

LIVES poultry value chain development interventions: Approaches and scalable interventions

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PRESENTATION OUTLINE

1. Ration formulation using locally available feed resources

- **Problems/issues**
- **Context of the intervention**
- **Approach or technology**
- **Implementation process**
- **Results (outputs, outcomes, impact)**
- **Key lessons learnt and challenges**
- **Implications for scaling out**

PRESENTATION...

2. Introduction of commercial formulated ration
3. Alfalfa-based poultry feeding
4. Debeaking
5. Small scale day-old-chick supply system
6. Improved housing and bio-security measures
7. Linkages to inputs/services and markets

1. Ration formulation using locally available feed resources

Issues/Problems

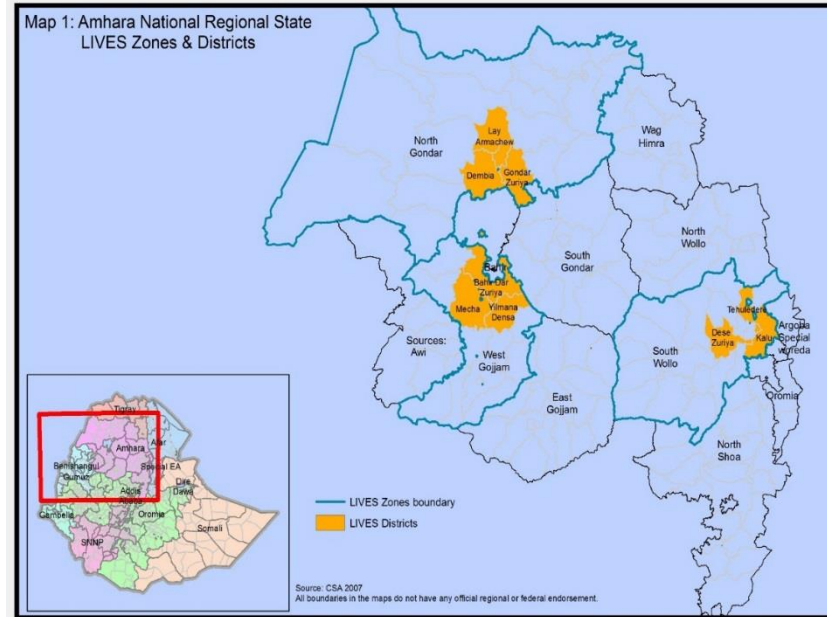
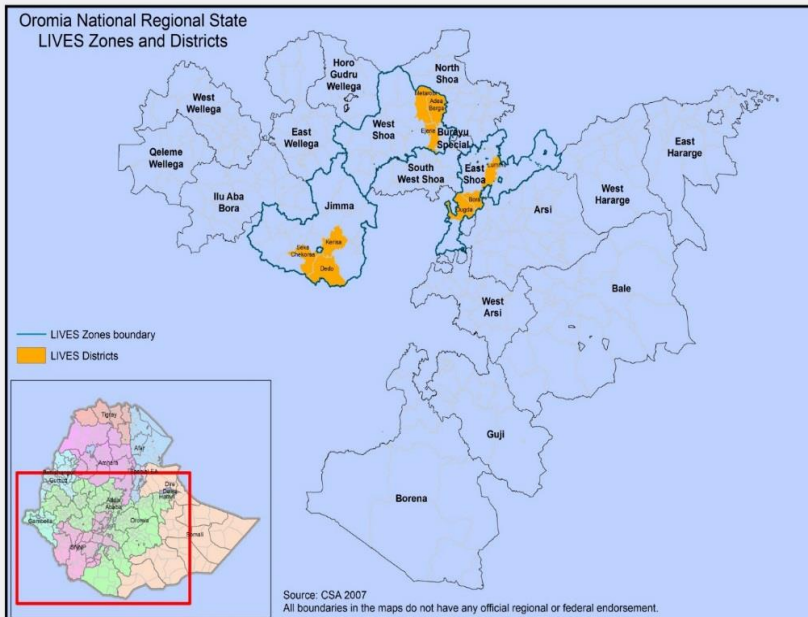
Many developing countries including Ethiopia (GTP II plan of Ethiopian, 2015-2020)

