RESEARCH PROGRAM ON Livestock and Fish

CGIAR

More meat, milk and fish by and for the poor

Report of the Genetics Team Meeting of the CGIAR Research Program on Livestock and Fish Nairobi, Kenya, 30-31 July 2012

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WorldFish

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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; the WorldFish Center 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.

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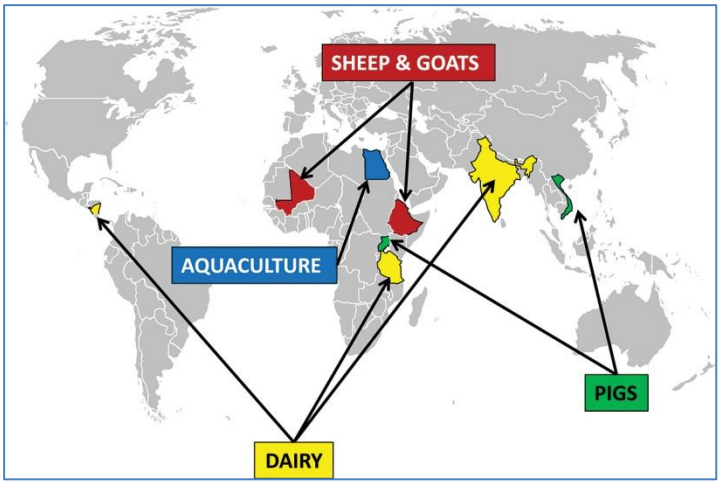
Introduction

The CGIAR Research Program on Livestock and Fish started in January 2012. It aims to increase the productivity of small-scale livestock and fish systems in sustainable ways, making meat, milk and fish more available and affordable to poor consumers across the developing world.

Drawing on recent lessons in research-for-development, the Program applies a solution-driven approach to achieve the targeted impact. It has the following key features:



Target value chains and countries

- **A value chain approach**: The Program uses the value chain concept as an organizing framework, with improving the value chain as the objective. This means considering what is needed to make the value chain work more effectively as a system, exploring the full range of constraints it faces, from policies and institutional issues down to specific technological problems.

- **Focus**: The Program works in a few value chains across the developing world. The initial set of value chains includes 3 smallholder dairy systems (Tanzania, India, Nicaragua), 2 small ruminant systems (Mali, Ethiopia), 2 smallholder pig systems (Vietnam, Uganda) and 1 aquaculture system (Egypt). All the research will address the constraints in these value chains.

- **Working with development partners**: The program collaborates with development partners in each value chain so they are involved, co-creating, contributing to, drawing from, and testing the evolving research outputs.

- **Impact at scale**: Working in a few value chains allows the Program to fully engage with the research and development partners in each chain to identify technological and institutional strategies and interventions, generate the evidence that they indeed work, and use this evidence to attract the development investment needed to take the intervention to scale.

- **A more relevant agenda of basic research**: Research-for-development work in the selected value chains will be supported by technology development and basic research on the main productivity drivers of feeds, genetics and health.

Workshop Activities

Genetics is one of the three technological components of the Livestock and Fish research program. A genetics team meeting was held on 30-31 July 2012, at the International Livestock Research Institute (ILRI), Nairobi. It was attended by 10 scientists from ILRI, the International Center for Agricultural Research in the Dry Areas (ICARDA) and the WorldFish Center working on the livestock and fish genetics component of the program.

Participants included; Steve Kemp (ILRI), Okeyo Mwai (ILRI), Julie Ojango (ILRI), Tadelle Dessie (ILRI), Karen Marshall (ILRI), Tom Randolph (ILRI), Stephen Hall (WorldFish), Rual Ponzoni (WorldFish), Barbara Rischkowsky (ICARDA) and Aynalem Haile (ICARDA). Jimmy Smith, the director general of ILRI attended the opening session and welcomed the participants. Sue Canney Davison of Pipal Ltd. was the workshop facilitator.

