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Assessment of Community Livestock Extension Workers' Services

Under the Prime Minister's Special Initiative for Livestock:
A Public Private Partnership between the Rural Support Programmes and the Ministry of Livestock and Dairy Development, Government of Pakistan

Submitted to:
Rural Support Programmes Network (RSPN)

This CLEW assessment study represents the findings, views and opinions of EBDM, the third-party evaluators engaged by RSPN. The report documents the progress and achievements of the CLEWs training and services in the context of the PMSIL project. The study has focused on the implementation and effectiveness of CLEWs selection, training, service provision, linkages and impact after two years of service provision. As such feedback from the Ministry of Livestock and Dairy Development is awaited. Until such time this Report is considered as DRAFT-f.

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KEY ACTIVITY INFORMATION

Project Title
Prime Minister's Special Initiative for Livestock (PMSIL)

Sponsoring Agency
Ministry of Livestock and Dairy Development

Implementing Agency
Rural Support Programmes Network

Implementing Partners
Aga Khan Rural Support Programme (AKRSP)
Balochistan Rural Support Programme (BRSP)
Sindh Rural Support Organisation (SRSO)
Punjab Rural Support Programme (PRSP)
Sarhad Rural Support Programme (SRSP)
Thardeep Rural Support Programme (TRSP)
National Rural Support Programme (NRSP)
Ghazi Barotha Tarqiati Idara (GBTI)

Assignment
Assessment of Community Livestock Extension Workers' Services

Period of the Assignment
July 2009 – December 2009

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ACRONYMS AND ABBREVIATIONS

AHITI	Animal Husbandry In-Service Training Institute
AJK	Azad Jammu Kashmir
AKRSP	Aga Khan Rural Support Programme
BRSP	Balochistan Rural Support Programme
CASVAB	Centre for Advanced Studies in Vaccinology & Biotechnology
CLEW	Community Livestock Extension Worker
CO	Community Organisation
CTL	Control Group
DLO	District Livestock Officer
DVM	Doctor of Veterinary Medicine
FANA	Federally Administered Northern Areas
GBTI	Ghazi Barotha Taraqiati Idara
KPI	Key Performance Indicators
MINFAL	Ministry of Food, Agriculture and Livestock
MinLDD/MLDD	Ministry of Livestock and Dairy Development
MTDF	Medium Term Development Framework
NARC	National Agriculture Research Centre
NRSP	National Rural Support Programme
NWFP	North-West Frontier Province
PMSIL	Prime Minister Special Initiative for Livestock
PRSP	Punjab Rural Support Programme
RSPN	Rural Support Programmes Network
SRSO	Sindh Rural Support Organisation
SRSP	Sindh Rural Support Programme
TRT	Treatment Group
UVAS	University of Veterinary and Animal Sciences

EXECUTIVE SUMMARY

The CLEW assessment study has evaluated the progress and achievements of the CLEWs training and services in the context of the PMSIL project. The study has focused on the implementation and effectiveness of CLEWs selection, training, service provision, linkages and impact after two years of service provision. The assessment provides an independent and objective feedback on the outcomes of the PMSIL project in the context of its development objectives: a) to enhance livestock productivity through the provision of livestock production, extension and veterinary services at farmers' door steps; b) Rural livestock asset creation; and c) Poverty alleviation.

Methodology

An impact assessment approach was adopted for the study based on the 'ex-post project and non-equivalent comparison group' model and the 'rapid assessment ex-post evaluation' model. The main methods used in the assessment include (a) formal survey (b) rapid assessment methods such as mini-surveys, and (c) participatory methods such as stakeholder analysis and beneficiary assessment.

The formal survey was conducted using a stratified random sampling of male CLEWs in 31 randomly selected districts. A stratified two-stage random sampling method was used for the selection of CLEWs. Structured interviews were conducted with 372 sampled male CLEWs. No separate sampling was performed for female CLEWs as the size of the female CLEWs population is insignificant for sampling. However, 15 female CLEWs were interviewed during the survey out of the total 27 females trained through the Project and three female case studies were developed out of these.

Short structured interviews were conducted with Doctors of Veterinary Medicine (DVM), District Livestock Officers (DLOs) of the Project and representatives of government training institutes. Semi-structured questionnaires were used to assess the impact of CLEW services by interviewing 353 livestock owners of which 178 belong to the treatment group and 175 are control group respondents.

