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The U.S. Government's Global Hunger & Food Security Initiative

THE ENABLING ENVIRONMENT FOR ANIMAL SOURCE FOOD MARKET SYSTEM SUCCESS: LESSONS FROM THE FIELD

Supply-Side Factors

Feed the Future Innovation Lab for Livestock Systems
Feed the Future Enabling Environment for Food Security Project

November 5, 2020

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ANIMAL-SOURCE FOODS

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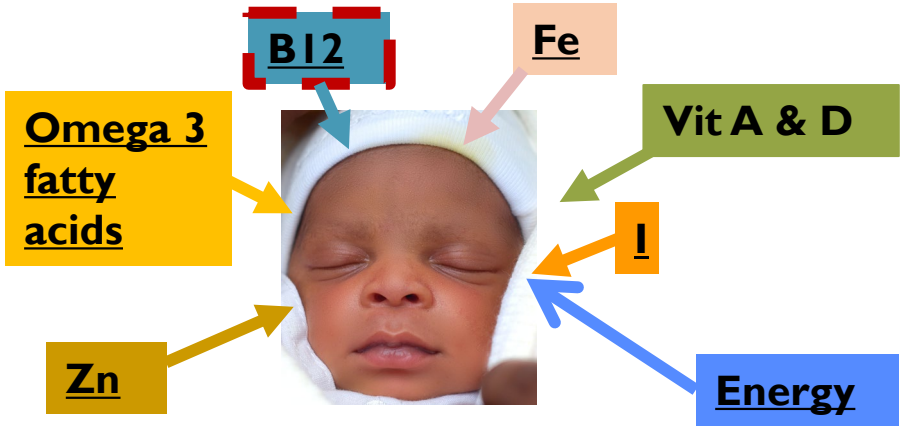
IMPORTANCE OF ANIMAL-SOURCE FOODS (ASF)



Brain growth ~ 90% complete in first 1000 days; determines brain function for life

- Best high-quality, nutrient-rich food for children aged between 6 and 23 months (WHO, 2017).
- Packed with ideal protein and more bioavailable micronutrients than plants.
- Can help prevent stunting, which reduces brain development and growth and increases poverty.
- 60% of children don't eat enough ASF (UNICEF, 2020).

(Miller, 2019)

Photo by Aikomo Opeyemi on Unsplash

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INNOVATION LAB FOR LIVESTOCK SYSTEMS

Vision

Sustainably intensify livestock production to improve the nutrition, health, incomes, and livelihoods of the poor.

Photo credit: J. Vipham

Donors:

- **USAID**
- **BMGF**

Countries:

Cambodia, Nepal, Burkina Faso, Niger, Rwanda, Ethiopia, Uganda, Kenya

Projects:

- 45 field to fork research for development projects on all species

Grantees:

- 63 foreign and U.S. partners

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THE ENABLING ENVIRONMENT FOR ANIMAL SOURCE FOOD MARKET SYSTEM SUCCESS: SUPPLY-SIDE FACTORS

Feed the Future Enabling Environment for Food Security Project

Dr. Steve Staal, Consultant, EEFS
Adam Keatts, Chief of Party, EEFS

November 5, 2020

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THE ENABLING ENVIRONMENT FOR ASF

The enabling environment for ASF is distinct from crop-based agriculture.

- Unique technologies and requirements for trade, processing/packaging, food safety management, etc.
- The rules that exist for the agriculture sector may be necessary, but are insufficient for ASF.

Objective:

Document a comprehensive set of formal and informal factors in the EE that affect ASF market system success (e.g., competitiveness, inclusiveness, resilience) and associated metrics for analysis.

Methodology:

- Literature review across developed, emerging, and developing countries.

Use Case:

- USAID, its implementing partners, host country governments, and other development actors.
- A guide for targeted analysis to inform investment and resource allocation decisions based on the gaps and opportunities in the enabling environment.

CATEGORIZING THE EE FOR ASF

The EE for various ASF systems is complex and multi-faceted. We categorize findings by:

- **Supply-side** factors, **marketing** factors, and **financial service** factors.

Today, we will focus on the supply-side factors in the EE for ASF systems.

