

Report of the second CRP Livestock cross-country Learning Week, December 2020

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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 provides research-based solutions to help smallholder farmers, pastoralists and agro-pastoralists transition to sustainable, resilient livelihoods and to productive enterprises that will help feed future generations. It aims to increase the productivity of livestock agri-food systems in sustainable ways, making meat, milk and eggs more available and affordable across the developing world. The Program brings together five core partners: the International Livestock Research Institute (ILRI) with a mandate on livestock; the International Center for Tropical Agriculture (CIAT), which works on forages; the International Center for Research in the Dry Areas (ICARDA), which works on small ruminants and dryland systems; the Swedish University of Agricultural Sciences (SLU) with expertise particularly in animal health and genetics and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) which connects research into development and innovation and scaling processes.


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Introduction

The CRP Livestock has started the implementation of four country projects in its priority countries Ethiopia, Tanzania, Uganda and Vietnam. The shared objective of the country projects is to accelerate testing and uptake of integrated packages and baskets of technical and institutional innovations/interventions. These projects are supported by the PMU and KIT to maximise learning and intervention outcomes as well as effective engagement, communications and planning.

In order to support the learning across the different flagships and country teams, a second virtual learning week was organised during the period 14-18 December 2020. The objectives were:

1. Collect story-based insights on integrated research through an online survey;
2. Discuss and document learning and reflection on integrated research in the priority country projects.

The term 'integrated research' can mean many things for different people as there is no clear definition in use within the CRP Livestock presently. It is therefore important to unpack the meaning of integrated research.

Based on discussions during and after the first learning week, the following types of integration were distinguished in the context of the priority country projects under the CRP Livestock:

- *Integrated team*: people from flagships and partners work together as one team.
- *Integrated plan*: collaborative design of flagship agenda's and priorities with common theory of change, outcome pathways, deliverables and budgets.
- *Integrated delivery*: multiple interventions of different flagships tested and delivered in coordinated ways to target groups.
- *Integrated intervention packages*: several different and complementary interventions are combined together to serve different objectives.
- *Integrated platform*: multiple interventions are aggregated together to reach target groups.

Equally, one could distinguish different forms or levels of integration, as defined in Table 1. Note that one form of integration is not intrinsically better than the other. Rather, the level of integration should fit the context and purpose of the integrated research.

Table 1. Levels of integrated research

| Level of integration in country programs | Level of academic interdisciplinarity | Lens on system complexity |
|--|---|--|
| Aggregation: <ul style="list-style-type: none">- Different flagship research activities and technologies / innovations are disseminated in the same intervention area, but limited joint activities- No integrated research question | <u>Multi-disciplinarity</u> <ul style="list-style-type: none">- Multiple disciplines working separately on same problem to reach greater understanding- Contrasts disciplinary perspectives in an additive manner; limited interaction between disciplines | <i>Simple: best practice</i> The link between cause and effect is obvious |
| Harmonization: <ul style="list-style-type: none">- Research activities are jointly planned and implemented in order with seasonal husbandry activities- Disseminated technologies / innovations are not conflicting | <u>Inter-disciplinarity</u> <ul style="list-style-type: none">- Multiple disciplines working integrated on same problem to reach understanding- Visible / measurable evidence of integrated research outputs | <i>Complicated: good practice</i> The link between cause and effect requires analysis and application of expert knowledge |

| Level of integration in country programs | Level of academic interdisciplinarity | Lens on system complexity |
|--|---|---|
| Integration: <ul style="list-style-type: none"> - Research activities are integrated and in line with production calendar - Technologies / innovations are combined to foster synergies / positive interaction effects (sum > parts) - Planning of activities and selection of technologies is done jointly with partners and communities - Multi-stakeholder platforms for co-creation of solutions | <u>Trans-disciplinarity</u> <ul style="list-style-type: none"> - Inter-disciplinary research works together with stakeholders to formulate sustainable solutions - Outcome oriented instead of output oriented - Social learning for practical solutions | <i>Complex: emergent practice</i> <p>Relationship between cause and effect can only be perceived in retrospect as they emerge during intervention</p> |

Between 3 and 18 December 2020, CRP Livestock scientists and partners were invited to share an experience on integrated research through an online survey. This resulted in 28 responses to feed into the reflections on integrated research. The initial findings were made available at the start of the second learning week. During three days, a daily learning question on integrated research was posted on each country channel and shared by e-mail to each country team (including partners). During the day, participants could post or e-mail their replies and react to each other posts. The survey findings and a summary of the online discussions were presented during a webinar on the final day (December 18) and further feedback was collected from the participants.

The three learning questions were:

| |
|--|
| Day 1 (survey findings): Respondents assess the experiences with integrated research as positively contributing to the project performance; on what basis (or which criteria) do we determine whether integrated research is successful? The different types of integration (integrated team, integrated plan, integrated delivery, integrated intervention package, integrated platform) feature in most stories. Is there a logical chronological order in how to build up integration in research or should each type be fostered simultaneously? The stories mention little about trade-offs or synergies; how are these being dealt with? |
| Day 2 (involvement non-research partners): What good practices or challenges have you encountered in terms of involving non-research partners in the country projects? What are the results or effects of their involvement? What lessons do you learn from these? |
| Day 3 (enablers and barriers of integration): What are the enablers and barriers to integration in our research (disciplines, flagship activities, study design, analysis)? What does integrated research actually mean? How are we integrating critical areas like gender or the environment? |
| Day 4 (implementation of integrated research): What processes and conditions are necessary to facilitate effective implementation of integrated intervention packages on the ground? What barriers or pitfalls have you encountered? |
| Day 5 (conclusions): What do these (positive and negative) experiences suggest in terms of improving the efficiency and effectiveness of the country projects? |

Table 2 summarizes the level of participation per country and per day. As the learning week was close to the Christmas holidays, participation rates were relatively low.

Table 2. Participation in the CRP Livestock chat discussion (learning week 2, December 2020)

| | Ethiopia | Tanzania | Uganda | Vietnam | Total |
|--|-----------------|-----------------|---------------|----------------|-----------------|
| # persons participating | 12 | 7 | 8 | 10 | 22 ^a |
| # posts & replies (1: survey results) | 11 | 5 | 4 | 7 | 27 |
| # posts & replies (2: non-research partners) | 17 | 5 | 15 | 7 | 44 |
| # posts & replies (3: enablers and barriers) | 11 | 8 | 13 | 7 | 39 |
| # posts & replies (4: implementation) | 8 | 5 | 5 | 5 | 23 |
| Total posts & replies | 47 | 23 | 37 | 26 | 133 |

^a Some CRP scientists participated in multiple country channels

Stories on integrated research

Methodology

This story-based qualitative survey is part of learning trajectory of the CRP Livestock, facilitated by KIT and the CRP PMU. The aim of the survey is to learn about the ways in which integration takes place between different research areas within the programme (i.e. animal health, genetics, feeds and forages, environment, livelihoods and agri-food systems, and gender), and with partner organizations. The results will also be used to contribute to the overall evaluation of the country projects

The Sprockler platform was used to collect stories from CRP Livestock scientists and partners on their experiences with integrated research. The survey tool comprises a method to capture personal accounts of change or lessons learned through an online survey tool. It enables the collection and interpretation of people's opinions into a narrative about change, contribution, relations and impact. The respondents code the stories themselves to allow pattern recognition in the stories. Sprockler taps into the collective project intelligence to understand what and why things are happening. The focus of Sprockler is self-signification, placing the respondents at the core of the analysis process. The analyser and visualizer modules of Sprockler display and share the results.

CGIAR scientists and national partners involved in the priority country projects were invited to share a story on their experiences related to integrated research. More specifically, they were asked to share an integration story where they collaborated with other teams/partners that had an important effect (positively or negatively) on the implementation or result of the country program. This experience could be related to research, integrated intervention package, project management, or implementation. The stories should clearly describe when this took place, who was involved, what happened and why, and how it affected the program.

The online survey was sent to approximately 100 researchers and national partners; 29 respondents filled in the survey. Fifteen respondents are CGIAR scientists; two respondents are within the PMU/MELIA team; eight respondents identified themselves as national partners and one respondent as international research partner (Figure 1). Two-third of the respondents were involved with the CRP Livestock for more than 18 months. One-third of the respondents were involved between six and 18 months, whereas one respondent was involved for less than six months.