- ✓ Increase in poultry meat & egg production (e.g., Ethiopia: **5%** to **30%** by 2030; chicken meat to **164,000 tonnes &** eggs to **3.9 billion** year 2020)
- ✓ Increase in human population, increased income and urbanization
- ✓ Low emitters of green- house gases (Climate Resilient Green Economy)
- ✓ Reducing poverty & malnutrition: rural & urban poor (women & youth)
- ✓ Low current poultry productivity, scavenging & unbalanced local food grains

1. Ration formulation using locally available feed resources

- ✓ Different scenarios (formulated commercial feeds = Lack of access, high cost feed, availability, transport cost, quality, **70%** of total cost of poultry)
- ✓ Ration formulation using locally available feed resources
- ✓ LIVES worked with partners and value chain actors across (VC technological and organizations interventions to CD, KM, promotion, and action research.

Context of intervention



Zone/district	Bio-physical condition	Agricultural condition	Socio-economic
West Gojam / Bahir Dar Zuria district	76% between 1500-2500 masl. Area= 13,280 km ² ; swampy land = 33.20%;	Mixed crop livestock Maize, Tef; Maize, Chicken = 2,857716	HP = 2.63 million
North Gondar	North to south, Predominantly characterized as ‘Moist Weina Dega’; Area= 45,934.090 km ²	Crop-livestock mixed farming; LS = 24%; Sorghum, Maize, Tef; Chicken = 5,588, 277	HP= 2,929,628
East Shoa	rift valley lakes, semi-arid; 8370. 90 Km ²	Mixed crop livestock, vegetable, Chicken= 1.2 mil	HP= 1.6 million Market access

The interventions

Activity 1. Replacement of soybean meal with fish meal (Dugda, east Shoa zone) (MSc thesis KEDIR ABDURAHMAN)

Activity 2. Ration formulation & balanced feed (businesses district towns) (Bahir Dar Zuria)

Implementation process or approach

- Feed problems identified & solutions proposed stakeholder platforms
- Skill trainings, computerized feed formulation
- study tours, linkages created, coached & mentored
- Action research on ration formulation
- (participating farmers & feed formulators)

Activity 1

- Dual purpose growing chicken (Koekoek breed) (Dugda) (120 chickens)
- Coarse feed ingredients ground & mixed using feed chopper



Table 1. Feed ingredients (%)

Ingredients	R1 (ALEMA commercial feed)	R2 (Home formulated)	R3 (Home formulated)	R4 (Home formulated)
Maize	51.6	52	52	52
Soybean meal	15	10	5	0
Wheat bran	16	26	26	26
Fish meal	5	10	15	20
Lime stone	1	1	1	1
Nouge cake	10	-	-	-
Methionine	0.1	-	-	-
Premix	1	-	-	-
Salt	0.3	1	1	1
Total (%)	100	100	100	100
Energy content	3225.89	3226.8	3193.5	3160.1
Protein content	19.87	19.80	21.43	22.97

Activity 2

- Skill training to farmers (West Gojam and North Gondar)
- Practical sessions
- Computerized SW

Feed ingredients

Ingredients	percentage
Maize	40-50
Noug cake	15 (maximum)
Soya bean	12 (Maximum)
Soya bean cake	15 (maximum) (as a substitute of soya bean when available)
Wheat bran	5-10
Wheat melding (Furshkilo)	15
Bone meal	2-4
Fish meal	4.2(maximum)
Limestone	1-2
Salt	1.5
General premix	2

