-	**11**
32	TIHO	UNIVERSITY OF VETERINARY MEDICINE HANNOVER (TIHO)	Germany	-	-	49	-	**49**
33	UoN	Univ of Nottingham-KOR014	UK	-	-	60	-	**60**
34	UAF	University of Agriculture Faisalabad-Pakistan	Pakistan	-	-	42	-	**42**
36	IIASA	International Institute for Applied Systems Analysis	Austria	90	-	-	-	**90**
38		Bangladesh Fisheries Research Institute	Bangladesh	-	8	-	-	**8**
39		BSFF	Bangladesh	-	7	-	-	**7**
40		CARE International	(blank)	-	-	266	-	**266**

41		CODEC	Bangladesh	-	64	-	-	64
42		Innpact Sarl	Luxemburg	-	-	0	-	0
43		Ministry of Agriculture and Forestry Research Institute for Aquacul	Vietnam	-	28	-	-	28
44		SAVE	Bangladesh	-	13	-	-	13
45		Speed Trust	Bangladesh	-	35	-	-	35
46		University Hanover	Germany	-	-	5	-	5
47		Unversity of Malawi	Malawi	-	8	-	-	8
48		Water Research Institute, Ghana	Ghana	-	9	-	-	9
49		Others	(blank)	6	-	-	-	6
	Total for CRP			**157**	**308**	**1,386**	**-**	**1,850**

3. CIAT				**Actual Expenses - This Year**				
Item	**Institute Acronym**	**Institute Name**	**Country**	**Windows 1 & 2**	**Window 3**	**Bilateral**	**Center Funds**	**TOTAL**
1	UG	University of Goettingen	Germany	-	-	11	-	11
2	RAB	Rwanda Agriculture Board (RAB)	Rwanda	-	-	16	-	16
3	NARO	National Agricultural Research Organization (NARO)	Uganda	-	-	8	-	8
4		NARS (CSIRO, AUS; Univ. Of Murdoch, AUS; MORU, THA, ...)	Laos	-	-	83	-	83
5	UNA	Universidad Nacional Agraria (UNA)	Nicaragua	-	-	-	-	-
6		CORPOICA	Colombia	-	-	6	-	6
7	UH	University of Hohenheim	Germany	-	-	25	-	25
8	NAFRI	National Agriculture and Forestry Research Institute - Ministry of A	Cambodia/Laos/Vietnam	-	-	169	-	169
9	TNU	Tay Nguyen University (TNU)	VietNama	-	-	-	-	-
10	DAPH	Department of Animal Production and Health (DAPH)	Combodia	-	-	37	-	37
11	RUA	RUA Royal University of Agriculture	Combodia	-	-	22	-	22
12		NARS		-	-	9	-	9
13	SUA	SOKOINE UNIVERSITY OF AGRICULTURE (SUA)	Tanzania	-	-	-	-	-
14	TALIRI	Tanzania Livestock Research Institute (TALIRI)	Tanzania					-
		Total for CRP		**-**	**-**	**385**	**-**	**385**

7. ICARDA				**Actual Expenses - This Year**				
Item	**Institute Acronym**	**Institute Name**	**Country**	**Windows 1 & 2**	**Window 3**	**Bilateral**	**Center Funds**	**TOTAL**
1	APRI	Animal Production Research Institute	Egypt	-	-	37	-	37
2	OSU	Oregon State University	USA	-	21	-	-	21
3	IMAU	Inner Mongolia Agriculture University	China	21	-	-	-	21
4	BARC	Bako Agricultural Research Center	Ethiopia	7	-	-	-	7
5	DBARC	Debre Birhan Agricultural Research Center	Ethiopia	7	-	-	-	7
		Total for CRP		**35**	**21**	**37**	**-**	**93**