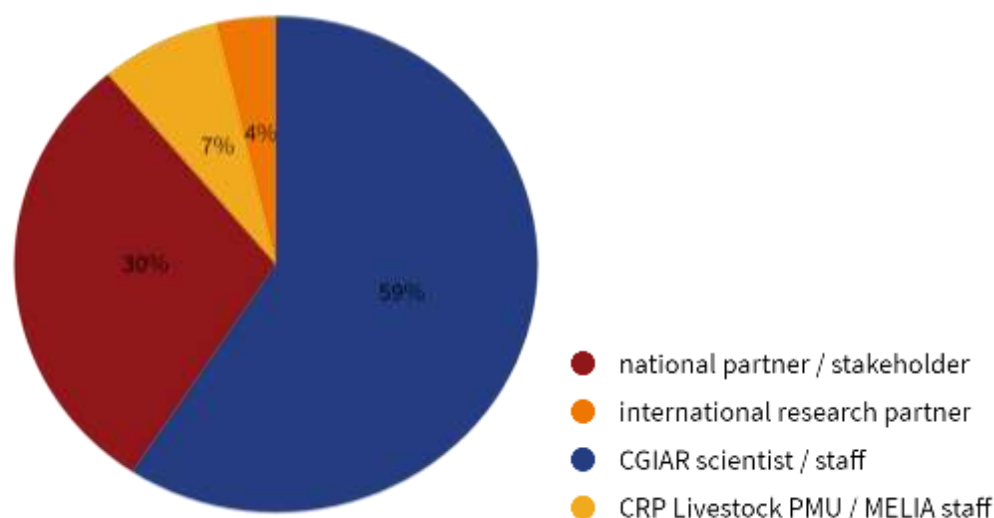


Figure 1. Classification of respondents according to their CRP Livestock role

Survey findings

Stories of integrated research

A wide variety of experiences was shared to illustrate experiences with integrated research (see Annex 1). Some stories are brief, relating to a joint activity within the country project, other stories include some reflection on benefits and challenges of integrated research. Nearly half of the stories are more generic descriptions of the country project, and the other half of the stories refer to specific recent events or activities.

Half of the stories concerned an example of collaboration between flagships to jointly plan and conduct activities (e.g. field visits, training, workshops or surveys)

The other stories can be grouped around the following topics:

- Interdisciplinary research involving multiple flagships
- Collaboration with national partners for project implementation
- Collaboration with value chain actors to deliver integrated packages to farmers
- Benefits of integrated intervention packages for farmers

More than half of the stories applied to Ethiopia; some stories applied to multiple countries (Figure 2). Four stories applied solely to Vietnam, four stories to Tanzania, five stories to Uganda, and 11 stories to Ethiopia; five stories applied to multiple countries. Most stories took place within the current phase of the CRP Livestock, either within the last six months prior to the survey (during the COVID-19 pandemic) or between 6 and 18 months prior to the survey. Some national partners, however, indicated that their stories of integrated research started already prior to the current phase. Indeed, the country projects in Ethiopia, Tanzania and Uganda are building on previous projects that already featured elements of integrated research.

Respondents also indicated which flagships and actors featured in their stories of integrated research (Figure 3). The flagships Health, Feeds & Forages and Genetics featured most prominently in the stories, in particular in the stories of the national partners. CGIAR scientists, however, reported the involvement of all flagships (including CapDev and the Gender team) to equal extent. National implementation partners, public extension services, national researchers and livestock producers (farmers) also featured strongly in the stories. Other value chain actors such as input and service providers or traders/aggregators play a less prominent role in the integrated research.

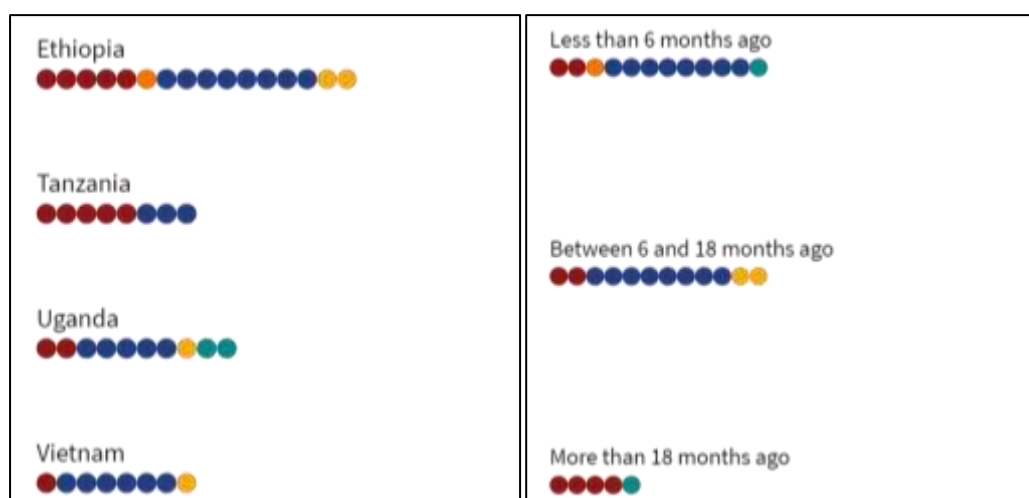


Figure 2. Number of stories applying to specific priority countries and time periods

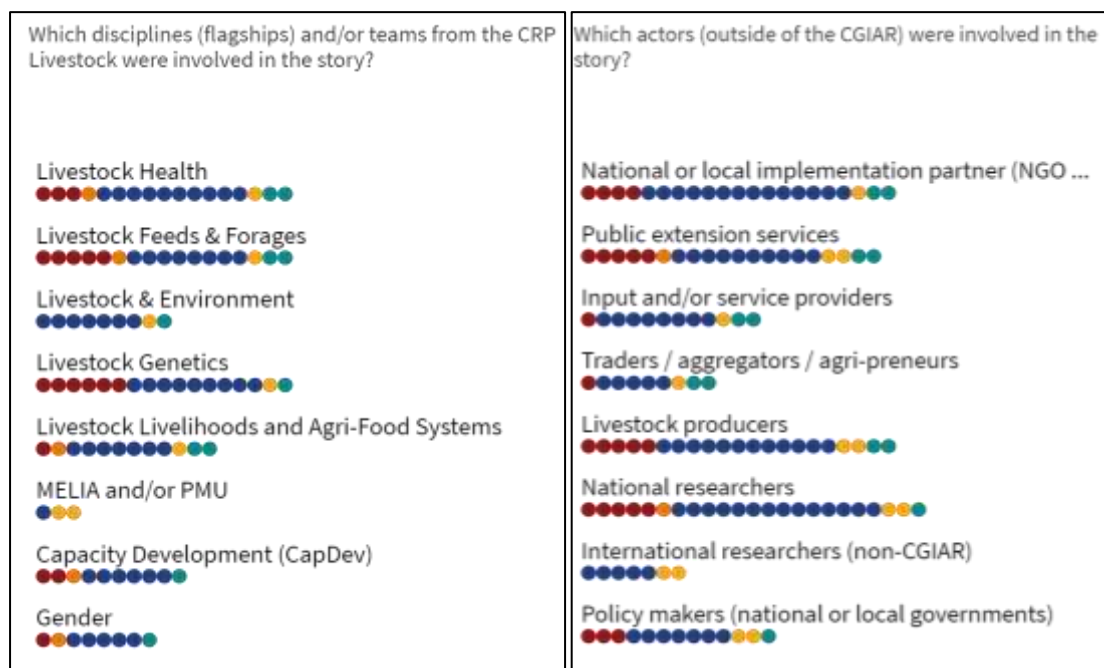


Figure 3. Involvement of flagships and non-CGIAR actors in the stories of integrated research

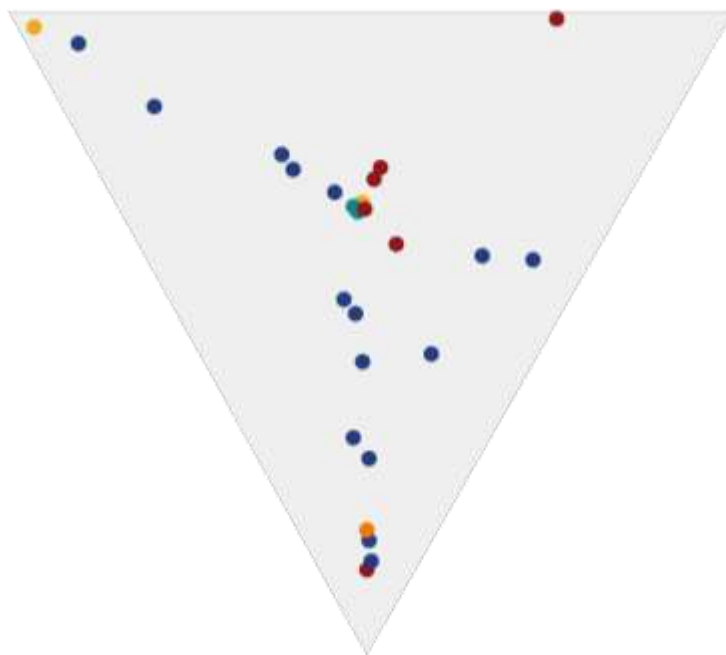
Unpacking integration

Respondents were asked to categorize their stories according to the different types and levels of integration. Most respondents found it difficult to clearly distinguish the different types (Figure 4) and levels (Figure 5) of integration, thus allocating their stories to all types and levels. This may be caused by a lack of clarity about the different forms of integration or different interpretations of the term integrated research. This is understandable, given there is no common framework or definition within the CRP Livestock yet. However, the self-classifications do show that most respondents recognize the integrated team as a common feature, whereas the integrated platforms to reach target groups featured less strongly in the stories. Most stories were classified in between the three levels of integration (aggregation, harmonization, integration) possibly because people were unsure, or because they recognized that different types of integration take place at different levels. Few stories are distinctly classified as aggregation or harmonization.



Figure 4. Number of stories featuring specific types of integration

Aggregation: Different flagship resear... Harmonization: Research activities ar...



Integration: Research activities are integrated and in line with the livestock ...