Results: **Outputs, outcomes, impact**

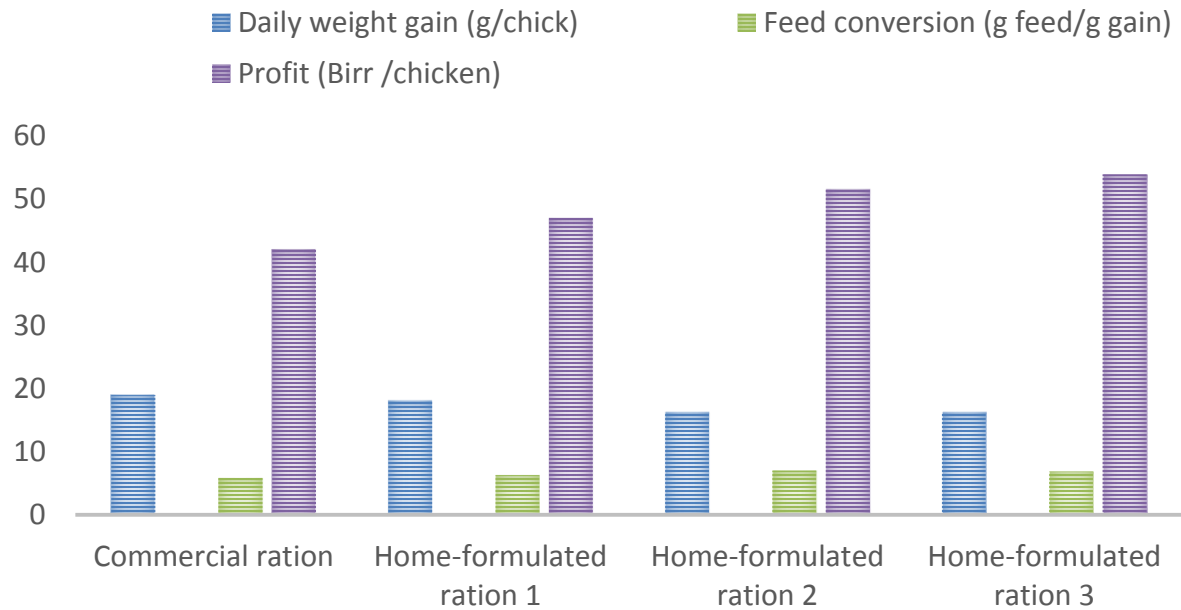


Fig. Performances of chicks supplemented with commercial and HF rations and profitability of the rations.

- **Five extension staff (4 M & 1 F)**
- **10 poultry producers (2 F & 8 M) (peri-urban and rural areas)**
- **Visited, application, future direction**



Commodity	Locally formulated feed supply
<p>Results/ Evidences</p>	<ul style="list-style-type: none"> ○ Most trainees started formulating feed (own use) ○ 1 BahirDar Zuria and 2 N. Gondar model PF suppliers ○ Bahir Dar provides FM to GOs & NGOs, balanced ration ○ Avail at reasonable cost (600 ETB vs 1100 ETB), 36.4 % ○ Initiated farmers and urban dwellers ○ Job opportunity (hired, feed retailing activities)
<p>Key lessons learnt and challenges</p>	<ul style="list-style-type: none"> • Use of fish meal and fish meal processing • Regulatory mechanism • Credit
<p>Implications for scaling out</p>	<ul style="list-style-type: none"> ○ local raw materials available ○ reduces cost and improves production ○ no any negative side effect on the environment ○ Similar training & coaching for others



- **New fish meal processing plant at Alem Tena (Bote)**



Intervention 2: Introduction of commercial formulated ration

Background/problem definition

- Lack of awareness among semi-commercial poultry keepers who would afford to use commercial feeds
- Use of standard rations for DOCs, layers and broilers in semi-commercial small-medium scale poultry producers.

Context of intervention: Oromia and Tigray

Description of the intervention

1. The interventions: Introducing commercial rations (classes): Targets semi-commercial small to medium scale peri-urban/urban farms

2. The approach:

- **Awareness creation** (tours to modern farms); training
- **linked** to commercial feed shops in district towns or existing feed suppliers.
- Action research (Oromia and Tigray)
- 40 women (3 PAs in Jimma), 5 Bovan brown pullets, 100 gm/head/day, 30 days



Table . Egg production performance of chickens supplemented or not-supplemented with commercial layer ration in intervention PAs in Oromia

