



## Developing learning approaches for livestock feeds

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### Feeding livestock

Across the African continent, livestock represents 40% of agricultural GDP, and hundreds of millions of smallholder farmers in Africa depend on livestock for their livelihoods. To feed themselves and their families, and to benefit from increasing demand for livestock products in developing countries, livestock keepers must have consistent access to good quality feed for their livestock.

Many farmers however, struggle to source sufficient feed, year round, to increase livestock productivity. To address this big issue, researchers are working on better animal nutrition, improved nutritional quality of feeds, and new breeds of high-producing forages. Scientists at ILRI and CIAT however also realized that new technical solutions were not always the bottleneck.

What was needed was a way of systematically looking at the farming system and working with farmers and other experts to come up with new ways of feeding livestock that were appropriate to the context and where farmers had some ownership of suggested solutions.

In 2008, they created a Feed Assessment Tool (FEAST) that researchers, farmers and farm advisers can use to identify promising feed interventions. It uses participatory farmer-centred diagnosis (FCD) to generate an accurate picture of a community's livestock feed demands, resources, opportunities and constraints.

Together with the TechFit tool, it helps researchers, government and development agency staff and others better respond to actual feed constraints and opportunities.

So far, the FEAST tool has been used in more than a dozen countries to inform livestock interventions. ILRI has also received growing demands to provide guidance, support and training in using the tool. An increasingly important question was how FEAST could be disseminated and supported to large numbers of people without overwhelming ILRI's research staff.

Experience gained with the tool showed that many of the people tasked with applying FEAST had limited experience using computer-based applications. Some users also struggled with the process of engaging and interacting with farmers and other local stakeholders. Moreover, the FCD process required them to collect and analyze data from a sample of farmers that would be representative of all farmers in the area and to make recommendations for action based on this data and the graphs generated by the tool. Many also found this difficult and failed to use the tool and the FCD process effectively, limiting the benefit of the tool to farmers.

Classroom-based training was somewhat successful in improving skill sets but delivering the training posed a considerable travel and logistical burden on ILRI's staff. A new approach was needed to educate and support the growing community of FEAST users worldwide.

## Feeding learning

In 2014, the ILRI Capacity Development Unit was called on to develop such a new approach. It worked closely with animal feed subject experts to review existing training materials and knowledge about the FEAST tool and the FCD process, some of it hardly documented.

Classroom training events in various countries were observed and participant needs assessed. Based on the needs identified, a curriculum framework was generated.

The goal was to improve the classroom experience and extend the reach of the training program while lessening the logistical burden on ILRI scientists.

ILRI partnered with Sonata Learning to identify suitable learning modalities and to design learning modules that would help targeted participants achieve their learning objectives.

From the start, it was clear that a blended learning approach combining classroom training with online learning was the most appropriate solution. This would provide learners, and future trainers, with ways to master content and develop and refresh their skills.

## Blended learning: The new approach

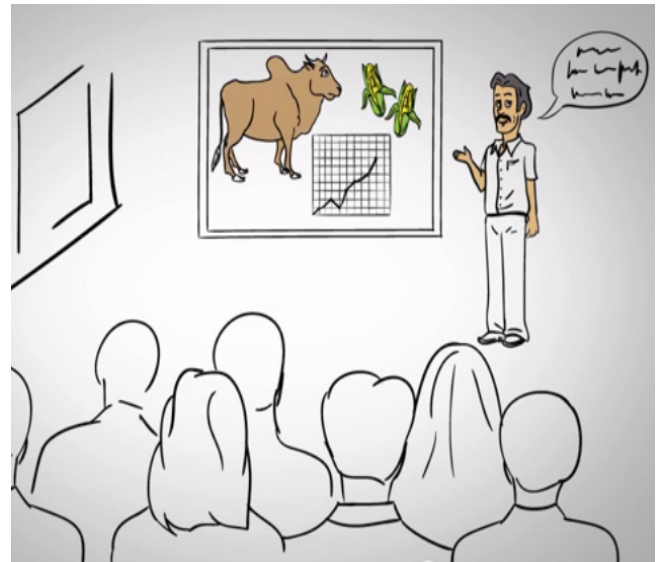
With the objectives and specialist partner on board, the next step was to design and develop the learning materials.

Using standard best practice approaches<sup>1</sup>, the team identified the skills required for effective use of the FEAST toolkit, met with typical course participants to find out how many of these skills they already had, and then designed learning experiences which would help a course participant develop the skills required.

Given that the people who commonly use the toolkit are adult learners with conflicting demands on their time, course developers drew heavily on adult learning principles to produce an engaging course that is highly interactive, connected with their existing knowledge and skill sets, meshed with perceived professional development needs, and based on relevant and practical examples.



1. The ADDIE and SAM models are the best known of these.



A comprehensive set of teaching-learning tools (PowerPoint presentations; interactive online activities including games, videos and online quizzes; instructor guides; and training preparation checklists) was developed. Insights from the subject experts were included in course documentation. This meant that the course could be presented by less experienced trainers while maintaining the quality of the learning experience for participants.

## New learning technologies

Alongside the development of the learning materials, it was important to have an online platform where they could be made accessible.

The team then set about identifying a learning management system (LMS)<sup>2</sup> where the FEAST learning materials and other courses could be run. The minimum requirements were that the ILRI LMS would be able to track learner progress through modules including results on exercises and quizzes, be compatible with a blended learning approach, be able to scale up to more complex course designs while keeping costs to a minimum, and, most important, be deliverable in classrooms with poor or no Internet connections.

Reviews<sup>3</sup> of a wide range of LMS products did not reveal a suitable solution. While some products came close to satisfying requirements, vendors were unwilling to customising their products to meet ILRI's requirements.