Figure 5. Classification of stories by level of integration

Effects of integrated research

Respondents were asked to give an indication whether their example of integration research was an exception or common practice, and whether they thought it had a positive or negative effect on project performance. The vast majority of the examples were thought to have a positive effect on the projects. Only one example was shared that was a distinctly negative experience (of a pitfall to be avoided). The stories contain both experiences that are considered exceptions as well as experiences that are considered common practice (Figure 6). The majority of the experiences were thought to be easily replicated in other research projects (Figure 7).



Figure 6. Frequency and effects of experiences on project performance



Figure 7. Replicability and effects of experiences on project performance

Most of the examples affected in particular the research and livestock producers; effects on other stakeholders such as value chain actors and policy makers were considered to be minor (Figure 8).

The effect of what I shared in my story was largest for:

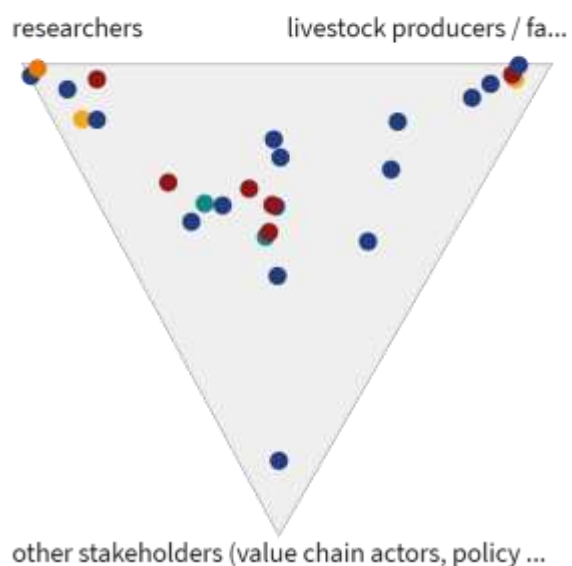


Figure 8. Effects of integrated research on stakeholders

Lessons and recommendations

Respondents were asked what lessons they learned from these experiences with integrated research. The following lessons and recommendations were mentioned by multiple respondents:

- Good communication is very important, both between flagships as well as with local partners.
- Commit to joint planning and implementation of interventions, exchange of information and experiences.
- Engage local partners as critical mass for implementation, and to embed integration and sustainability in local institutions.
- Create space (time and resources) and appreciation for joint activities, learning, reflection and discussion.
- Encourage researchers to think less about flagship deliverables and publications, and more about development outcomes (e.g. linked to synergies between flagships).

Other lessons mentioned by the respondents are:

- Do not propose technologies that farmers cannot access.
- When empowering women, empower men also (consider needs of different social groups).
- Be aware that other stakeholders or partners do not have the same resources and infrastructure as we have; instead, be aware of limitations others are facing.
- Not all research outputs require integrated approaches – evaluate what innovations need integration to achieve synergy and which can be promoted as single products.
- Get out of comfort zone and start with the needs of the end users.
- Align incentives of researchers and development partners to foster collaboration.
- Try to keep it simple and realistic.
- Use opportunities that arise through stakeholder engagement and technical input of flagships.
- Work more on integrated best practices that capitalize on synergies to get maximum benefits.
- Invest in continuous follow-up and training at different levels (incl. researchers).

Defining success of integration in Research for Development

CRP Livestock scientists' suggestions for indicators:

- Conventional indicators are not sufficient, so there is a need to:
 - move beyond quantitative indicators and research outcomes
 - move beyond comparison of single intervention effects vs integrated effects
- Include assessment of integration from operational point of view
- Extent to which expected synergies have been realized – as perceived by partners
- Satisfaction levels of farmers and local partners (*users*)
- Change in capacities or practices of stakeholders (e.g. value chain actors)
- Willingness of local partners to implement the integrated intervention packages

Reflections on findings

During the second learning week, three follow-up questions (related to the survey results) were posed to the CRP Livestock scientists and partners:

1. Researchers assess the experiences with integrated research as positively contributing to the project performance; on what basis (or which criteria) do we determine whether integrated research is successful?
2. The different types of integration (integrated team, integrated plan, integrated delivery, integrated intervention package, integrated platform) feature in most stories. Is there a logical chronological order in how to build up integration in research or should each type be fostered simultaneously?

3. The stories mention little about tradeoffs or synergies; how are these being dealt with? Or is this not an issue?

The survey results were also presented in an online webinar and discussed in breakout groups. The online responses and discussions provided the following shared insights.

Defining success of integrated research

First, success can already be assessed from an operational point of view, where integrating research activities such as baseline studies make data collection efforts more efficient and less burdensome for the stakeholders and target beneficiaries.

Defining success in terms of research outcomes is not straightforward. One could look at the combined effect of interventions versus single intervention effects, but that requires a complex experimental set up. Several scientists suggested that the success of integrated research should be assessed beyond the research outputs; that is, the extent to which the research outputs are relevant for next users (e.g. national partners, extension officers) and end users (farmers and value chain actors).

For example, the level of success of the integrated research could be determined by the extent to which expected synergies between different innovations have been realized, as perceived by partners. One important objective to guide the integrated research is to take the needs of the poor as starting point, and how the different innovations work “in concert” for them. A good indicator to gauge success of the integrated packages is the satisfaction level (or absence of complaints) of farmers. For example, in Ethiopia farmers complained about the lack of markets for their animals before the integrated intervention package, but in the current phase these complaints have not (yet) been raised.

There is a need, however, to define indicators that can measure the results of integrated research. Prior to that, clear definitions of what integrated research actually means, and what it is trying to achieve, should be agreed upon. During the discussions it became clear that the term ‘integrated research’ is used often without clearly defining it. Some scientists felt that the benefits of integration were already proven, whereas others noted that the benefits had yet to become apparent. The concept of integration thus presents itself, and is understood, differently to different researchers and partners depending on their involvement in the project and expectations. In addition, it was observed that integration takes place at different places and times within the country projects. Unpacking integration into different types and levels is a first step towards a more common understanding of integration, but not yet sufficient. In addition to the request for definitions and indicators, there was also a request for guidelines on how to implement integrated research.

“I am sure the economists will have indicators to gauge success of the integrated packages; for me, in addition to the obvious measurements like productivity improvement, offtake rate, income, consumption, etc., ‘satisfaction’ by the farmers as reflected by lack of complaint about a specific technology is an excellent indicator. Example, people complained about lack of markets for their animals before integration but now that is not there.” – researcher Ethiopia

Sequencing integration

As for now, the scientists felt that the integration happened organically as the country projects started the implementation (learning by doing). There is not a defined chronological order of types of integration; instead, it was felt that some types of integration could happen simultaneously. However, starting with an integrated team and integrated plan facilitates the other types of

integration. It was also suggested that the different integration types should be seen within the context of a project cycle and activities.

The following observations were shared as best practices for the different types of integration:

1. Integrated teams
 - Common objective should direct research activities
 - Strengthen skills in systems thinking and IAR4D to deal with complexity
 - Improve joint understanding of what integration actually means (joint learning by doing & reflecting)
2. Integrated intervention package
 - Mirror farmer needs at community level in research project – but avoid the pitfall of getting lost in the complexity
3. Integrated planning
 - Make use of the project cycle to build integration
 - Synchronize and sequencing of activities to facilitate integration
 - Allow an iterative process – adapt to new challenges/issues
4. Integrated platform and integrated delivery
 - Allow incubation time to build trust and ownership among partners

Trade-offs and synergies

Many participants recognized the trade-offs in efficiency of integrating research activities, where different research teams as well as intervention packages have to wait for each other. But synergies are observed where the cross-fertilization of ideas between flagships enriches the original proposals, or when a holistic package is on offer for farmers.

“For the question on whether there can be too much integration, probably yes at some point, when transaction costs of integration outweigh the benefits, but we are not yet there in my view.” – researcher Tanzania

Trade-offs take place at operational level (transaction costs of working together), though there are also synergies when resources can be shared. Synergies are expected to occur more at output or outcome level (benefitting the end users of the integrated intervention package); no trade-offs have been observed at this level so far.

It was also observed that the stories about integrated research were all positive experiences except for one story. In addition, many survey respondents indicated that these experiences of integrated research were easy to replicate. This raised the question whether there was a lack of self-criticism, or whether the integration that was happening so far was mainly with well-known colleagues and key partners but had not yet addressed the more complex problems that require integrated research. One participant of the webinar commented that the integration is mostly happening at the level of the research (i.e. integration of flagship activities), but not yet with other partners involved in the priority country projects.

It was recognized that at some point the transaction cost of integrated research may exceed the benefits of the synergies, but there is a general sense that the CRP Livestock priority country projects have not reached that point yet.

Online exchanges on lessons learned

Involvement of non-research partners

In the past, the CGIAR has been criticized for focussing too much on national research partners (NARS) and not putting sufficient effort into collaborations with non-research partners such as extension services. CGIAR scientists acknowledge that non-research partners have an important part to play in Research for Development; including making applied research relevant for local needs, providing knowledge on local contexts, and bringing research into use. The non-research partners thus also have a role to play in solving problems that livestock producers face. Involving non-research partners from the beginning also ensures that the project objectives are relevant, address needs on the ground, and in line with the development agenda of local authorities.

In Ethiopia, the national research partners are mostly collaborating with non-research partners rather than CGIAR scientists. The national research partners are closer to, and trusted by, the non-research partners. Two levels of non-research partners can be distinguished: higher-level (regional) partners involved in planning the activities (e.g. regional governments and public institutes), and lower-level (district) partners involved in the implementation of activities (e.g. extension agents, cooperative staff).

