

Punjab Economic Opportunities Programme

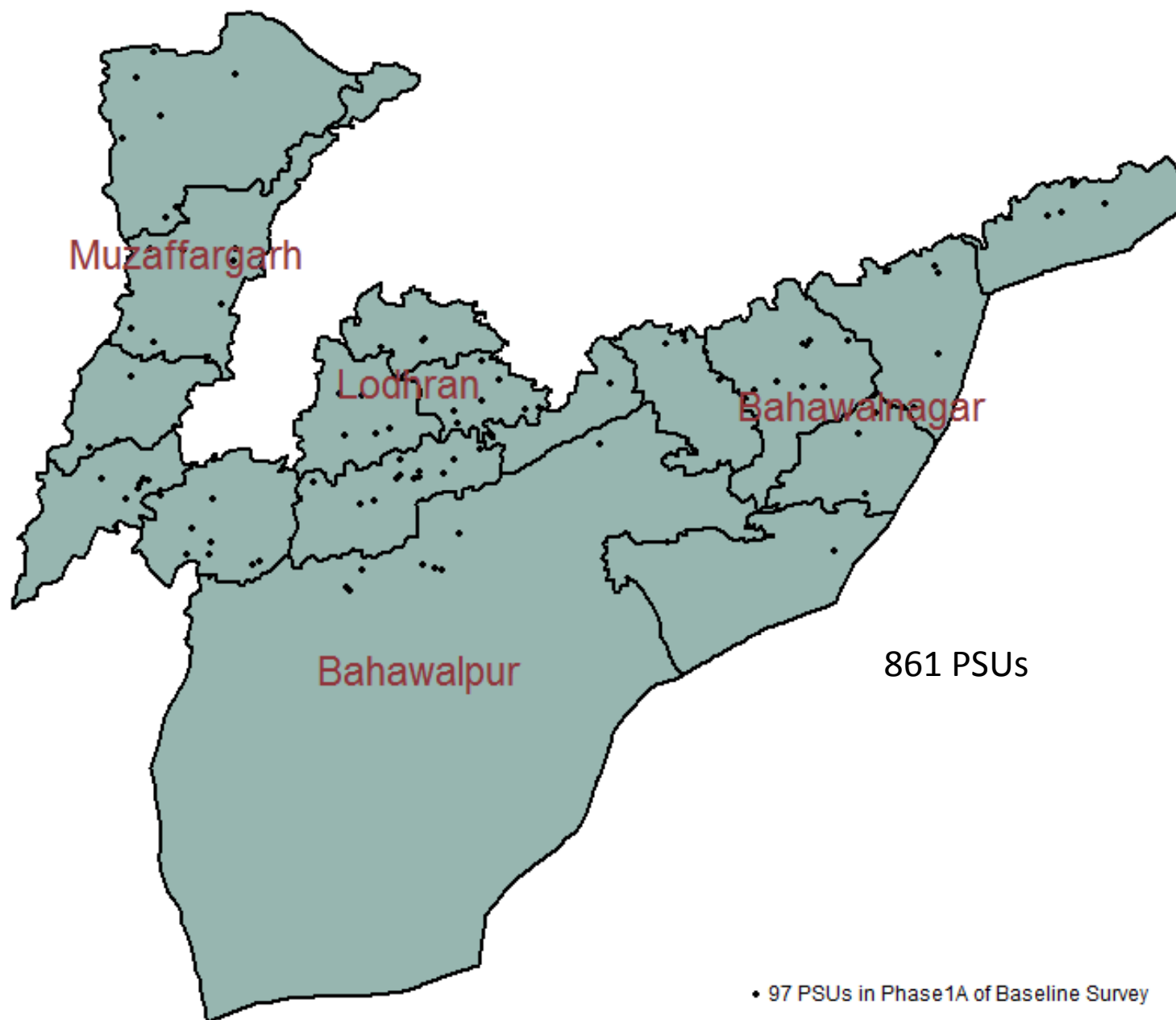
Preliminary Findings for Livestock and Dairy Interventions

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I. Background to PEOP: Livestock and Dairy Interventions

- **Goal** is to improve the lives of households through:
 - Better access to marketable **skills**
 - Access to **dairy yield enhancing practices**, better animal health care, nutrition and breed improvement to 100,000 dairy farmer
 - Better functioning livestock markets and **linkages** accessible to 50,000 livestock farmers
- **Achieving** this means understanding issues on *both* **demand & supply** sides
 - Household, Village and Supply Side Surveys
- Interventions (evaluated through RCTs):
 - Constraints on **knowledge and practices** - Information Campaigns (Farmer Days, mobile telecoms)
 - **Constraints** on raising productivity yields – Mobile Vets, etc
 - **Asset transfer programs**
 - Shortcomings in supply side factors **linking farmers to markets**