Presentation and notes from the meeting can be accessed from the wiki workshop page at: http://livestock-fish.wikispaces.com/Genetics+team+meeting+notes%2C+July+2012

Read a brief report of the meeting: Where livestock and fish genetics intertwine: Results of the first genetics team meeting

Workshop Objectives

The objectives of the workshop were to:

- Develop a common understanding of the objectives of the Component and the proposed approach
- Review and refine the implementation plan and agree on the timetable for 2012
- Identify resource mobilization priorities
- Agree on responsibilities

Workshop Expectations

Participants first shared their own expectations of the meeting, which have been summarized into the following points below:

- Develop a common understanding of the Component's objectives, outputs and expected outcomes
- For the team to know each other
- Define and outline clear work plans
- A coherent and clearly focused agenda for the next 3 years
- Clarity on the roles of team members
- An idea on how integration of work between livestock and fish will develop
- Commitment of partner institutions
- Openness of discussions
- Find out opportunities for impact

Walk-through of key issues by Tom Randolph

The program director, Tom Randolph, presented the program's overview and engaged the participants in a discussion on some aspects of the livestock and fish genetics component and the implications of this new way of working with regard to several components of the proposal (view presentation). The discussions touched on the following questions below with some of the discussion feedback:

1. What does the proposal describe?

The CRP approach has stimulated and challenged the team to investigate more their breeding / genetics programs. Some key items to note: improved appropriate technology, capacity building.

2. How can we best support development of a value chain and the value chain teams?

- Help them to start linking and contextualizing their genetics work
- Create an institutional framework that allows the team to achieve their deliverables at scale
- Adaptation to consumer needs
- Using the value chains to get more information, get the phenotypes and then work on the genomics value chains will give opportunities to collect data that will be useful in the future; in some areas we can get targeted and more focused data.

3. What are the main constraints/opportunities for transforming a value chain that genetics can address?

- Putting things to scale
- Addressing quality issues
- Making everybody see the benefits of genetics
- Assessing whether the production environment expresses demand for and supports the technology?

4. Role for partners

- Synchronise / align research and development partners
- Build strategic partnership with institutions that can see where our comparative advantage is

5. Links to other components?

- Engaging on collective value chain development (VCD) conversation / challenges elevate to the group
- How do we know if we are improving the value chain? Do we have a 'yield gap' analysis equivalent in dairy/livestock/fish breeding? How do we evaluate importance of incremental improvement vs new material

Livestock and Fish: Similarities and differences

The WorldFish Director General, Stephen Hall, presented the WorldFish conceptualization on how WorldFish envisages genetics in their research (Genetics Strategy_WorldFish). The key question that the presentation sought to find out was, at what point does the team work together and at what point does the team work independently? The conceptualization helped to depict what the genetics components looks likes from the fish side, it was recommended that a similar tool be used to help conceptualize the genetics components from the livestock side by scientists from ILRI and ICARDA.

Visioning: what will we have achieved 10 years from now?

A group exercise on visualizing what success would look like for the team in 10 years was carried out. The team was divided into two working groups and gave the following statements that would describe success for the team:

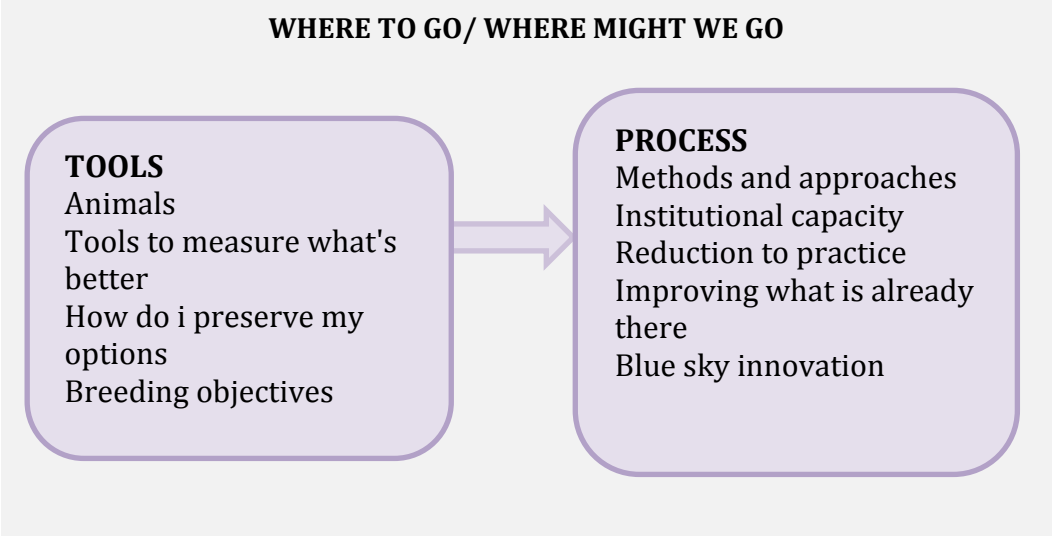
1. Animal-source food value chains targeted by the program -- which include smallholder dairy, pig, small ruminants and aquaculture -- to be fully integrated and taking advantage of what genetics has to offer, as well as establishing self-sustaining institutions through capacity building tools and adapting to future needs through continuing research along these lines
2. Proud of the impact of their genetics work on people's lives and a compelling evidence base to confirm that impact
3. Recognized for our coherence and people coming to learn from us
4. Understanding of the criteria of the best bets / tool box that matches what different actors can take up
5. Excited about where we can take our work next and build on our past successes
6. Development of tools and methods of delivering improved genetics to the needs of the market, and the relevant stakeholders and institutions
7. Visible breakthroughs and new methods identified to enable leaps into the next level of genetics improvement in place