In Tanzania, there is a sense of increasing appreciation by non-research partners of potential benefits of research-development partnerships. The Tanzanian team is building upon the momentum created by the co-creation process of the Maziwa Zaidi II project through stakeholder workshops, exploring opportunities for collaboration with partners in the pilot project sites.

In Uganda, extension service providers have been instrumental in reaching beneficiaries. More recently, input suppliers and service providers are engaging with the digital content that is being shared on the online platform, to be used for their own outreach to farmers.

In Vietnam, the team in particular collaborates with the local authorities, without whom the project could not be implemented as the Provincial People Committee needs to approve any foreign-funded project. In addition, aligning the project with the Government's policies can give access to additional public resources.

A number of good practices in collaboration with non-research partners were being shared. The good practices can be grouped into different principles related to multi-stakeholder collaboration, project management and partnership building.

"... through developing scaling strategies we can increase our insight and bring together our experience on what actors should get fully involved and eventually take over from us. Scalability will depend if these actors are available, interested and able." – researcher Ethiopia

"One partner representative asked at the onset whether what we are up to is "just research or something more". He has appreciated the collaborative and integrated approach we are taking. A key lesson is that research needs to be re-balanced to be more responsive to the immediate needs of development partners." – researcher Tanzania

"When our activities are in line with the Government's policies, we can make use of the resources. For example, Li-chān provide technical training for local vets, while the Government's fund has some investments in equipment / infrastructure in some poor communes as well. They can help to scale out the activities later on if our demonstrations prove to be successful. Moreover, the research results can be input for the Government's socio-economic development plan. My lessons is not only inform them, but also involve them in our project. They do have technical knowledge and good experiences of the local context. The partners will continue the work even when the project fades out." – researcher Vietnam

The following good practices were being shared by the priority country teams:

- Include partners from start to finish (and beyond) of the project.
 - o Co-create the country project; jointly identify opportunities for partnership and outline coordinated actions to fill gaps in capacity building and learning (Tanzania).
 - o Not only inform non-research partners but also involve them in the project as they will remain and can continue the work after the project has ended (Vietnam).
- Include project activities and objectives to go beyond research (e.g. capacity building, service delivery).
 - o Include the stakes of non-research partners in the partnership; research objectives do not need to be fully aligned, but common goal is needed (Vietnam).
 - o Include capacity building for (non-research) partners (Ethiopia, Tanzania).
 - o Research needs to be (re-)balanced to be more responsive to the immediate needs of development partners; they are not interested in 'just research' (Tanzania).
 - o To create close research-practice-policy partnerships, all need to be able to see the benefit for their own objectives (Uganda).
- Value the knowledge, expertise and skills that the other partners bring in.
 - o Use the knowledge of non-research partners to understand the local contexts (Ethiopia, Vietnam).
 - o Build on the lessons from ongoing development projects implemented by non-research partners; learn from practices used by partners (Tanzania, Vietnam).
 - o Build on what each partner is doing well, not trying to substitute each other's roles (Uganda).
 - o Involve non-research partners in knowledge products such as training material and policy briefs (Uganda).
- Foster partnerships.
 - o Create awareness of the partners about the technologies (or innovations); foster trust in research outputs (Ethiopia, Uganda).
 - o Work with Community of Practice to create platforms for exchange and integration (Ethiopia).
 - o The research should support the other partners achieve their goals. This requires mutual understanding of the goals and expertise of all partners. As all partners are constrained in time and resources, the partner engagement needs to be targeted (Uganda).

Successful collaboration with non-research partners

The MorePork project in Uganda developed a policy brief on heat stress which created interest among policy makers. When writing the policy brief, the research collaborated with non-research partners, in particular ministry staff. This helped to create interest in the topic for the following reason:

- The ministry staff were already involved in the writing process of the policy brief and thus shared ownership over the brief.
- In the process, there is a facilitator within the ministry who is well connected.
- The research findings that are being shared are well 'manicured' and digested and prepared in an appealing manner for policy makers.

Collaborations with non-research partners also bring their challenges, related to differences in objectives and priorities, institutional barriers and project management.

- Differences in capacities and priorities between partners:
 - o Lack of capacity and weak attention to the project objectives (Ethiopia, Uganda).
 - o Limited availability and staff turnover during implementation (Ethiopia).
 - o Different mind-sets, objectives and priorities (Ethiopia)
 - o Inadequate or limited knowledge on virtual collaboration and e-communication (Tanzania).
- Institutional barriers:
 - o Different partners operate with different incentive systems for agenda setting and staff performance. For example, public extension services are often influenced by political programs, resulting in short-term objectives and targets (Ethiopia).
 - o Poor institutional linkages between research and non-research institutes (Ethiopia).
 - o Institutional disaggregation of non-research partners (e.g. separate government offices for different topics / sub-sectors) and bureaucratic processes hamper collaboration and cross-sectoral support (Ethiopia).
 - o Weak policy enforcement (Uganda).
- Project management cycle
 - o Often projects are relatively short term and do not keep the momentum going for long term (Uganda).

It was also noted that the COVID-19 pandemic slowed down implementation and thus reduced opportunities for joint learning among partners. As a result of the pandemic, virtual engagement has replaced face-to-face interactions. However, this has proven to be challenging for non-research partners, highlighting the fact that science-practice-policy partnerships thrive on personal connections.

Enablers and barriers of integrated research

The CRP Livestock scientists shared enablers and barriers to integrated research based on their experiences in the priority country projects and other interdisciplinary research.

Enabling factors for integrated research:

- Acquire skills to integrate knowledge with other disciplines, and recognize / appreciate / respect the knowledge of others.
- Act as a single team, working towards a common end goal that mirrors needs of communities. Developing a common Theory of Change supports this common vision.
- Regular communication; modern communication tools and online access to resources facilitate integration.
- Having an integrated study design.

“A key enabler is that integration makes most of all sense to the communities we are trying to reach – to them it is important to improve the livestock system overall and they likely are the ones caring least about disciplines – so maybe in our work we really do need to mirror more what the communities / intended beneficiaries think, do or need.” – researcher Ethiopia

Barriers to integrated research:

- High transaction costs: there is a trade-off between synergetic benefits and (perceived) transaction costs (e.g. coordination to synchronize activities). Tendency is to fall back to the disciplinary comfort zones where researchers feel they can be more effective.
- Challenge to demonstrate quick wins of integrated research.
- Limited resources for integrated research (time, staff, funding).
- Limited scope of funding calls.
- Focus on own core deliverables before joint deliverables (limited resources, incentive system)
- Lack of activities to link up research.
- Lack of research or focus on the effects of an interrelated interactions of the flagships.

“Concerning how to integrate critical areas [such as gender], it can be helpful to collaborate with those that possess skill in such areas right from the initial research stages in order to meaningfully integrate critical aspects from the onset. And along the process of research, have continuous engagement with them until you build sufficient skill and knowledge. Even at the stage of feeling confident in having acquired sufficient skill and knowledge, it is still a great idea to keep the engagement with colleagues in these areas so as to continuously improve in the process of integrating critical areas.” – researcher Ethiopia, Uganda

Implementation of integrated intervention packages

In order to facilitate the implementation of integrated intervention packages, the following prerequisites and good practices were observed:

- Identification of the same site or community fitting the various research disciplines. It is difficult to find communities that meet the requirements for all disciplines / flagships.
- Designing a joint data collection scheme for integrated analysis.
- Integrated project management: joint planning, monitoring and support. Good facilitation to ensure that the contribution of each component generates new common knowledge. Shared documentation of agreements between collaborating parties. Regular progress meetings to keep each other informed.
- Apply a system approach to integrate technology.
- Foster good relationships with local partners.

Implications for CRP Livestock

During the online workshop at the end of the learning week, participants were asked to reflect on the implications of the survey findings and lessons learned for the priority country projects. Participants discussed in break-out groups the next steps on how to improve the integrated research in the priority country projects. The suggestions for improvement are listed below.

Ethiopia:

- Think about how to measure benefits in a qualitative way.
- Spend time on identifying integrated outputs; most deliverables are at a disciplinary level as they have been designed at flagship programme level.
- Invest more time for discussions/meetings on integration; define better the roles each team member has to play.
- More communication with community and improve capacity of partners.
- Keep discussing with high-level officials, show cases to them to convince them to include integrated activities in their system.
- Resources are not a challenge in Ethiopia as the project is currently underspending.

Tanzania:

- More time is required to foster integrated research.
- Country team requires a critical mass across the flagships.
- Need to identify integration nodes guided by activities at the beginning and remain loyal to these.
- Enhance synergy between integrated core project and bilateral projects.

Uganda:

- Allowing partners and stakeholders to take bigger roles in areas they are good at, as a facilitator of integration.
- Communicate more – especially with the partners.
- Take advantage of the existing MSPs to communicate about the integrated package
- Dialogue with the policy makers – already have some avenues to interact with officers from the Office of the Prime Minister.
- Success of integration can be defined as positive things we observe now that we have rarely observed in the past with different approaches.

Vietnam:

- Improve coordination between closely linked flagships
- More frequent communication between team members to share experiences on activities and find out possible opportunities to work together and improve integration.
- Planning should better follow the schedule of the project.
- Target the right partners at local level.
- Engage more with ministry and policy partners.
- Document the story of integration and partnership for Vietnam case.
- Coordination of flagships also in relation to interaction with partners and clients so they are not overloaded.