Key Findings

1. The most common age of the CLEWs was between 19-25 yrs (36.56%) and 26-35 yrs (36.56%) that together represent approximately 73% of the CLEW respondents. The predominance of these two age groups is a positive finding, given it represents that the selection regiment is being implemented appropriately by enlisting trainees who generally have matriculated, have reached their prime learning ability for technical learning and practice, and have the requisite maturity and responsibility to conscientiously provide extension services.

2. The majority of CLEWs, approximately above 85%, have attained matriculation or a higher education qualification. This high percentage is not only good indication that, as mentioned above, a stringent educational criteria is being followed for selecting CLEWs for training but also that the RSPs have sustained this stringent educational criteria despite the existence of conditions where qualified candidates were not easily available or did not always have prior livestock experience or interest.

3. The average monthly income through CLEW services are fairly well spread across all the income groups and are not concentrated within any one income group. However, the majority of the CLEWs (over 80%) have incomes between the range of above PKR 1,000 and below PKR 8,000 while the mean income of CLEWs is PKR 2,521. The main reason for larger spread of income across the groups is that there are many underlying geographical, environmental and cultural factors that influence the income generation capability of CLEWs in each region.

4. The survey findings show that the CLEW provide services in five main domains: vaccination, de-worming, first aid, awareness and advisory. Vaccination is the most popular serviced provided by around 98% of the CLEWs, closely followed by de-worming (93.2%) and awareness (92.3%).

5. Around 5% of the CLEWs devote over 10 hours of their day to CLEW services and around 14% of the CLEWs are devoting 7-10 hours to CLEW services. These are important segments of the CLEW population as they are most likely devoting their full day to veterinary work and are the most highly committed workers with a high degree of sustainability. The majority of the CLEWs are spending between 4-6 hours (42.7%) while a significant portion are allocating less than 3 hours (35.8%) to service provision. 4-6 hours is the average commitment level for the CLEWs, a productive level of commitment given CLEWs are not financially supported in any way by the project, and therefore are often involved in farming or other income generating activities.

6. The majority of the CLEWs are providing services at door step of the livestock owners (68%) and/or from their home (48%). Only around 19% were able to begin providing services through a clinic and a small number provides telephonic services (6%). These are positive findings indicating that by and large the Project was able to provide veterinary services to the farmer's doorsteps.

7. Over 60% of the farmers expressed high level of satisfaction with quality of CLEWs services. 34% expressed average level of satisfaction with and only 3% indicate below satisfactory views.

8. The two most common type of benefits expressed by the community are 'accessible, timely and cheaper service' (64%) and 'improvement in animal health, reduction in disease and mortality' (48%). These results indicate CLEW services were reaching the farmers 'at their door steps' and that the qualities of services are effective enough to have a visible effect on their animal health.

9. 21.5% of CLEWs have assessed training facilities as 'excellent', 51.6% have classified them as 'very good' and 24.7% have given a 'satisfactory' assessment. These results indicate that the overwhelming majority (more than 95%) were satisfied with the quality of training facilities. The quality of training facilities have a direct impact on learning quality and these results indicate that the government institutes have provided adequate facilities to promote better learning among the participants. Moreover, the CLEWs have also given an overall positive assessment of the training material provided to them by the training institutes. 16.4% have given excellent rating to training material, 45.4% have given 'very good' and around 34% have given a satisfactory rating that translates into an overall positive rating from 95% of the CLEWs. The training institutes therefore are performing adequately in supporting the training and development of the CLEWs by providing adequate facilities, proper training material and using effective training methodologies.

10. The survey results are suggestive of an overall positive impact of the services on the livestock health and productivity of the beneficiary communities in comparison to the control group:

    a) In terms of income, given on average the household income of the treatment groups is 25% higher than the control groups, the survey shows that the treatment group has a higher percentage of respondents in the higher income brackets while the control group has higher percent of respondents in the lower income brackets.

    b) In terms of livestock asset creation, the survey shows that the mean livestock ownership among the treatment group is about 10 to 15% higher than the livestock ownership of the control group.

    c) In terms of livestock productivity, the survey shows significant improvement in the conditions of the treatment group in comparison to non-users. 'Significant increase' is around 18% greater in the treatment group and 'some increase' is 15% greater.

d) In terms of disease and mortality, benefits are visible in the comparison between disease incidence and mortality rates of the treatment and control groups, with treatment group respondents having reported 15% less increase in animal disease than the control group and 24% more 'significant decrease' in animal mortality than the control group. These are both significant figures and indicate the impact that vaccination and de-worming are having on the treatment group's livestock.

e) In terms of economic conditions, the treatment group respondents have also been experiencing better economic conditions than the control group. Around 32% of the treatment respondents have reported significant improvement in economic conditions while only 17% of the control group respondents have reported the same.