- These are **the factors that enable or impede the production of ASFs.**

The key supply-side factors we'll discuss today are those that affect the cost, quality, and availability of:

- Animal **feeds,** animal **health products/services**, and animal **genetics.**

Photo by Fintrac Inc.

WHY FEED, HEALTH, AND GENETICS?

- 3 of the most important determinants of farm profitability and system resilience.

- Feeds comprise up to 70% of production costs, and animals are chronically underfed in developing country systems.
  - Improving quality, reducing cost, and expanding supply of feeds will address these challenges.

- Livestock diseases increase mortality, reduce productivity, and limit export opportunities.
  - Effective and affordable animal health products and services can mitigate these risks.

- Genetics impact animal productivity, reproduction, and resilience by agroclimatic setting.
  - Affordable access to the genetic characteristics farmers prefer can achieve these goals.

- Steve will now discuss specific findings related to each.

ANIMAL FEEDS

Commercial Feeds

- Feed quality can vary seasonally as availability/prices of materials change, and processors alter feed mixes accordingly and/or avoid standards.
- Variability leads to lack of trust among producers, who may create their own feed mixes — a practice which reduces costs but generally also reduces performance.
- Countries without domestic supply may rely heavily on imported feedstuffs, including grains, oilcakes, vitamins, minerals, and other additives.
  - Tariffs and NTBs impact processor access to feedstuffs and raise feed prices for producers.
  - E.g., import restrictions, limited access to foreign exchange, etc.
- Weak enforcement of feed quality regulations/standards influences quality and erodes trust.

ANIMAL FEEDS

Forages

- Forage material markets are largely informal and unregulated.
  - May benefit from infrastructure (e.g., designated market points to store material and transact).
- "Food-feed crops" are grains bred to yield more digestible straw for animals.
- Specialized planted forages are high-yielding grasses and high-protein forage legumes.
  - Both require sustainable seed systems to develop and distribute appropriate cultivars.
- Private sector seed systems have shown limited interest in investing in the production and distribution of food-feed crops and specialized forage seed.
- Public sector systems may support forage seed production and delivery, but effectiveness and efficiency at scale is often constrained.

ANIMAL HEALTH

Public vs. private provision of veterinary services

- Lack of clarity and duplication of roles can undermine private vet viability.
- The enabling environment should have clear documented policy on differentiated roles for public and private animal health services, as well as on licensing requirements.
- Generally, the public sector role should be disease control (vaccinations) and surveillance.
- The private sector role should be clinical services and supporting government services in contracted roles to build system capacity.

Photo by Fintrac Inc.

ANIMAL HEALTH

Community Animal Health Workers

- Minimally trained CAHW can provide low-cost, basic services in remote areas (sometimes under vet supervision) and have shown improved animal health outcomes.
- CAHW may be resisted by vets, and in some countries may not be officially licensed or recognized.
- Clear policy and licensing requirements and supervisory guidelines are needed for effective CAHWs.
- CAHW systems should:
  - Be developed with local communities
  - Employ sound business practice
  - Conform with veterinary authorities, disease surveillance/reporting systems, and veterinary drug controls

ANIMAL HEALTH

Quality Control for Veterinary Drugs

- Regulation of the production and/or importation of veterinary drugs.
  - Developing countries often lack infrastructure, specialized personnel, and financial resources to enforce regulations to control substandard veterinary drugs in the market.
- These countries should coordinate with regional organizations to develop and employ harmonized quality control standards.
  - For example, such as those developed by the Pan African Veterinary Vaccine Center of the African Union.
- Where government lacks the resources to enforce drug quality regulation, then training and awareness raising among producers, veterinarians, dealers, and retailers are essential.

Photo by Fintrac Inc.

GENETICS

Public vs. Private Sector Roles

- Key factor for public sector institutions to directly support genetic improvement to kick-start industry improvement:
  - Requires operational capacity to deliver genetics at the necessary scale and cost to reach target producers, particularly the majority smallholders.

- As livestock systems become more mature, private systems will play a larger role in the delivery of improved genetics.
  - Private actors often rely heavily or entirely on imported genetics from global suppliers.
  - Therefore, import regulations, tariffs, and NTBs will affect domestic producer access to genetic resources.