Livestock Ownership

	Full Sample	Rural Only	Urban Only
Non-owner HHs	48.23%	36.22%	79.57%
HHs owning at least one animal	51.78%	63.78%	20.43%
Mean of HHs with animal, conditional on ≥ 1	5.72	5.63	6.47
Mean of Cattle + Buffaloes, conditional on ≥ 1	3.73	3.70	3.96

- **Asset transfer** programs targeted towards non-owners: benefit 48% of households
- **Livestock rearing practices** programs: benefit 52% of households
- **Market linkage** programs: directly benefit 52% of households
- Highly selected group of livestock households in urban areas

Productivity

Milk yield distributions by animal type

Animal	Mean	25th Percentile	Median	75th Percentile
Cow	2.29	1.5	2	3
Buffalo	2.98	2	3	4

- The top 25% of farmers have yields **more than double** the bottom 25% of farmers
- This productivity variation **remains** when we take account of:
 - the number and types of animals owned, other household characteristics
 - the PSU in which the farmer lives

Implications for Livestock Policy

- Big differences in self-reported skills and practices among farmers in the 1st and 4th quartile of the productivity distribution
- **POLICY LESSON 1:** If this productivity dispersion is because of **basic skills and practices**, then 40% improvements in yields for some farmers are achievable
- **Farmer days:** low cost, potentially high return intervention
- **NEXT QUESTION:** do farmers express a desire for more skills/training?

Current Skills

Table Skills most suited for - Males

What tasks are you skills most suited for?	District Code				Total
	BHN	BHW	LDH	MZG	
Farm Maintenance	44.93	14.58	3.45	3.92	17.67
Farming	49.76	47.92	43.10	60.29	50.49
Animal Breeding	1.45	34.38	53.45	15.69	25.14
Animal Health Care	2.90	1.82	0.00	5.88	2.74
Poultry	0.97	1.04	0.00	3.43	1.43
Veterinary	0.00	0.26	0.00	10.78	2.52
N	207	384	116	204	911

Table Skills most suited for - Females

What tasks are you skills most suited for?	District Code				Total
	BHN	BHW	LDH	MZG	
Farm Maintenance	50.00	14.81	5.26	6.25	9.65
Farming	50.00	44.44	5.26	12.50	20.18
Animal Breeding	0.00	25.93	89.47	75.00	63.16
Animal Health Care	0.00	14.81	0.00	0.00	3.51
Poultry	0.00	0.00	0.00	3.13	1.75
Veterinary	0.00	0.00	0.00	3.13	1.75
N	4	27	19	64	114

Desired Skills

Table Skills like to acquire - Males

What skill do you think Name would like to acquire?	District Code				
	BHN	BHW	LDH	MZG	Total
Farm Maintenance	50.53	14.81	4.31	2.87	18.25
Farming	43.16	44.97	43.1	60.29	47.93
Animal Breeding	2.11	35.98	52.59	16.27	26.32
Animal Health Care	3.16	2.65	0	6.22	3.25
Fish Farms	0	0.26	0	0	0.11
Poultry	1.05	1.06	0	3.35	1.46
Veterinary	0	0.26	0	11	3
N	190	378	116	209	893

Table Skills like to acquire - Females

What skill do you think Name would like to acquire?	District Code				
	BHN	BHW	LDH	MZG	Total
Farm Maintenance	33.33	8.33	0	6.35	6.36
Farming	66.67	50	0	12.7	20
Animal Breeding	0	29.17	95	74.6	66.36
Animal Health Care	0	12.5	0	0	2.73
Fish Farms	0	0	5	0	0.91
Poultry	0	0	0	3.17	1.82
Veterinary	0	0	0	3.17	1.82
N	3	24	20	63	110