Location (PA)	Supplementary feeding	Number of hens	Egg production in one month (% of hens laying)		
			30 eggs	20-25 eggs	< 20 eggs
Kitimble	Supplemented	60	70.0%	15.0%	15.0%
	Not-supplemented	43	0.0%	23.3%	76.7%
Gello	Supplemented	60	50.0%	36.7%	13.3%
	Not-supplemented	57	0.0%	10.5%	89.5%
Bulbul	Supplemented	55	23.6%	49.1%	27.3%
	Not-supplemented	46	0.0%	8.7%	91.3%
Overall	Supplemented	175	48.6%	33.1%	18.5%
	Not-supplemented	146	0.0%	13.7%	85.8%

Mortality

Supplemented ones (death occurred after supplemental feed run our

Non-supplemented

Death before laying

Predators

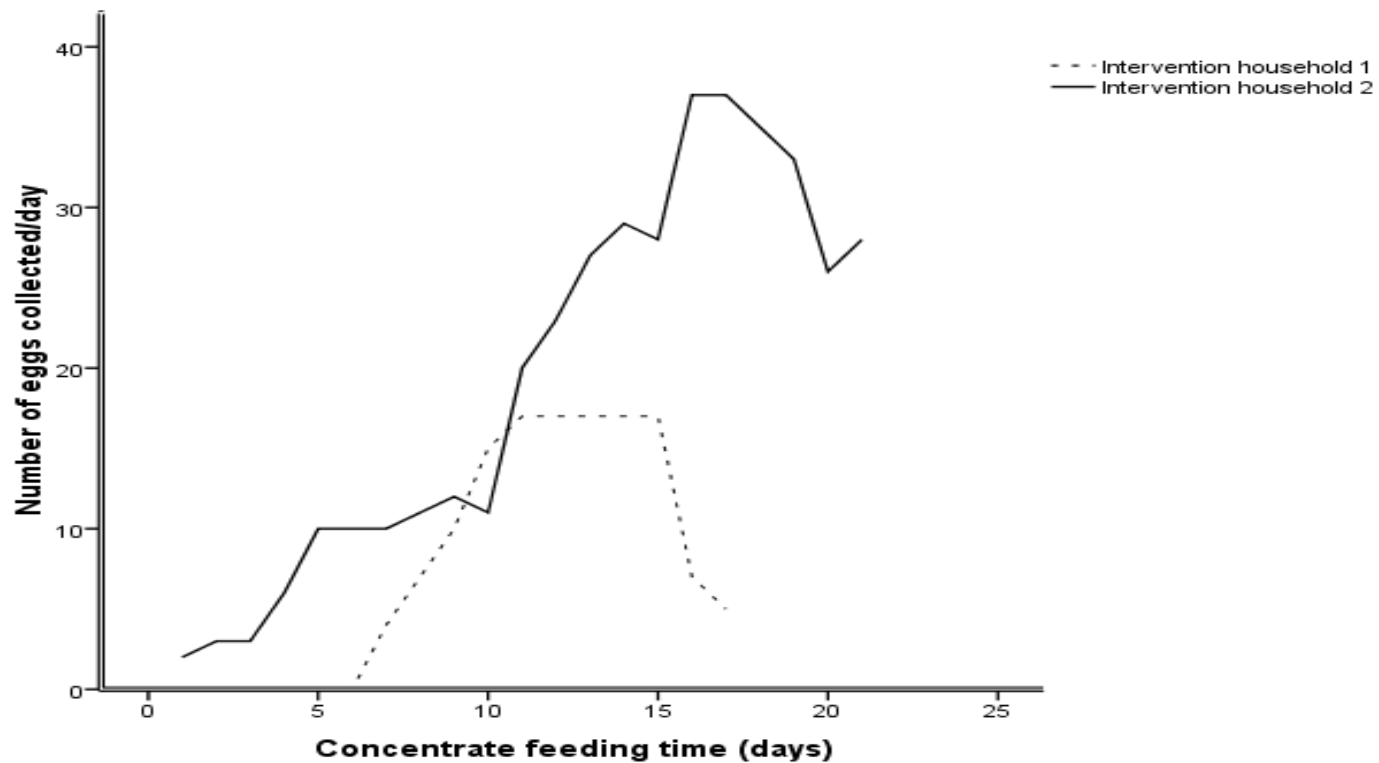


Fig. 2: Egg production trends in smallholder poultry farms Central Tigray (50)