Identifying core values, skills, knowledge and experience that team members bring to the project

Participants had an interactive session where they helped each other to identify their core values, skills, knowledge and experience by writing these down on cards, supplemented by skills identified by the individual members themselves so as to draw out a complete picture of the team's resources. The importance of a well-coordinated leadership and management was discussed in detail and the participants expressed the need to have a strong program management to coordinate the program activities.

Visualizing the component

Stephen Hall facilitated the process through a diagrammatic presentation to help the team conceptualize the component activities. The diagram shows the tools and the process important for the genetics team.



Graduated breeding strategy

Rual Ponzoni presented a basic graduated breeding strategy that applies to both fish and livestock. The approach was based on the principle of investment and benefits of breeding programs. He pointed out on the need to have breeding programs whose costs do not outweigh the benefits. Some questions from the presentation were: who reaps the benefits and what are the returns in breeding programs? How is breeding useful for farmers and what is the level of maturity of the community you are improving?

Reviewing the overall approach

Tom Randolph led the team in a session on developing a strategic map for working together. Participants identified 3 main categories of breeding purpose, into which they later classified their activities. These categories were:

1) developing new strains
2) enhancing sustainable breeding systems, and
3) cross-cutting high-tech innovations.

The participants then listed all the activities that they were engaged in and related these to the three breeding components. These activities were outlined against countries and cross cutting issues and tabulated in a spreadsheet (download spreadsheet that shows the activities).

A review of the logframe was done, bearing in the mind the earlier workshop discussions which sought to draw a clearer picture of the livestock and fish genetics work. Below is the logframe that the team worked on during the meeting.

Objective	Outcome	Outputs	Activity Outputs
To develop and promote breeding strategies and interventions that improve animal productivity in [emerging] small –scale market oriented livestock and fish production systems.	Research and development investors and practitioners actively promoting improved strains and breeding strategies that sustainably improve animal productivity in emerging small-scale market oriented livestock and fish production systems	1 *Assessment and tailored strategies for sustained genetic improvement for targeted production systems*	1.1 Tools for assessing breeding strategies and Animal Genetic Resources (AnGR) use, as part of an overall VC assessment tool, developed as an IPG 1.2 Tools for assessing the socio-economic performance of different breed-types within a livestock production system, developed as an IPG 1.3. Piloted and tested genetic improvement strategies 1.4 Capacity established to sustain continued genetic improvement (key institutions and champions)
		2. *Genetically improved strains and conserved genetic resources to meet future needs*	2.1.Improved fish strains available for dissemination 2.2 improved livestock populations identified and available for breeding systems 2.3 Tools and criteria developed for identifying better strains 2.4. Tools that support genetic interventions, such as breeding guidelines, training manuals, data management and feedback systems, developed and in-use 2.5 Process developed for characterizing and strategically conserving AnGR for future use

Other items which were reviewed by the team centered on issues such as, the relationship between genomics and conservation, shifts in the livestock agenda, understanding the depth and history of breeding at ILRI, what new proposals for the component would look like and the integration of the research, the expectation on the Component in the value chain system and what kinds of outputs are required, all geared towards getting a strategic map that will see the team working together in an integrated manner. This was facilitated by Tom who also took the team through the programs budget and discussed how funds for the Components had been allocated.