- In the most successful ASF systems:
  - Private actors work in close cooperation with public breeding programs, sharing strategies, facilities, and germplasm and conducting joint training.

GENETICS

National Breed Strategies

- National breed strategies and policies often prioritize the conservation of native genetics, given the real or perceived threats from uncontrolled crossbreeding.
- There is long-term value to retaining these genetic resources to mitigate future risks, including climate change, emerging diseases, and changing market demands.
- It is important to balance these considerations with the demonstrated needs of producers on the types of improved genetic characteristics they prefer, such as those with higher productivity.

Photo by Fintrac Inc.

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DEVELOPING THE FEED VALUE CHAIN IN NIGER

A Market Opportunity to Unlock the Production Potential of Agriculture and Livestock

Dr. Vincent Bado

November 5, 2020

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ICRISAT INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI-ARID TROPICS

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INTRODUCTION

- About 80-90% of the population of Niger are agro-pastoralists.
- Soils are poor in nutrients, low organic carbon content.
- Because smallholder farmers have limited financial resources to invest in inputs (fertilizers), soils are cultivated for a long time without the application of fertilizers.
- This leads to the decline of soil fertility, land degradation, and the decrease of biomass production.
- The important role of livestock:
  - Quality and diversified food
  - Main source of income to invest in agriculture (inputs, technologies, energy)
  - Source of income to pay for education, health, and other services
  - Agriculture

INTRODUCTION

With the growing population: growing demand for food, feed, competition for lands





High pressure on lands: land degradation, food insecurity, and poverty


- Conflicts
- Migration
- Social crisis
- Insecurity

LIVESTOCK FEED AS A MARKET OPPORTUNITY

To Make Incomes From Both Feed and ASF

- The residues of cereals (millet and sorghum) and legumes (groundnut and cowpea) are the main sources of feed that farmers use to feed their animals.
- Use of industrial feeds is limited to some actors of semi-intensive livestock systems.
- The decrease of biomass production with the growing population leads to competition for crop residues.

- Feed scarcity in West Africa Sahel countries (such as Niger) is a real constraint for livestock.
- This leads to a growing market of livestock feed.
- Turning the feed demand into a business opportunity by developing the feed value chain can contribute to generating incomes, creating jobs, and alleviating poverty.

A FEED BUSINESS MODEL

Linking Livestock Famers and Feed Sellers in a Business Partnership

- Socio-economic surveys and focus group discussions revealed two constraints on two regions related to feed:
  - At Torodi, feed scarcity was the first constraint leading to high feed price, high rate of mortality (30%).
  - At Maradi, there was better availability of feed located 900 km away from Torodi.
- The business model:
  - We encouraged feed traders at Maradi to seize the demand for feed at Torodi as a market opportunity. They created a small association to collect and transport the feed to sell at Torodi.
  - Similarly, we assisted farmers at Torodi with creating a small association. They receive the feed from Maradi. They sell the feed to their members and pay back the traders from Maradi.
  - We assisted a farmers association with a revolving fund of US$2,000.

A FEED BUSINESS MODEL IN NIGER

Linking livestock famers and feed sellers in a business partnership

- Output: This new market is growing very quickly.
  - About 13 tones of feed for a market value of US$3,600 have been sold in less than 6 months.
  - The cost of feed is reduced by 30% at Torodi through this market.
  - Improvement of access to feed at Torodi.
  - Creation of a new feed market between Torodi and Maradi.

A FEED BUSINESS MODEL IN NIGER

Mr. Habibou (one of the traders) testified,

"I used to spend two weeks in Niamey (75 km from Torodi) searching for feed markets where I could get good returns.

But now I come to Torodi, and in one day I have sold all my feed. I never knew that Torodi presented such a huge opportunity for feed."

A FEED BUSINESS MODEL IN NIGER

Mr. Oumarou Moussa (one of the farmers):

"This feed business is an excellent initiative to our community. We can now we buy feed in our village.

This really contributes to improving the productivity of our animals."