Key Recommendations

1. To improve the already appropriate selection of CLEWs, the PMSIL project can develop a more systematic merit-based selection process for future recruitment of CLEWs so that more motivated and qualified candidates are selected. The selection criteria should further emphasise ideal age groups and educational backgrounds for enlisting trainees.

2. The basic training period should be increased to at least 45-60 days and refresher training should be provided every 6 months to provide sustainability to the CLEWs. Majority of the training institutes have recommended refresher courses as essential for maximizing the impact of the training programme. The refresher courses also play role in keeping the CLEWs motivated and interested in livestock services while countering the inactivity rate in the Project.

3. It is recommended that DVMs are allotted a more central role in the training programme because they have better field experience working with and supervising CLEWs. The DVMs have a negligible role in planning and formulating the training programme despite the fact that they are the immediate supervisors of the CLEWs and are involved in their selection.

4. The positive experience of female CLEWs training shows that there is strong potential and needs for developing them. The main beneficiaries of female CLEWs are female livestock farmers managing livestock in their homes. However, the main challenges female CLEWs face are mobility and low availability hours. These factors have to be addressed to improve the effectiveness of female workers in the field.

5. There is a strong need for extending the coverage of first-aid services by enabling even more CLEWs. First-aid services are already being provided by 57% of the CLEWs, who perform as 'first responders' provide initial care for animal illness or injury. Further improving accessibility and timely availability of first aid services is crucial for saving more animal lives in these regions.

6. Time commitment of CLEWs needs to be improved by ensuring better supervision from DVMs, offering tangible incentives to and providing refresher training.

7. Survey findings also suggest that primarily because of constraints, e.g. concerning transportation and financial cost, there is a communication gap between the DVM and CLEWs as indicated by the substantial proportion of the CLEWs that are able to communicate on a monthly or occasional basis or are unable to submit progress reports. These constraints should be remedied by RSPs to reduce this communication gap.

1. INTRODUCTION

BACKGROUND

Livestock is an important component of economic sustenance in Pakistan. Vast majority of the rural poor depend on livestock for livelihood and it accounts for almost 52% of the overall value addition in the agriculture sector and almost 11.2% of the national GDP. Currently the livestock sector is a low input-low output production system but has a high potential for development. The development of livestock sub-sector is constrained by inadequate and poor quality of feed and fodder, limited animal health coverage, widespread breeding of genetically inferior livestock, outdated and limited marketing facilities, shortage of trained manpower and lack of an effective system of economic incentives and facilities to the small producers. The export of livestock and its products is constrained because of the presence of diseases, poor sanitary and hygienic conditions of slaughterhouses and slaughtering practices, and inadequate livestock infrastructure and laboratory facilities to assure quality products (MTDF, 2005-2010).

The Medium Term Development Framework (2005-2010), a five year economic development plan of the government of Pakistan, identifies the main objectives of livestock development to achieve self-reliance in livestock products and improve productivity of milk and meat. The MTDF highlights two main policies for that will be implemented for achieving these objectives:

a. Enhance productivity of existing livestock, dairy, poultry and fisheries resources through development of new technologies, scientific methods of farming and improved management practices; and
b. Strengthen institutions for livestock research and extension and improve their linkages and coordination.

The Ministry of Food Agriculture and Livestock (MINFAL) launched the Prime Minister's Special Initiative for Livestock (PMSIL) in December 2006[1] as one of the development projects to achieve MTDF's stated livestock development objectives. The main aims of the PMSIL project are:

a. To enhance livestock productivity through the provision of livestock production, extension and veterinary services at farmers' door steps;
b. Rural livestock asset creation; and
c. Poverty alleviation.