POLICY LESSON 2: DEMAND TO ACQUIRE MORE SKILLS AND TRAINING IN LIVESTOCK

Demand predominantly for more of the same skills, not diversification

Input Usage: Animal Health

Figure 4.2. Livestock Health Status by Animal Type

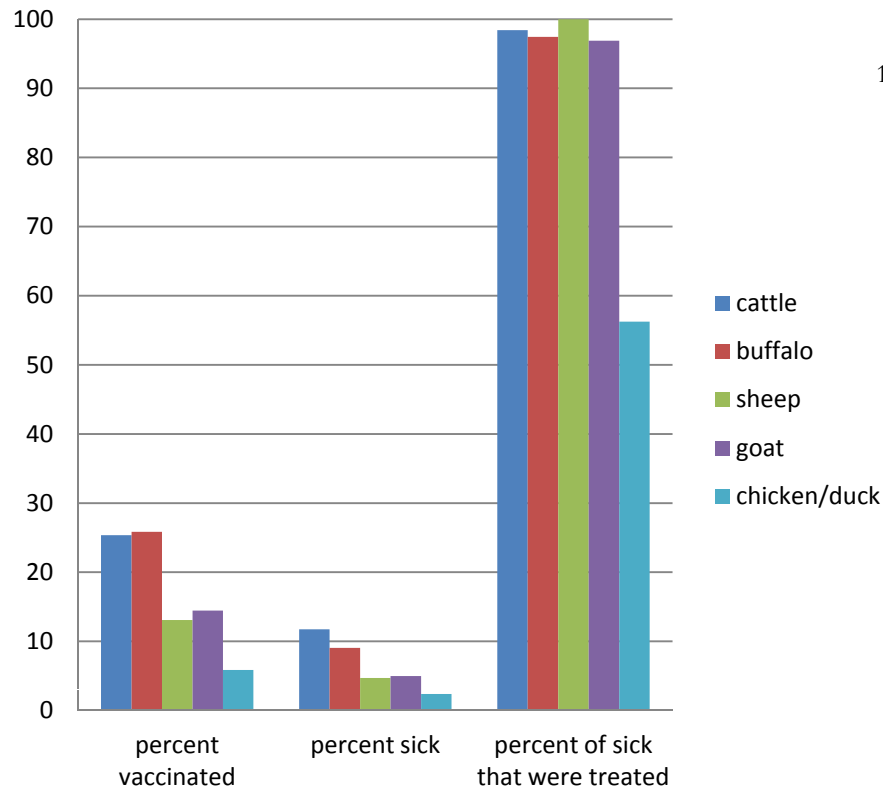
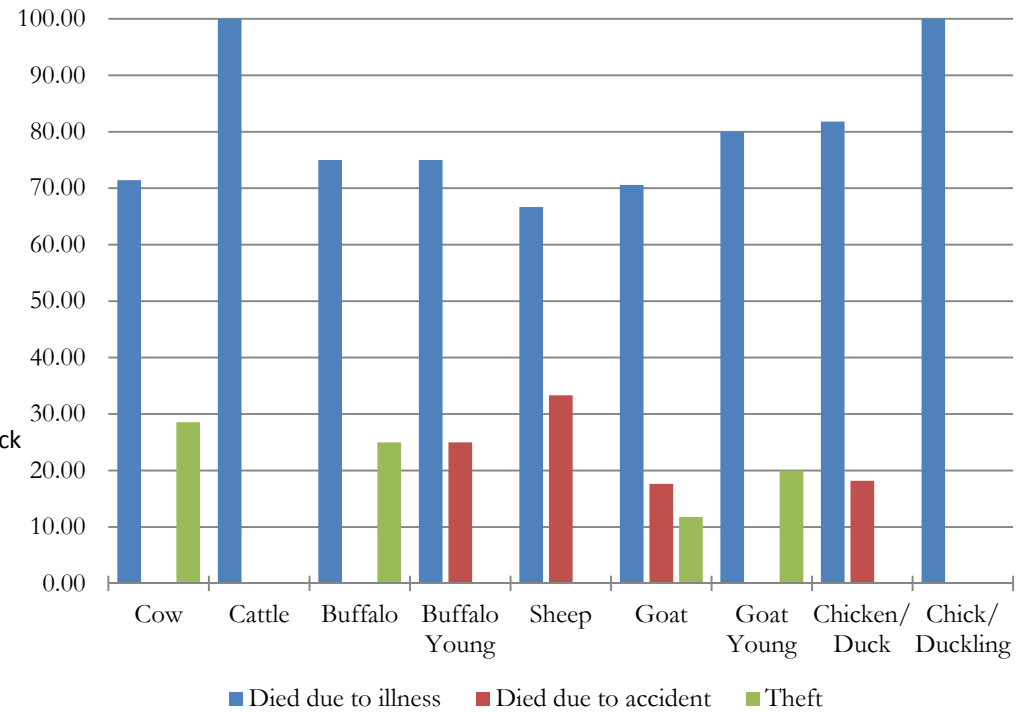