CONCLUSION

- Feed scarcity is the main constraint for livestock in Niger.
- The growing feed market is a response to feed scarcity.
- The growing demand and marketing of feed is an opportunity for development of the feed value chain.
- Our experience confirm how actors (traders, producers) are interested with strong motivation.

- The feed value chain could greatly contribute to unlocking the production potential of both agriculture and livestock in Niger to:
  - Generate incomes to invest in farming systems, conserving land resources
  - Pay for education, health, and social needs
  - Create jobs, alleviate poverty

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Community Animal Health Worker Training for Rural Women in Nepal

Distance Learning Versus Traditional Training

Dr. Conner Mullally

November 5, 2020

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INTRODUCTION

- Restrictions on mobility and responsibilities at home can limit the ability of rural women to take advantage of economic opportunities and training.
- Mobile technology can bring training to women and make it possible to become entrepreneurs despite constraints on independence or being away from home.
- Although entrepreneurship training programs for rural women in developing countries exist, few focus on technical professions.
- We partnered with Heifer International and the Government of Nepal to evaluate the effects of training for a technical occupation, Community Animal Health Worker (CAHW), on rural women in Nepal.
- In our ongoing study, we will evaluate:
  - The effects on CAHW training on a variety of outcomes related to household welfare and women's empowerment.
  - Whether delivering training through mobile technology increases training completion.
  - Whether training with mobile technology affects the quality of trained candidates.