The goal of the PMSIL project is to fill the gap in public service delivery by developing a cadre of community-based Livestock Extension Workers (CLEWs). The Project aims to target 13 million rural poor in 1, 963 Union Councils in 80 districts over duration of five years and is currently being sponsored by the Ministry of Livestock and Dairy Development (MinLDD). PMSIL is based on the concept of public-private partnership between the Government of Pakistan and the Rural Support Programmes Network (RSPN), whereby eight Rural Support Programmes (RSPs)[2] are implementing the Project in 79 districts of the four provinces including Azad Jammu & Kashmir (AJK) and the Federally Administered Northern Areas (FANA). The MinLDD has outsourced the project implementation to RSPs under an agreement with RSPN. The MinLDD funds and monitors the project activities.

The key intervention of the Project is the creation of a trained cadre of 7,250 Community Livestock Extension Workers (CLEWs) to provide sustainable animal health services to the target rural community. The trained CLEWs provide veterinary and extension services at the grassroots level. The cadre of CLEWs are being created through the social mobilisation and community building network of the eight RSPs. CLEWs are selected through established Community Organisations (COs) in

[1] Subsequently the Ministry of Livestock and Diary Development took ownership of the PMSIL project.
[2] The eight RSPs include: Aga Khan Rural Support Programme (AKRSP), Balochistan Rural Support Programme (BRSP), Ghazi Barotha Taraqiati Idara (GBTI), National Rural Support Programme (NRSP), Punjab Rural Support Programme (PRSP), Sarhad Rural Support Programme (SRSP), Sindh Rural Support Organisation (SRSO), and Thardeep Rural Development Programme (TRDP).

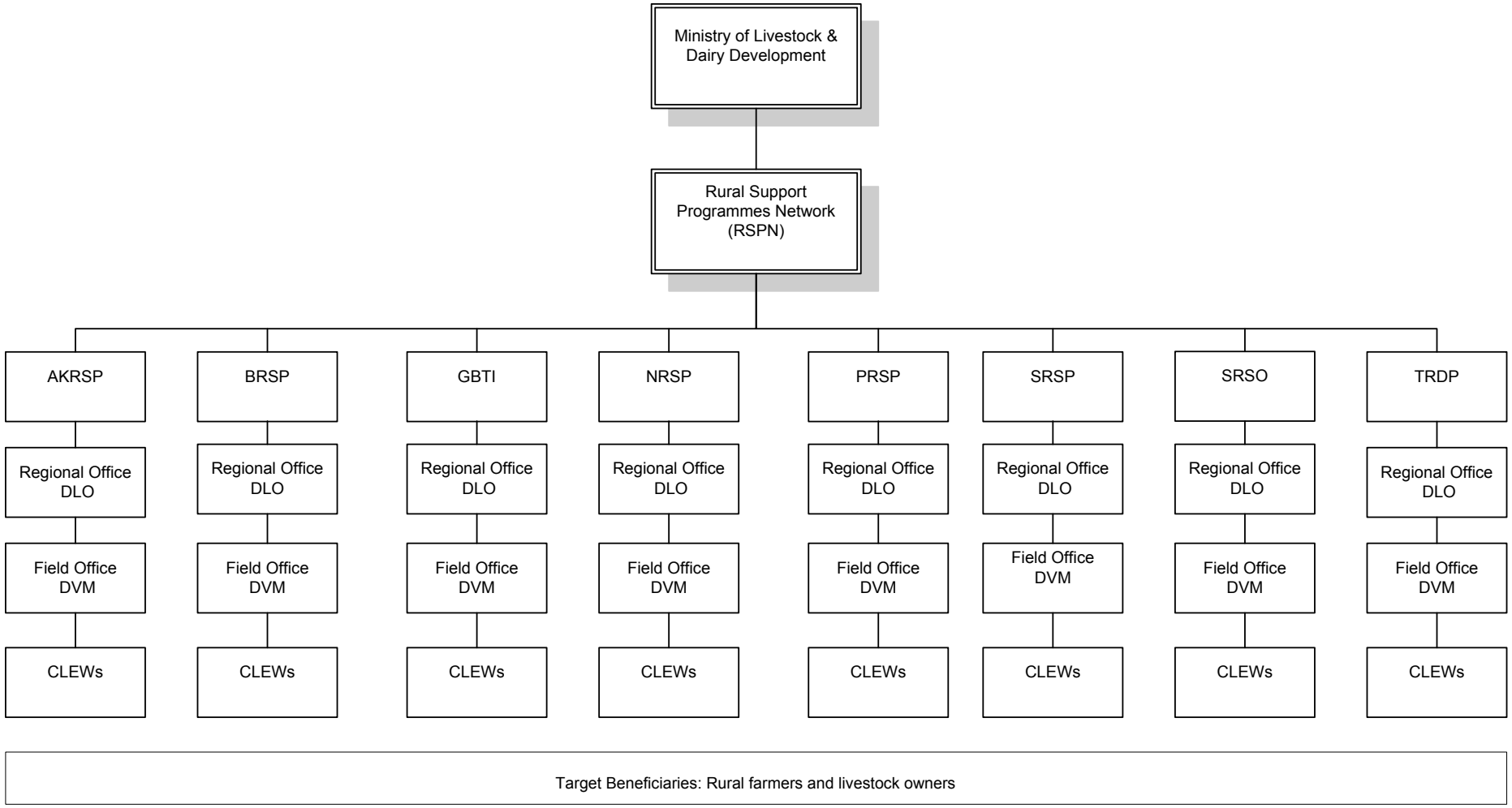
coordination with Doctors of Veterinary Medicine (DVMs) and are trained through the Government livestock training institutes. After training the CLEWs pursue self-employment as extension workers providing animal health services at cost under supervision of the DVMs while also spreading education and awareness among rural farmers.