Figure 4.3. Percentage animals by animal type and cause of loss



Input Usage: Animal Health

Table: Percentage of government treatment facilities availed by households by district

District	% of Livestock owning HHs that availed	Total Govt Vet facilities (Source: LDDD)	Reason for not availing as %age of Livestock owning HHs that did not avail		
			Too far	Poor Response	Too Expensive
Bahawalnagar	40.29	184	83.74	13.82	2.44
Bahawalpur	53.95	173	88.57	8.57	2.86
Lodhran	18.75	37	73.08	22.31	4.62
Muzaffargarh	38.61	132	78.49	18.82	2.69
N		526	468	93	18

POLICY LESSON 3: need more **service availability**: mobile veterinary services

BRING SERVICES TO THE FARMERS: FARMERS CANNOT TRAVEL TO THE SERVICES

Perceptions of Animal Health Service Providers

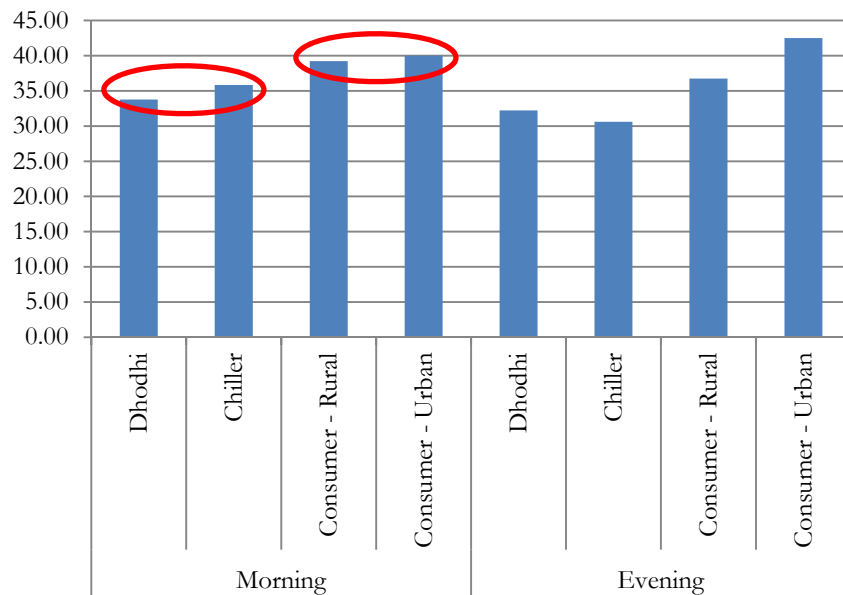
Table: Quality of animal health services

	Perception of quality (in percentages)		Satisfaction with outcome of dealing with animal health service provider	
	Private	Govt	Private	Govt
Very Unsatisfactory	3.15	4.16	3.43	5.17
Unsatisfactory	10.67	18.2	11.52	18.55
Neutral	33.93	38.03	32.81	36.37
Satisfactory	49.61	37.08	49.44	37.38
Very Satisfactory	2.64	2.53	2.81	2.53