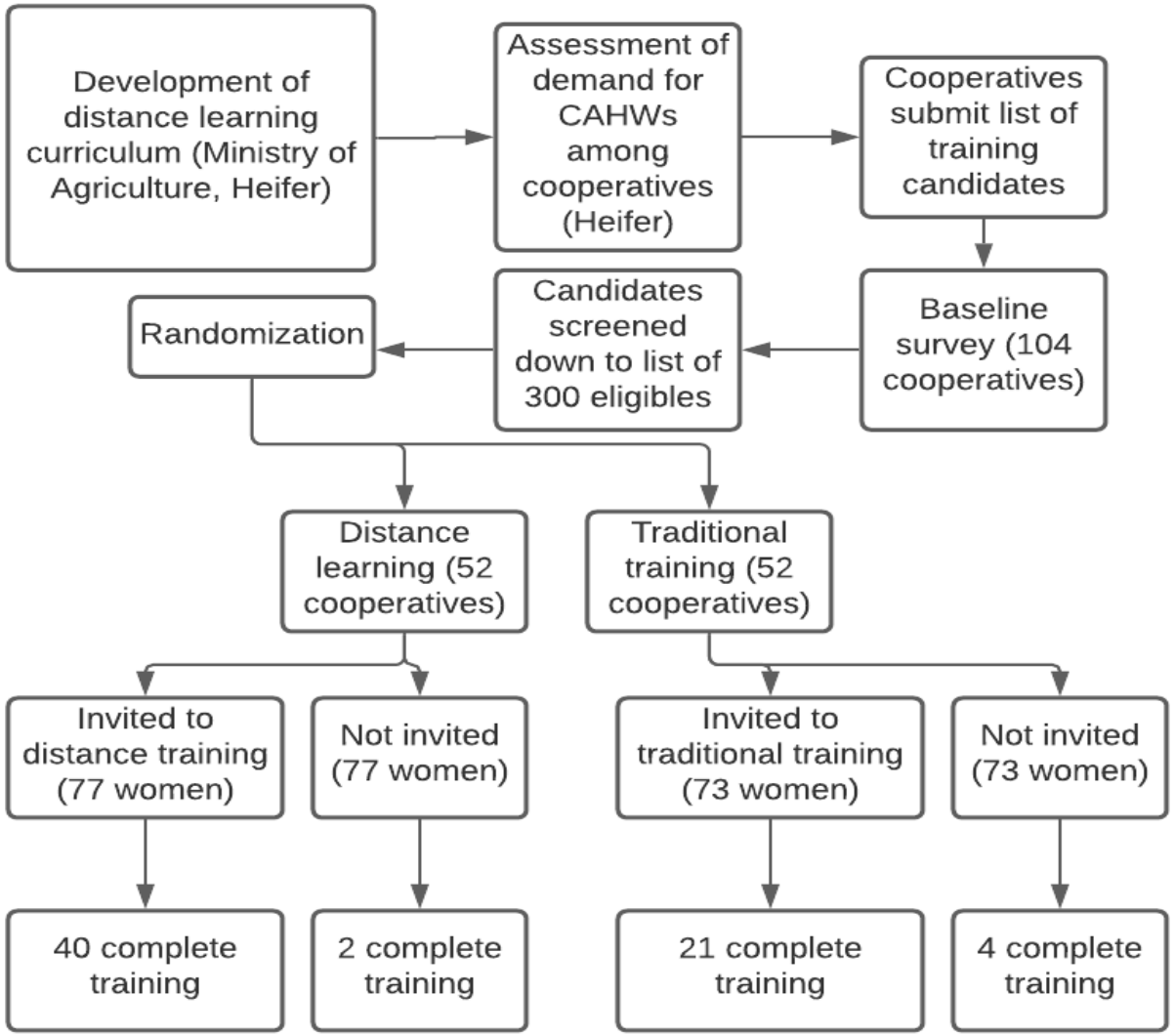
STUDY DESIGN AND GOALS

- Working with producer cooperatives through Heifer International's Nepal office, we assigned 150 candidates selected by the cooperatives to one of two CAHW training forms:
  - Traditional training (TT)
  - Distance learning (DL)

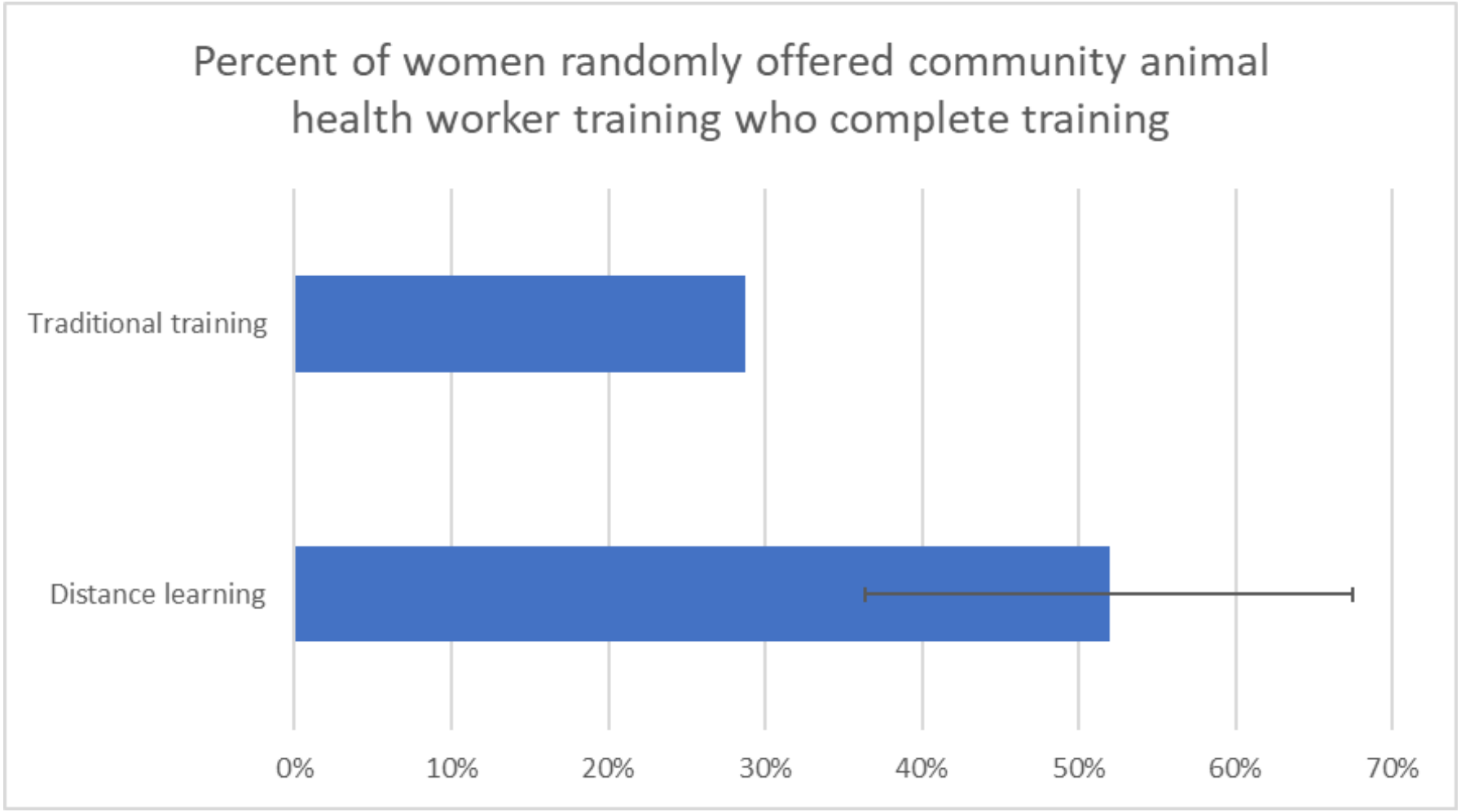
- Another group of women is a pure control group.