Key lessons learnt and challenges


- Role they play
- Cost

Implications for scaling out

Preferably around urban/peri-urban
 Increase in agents/dealers
 Price

Intervention 3: Alfalfa-based poultry feeding

Background/problem definition

- Free ranging chicken  indoor rearing (cage/litter)
- Dependence on concentrate diets and confinement of birds
- Eggs produced lack deep yellow yolk color.
- Ethiopian consumers prefer deep yellow yolk color to eggs (light yellow yolk)
- Introduced alfalfa production in the backyard to support poultry farming

West Gojam and north Gondar

Description of the intervention

- Backyards of selected smallholder chicken producers
- Priority (layers), Cannibalism (pullets and broilers)
- Green leafy alfalfa (different places in chicken house)

Implementation process or approach

- Problem identification (stakeholder platforms)
- Skill trainings, selection of farmers
- Introduction, technical support

Results/ Evidences

- Significant changes (Reducing cannibalism, mortality and improving egg production and coloration)
- Prior to the intervention (egg consumers were not willing to buy eggs from improved chicken)
- Big price difference
- Change of attitude: Bahir Dar and Gondar

Key lessons learnt and challenges

- Importance of alfalfa and simple technology
- High price, quality of seed market is not known,



Implications for scaling out

- **Everywhere regardless of production system and geographical location**
- **Availability of a plot of land**
- **No negative environmental effect (soil fertility and reduce soil erosion)**
- **Certification of the quality of alfalfa seed**
- **Adequate amount of alfalfa and at affordable price**



4. Intervention title: Debeaking service

Background/Problem definition

- Indoors poultry rearing (Cannibalism)
- Debeaking (trimming chick's beak)
- Manual and electrically operated
- Service provision rare
- Most farmers (Not aware about service)



- LIVES **identified** few private debeaking service providers (Bahir Dar town) and **linked** poultry farmers (**North Gondar & West Gojjam**)

Description of the intervention

- Dual purposes (creating job opportunities for individuals or groups; improving production and productivity of poultry farm)
- Individual/group businesses
- LIVES created linkage

Implementation process or approach

- Problem identification (stakeholder platforms)
- Identification, linkage
- Technical support

Results/ Evidences

- Smallholder poultry farmers reflected (affordable, significantly minimizes chicken cannibalism)
- Reduces wastage of feed (minimizing selective feeding)
- Minimizes incidence of egg breakage
- Kassahun debeaked 20,000 chickens last year/1.50 Birr/chicken (>500 chicken), and 2.00 Birr/chicken (<500)
- Andargie, 4000 birds past five month's period (1.50 Birr/bird)

Key lessons learnt and challenges

- Improvement in poultry production, employment
- Service can be given to all smallholder poultry producers regardless (geographical location, and production system)
- High cost of machine (6000 ETB)
- Technology may not be appropriate for scavenging chicken

Implications for scaling out

- Technology feasible (individual or group businesses are established / strengthened)
- Arranging credit service (banks/micro-finance I)

5. Intervention title: Small scale day-old-chick supply

system Background/Problem definition

- Supply of DOC (not sufficient) and limiting
- Small scale hatchery businesses by individual or groups (women groups)
- Improve the supply of DOCs locally and income landless poor women and youth groups
- Mini-hatcheries and Intervention package

Context of the intervention: Tigray

Description of the intervention

The approach

- Trainings, organized DOC growers with Axum ARI and RLF
- Introduced new mini-hatcheries (42 eggs capacity)
- LIVES worked with **8 DOC growers** in Tigray
- Local small scale hatcheries, Mini-incubators (42 eggs capacity)
- Coached and mentored
- Linkage support (fertile eggs, incubators, improved rations and credit services)



Results/ Evidences

- Mini-incubator VS old 800-egg capacity incubator (8-women group Rahwa Poultry Association)
- Infrequently used (large power) & frequent power outages
- Hatchability increased from 48% (maximum of 55%) to 83%
- Market > 140,000 chicks (2014/2015 & 2015/2016)
- Benefited 6326 poultry farmers (2874 males and 3452 females)

Key lessons learnt and challenges

Rural areas (electric power) replace hens' role in hatching eggs and increasing number of hatched day old chicks.