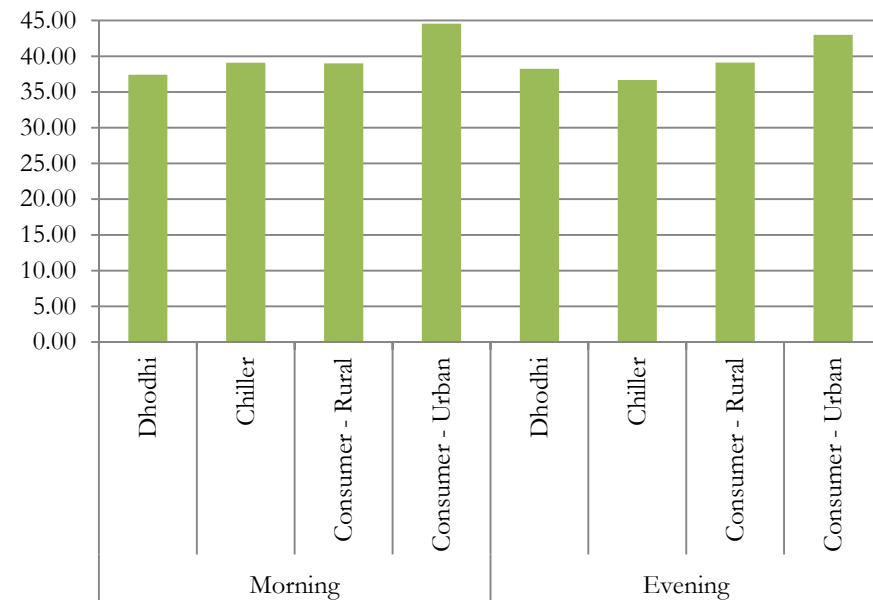
V. Outputs: Milk, Sale and Purchase

Figure 5.2. Average milk selling price by animal type and time of day

Average cow milk price by type of individual and time



Average buffalo milk price by type of individual and time

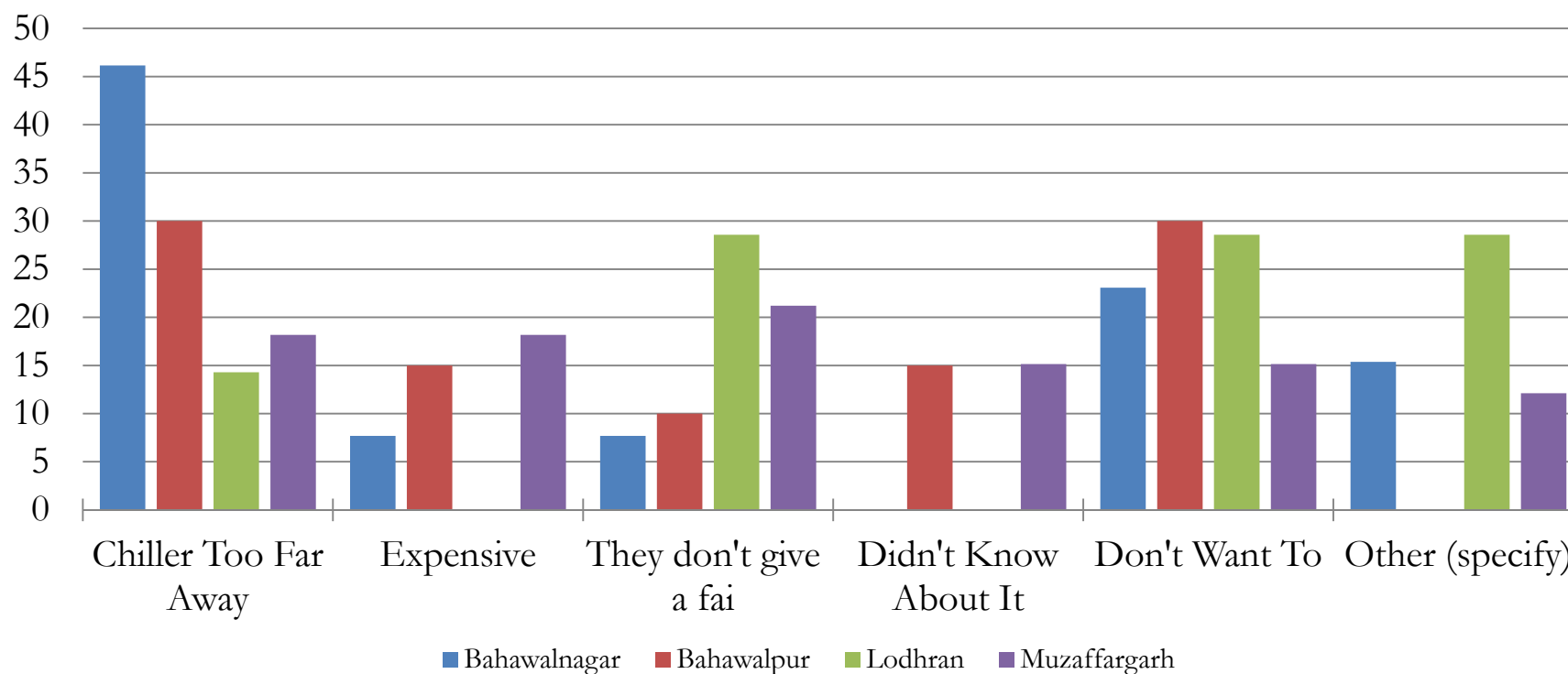


POLICY LESSON 5: increasing market linkages to dodhis and chillers will raise farmer incomes substantially

Recall majority of low productivity farmers are consuming all milk

VI. Intermediate Markets Chillers

Figure 6.4. Reasons why not use private chillers (by district)