In the end, ILRI partnered with Sonata Learning, who, in addition to developing the learning materials, developed an LMS to ILRI specifications under a favourable licensing arrangement for ILRI and its CGIAR partners.

2. An LMS is a specialist web site where learners can find learning content including text, videos, audio files, assessments and discussion forums. It also allows course administrators to track when and how learners use these resources including recording grades where appropriate.

3. <https://cgspace.cgiar.org/handle/10568/65951>

The LMS features include:

- Simple, clean, intuitive user interface;
- “Blended first” approach to delivery - allows instructors to grant or restrict access to lessons in the LMS during a classroom training session and give scores for attendance and participation;
- Integration of social learning –can require that users post to discussion forums in order to proceed with a course, then notifies them of responses;
- Branding and sub-portals –with options to share or separate content for different audiences and set different preferences for each;
- Ability to scale with the growth of ILRI programs – allows for more advanced course design including multicourse sequences, awarding credits for classes etc.;
- A unique approach to grading – includes support for conducting and analyzing pre-assessment and post assessment tests and assigning weightings to different assessments;
- Reporting features –including generation of HTML5 graphs and dashboards;

To deliver training in low-bandwidth environments, Sonata Learning also developed a stand-alone offline player module with the following features:

- Runs on a USB drive without the need to install any software on the learner’s hard drive;

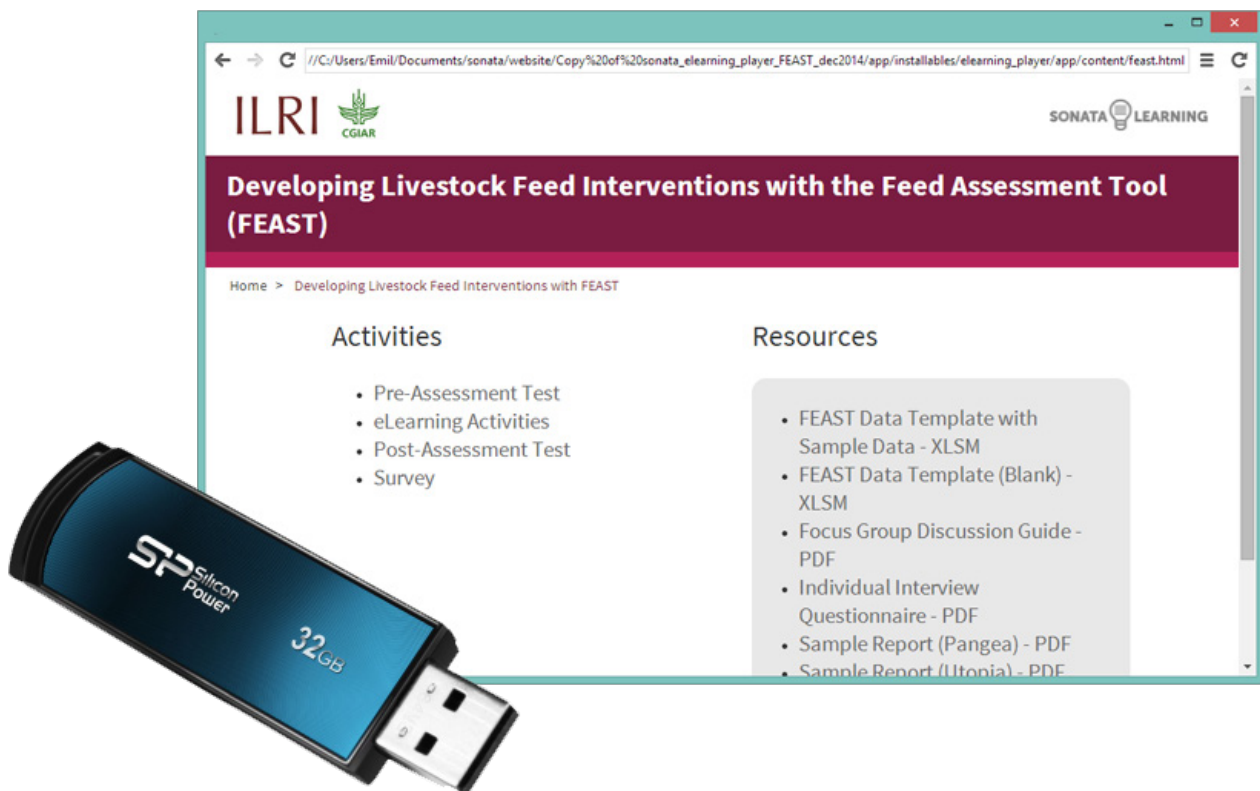
- Plays any type of content in its own self-contained browser, avoiding any complications that might arise with the computer’s default browser (Internet Explorer, Chrome or Firefox, etc.);
- Saves learner assessment and progress data to the USB drive from which it can be copied to a central computer;
- Provides a program to automatically install the player to multiple USB drives making it fast and easy to prepare for training workshops.

## Feeding innovation

This project combines innovation in feeding with innovation in learning. The FEAST course offers an innovative way to make a practical feed toolkit accessible for use by the wider livestock community. The platform offers an innovative way to deliver targeted learning materials, even to people off the digital superhighway.

Together, they aim to help rural communities feed and sustain their livestock, making good use of locally-available resources and innovation.

In May 2015, the FEAST blended e-Learning course was launched in Addis Ababa. It was the initial product on ILRI’s new learning management system.



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Better training + Better tools = Better lives through livestock



Iddo Dror, Deborah Wyburn, Ben Lukuyu, Alan Duncan and Peter Ballantyne all work for ILRI. Emil Heidkamp works for Sonata Learning.

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