Review of 2012-2013 work plan

Participants discussed some of the future activities and important dates for 2012-2013, as outlined below. It was recommended that the program management team should meet more frequently and especially in this initial phase of the program. Among the short-term activities that were discussed were:

- Establishing needs for the described activity by August 2012
- Get a Component work plan and budget by August 2012
- Deliverables from ILRI, ICARDA and WorldFish on the value chains reported by mid-August
- Individual teleconference by Tom to various teams before next meeting around October/November
- Face-to-face meeting for the team in October/November 2012
- Management meetings should be more regular
- Submission of program report in January 2013

Outline of team members

The team members from the various Centers who will be contributing to the genetics Component as well as the time that they would be putting in the Component were listed together with advisory committee supporting the Component.

Among the people who will form part of the component are:

Livestock and Fish advisory committee
James Muir – Aquaculture
Max Rothschild – Swine genetics
Andy Peters – Animal Health
Jemimah Njuki – CARE, Gender
Andreas Heinz-Springer, GIZ value chain (not yet confirmed)
Imke de Boer – Wageningen EIA, life cycle (not yet confirmed)

Component members

ILRI
Steve Kemp (30%) – molecular biologist/ Component leader
Mwai Okeyo (57%)– quantitative genetics/ Component leader
Karen Marshall (46%)- quantitative genetics
Tadelle Dessie - quantitative genetics
Denis Mujibi (10%) – molecular geneticist
Julie Ojango (37%) - quantitative genetics

WorldFish
Raul Ponzoni (100%) - quantitative genetics
Curtis Wagdy
Hosi Ling (100%)

ICARDA
Anyalem Hailu (30%) - quantitative genetics

Barbara Rischkowsky (30%) – breeding systems
Halima - molecular geneticist

Tom Randolph (ILRI) – overall program director

Workshop Evaluation

Following day 1, the participants reviewed some of the items that they thought had stood out during the day's discussion and issues that are important to the Component; these were:

- Looking for commonalities between livestock and fish (vision, steps in breeding), appreciating inherent difference and language
- Layers of conceptualization: vision, 2/3 pillars/outputs
- Organizational contexts, current realities
- What kind team/coordination will best fit?

At the end of workshop, the participants evaluated the workshop by reporting on what worked well and what could have worked better. The participants reported that the workshop facilitation was good and that the workshop helped to develop a sense of common understanding as well as open exchanges about the Component's activities. The participants felt that all members needed to be present on both days of the workshop as some research support staff joined on day 2 and they expressed fear that not all the objectives that were set out had been met due to time constraints. The table below lists the specifics of what was reported to have worked well and what could have worked better.

What worked well	**What could have worked better**
Openness to change	Not all team members present in day 1
Good team work, excellent collegiality	Long conversion
Interesting debates	Limited time to have all discussion
Flexibility to allow science discussion/diversion with keeping to task	Not sure we achieved enough concrete outputs
The conversation focused activities for the next couple of years	Resource mobilization discussion lacking
Increasingly aligned and common language due to having the right conversations	Not completely achieved objectives – time too short
Lively, fun and participatory process	Day 1 conversation took long compared to the achievement
Synthesis from objectives to outcomes to outputs and activities (clarity)	No time to drill down into where we could begin to jointly raise more resources
Honest, open exchange	
Concrete mid-level plan laid out through a clear process	
Well managed as planned	
Clarifying where we are and where we are going	
Good to have face-to-face meeting across centers	
Clearer steering from the CRP director	

Annex 1: Brief facilitator's Workshop Report

Sue Canney Davison, Director, Pipal Ltd.

Sue Canney Davison, the facilitator, met with Tom Randolph prior to the workshop to develop the agenda for the meeting. The participants consisted of the key scientists in the CRP 3.7 genetics component coming from ILRI, ICARDA and WorldFish. Tom Randolph attended as teak leader for the CRP 3.7. Steve Hall Director General of WorldFish attended throughout. Jimmy Smith the Director General of ILRI welcomed and encouraged the group.

After introductions and establishing some basic workshop agreements, Tom Randolph gave the overview of the project and stimulated a participative discussion on some of the key contextual issues that he has seen as affecting the project. Steve Hall also presented the conceptual frameworks that the WorldFish Team have developed to try to encapsulate the strategic research, foci and strategy, of how their work contributes to CRP 3.7 delivery. He also outlined the perceived inherently different challenges between the breeding programmes for livestock and Fish.