12. ILRI				**Actual Expenses - This Year**				
Item	**Institute Acronym**	**Institute Name**	**Country**	**Windows 1 & 2**	**Window 3**	**Bilateral**	**Center Funds**	**TOTAL**
1	BAU	Bangladesh Agricultural University	Bangladesh	-	-	18	-	18
2	CIAT	International Centre for Tropical Agriculture	Colombia	-	64	-	-	64
3	CHIRAG	Central Himalayan Rural Action Group	India	-	25	-	-	25
4	CVL	CENTRAL VETERINARY LABORATORY, WINDHOEK	Namibia	-	-	61	-	61
5	EISMV	Ecole Inter-Ettats des Sciences et Medicine Veterinaires	Senegal	-	-	152	-	152
6	EIAR	Ethiopian Institute of Agricultural Research	Ethiopia	-	-	17	-	17
7	FORWARD Nepal	FORWARD Nepal	Nepal	-	-	8	-	8

8	FLI	FRIEDRICH-LOFFLER-INSTITUTE	Germany	-	-	112	-	112
9	HI	Heifer International	Tanzania	-	-	40	-	40
10	INHERE	Institute of Himalayan Environmental Research and Education	India	-	26	-	-	26
11	KARI	Kenya Agricultural Research Institute	Kenya	-	-	14	-	14
12	NIAH	National Institute of Animal Husbundry	Vietnam	-	-	48	-	48
13	NLU	Nong Lam University	Vietnam	-	-	9	-	9
14	SUA	Sokoine University of Agriculture	Tanzania	26	-	37	-	63
15		University of Peradeniya	Sri Lanka	-	-	15	-	15
16	TDB	Tanzania Dairy Board	Tanzania	-	-	11	-	11
17	TIHO	UNIVERSITY OF VETERINARY MEDICINE HANNOVER (TIHO)	Germany	-	-	49	-	49
18	UoN	Univ of Nottingham-KOR014	UK	-	-	60	-	60
19	UAF	University of Agriculture Faisalabad-Pakistan	Pakistan	-	-	42	-	42
21	IIASA	International Institute for Applied Systems Analysis	Austria	90	-	-	-	90
		Total for CRP		**116**	**115**	**692**	**-**	**923**

15. WORLDFISH

Item	Institute Acronym	Institute Name	Country	Actual Expenses - This Year				
				Windows 1 & 2	Window 3	Bilateral	Center Funds	TOTAL
1		Bangladesh Fisheries Research Institute	Bangladesh	-	8	-	-	8
2		BSFF	Bangladesh	-	7	-	-	7
3		CARE International	(blank)	-	-	266	-	266
4		CODEC	Bangladesh	-	64	-	-	64
5		Innpact Sarl	Luxemburg	-	-	0	-	0
6		Ministry of Agriculture and Forestry Research Institute for Aquacul	Vietnam	-	28	-	-	28
7		SAVE	Bangladesh	-	13	-	-	13
8		Speed Trust	Bangladesh	-	35	-	-	35
9		University Hanover	Germany	-	-	5	-	5
10		Unversity of Malawi	Malawi	-	8	-	-	8
11		Water Research Institute, Ghana	Ghana	-	9	-	-	9
12		Others	(blank)	6	-	-	-	6
		Total for CRP		**6**	**172**	**272**	**-**	**449**

TOTAL FOR CRP "X.X"

	Actual Expenses - This Year				
	Windows 1 & 2	Window 3	Bilateral	Center Funds	TOTAL
1. AFRICA RICE	-	-	-	-	-
2. BIOVERSITY	-	-	-	-	-
3. CIAT	-	-	385	-	385
4. CIFOR	-	-	-	-	-
5. CIMMYT	-	-	-	-	-
6. CIP	-	-	-	-	-
7. ICARDA	35	21	37	-	93
8. ICRAF	-	-	-	-	-
9. ICRISAT	-	-	-	-	-
10. IFPRI	-	-	-	-	-
11. IITA	-	-	-	-	-
12. ILRI	116	115	692	-	923
13. IRRI	-	-	-	-	-
14. IWMI	-	-	-	-	-
15. WORLDFISH	6	172	272	-	449
Total for CRP	**157**	**308**	**1,386**	**-**	**1,850**

Notes

All figures shown here are illustrative only, and are in USD 000's

Amounts reported are for actual expenditure, so unliquidated advances not included.

Institutes should be clearly identifiable by name and/or acronym, plus country.

Totals within this report must agree with amounts reported in L121 "Collaborator Costs - Partners".