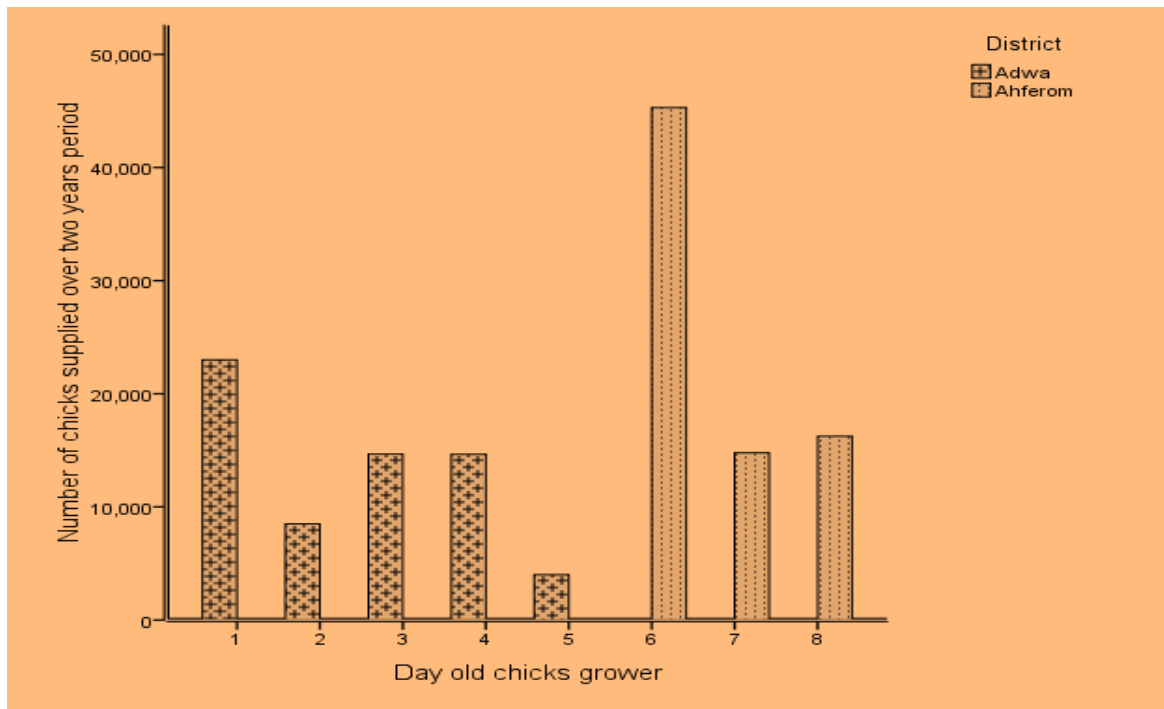


Fig. Total number of DOC supplied by growers

Implications for scaling out Availability of electric power

. Intervention: Improved housing and bio-security measures

Background/problem definition

- Absence of strict bio-security measures, hygienic housing and feeding/watering facilities
- Introduction of semi-scavenging breeds
- Entail introduction of affordable and hygienic housing, feeding and watering facilities with biosecurity measures and introduced by LIVES

Context of the interventions: All regions

Description of the intervention

Interventions approaches: Awareness creation, training, demonstration of biosafety equipment, and study tour to exemplary farms, creation of linkages for different inputs, coaching and mentoring of farmers, extension staff and other value chain actors.

Improved and hygienic housing package: LIVES introduced and demonstrated improved poultry housing package (urban and peri-urban) The watering/feeding equipment (rural)



Bio-security measures:

Introduction of foot bath, regulations on bio-security measures and general house cleanliness



Responses of farmers: Reduce young mortality and morbidity, increase their flock size and ease management of their flocks.