CRP level:

- Need a common paper or output or delivery mechanism to rally around.
- Develop initial principles and practical techniques to guide integration; more efficient communication techniques.
- In future, design of country programmes and the structure of 'planning together' needs to be addressed.
- Feed lessons into One CGIAR – keep focussing on post-CRP and how to support the initiatives going forward.
- Clarify the different steps or stages of integration (and the aggregation / harmonization / integration levels) and indicators to measure our progress (KIT/PMU/MEL).
- Draw lessons from the COVID-19 time. Face-to-face limited but some scheduling of interactions was easier.
- To assess utility – perhaps defined by the end objective of providing a scalable development candidate intervention.
- Synthesis of this learning on improving integration (KIT/PMU).
- Facilitate common points of exchange (meetings?), to share updates but more important also action points.
- Seize every opportunity with funders to understand, appreciate and support integration, and to put in place an incentive system to make it work.
- Candidly review the value of different meetings and find ways to invite some cross-representation across flagships to build rapport etc.
- Review the common pillars of communication, facilitation, monitoring as part of the documentation effort in 2021.
- Continue to innovate to make communication efficient and effective.
- Holistic and systems approach of the CGIAR; Context of the CGIAR seems to follow but suggested structure is not fully aligned.
- Need to start thinking about attribution due to integration complexity; who was responsible for what?
- Integration – how do we know we have actually integrated? When going into the field we do things individually.

Lastly, participants were asked their views on the changes that need to be made to improve integrated research within the CGIAR. The responses are summarized/ grouped below:

About communication and facilitation:

- Review how communication, monitoring and facilitation supported integration (or could have), as part of our overall documentation efforts in 2021
- Institutionalize it!
- Develop a couple of simple techniques for facilitating team development and guidelines with some guiding principles and practices for integration, by stage in the project cycle
- Better planning and structure
- Keep sharing and reflecting together to learn how to do this
- Communicate more with partners as well as ourselves
- Efficient communication and more common outputs as incentives
- More communication and sharing space to share experiences and plan among flagships to increase the opportunities for integration
- Invest more time in brainstorming around integration

Other topics:

- Open mind of team members to do integration
- Document our current experiences
- Measuring progress
- Recognize transaction costs also at stakeholder level
- Noting that a lot of comments are at CRP level i.e. similar issues across countries.

Next steps for integrated research in the CRP Livestock

The term ‘integrated research’ is used frequently in the CRP Livestock, yet it still has different connotations for different researchers. Clarification is required on what is meant with the term, how it is implemented, what its objectives are and how it can be measured that these are achieved. We are not proposing to re-invent the wheel. We can take guidance from past and current experiences – within and outside the CGIAR – on integrated agricultural research for development (IAR4D).

Defining integrated research: IAR4D

Agricultural Research for Development aims to contribute to agricultural growth in Low- and Middle-Income Countries (LMICs) as a vehicle to combat poverty. Evidence suggests that investment in AR4D can provide high economic returns and can be effective in addressing (rural) poverty. Tomich et al. (2019) reviewed publications on AR4D in the past 25 years and distinguished 18 different pathways how AR4D project can contribute to poverty reduction, ranging from increase in agricultural productivity, risk minimization, addressing market imperfections, natural resource management, nutrition & health, food supply to institutional strengthening (R&D and policy). However, none of these impact pathways can successfully address complex problems such as poverty and food insecurity by itself. In other words, a multi-faceted approach to AR4D is required to tackle the problems.

Most of these AR4D projects have taken place within the CGIAR. However, there is a lack of consensus concerning the impact pathways between AR4D and poverty reduction, as AR4D typically takes place in complex environments with multiple influencing factors and partners, non-linear processes and emergent properties (Tomich et al. 2019). Several researchers (e.g. Boru Douthwaite, Cees Leeuwis) have reflected on the ups and downs of systems research and research for/in development within the CGIAR. The reflections highlight that the debate and diverging views on the failures or successes can be retraced to epistemological differences that underlie the views of the role of research and definitions of agricultural development.

Recently, the main discourse within and outside the CGIAR has shifted from AR4D or systems research to (agri-)food system transformation. In their recent report, Barrett et al. (2020) note that the development of socio-technical innovation bundles are essential to achieve transformation. The authors observe that (pp 6): “Despite the abundance of rapidly progressing innovations across all stages of [agri-food value chains] today—in digital, genetic, and other spaces—no magic scientific or engineering bullets exist. Few, if any, innovations can adapt and scale effectively without essential supporting policies and institutions. Innovation is as much a social process as a scientific one (...). Co-creation of bundled approaches is therefore essential to enable packages of new technologies and practices to emerge, adapt, and diffuse to scale within, and across, contexts, and to generate beneficial impacts with limited, or no unintended, net adverse consequences.”

Although Barrett et al. (2020) do not refer to IAR4D, in our perception this is what IAR4D is about: develop socio-technical innovation bundles (known as integrated intervention packages in the CRP Livestock), involving research, practitioners and private sector, to bring about change in value chains at scale for the benefit of smallholder farmers. This requires not only collaboration between scientific disciplines, but also between researchers and stakeholders involved in the agri-food system. Hence why the adjective integrated has been added to AR4D, to emphasize the transdisciplinary approach and need for bundles of innovations rather than single innovations. The IAR4D approach is thus presented as being different from linear transfer approaches that are based on ‘supply-driven’ research outputs being transferred to farmers through extension services. Instead, IAR4D focuses on achieving impact through the engagement of multiple stakeholders along

the value chain in order to jointly seek innovative solutions to technological, institutional and infrastructural constraints in the agricultural system (Maru et al. 2018).

Maru et al. (2018) recognize the following dimensions of integration as unique features of IAR4D:

- Integration of perspectives, knowledge and actions of different stakeholders around a common theme;
- Integration of analysis, action and change across the different environmental, social and economic dimensions of development;
- Integration of analysis, action and change at different level of spatial, economic and social organization.

The IAR4D approach thus recognises that researchers require the ability to put their disciplines into dynamic systems contexts and to integrate the contributions of different disciplines. This also requires skills in partnerships development and change management with multiple stakeholders in the agricultural sector and wider society (Kaufmann, 2007). IAR4D can thus be considered as a transdisciplinary approach which involves stakeholders in the research process to enhance real-world knowledge and contribute to societal change (see for example: Fritz et al., 2019; Schneider et al., 2019).

KIT reflections on the learning week

The shared objective of the CRPs is to accelerate the uptake and eventually scale of technical/ institutional innovations in order to translate research outputs into impact. This is envisaged through integrated livestock development interventions in each project site. Integrated livestock development interventions or integrated livestock research for development (ILR4D) is based on the CRP priority country approach. KIT proposed to unpack the term ILR4D using: a) different types of integration and b) different levels of integrated research.

With regard to different types of integration, for the CRPs- working in integrated teams (across flagships/ with external partners), engaging in joint planning exercises, exploring mechanisms/instruments for integrated delivery (e.g. TNZ-agripreneurs) is relatively easy. The country projects have experience in using multi-stakeholder platforms to assist outreach and delivery to the deserving target groups. The challenge is the design of integrated intervention packages i.e. the 'right' combination of research outputs/products to reach the common objective of improving livelihood (income and well-being) of livestock farmers producers. The underlying assumption is that increasing productivity and linking the livestock producers to market actors will result in better livelihoods. Yet, how the combination of research outputs will result in this, is not always clearly articulated.

Reflecting on the experiences that were shared through the survey, most stories were describing operational experiences and outputs. There were few reflections on the outcomes achieved through the integrated research projects, which can be partly explained by the relative short implementation period of the current phase. However, ILR4D is also about embedding the solutions in the socio-institutional context in which the next users and end users operate.

The country projects are also still learning about the best ways to deliver these intervention packages so they can go to scale. Working with 'next users' (value chain actors who provide goods and/or services) is necessary but not sufficient. Strengthening their capacities through training does not guarantee success. These actors also must find the integrated packages effective to achieve their own objectives (e.g. profit, high uptake of practices). The indicators of success may thus look different for the next users than for the researchers or livestock producers. This can create tension,

but if not resolved, it is unlikely that the integrated interventions packages will go to scale. The next users – whether extension agents, policy makers or entrepreneurs – will only take ownership if the integrated intervention packages are relevant and appropriate to achieve their objectives. Spaces (physical or virtual) that facilitate stakeholder interaction are needed to discuss such issues, and to identify constraints and barriers that the next users may be facing. These spaces should go beyond information sharing and actively seek to co-create solutions to shared problems.

What, then, is the added value of integration (or ILR4D) in the country projects? This is difficult to observe and thus quantify. In particular when the concept of ‘integration’ means different things for different stakeholders, including researchers. Most activities of the country projects are examples of aggregation or harmonization of activities, where project teams have started to plan their research and training activities together. But flagships often formulate solutions separately, though some flagships find it easier to work closely together, because of an obvious interdependence of domains, than others. Yet, discussing problems in an integral manner can give surprising insights (for example in Vietnam there was a realisation that many cattle in the communities are infertile, and that there is a strong need for a joint approach on breeding, animal health and feeds). It is not possible to integrate every single discipline and stakeholder objective; hence integration needs to happen in parts (which is an oxymoron), to avoid getting lost in the whole. Integration should not become a goal in itself, but it should be considered as a way to make research relevant to the end users.