The organisational structure of the PMSIL project is shown in the next page and the following table describes the role and function of the different actors in the structure:

Table 1.1: Role and functions in the PMSIL Project organizational structure

Actor	Role and Function
Ministry of Livestock & Dairy Development (MinLDD)	The Ministry is the financial sponsor of the PMSIL project and is responsible for monitoring Project activities and outcomes
Rural Support Programmes Network (RSPN)	RSPN is the implementing and coordinating agency for the PMSIL Project outsourced through the MinLDD
RSPs	The Rural Support Programmes are members of RSPN responsible for delivering and managing the PMSIL project
District Livestock Officer (DLO)	DLOs manage and coordinate Project activities at the regional office level and are direct supervisors of the DVMs in their specific regions
Doctors of Veterinary Medicine (DVM)	DVMs are situated at established field unit clinics and hold the responsibility of providing oversight, technical guidance support to the CLEWs while also managing clinic activities and working with community representatives
Community Livestock Extension Workers (CLEWs)	CLEWs work under the supervision of DVMs at the field unit clinic and are responsible for delivery preventive and first aid care to farmers in their target areas. In addition, the CLEWs identify and report disease epidemics and spread awareness regarding better livestock management practices

Organisational Structure of the Prime Minister's Special Initiative for Livestock (PMSIL)



2. METHODOLOGY

OBJECTIVES OF THE ASSESSMENT

The training programme for Community Livestock Extension Workers (CLEWs) was initiated in May, 2007 and in the period 2006-2008 a total of 2,320 CLEWs were trained. However, during FY2008-2009, the training of additional CLEWs could not be continued due to low release of funds by the government. The assessment study examines the effectiveness of CLEWs in delivery of veterinary extension services in their villages after over two years of operations. The specific objective of the assessment study is to evaluate the progress and achievements of the CLEWs training and services in the context of the PMSIL project. While focusing on the implementation and effectiveness of CLEW activities in the target communities - the assessment provides an independent and objective feedback on outcomes of the project in the context of its development objective.

ASSESSMENT APPROACH, MODEL AND METHODS

An *impact assessment* approach was adopted to undertake this review, however, it is clear that this assessment is specific and relevant only to the training component of the PMSIL project. Out of the various standard models for conducting impact assessments, this review is based on the 'ex-post comparison of project and non-equivalent control group' model and the 'rapid assessment ex-post evaluation' model[3]. However, the control group was only taken for livestock farmers/owners and not the other respondent types such as DVMs, CLEWs, DLOs etc. Based on these two impact assessment models, both qualitative and quantitative data collection and analysis tools were used, which can be clubbed into the following standard assessment methods:

a) *Formal Survey*: A cross-sectional survey design[4] was used to collect quantitative and qualitative data related to the core activities of CLEWs. This survey design allows the collection and analysis of data on specific aspects of the CLEWs intervention with direct reference to the objectives of their training. Standardized information was collected through stratified random sampling of male CLEWs in 31 randomly selected districts. Structured interviews were conducted for 372 male CLEWs, whereas only 15 female CLEWs were interviewed considering that a total of 27 female CLEWs have been trained through the Project. The survey provides data to measure the performance of CLEWs in delivering their services and assess quality and effectiveness of the training imparted to them;

b) *Rapid Appraisal Methods:* Mini-surveys were used to acquire data on key performance and quality dimensions of CLEWs services and training through short structured interviews, which were administered for Doctors of Veterinary Medicine (DVM), District Livestock Officers (DLOs) of the Project and representatives of government training institutes. Purposive sampling was used in these cases, targeting only those DVMs, DLOs and training institutes that had a direct link with the randomly selected CLEWs.

c) *Participatory Methods:* Stakeholder analysis was used to review the relationship, influence and interests of various entities involved. Beneficiary assessments were undertaken for the identified treatment and control groups of livestock owners that were readily available in the geographic areas that the randomly selected CLEWs were operating. Semi-structured questionnaires were used to assess the impact of CLEW services by interviewing 353 livestock owners of which 178 belong to the treatment group and 175 to the control group respondents. The data collected from livestock owners identifies which activities are reaching the beneficiaries and the magnitude of their impact on the target community's livestock asset ownership, livestock productivity and health. Whereas, case studies of three female CLEWs

[3] 'Monitoring & Evaluation: Some Tools, Methods and Approaches'; World Bank Operations Evaluation Department – Evaluation Capacity Development
[4] Cross-sectional design is a research design that entails the collection of data on more than one case and at a single point in time in order to collect a body of quantitative and quantifiable data in connection with two or more variables.

were conducted from different regions to document and analyze their experiences and achievements. This method was used keeping in view the very small number of female CLEWs trained so far, as a sample survey or even a census would not yield statistically comparable inferences.

DATA COLLECTION PROCESS AND TOOLS

Key Performance Indicators (KPI) were developed for the assessment study using the SMART criteria[5] to define the measures for assessing the progress and impact of the PMSIL project CLEWs training component. A total of 73 indicators were developed covering the following aspects of the CLEWs intervention (Appendix 3):

a) Livestock productivity;
b) Livestock heath;
c) Poverty alleviation;
d) Community perceptions of CLEW services;
e) Perceptions of CLEWs performance;
f) Assessment of CLEWs services;
g) DVM and DLO performance indicators;
h) Training perceptions and assessment; and
i) Competitors.

The data variables of survey questionnaires were developed on the basis of KPI that allowed collection of data from different respondents to measure the outcomes of Project activities.

Desk Review

The desk review process was conducted at the initial stage of the study to finalize primary data collection strategy and assessment tools. The desk review and analysis of secondary data provided by RSPN helped in the formulation of performance indicators and questionnaires. In addition, secondary data was used to compile and analyze contextual knowledge related to the CLEWs intervention, perform stakeholder analysis and analyse data collected from the field.

Structured and Semi-structured Interviews

Community Livestock Extension Workers (CLEWs)

The primary survey instrument is a CLEWs structured questionnaire for collecting standardized information through stratified random selection of 373 male CLEWs in the target areas (see Sampling Design section for details). Service provision by CLEWs is the core activity of the Project and the CLEWs questionnaire was developed to measure the performance of the CLEWs in delivering veterinary extension services and compare implementation activities with project targets and objectives.

Doctor of Veterinary Medicine (DVM)

A short structured questionnaire was developed to interview Doctors of Veterinary Medicine (DVM) – the RSP staff meant to supervise, guide and support CLEWs (one DVM per 25 CLEWs) deployed in the districts sampled for CLEW interviews. DVMs are supervisors of the CLEWs and managers of the field unit clinics overseeing CLEW service provision in the field. Hence, the DVM questionnaire has gathered data to assess the performance and constraints in project implementation from the perspective of the DVMs. The questionnaire assesses the DVM's role and linkages with CLEWs activities. The DVM questionnaire complements and verifies the information collected from the

[5] SMART' is a set of criteria that determine if the indicators are Specific (with lucid description and no ambiguity in interpretation), Measurable (through qualitative or quantitative methods), Attainable (in the form of documents, data or tacit information that can be documented), Realistic (not overly ambitious or too basic), and time-bound (with defined time frame for observation).

comprehensive questionnaire administered to the CLEWs. 63 DVMs were interviewed through convenience sampling in the field unit offices where the sampled CLEWs were interviewed.