Interventions well adopted by poultry keepers. Two PAs in Bora and one PA Lume districts alone, 306 male and 68 female poultry keepers bought improved waterers, feeders and antibiotics



Abebe Girazmach and Birtukan Dula of Abo Gabriel PA, Dugda district, east Shoa (bought)



Zemera Sheh Abedela (Tel: 092481815886, Kersa district, Gabo PA)

17. Intervention title: Linkages to inputs/services and markets

Background/Problem definition

- Access to inputs & profitable markets & proper communications (VC actors)
- Gap in poultry business skills (smallholder poultry keepers)
- Not been able to benefit fully from their businesses
- LIVES has thus adopted 'linkages' as its main intervention strategy

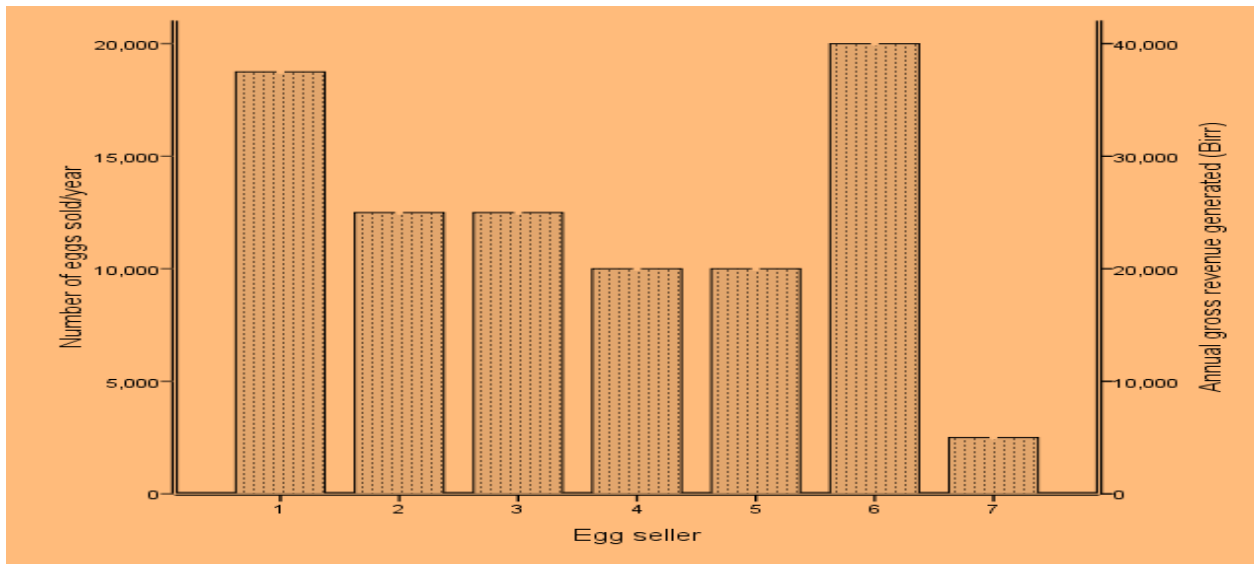
Context of the intervention: Tigray and Oromia

Description of the intervention: Linking producers to input suppliers; services, to profitable markets; study tours to markets and improved poultry farms

Implementation process or approach: Same as others

Results/ Evidences

- 7 women in egg handling/business skills/marketing & linked them with cafes, hotels, and consumers
- 25 weeks of egg buying and selling (63000 to 86000 eggs)
- 1.3 to 1.7 million (2 Birr/egg)



Number of eggs sold and revenue generated by women egg sellers per year



Women trained by LIVES on egg marketing business in Laelay Maichew district, Tigray

A linkage case story from Oromia

- Dadi Leta & his spouse Basaha (LIVES, Meki town in Dugda)
- Started poultry keeping 2015/16 (LFRDOs and LIVES interventions)
- Training, linkage, equal participation
- Linked (commercial feed shops in Meki, DOC Debrezeit, vaccine (NVI); Coached and mentored
- They started with 307 layers (12 months period)
- Revenue = 228, 900; Total variable cost= 177, 480
- Gross margin 51, 420 ETB



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