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Annex. Stories on integrated research in CRP Livestock

| Headline | Story |
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| Clapping with two hands (already published) | In Ethiopia, attempts to ensure animal health interventions are gender sensitive, and possibly gender transformative, over the years we closely worked across ILRI programs and with ICARDA. This really started during CRP L&F, and continued in CRP Livestock. Out of this important insights on division of labour related to animal health management at household level, disease prioritisations and reasons for this by livestock keepers and entry points for interventions were gained. This has shaped the interventions, incl. training approaches, currently being implemented in Ethiopia. The lesson learned was that to establish this sort of collaboration and continuity, a long-term commitment and a certain degree of flexibility is needed. |
| It was done before I joined the team published by different teams in different titles by Small ruminant Breeding and genetics teams, animal health teams on community conversations and small ruminant marketing component teams. | The partnership in small ruminant value chain transformation with the institution composed of different SMaRT pack owners integrated with the local research partners nearest to the intervention sites implemented the proven technologies and new research ideas based on the procedures. during the COVID-19 situations most planned activities implemented as planned by the local partners with little technical support and follow ups. |
| Integrating livestock packages for easy access and utilization | the implementation of integrated intervention package for Maziwa Zaidi II in Tanzania which includes Artificial Insemination services for breeding activities and improvement of dairy cattle for increased production, pasture and forages, EFC vaccine and manure management seem to touch base and pave a way for integrating innovative packages which brings many actors together within the milk value chain in the community. This is working well with farmers who are in milk cooperatives whereby members can access all services from their cooperative society under the agreed internal arrangements either by cash payment or check off systems. Service providers who are involved include but not limited to Agrovet, concentrates/ feeds sellers, AI service providers, extension advisory, animal health service providers, dairy producers, pasture and forages producers, researchers, local government authorities, veterinary council for approval of expertise just to mention few |
| Integration at different levels to result in measurable changes | Joint planning of the research team and overall coordination by the project coordinator have really helped to get the integrated package on the ground. The farmers also like the approach as their problems are many which need concerted, integrated approach. The planning and field implementation involved all the actors, including CG team, NARs, extension staff etc. This helps for smooth collaboration among the different actors with clearly defined responsibilities. Whether the actions have resulted in measurable changes/ outcomes need to be formally assessed. However, preliminary results clearly show that substantial results are being achieved. |
| Joining hands for reliable and trustworthy sires in sheep and goat breeding in Ethiopia | This is related to the certification of improved rams and bucks in CBBP sites in Ethiopia. Integration is at the discipline level involving breeding (certification for genetic merit), reproduction (certification for reproductive ability), health (certification for breeding soundness and vaccination for major infectious diseases). Integration is also at the partner level bringing together breeders from research institutes and vets from the animal health services. |
| How to efficiently run and multi-disciplinary and multi-stakeholder programs with different focuses in several | Project management: Albeit the integrated country approach is commendable. The three dimensional aspect (country, flagship, partner) of the approach has made it overly complex with regards to leadership/management, budgeting/financial admin as well as progress reporting. In its current setup it is very high transaction costs, both money wise and |

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| countries at the same time with reasonable efficiency | human engagement-wise. Even though any arrangement with the ambition to integrate different "disciplines" with several partners in one country will be complex - there are lessons to be learned from the current arrangement about what is not cost-efficient. |
| Integrated training and certification of small-scale commercial feed producers. | <p>What: Initial meeting about the "Training and certification of small-scale commercial feed producers."</p> <p>Who: Makerere University, Single Spark B.V, NaLIRRI.</p> <p>When: Early March 2020</p> <p>Why: Strengthen capacity of feed compounders in producing quality compounded feed for pigs.</p> <p>What-Results: Manual for training, Training program based on KAPs survey. Deep-dive of the component by Impact@Scale of ILRI.</p> |
| Multi-stakeholder workshop: Introduction of the Livestock CRP project | Li-chan project in Vietnam organized 1 stakeholder meeting with local partners to introduce the projects and consult the project timelines and proposed interventions in June 2019. Representatives of all 6 flagships of the project attended and gave presentations in the meeting. This provided an opportunity for the local authority and potential beneficiaries to understand about different components of the project and their possible linkages. For instance, to produce high value-added livestock products, farmers should care about animal breed, feed, health care, environment and marketing linkages, which can be supported by different interventions proposed by the corresponding project's flagships. Also, feedback from the participants helps 6 flagships to identify possible time slots that they can work together in the field. |
| The benefits of Livestock Research to improve livelihoods- the case of ILRI interventions to Masaka Small Pig Farmers | <p>The first phase of the Livestock- CRP was Titled "The Small Holder Pig Development Project" in the period 2012-2017. We achieved the following;</p> <p>1) Baseline survey with objective to get the data on Households and stakeholders involved in the pig value chain for a livelihood, the relevance of pig farming as it relates to men, women and youths on one side and what Government was contributing. We further defined the Value Chain into Urban-Urban, Urban-Rural and Rural-Rural. 2) Problem profiling survey- in this intervention set of Participatory tools were used to identify and rank the problem and in so doing farmers ranked the problems as 1) Disease especially African Swine Fever, ii) Feeding and Feeds and iii) Markets. These issues defined the next interventions including a detailed collection of fecal and blood samples from all Sub-Counties and a list of key diseases other than ASF were defined. Intervention were also done on Forages and Sweet Potato silage to address Nutrition. Also Food Safety and Capacity/Training were carried out for Pork Inspectors. On Marketing- the Pig Multi-Stakeholders Platform(Pig MSP) were formed and pig farmers were able to come together and discuss issues they could manage. The Pig-MSP gave birth to seven Pig Cooperative Societies based at Sub-County and later merged to form the Greater Masaka Pig Cooperative Union. With the Union, ILRI /Irish Aid funded the design and Business Plan of the Greater Masaka Pig business Hub and Slaughter House. The District invested UG Shillings 87million and were are mobilizing to complete the Project and the above marked the end of the first Phase (2012-2017) and it was a satisfactory journey. In Phase-II of the project we have continued on 4 Flagships that were generated in the First Phase: i) Animal Health Flagship, ii) Nutrition and Feeding, iii) Genetics and iv) Manure Management and Adaption to Heat stress and the Environment. The Flagships are being fine-tuned and integrated to " talk" to each other through the PIG SMART TECHNOLOGIES. I'm grateful that I participated in the identification of the Basket of the Pig SMART Technologies that include the Feed Calculator, Gross Margin Calculator, Community AI. COVID-19 delayed the take-off of the interventions, however when lock down was eased we have resumed activities in July 2020. Training of Trainers have been conducted on the Feed Calculator and the Gross-Marging Calculator . As an end note there is a shift in the interventions in this Phase as we emphasize Building Relationships between all the players in the Pig</p> |

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| | Value Chain and for this reason the entry point are the Aggregators/Off takers. Building relationships will increase Trust, Transparency and genuine profitability between the Farmer and the Trader. Already there is an increase in Price per Kg of Pork due to the fact that the slaughter slab started and farmers are paid per kg of Pork produced. This is a big breakthrough and Prices of beef and Pork are now very close to each other even deep in the Village. Masaka People are very happy of the interventions and we acknowledge the value of ILRI and Research more than ever before. This story is incomplete if I don't acknowledge Dr Danillo Pezo and all the ILRI Team with whom we started this Journey and for sure life of Small Holders is much better and we need all the support to fix the remaining interventions. The excellent cooperation of the farmers and stakeholders in Masaka is the key reason we have reached this far and is very much appreciated. |
| Communication and learning among Dairy Value chain actors in Tanzania made easy through the Dairy Development Forum Platform | WHAT? MAZIWA Zaidi Program in Tanzania impact is in formation of the Dairy Development Forum a platform, which has been very successful in bringing together nearly all Dairy Value Chain actors. Who? ILRI Tanzania program together with the Tanzania Dairy Board championed formation of the Forum. The Forum has grown having a very active WhatsApp group now with more than 300 participants. The group include; farmers, traders, processors, researchers, trainers, business people. When: in the initial stages of MAZIWA Zaidi Program. The Outcome: Sharing of information and learnings, advocacy and lobbying too. |
| Outcome of enumerator trainings in Kampala and Masaka districts, Uganda | The implementation of project activities involved training of baseline enumerators in Kampala in Nov 2020. Enumerators had been recruited from the district local governments (partner). The purpose of the training was to equip enumerators on knowledge and skills to collect the baseline data from selected value chain actors (pig producers, butchers/traders, feeds and drug stockists as well as extension agents). The training was facilitated by ILRI staff representing the different project components (feeds and forages, livelihoods, animal health). A similar was organized for enumerators from greater Masaka district. The key achievements of the trainings was that enumerators acquired skills and knowledge in the use of the ODK tool for data collection. Subsequently, the baseline survey was undertaken in both districts. We are pleased to report that data is now available and ready for analysis. |
| Sharing with farmers an integrated vision of livestock research and development | Li-chan: The community engagement week was a good collaborative effort between the different flagships. Representatives from each flagship joined the visit to each village selected for interventions, and presented the plan of activities. The visit happened early September. Farmers in each village visited were receptive and interested. There was a good atmosphere, allowing bonding between farmers and scientists. |
| Challenges to integrated research | There were two trainings in related topics (genetics and animal health, both with local vets and related to animal health/ reproductive diseases) that can combine together, but one flagship did not to combine because of logistic arrangement. Animal health also did not agree to add reproductive diseases in their training. Their reason is that virus related diseases are more necessary to train. So each flagships conduct training independently. Also, when conducted the training. One flagship conduct the training in the commune people committee, combining Thai and Hmong ethnicities together, also for logistic reason, and no translation into minority language. The Hmong farmers often live in high mountains, with difficult road that women cannot drive, just about 6km may take 1 hour to go. After this training, two ladies did not participate in our training anymore. Their husband said they did not understand anything in the training, so would be waste of time sitting in the training. |
| Livestock CRP flagships pools efforts to implement an integrated | For the Uganda MorePork project, all flagships are planning their activities based on the integrated intervention package. It sounded good on paper during proposal development and it is good to see it being practically implemented. The UBS team has started working with pig aggregators to sensitize them on the importance of |