POLICY LESSON 6: LINK FARMERS TO THE SERVICES: FARMERS CANNOT TRAVEL TO THE SERVICES

Finance

Fig. 8.1. Purpose of Loan

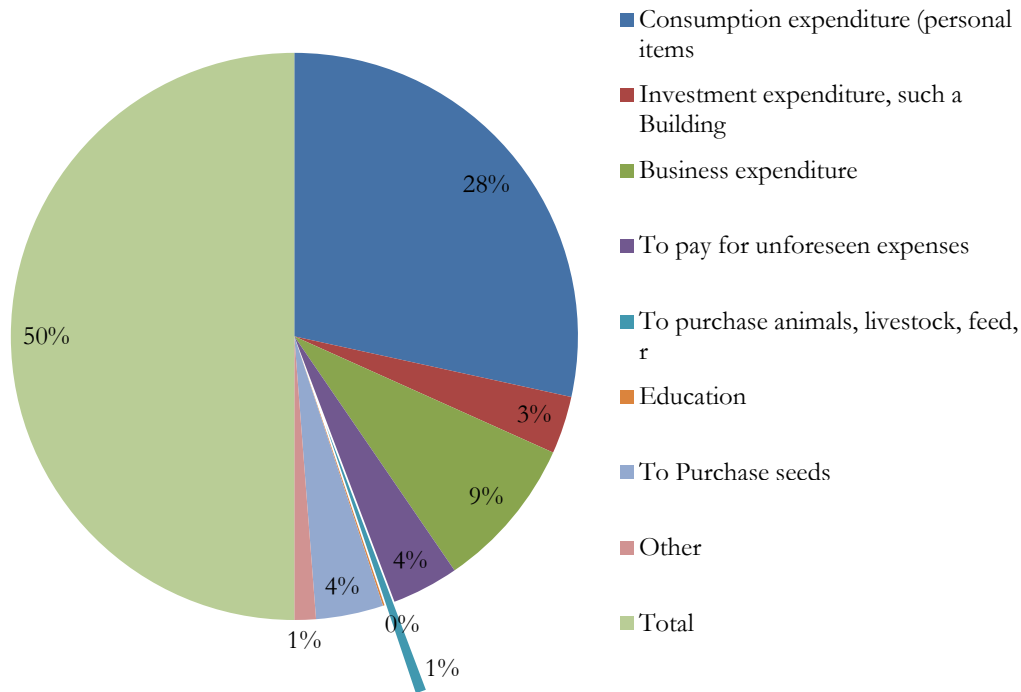
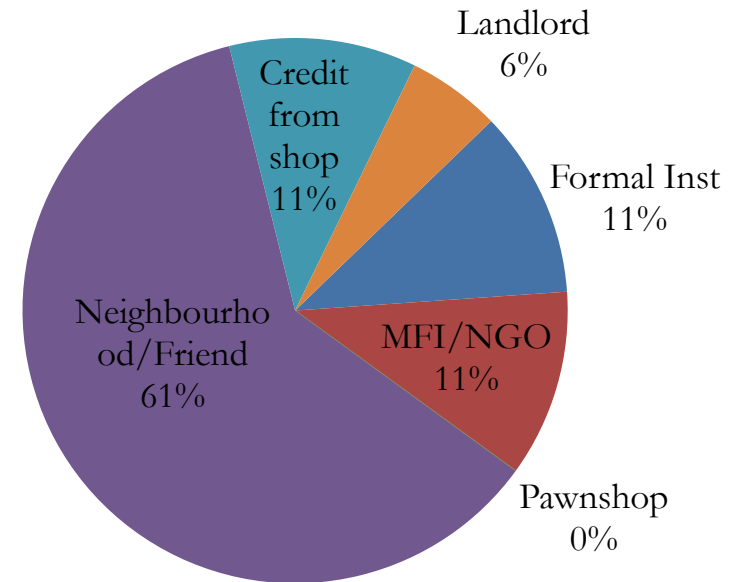


Fig 8.2. LS Loan Source



POLICY LESSON 7: Microfinance is not the most severe constraint to farmers Practices, linkages, asset transfers will have larger impacts

Baseline Surveys-Phase I

- Results from Phase I presented strong evidence for the following potential interventions
 - The need for **increased livestock asset ownership** (1/3rd of rural households did not own livestock) – Asset Transfer Programs
 - **Access to better livestock and dairy practices** - Farmer Days / Mobile Telecom Services / Mobile Vet Services / Lady Livestock Workers
 - **Improved linkages and increased access to livestock markets**
 - Supply side interventions
 - Collective bargaining power