DISTANCE LEARNING AND TRADITIONAL TRAINING

- Both training systems use the government-approved curriculum for CAHWs.
- Traditional trainees live at a training center for 35 days, spending four weeks on coursework and a week on practical training prior to a final exam.
- The DL platform is stored on Android tablets and delivers training contents through text, pictures, animation, and video.
- The DL platform was created by Heifer and technology firm MiDAS with input from veterinarians and the Government of Nepal.
- DL trainees attend a five-day orientation at a training center, study at home for 30 days, and return for a five-day hands-on module plus final exam.


Development of distance learning curriculum (Ministry of Agriculture, Heifer)
Assessment of demand for CAHWs among cooperatives (Heifer)
Cooperatives submit list of training candidates
Baseline survey (104 cooperatives)
Candidates screened down to list of 300 eligibles
Randomization
Distance learning (52 cooperatives)
Traditional training (52 cooperatives)
Invited to distance training (77 women)
Not invited (77 women)
Invited to traditional training (73 women)
Not invited (73 women)
40 complete training
2 complete training
21 complete training
4 complete training

IMPACT ON TRAINING COMPLETION



FOCUS GROUP RESULTS

From the distance learning group:

"I wake up early in the morning, earlier than my usual time, and study for few hours before starting regular household works. I also cut-off unproductive meetings with my neighbor friends and only attend the important ones. I also put-off some household works that can be done in few months, so as to give myself more time to study."

"I have to look after my ailing parents, as my husband is in Gulf country. Leaving them for 35 days ***(required if doing traditional training)*** *is not possible for me. Also, I have a farm and I cannot afford to be far from farm for that long time. This module works for rural communities in Nepal."*

"Time management was main challenge for me. At home, I was more distracted, as I have to split time between household works, taking care of kids, and working in the farm."

FOCUS GROUP RESULTS

From traditional training:

"I also learn a lot from my peers. We are from different geographical regions. So, the grasses/fodder found in Hilly region is not found in my region (plain). So, she better explained me, and I also did the same for her. It would have been much difficult if I learn all by myself."

"I also feel the same for group discussion. It was a great experience. Even we have a healthy competition among us to know more which push us to work harder."

SUMMARY (FOR NOW)

- Distance learning makes a technical profession attainable for women who would not otherwise take it up.
- But there are elements of traditional training that distance learning cannot replace.
  - Structure
  - Camaraderie (and learning from one another)
- It is not possible or advisable to completely eliminate in-person training, as hands-on experience is required.
- Distance learning candidates require close monitoring to be successful. In our case, they had weekly phone calls with instructors from the training center.
- Technical support is needed. If something goes wrong with the training platform or tablets, candidates cannot fix it themselves or by internet. They need in-person attention.

NEXT STEPS

- Pilot of a follow-up phone survey is underway.

- Follow-up data will be used to:
  - Compare the effects of DL and TT on knowledge, management of own livestock, breadth and depth of service provision, income and investment.
  - Compare the effects of CAHW relative to no training on income, saving, women's empowerment, gender attitudes, and aspirations.

THANK YOU

Disclaimer

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Q&A

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