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| intervention package under MorePork project | supporting pig farmers as well as identifying the market arrangements that can work for them. The farmers linked to aggregators have been identified and the same farmers are being trained by the Genetics flagship on pig AI and synchronisation. The same farmers are targeted by Animal Health flagship for the pig welfare related activities. For the first time in the pig value chain in Uganda, focus is being given to the input and service providers and their capacities being build. They will provide services and inputs to the pig farmers linked to the aggregators. AI technicians have been trained by Genetics flagship in October 2020 , Feed producers have been identified and targeted for feed compounding training and certification intervention, the digital solution providers under PigSmart have already signed agreements with the project and have initiated trainings for the extension agents who will provide extension support to farmers. The trainings started in Nov 2020. Baseline surveys for input and service providers were finalised in October 2020 and the farmer baseline surveys currently ongoing. |
| Improved feed options for increased livestock production | In one of the surveys, we worked well with one of our local partners (NOMAFSI) for data collection activities. The team has good experience in similar exercises and were well informed, providing vital feedback and follow ups thereafter. The field coordinator has also made established useful connections with target communities, community leaders and local authorities, which makes it easier for outreach and impact. |
| | Carrying out CLEANED assessments in the PCS provides an opportunity to move this from CGIAR-led analysis towards assessments driven by local partners (and hopefully thus also better integrated in local decision making processes) |
| Integration of packages and experts: the promising project: | <p>The integration of activities and disciplines in Ethiopia is promising. The positive part about this is that the government wings are following us and learning from us how to integrated different packages. The second thing is that the integration is answering different questions raised by farmers since the farmers always hold all these packages together. The start of implementation of the integrated packages in the value chain sites is already bringing the positive impact. For example in the case of reproductive performance improvement and reproductive diseases prevention the team of genetics, animal health and feed experts are working together. The negative side I saw in the past year (apart from COVID-19) is that communication between the scientists is still less. It should be improved.</p> <p>Aligning the assessments very well to overall project goals and the systems and packages will allow us to integrate empirical data/evidence, typically collected by flagship experts, into the model runs.</p> <p>Doing this in several PCs also presents an opportunity to learn across/get inspiration from different countries, e.g.:</p> <ul style="list-style-type: none"> - Uganda and TZ have extensive stakeholder lists (incl. environmental sector); this is something that can be done in the other countries too - the idea of organising a joint "series of learning events" |
| The research meets reality in Dairy farming | I participated in the workshop by ILRI where I learnt about Maziwa zaid project and was able to grasp useful points regards to Dairy Hub and incubation programme which fits to the project we are implementing in Tanga. In short we are implementing of what maziwa zaid experience and learnings .The maziwa Zaidi demonstrated real situation and highlighted facts which are very useful to the dairy value chain |
| An efficient integration of genetics and animal health on sire certification and other activities | <p>story about an efficient integration of genetics and animal health on sire certification and other activities:</p> <p>Community-based breeding programs that were organized for implementation of sheep and goat breeding program used as a framework to implement integrated packages on genetics, health, feed, environment and gender. This gives a chance to</p> |

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| | <p>work on the same communities and flocks. Even though all SmaRT pack activities have been implemented in the same community, the level of integration of stakeholders vary by activity.</p> <p>Sire certification: The transfer of genetic gain transfer to the CBBP as well as the base flock is via selected breeding sires. Therefore, breeding sires should be superior in performance and free from any reproductive diseases in order to maximize genetic progress and produce healthier animals. Sire certification involves various stakeholders (e.g. researchers from genetics and animal health, communities, data collectors and extension workers). It has been implemented in all SmaRT pack sites (Menz, Bonga, Doyogena and Abergelle) in Ethiopia. Breeding sires has been approved by a research team from genetics and animal health with full participation of the community and district level livestock experts. Sires with highest estimated breeding values for selection traits, qualified for semen evaluation test, with very good libido test and having an excellent breeding soundness has been approved for breeding. Performance and pedigree data collected by enumerators and loaded to a digitalized database system were analysed by genetics researchers to estimate their breeding values for selection traits. Then, selected candidates have been evaluated by farmers committee considering their physical and morphological appearances. Breeding soundness test and semen quality and quantity evaluation were carried out by a team of researchers from animal health and genetics. finally, vaccines were provided for prevailing diseases and an official certificate issued for each breeding sires by district level livestock office. Sire certification was started in September 2020 and has been implemented in Doyogena, Menz and Bonga CBBP sites. So far, about 80 breeding sires were certified and has been used for breeding.</p> <p>Other activities: Animal identification, performance recording, recording on health status of the flock, animal selection, provision of animal health services like regular deworming and vaccination of the whole flock for common disease has been implemented in an integrated way. Mostly, researchers and enumerators from animal health and genetics travel together to visit participating flocks. This helped to have better quality data, saves the time of farmers and allows sharing of resources like vehicle. This was implemented since the beginning of CRP Livestock. The outcome of this integration was enabled to produce healthier flock and increased the number of available animals for selection as it reduced lamb/kid mortality. The National Animal Genetic Improvement Institute (NAGII) and National Research Institutions will take over the whole certification process and other activities starting from 2022 so that integration of stakeholders needs to be strengthen for the smooth transfer of the activities.</p> |
| Dairy agripreneurs hold promise as entry points for ensuring sustainable delivery of integrated technologies | <p>Maziwa Zaidi II: Engaging dairy agripreneurs to articulate their demands (based on available offers) in a workshop in Oct 2019. The agripreneurs then act as focal points and 'glue' to packaging integrated technologies for testing and delivery by research and development partners. Working together and guided by appropriate business models, the partners impart appropriate skills to the agripreneurs and mentor/coach them to help catalyse uptake of the technologies among producers. This approach aims to match supply and demand and to ensure sustainability. The partners so far consider the approach as promising. Link with additional information: https://hdl.handle.net/10568/105706;</p> |
| Groundwork laid for improved community management of highland communal grasslands | <p>Communal grassland monitoring—Identified indicators, and possible restoration trials, that can be implement rapidly</p> <p>Communal grassland management characterization and prioritization—Getting close to refined means of rapidly and practically assessing community grassland management status, needs, and management options from a holistic, integrated perspective</p> |

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| | Communal grassland management planning—Developed a system for sequential intensification of community grassland management, version 2 (in progress) is to be applied |
| The story has already been published on a blog ¹ | Great support from the Country Priority Team Leaders, working on the CLEANED assessments part of Livestock and Environment cutting across all four countries. When moving the training online, participants from NARS were able to adjust well, and moving forward we are getting good support for the Team leads and team members for all the different priority countries. |
| Community conversations bringing together knowledge about best practices to raise awareness of women and men SR producers in Ethiopia. | This story relates to combining different research activities in the Ethiopia country project. The capacity development team is responsible for implementing the community conversations (CC) in close collaboration with the technical experts in the last quarter of 2020 and beginning 2021 in all four intervention sites. One part of the preparation was to put together the content in modules and the other part was on developing the KAP survey. Although it took some reminders, both, the content and the KAP survey are joint products across different interventions. The CCs are now being implemented in the field. Capacity development activities are probably the easiest way of integrating across disciplines. |
| | Our experience in the CRP livestock was very fantastic which means there was a multidisciplinary activity throughout the year that was genetic improvement, forage development, social science and animal health. We were working jointly with livestock agency at different levels that are regional, zonal, district and DAs. |
| CRP in Community-based breeding program generated promising genetic improvement in Doyogena southern Ethiopia | In the first place, the project is implemented after a long time fruitless crossbreeding effort. When we see the story, CCBP in Doyogena started in 2012/13 by ICARDA and ILRI in collaboration with the Southern Agricultural Research Institute (SARI), Areka Agricultural Research Centre (AARC).The program adopted in Doyogena district to improve Doyogena sheep. The project area of intervention were livestock genetics/breeding, livestock feed and forage, and community livelihood For the implementation the program, five kebeles/sites were selected. Accordingly, on-farm data collection of economically important traits focusing on quantitative traits has been recorded. In each site, one enumerator for each breeder cooperative and two health professionals for eight cooperatives they live within the community were employed. These makes easy close follow-up and routine data collection. We do regular formal and informal discussions with participant farmers. We discuss on challenge faced the breeder cooperatives, about enumerators and the flock. Different type of training and support were also organized ,Different forms of workshops/field day were organized, Large partitioned tin roof shed/shelter is constructed by ICARDA for three cooperatives and it is being used for candidates breeding rams selection, Zone and district office of livestock and fishery resources, office of marketing and cooperative office, has immense interest to work on the CBBP. The achievements of Doyogena sheep CBBP, presented in different workshops, attracted the attention of both governmental and non-governmental organizations. At the start, we have no detailed knowledge about selective breeding but due to the support of CRP livestock, we researcher, data collectors, technical staff, and health professionals were aware of importance of selective breeding program, data collection, data management, data analysis, and decision. Members of the breeder cooperative also have detail knowledge about sheep husbandry, and management practices, utilization of forage legumes, use of alternative feed resources, and sheep fattening strategies. |