Interventions For Which Current Evidence is **Less Supportive**

- Less compelling evidence that lack of **credit** is a major impediment for achievement PEOP goals in livestock
 - Farmers do **NOT** say they don't report services because they are too expensive
 - Farmers currently **ARE** able to take out credit loans, and they do **NOT** use them for livestock related purposes
- Less evidence of need to obtain access to cattle markets (well integrated prices of animal sales and purchases)
 - Well integrated markets for buying and selling livestock
 - **NO** strong evidence on need to establish central cattle markets
 - Focus should be on more **localized** service provision and delivery

Livestock Supply Side Surveys

Surveys target the supply side of market:

1. Veterinary Institutes
2. Milk Collection Centres and Chillers
3. Cattle Markets
4. Microfinance Institutions
5. Private Vets
6. Informal Vets (quacks)
7. Dodhis and milk traders
8. Informal Moneylenders

Livestock Supply Side Surveys

These surveys will collect information on:

- Services offered, pricing strategy, groups served and client demographics, business networks, constraints to expansion

WHERE ARE THE GAPS IN THE SUPPLY SIDE?

ARE SOME GROUPS BEING EXCLUDED FROM THESE SUPPLY SIDE SERVICES

RCT EVALUATION OF SUPPLY SIDE CHANGES

can we work with the private sector and NGOs to evaluate impact of interventions like opening chillers?