After lunch, the team shared individual experience, knowledge, skills and values and created the basics of a common overall vision of what their success will look like in ten years time. Again there was an on-going debate and exploration of how to frame, contextualise and describe the whole programme across the different approaches and institutions. What are the mid-level key pillars of levels of analysis between the vision and overall goal and the log frame and individual work plans that can bring coherence between all the different activities in nine countries? Some basic ideas were put out and the team went on to look at the basics of good teamwork, which led to a frank and open discussion about the on-going processes particularly within ILRI to adapt organisational structures and personnel to meet the needs of the CRP's. The group then shared how the day had gone for them.

The group was joined by three other team members on day two. The day started with a review of day one and Raul described a basic approach to breeding program design (a-tiered breeding program) which applies to both Fish and Livestock. Raul's point was that without the use of such a design (such as in one-tiered community based breeding programs) the costs of a breeding program will outweigh the benefits. This led again to the search for some mid level categorisation that could encapsulate all the activities and align with the outcomes and outputs. It developed into three main categories of purpose 1) developing new strains, 2) enhancing sustainable breeding systems and 3) cross- cutting high-tech innovations. The group then wrote out all their activities into the country anchors or as cross cutting issues to see what the timing and gaps were.

They then went through the generic first three layers of the log frame to rephrase the key objectives and discuss and pin down the activity outputs. Tom Randolph discussed the budgetary situation, a small timeline for project team activities an planning and reporting was developed and a quick evaluation of the two days was made.

Facilitator's remarks:

Project realities.

1) As the lead institution of the CRP 3.7, it is extremely urgent that ILRI, WorldFish and ICARDA agree and officially appoint the team leader of the Genetics component.
2) WorldFish is ahead aligning its current work with the CRP's as well as meeting face to face to co-create strategic level conceptualisations for the component. ILRI and ICARDA need to do that for cows, sheep, goats and pigs as soon as possible, so that there is one common strategic level concept note for discussions and priority research areas are clarified.

3) WorldFish have been more proactive in thinking through how to make the CRP systems work for them and how they may adapt value chains to meet the purpose of the CRP. It is strongly recommended that this very proactive driving approach remains.

Workshop dynamics

1) The workshop moved from starting with many questions and initial frustrations, to much greater common clarity. A more grounded understanding emerged of the boundaries of CRP 3.7 as well as a common understanding of the possible synergies and inherent differences.
2) People expressed a wish for the larger team to have been there throughout.
3) Once the ILRI structures are aligned, another face-to-face 2013 budget and more nitty-gritty prioritization exercise needs to happen as well as a visioning on 2013 – 2015.

Team Dynamics

1) Excellent and open exchange, friendly and cooperative
2) WorldFish have been more proactive in saying how do we make this work for us, how do we adapt value chains to meet the purpose of the CRP. It is strongly recommended that this very proactive driving approach is main
3) Steve Hall led the conceptualization process, Tom and future component leader need to do the same.
4) The leadership style of the component will be critical to its success. Some key elements need to be:
    - Maintaining a sense of common purpose, shared successes and keeping the whole team informed of the rest of the teams progress.
    - Seeing the purpose of the leadership of the component to uplift all the team members. This means:
    - ❖ Maintaining and sharing the vision,
    - ❖ Acting as a very proactive driver and champion of the component ,
    - ❖ Being very strict about agreed deadlines and agreed accountability and ownership,
    - ❖ Minimising the bureaucracy or extra reporting for all team members,
    - ❖ Acting as a supportive coach and facilitator,
    - ❖ Openly sharing all information,
    - ❖ Uplifting and praising others with specific positive feedback,
    - ❖ Seeking and driving synergies, both in science and in very proactive resource mobilization.
    - ❖ Seeking, listening to and enacting feedback on how to do a better job of leading.

Next steps

1) Clarify leadership and have a team discussion on what members of the component most need from the team leader.
2) Create and maintain a rhythm of face to face and teleconferences.
3) ILRI to align current work to CRP 3.7.
4) Prioritise areas of research (such as complete all nine country rapid assessments) and put in for joint proposals and resource mobilization
5) Clarify existing budget, and look for gaps.
6) ILRI / ICARDA to conceptualise strategic research and research focal areas and to amalgamate with WorldFish discussion paper.
7) Finalise the vision.