¹ https://alliancebioversityciat.org/news_and_blogs/virtual-trainings-for-sustainable-livestock-production/

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| | <p>To make the breeding program successful, we are working with different Stakeholders. For instance Woreda Administration Office, woreda Livestock and Fisheries Office, Marketing and cooperative office, Kebele Administrative Offices, and respective zonal administrative office. To make the breeding program sustainable, each stakeholder sign an agreement to share duties and responsibilities. Here below is some of stakeholder duty and responsibility we agreed before 4 years. Know we are working with this memorandum of understanding.</p> <ol style="list-style-type: none"> 1. Woreda Administration Office <ul style="list-style-type: none"> • Chairs Stakeholders forum. • Provides necessary support by monitoring the CBBP in the woreda. • Coordinates the kebele administration bodies and facilitates the office required for cooperatives. • Provides construction/shed site support as needed • Evaluates the performance of stakeholders from time to time • Monitors, controls and prosecutes illegal sheep trafficking 2. Areka Agricultural Research Center <ul style="list-style-type: none"> • Create awareness for farmers, data collectors and relevant professionals. • Prepares data collection format and checklist. • Provide technical support 3. Woreda Livestock and Fisheries Office <ul style="list-style-type: none"> • Create awareness for farmers and professionals. • Provides appropriate extension support to participant farmers • Creates a conducive environment for work by mobilizing and coordinating the participant farmers. • Provides follow-up and support by assigning focal persons to the selection process. • Maintains and monitors the health and nutrition of sheep by assigning livestock husbandry, feed and health professionals. It makes them work as part of their focus. • Castrate unselected candidates • Health professionals provide medical care to sick sheep, prepares an annual sheep vaccination calendar, and provides vaccinations. • Monitor and support the cooperatives. Identify those who are not members of the cooperatives or those who do not have ewes, and take action. • Be present during the selection process, and review the selection process to prevent gaps. • Facilitates market for selected sheep. • Collaborate with stakeholders to provide solutions to problems. 4. Marketing and cooperative office <ul style="list-style-type: none"> • Supports the breeder cooperatives, maintains member information, and monitors the cooperatives. • Encourages the members to use selected rams and to use them sparingly. • Audits the cooperatives freely; • Facilitates access to credit. • Monitors the management and members for fulfilling their duties in accordance with bylaws; • Supervises cooperatives and provides the necessary technical support • Monitor and control the illegal sheep circulation. 5. Kebele Administrative Offices <ul style="list-style-type: none"> • Support and mobilize the kebele sheep owners as needed; • Monitor and support the selection process in each kebele; • Collaborate with the woreda to facilitate the necessary offices and constituencies for cooperatives • Monitors, regulates and takes action against illegal sheep circulation. 6. Cooperatives members |

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| | <ul style="list-style-type: none"> • Members should have at least 2 ewes; • Use only selected best rams; • Provide information for the newborn lamb within 24 hours of birth, at 90 days of birth weight and 6 months ,9 month and 12 month of age; • Before selling any sheep, they must get the approval of the cooperatives and the data collector; • Cull or castrate unselected candidates; • A farmer who holds the selected ram is responsible for taking care of the ram, treating it when it is sick, and providing it to another farmer for free <p>We also collaborately worked with national agriculture research system. For instance, we are worked with Ethiopian institute of agricultural research. CRP livestock in Doyogena is successful because; Beneficiaries understood the benefits of selection, CBBS was linked with improved forage and animal health care, know the old breeder cooperative strengthen in the capital, improved genetics were linked with the market. So far, many numbers of improved genetics were distributed in different agro-ecology of the county. These improved genetics were sold at the best price (1 kg per 100 Ethiopian birrs).In addition; the cooperatives themselves benefited 100 ETB per 1 improved ram.</p> <p>CRP livestock has a significant role in technical backstopping and materials support throughout the process. Required material was supported freely. Livestock reproductive technology adopted to the project sites. For instance, synchronization and artificial insemination in sheep were adopted due to this project support. With collaboration with the Southern region livestock office we contribute, two working package with Amharic language (the first one is Sheep artificial insemination working package and the other one is Doyogena best breeding rams package ,suitable area in the region and management. This two package were prepared with Amharic language and distribute to regional government livestock office, district and kebele livestock professionals BOLF has also contributed to the success of the program</p> <p>After 6 years of selection (2013 to 2018), the collected data were analyzed, and promising achievements were obtained. Know the best practice of the selective program were increased from 5 cooperatives to 8 breeder cooperatives. The new 3 sites were out scaled sites</p> <p>The report attracted the attention of the CGIAR research program on Climate Change, Agriculture and Food Security (CCAFS). Currently CCAFS supported the three new sites to scale up the Doyogena sheep improvement program through disseminating improved rams selected from the older CBBPs.</p> <p>Major outcomes</p> <ol style="list-style-type: none"> Generally CBBP was acceptable in the community and satisfactory improvement was observed. Currently promising weight change(non genetic) obtained in respect to at start of the program Sheep management practice improved due to continuous training Due to continuous selection with EBVs, considering litter size, fecundity in ewes was increased. So far, more than 4800 lamb births were recorded. Litter size was increased across selection year(table 3) Distribution of improved genetics and breeding rams demand increased(table 4) Package was developed Negative selection reverted or reduced Availability of breeding ram increased Market situation triggered Input utilization improved Reproductive technology adopted <p>My negative experience</p> |

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| | Generally, the selection program and dissemination of improved genetics largely rely on continuous follow up, continuous accurate pedigree and performance recording. This needs much more labour and time. |
| Livestock agency, NGOs and local administrations are closely working for the project. | Our experience in the CRP livestock was very fantastic which means there was a multidisciplinary activity throughout the year that was genetic improvement, forage development, social science and animal health. We were working jointly with livestock agency at different levels that are regional, zonal, district and DAs. |
| better lives for the poor | livestock agency, ngos and local administrations are closely working for the project. |
| Community-based sheep breeding programs generated substantial genetic gains and socioeconomic benefits | Zelalem Abate |
| Community-based alternative breeding plans for indigenous sheep breeds in four agro-ecological zones of Ethiopia | <p>We have been done the CRP livestock project in our area with the objectives of flagship activities via agreement with mutual interest determined by the priorities of the SARI and ICARDA (i.e CRP livestock project) and the comparative advantages and resources, we agree to further enter in to a Research Collaboration ("Sub-agreement") titled, "Integrated Small-Ruminant Development Research activities" ("Research Project"), under the different flagship projects of CRP-Livestock. Our collaborators include zonal and district level government bodies, ICARDA, farmers and other research centers.</p> <p>thus, we have achieved the following success stories;</p> <ul style="list-style-type: none"> *genetic gain of our animal was improved, *negative selection were reverted *huge number of breeding rams were distributed as genetic material (8475 rams were selected and 5238 were distributed through country, *our community based bonga sheep improvement cooperatives were empowered (strengthened) i.e. Cooperatives get 20,486,564 ETB. From improved Bonga ram dissemination *AI and PD with ultrasonography in bonga ewes were introduced and demonstrated in farm level *Social and Cultural Linkages were strength with CBPP principles like, <ul style="list-style-type: none"> • Improving sheep genetics with common understanding and breeding objective • Strengthen the culture of breeding ram sharing • Improved idea sharing among farmers and breeders, • Honest for social responsibility and active participation. • Adoption of technology become no challenging |
| #beattheheatUG | Sharing a positive story from MorePork that illustrates integration both across flagships/disciplines, but also across various partners. Research around climate-induced heat stress (mapping, survey, workshops) has been ongoing since several years, with various outputs (peer-reviewed papers, MSc theses, policy brief, blog posts, workshop reports, infographics). From the onset, this was a collaboration led by the Environment Flagship, initiated together with the Genetics Flagship, triggered by the question which breeds (and therefore smallholder intensification) could be more affected by climate-induced heat stress? In the process of outreach to stakeholders, especially policy and decision makers in international agencies, the LLAFS Flagship became strongly involved as it touched economic impacts of such heat stress and vulnerability of different groups including women and youth. In a policy briefing in Dec 2020, we saw high level participation and commitment from stakeholders especially policy makers, and strong media outreach and interest, which was rated as success by all involved - concrete follow-up on commitment is planned, and invitation to present to Ugandan prime minister is open. This is just |

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| | <p>one success story, but some ingredients for success for me were: a) well cured and digested research results are available and vetted (not just preliminary); b) and asks for various actors existed and were prepared in a visually attractive way (great input from comms team here as well); c) interest of various flagships was met, most notably Env, Gen, LLAFS; d) well planned, targeted and supported event with outputs and deliverables.</p> |