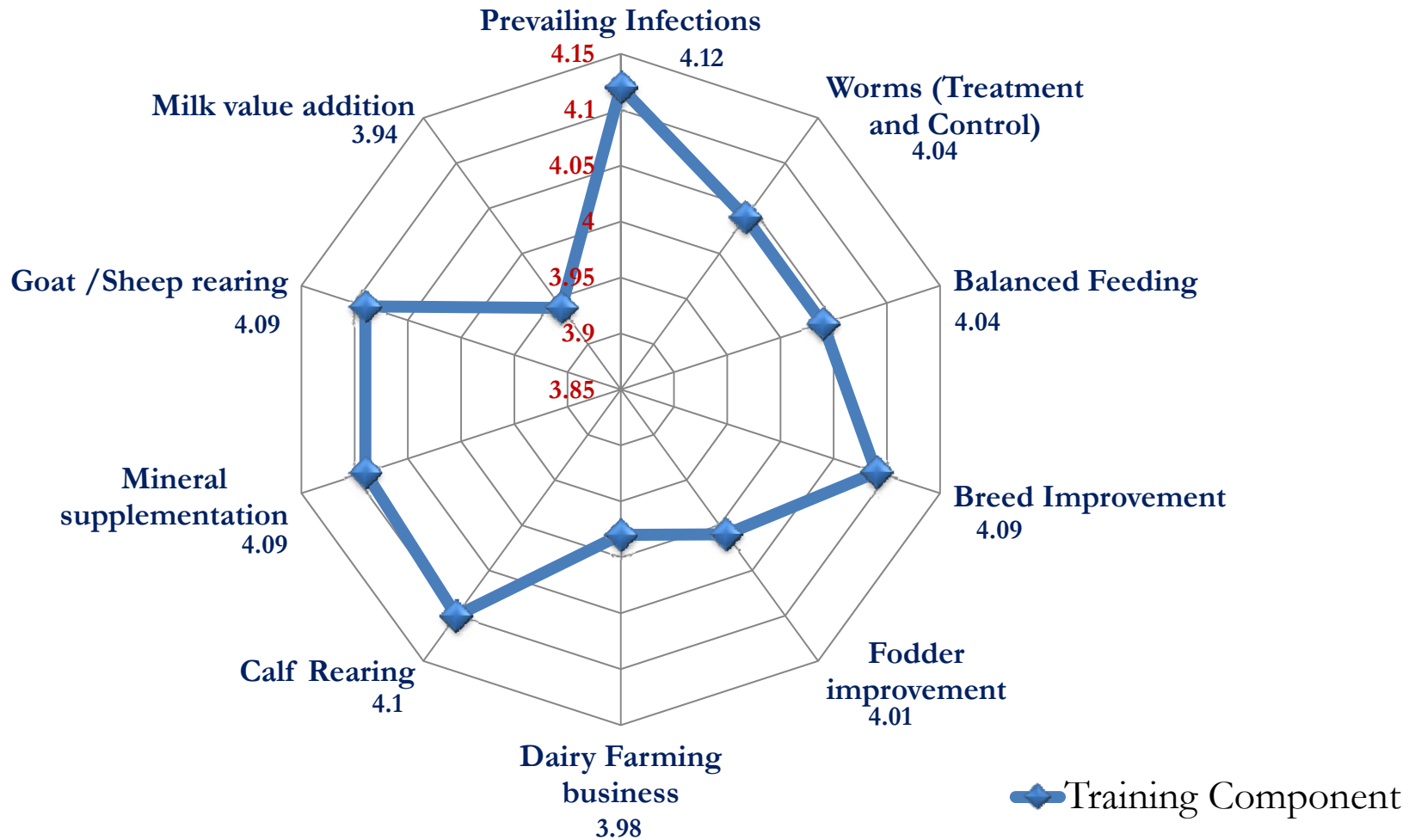
Intervention -Farmers' Day

Intervention Design

- Two day activity comprising registration, information and training sessions on the first day and door to door vaccination on the second day
- Feedback regarding the quality of information session was obtained from attendees on the first day. On the second day, follow-up forms were filled out by the treatment households
- RCT design was used: assignment of villages to treatment and control groups

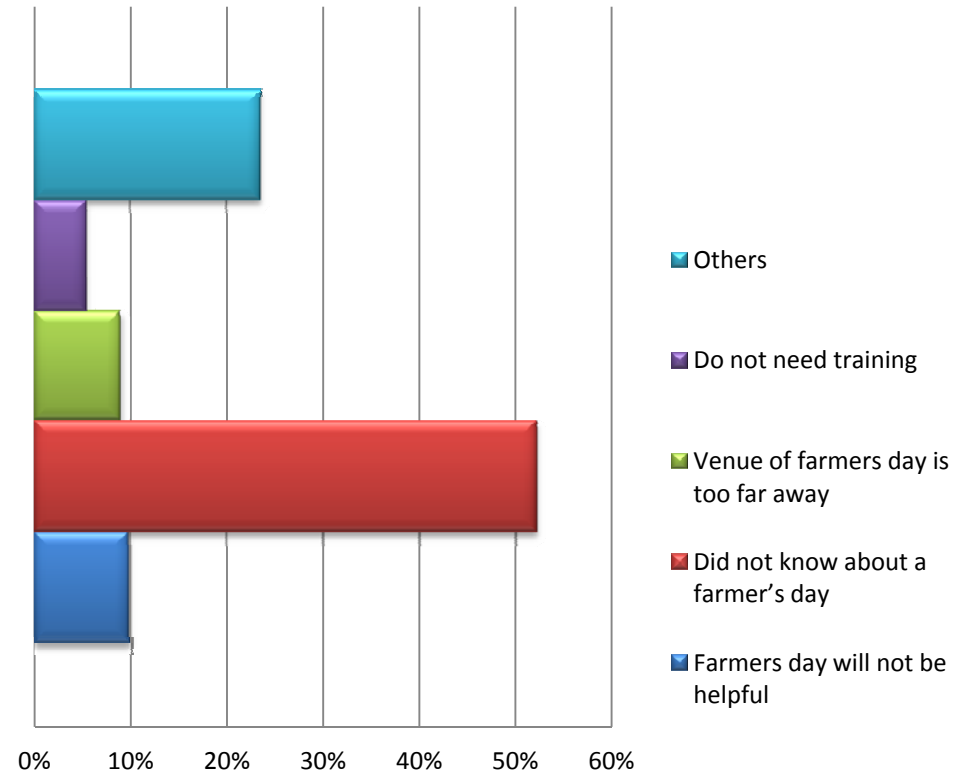
Feedback

Usefulness of training in creating awareness regarding...
(Scoring on a scale of 1=very poor & 5=very good)



Reasons for Previously Not Attending Farmers' Day

- More than 50% of the farmers seemed to be unaware of such an activity or its purpose
- This coupled with the feedback received from the participants makes clear the need for such an intervention given the huge existing gaps
- Farmers are aware of the need for better animal health care but either do not have access to facilities or lack practical knowledge



Impact on Key Outcomes

- Upon running tracker surveys on the PEOP participating households, impact of intervention will be measured
- Key baseline and endline outcomes of interest fall into three categories
 - Awareness (changes in livestock healthcare)
 - Skills Enhancement (changes in productivity, better feeding practices)
 - Household Living Standard (income and consumption)

Outcome	Baseline Measure
Productivity Per Cow Per Day (litres)	2.50
Productivity Per Buffalo Per Day (litres)	2.49
How often is water provided to livestock (times/day)	2.33
Number of cows and buffaloes vaccinated	3.29
Household Income from Livestock Per Month (Rs.)	16986.23
Food Consumption Per Capita Per Month (Rs.)	1374.89