District Livestock Officer (DLO)

A short semi structured questionnaire was used to interview 15 District Livestock Officers (DLO). The DLOs are RSP staff working under the PMSIL project to oversee the work of the DVM (one DLO per 10 DVMs) and manage the project in different regions. This questionnaire collects data on the performance and quality of linkages of the CLEWs with DVMs.

Livestock Owners

Semi-structured questionnaires were used to assess the impact of CLEW services on animal health and productivity of 178 beneficiary farmers as well as their perception of the quality and accessibility of services. The beneficiary farmers are the core beneficiaries of the Project as CLEWs and DVMs are providing services to them. A comparison group questionnaire has also been implemented to 175 non-users of CLEWs services living in similar geographical and socio-economic conditions. The comparison group data allows to exclude extraneous factors as cause of project impact and provide credible evidence that the target communities are benefiting from project activities. As a baseline survey was not conducted, a comparison or control group allows us to identify the extent of the project impact as perceived by the beneficiary communities.

Training Institute

A short structured questionnaire was used to interview training coordinators or representatives of the training institutes. Training institutes have been responsible for training of selected community members as CLEWs. The questionnaire collects their perspective on the effectiveness of the training process and programme. The questionnaire appraises the availability, accessibility and quality of training for CLEWs. A total of 13 training institutes were visited involved in the training of CLEWs in different regions.

SAMPLING DESIGN

Sampling Design for CLEWs

A stratified two-stage random sampling method was used for the selection of the respondents for the Community Livestock Extension Worker (CLEWs) questionnaire. The random sample of the CLEWs was stratified by province and Rural Support Programmes (RSPs) drawing a representative sample from each stratum. The sampling frame for the study consists of a total of 2,159 CLEWs that were trained through the Project with a distribution of 2,083 males and 76 females. No separate sampling was performed for the female CLEWs as the size of the female CLEWs population is insignificant for sampling. A qualitative approach was used to assess the female CLEWs.

Table 1.1: Male CLEWs sampling universe

Territory by RSP	FANA	Balochistan	Punjab	NWFP	Sindh	AJK	Total
AKRSP	55	-	-	-	-	-	55
BRSP	-	180	-	-	-	-	180
GBTI	-	-	9	7			16
NRSP	-	33	511	45	130	63	782
PRSP	-	-	339	-	-	-	339
SRSP	-	-	-	243	-	-	243
SRSO	-	-	-	-	76	-	76
TRDP	-	-	-	-	228	-	228
Total	55	213	859	295	434	63	1919

The districts of Mastung, Kalat, Karak, Malakand, Shangla, Swat and Hangu were excluded from the sampling frame because of security risks. In addition, CLEWs for which data on location was not available were also excluded from the sampling design. Therefore, final sampling frame for the study consists of 1,919 male CLEWs. Table 1.1 shows the sampling universe of CLEWs by province and RSP.

The statistically relevant sample of 1,919 CLEWs amounts to a sample size of 321 male CLEWs, calculated with a 5% margin of sampling error and 95% confidence level. Table 1.2 shows the calculation of the sample for each province by share of CLEWs trained in the last row:

Table 1.2: Sample distribution by province

Sampled by Province	FANA	Balochistan	Punjab	NWFP	Sindh	AJK	Total
Percentage of CLEWs of Total	3%	11%	45%	15%	23%	3%	100%
Sample Size of CLEWs by Province	9	36	144	49	73	11	321

In the next step, the ratio of CLEWs population trained by RSP in each province was used to take into account the second RSP stratum and calculate the sample size for each RSP-Province stratum. Table 1.3 shows the sample size for each stratum:

Table 1.3: Sample size by RSP-Province stratum

Territory by RSP	FANA	Balochistan	Punjab	NWFP	Sindh	AJK	Total
AKRSP	10	-	-	-	-	-	10
BRSP	-	29	-	-	-	-	29
GBTI	-	-	2	2	-	-	4
NRSP	-	6	83	6	22	10	127
PRSP	-	-	58	-	-	-	58
SRSP	-	-	-	42	-	-	42
SRSO	-	-	-	-	13	-	13
TRDP	-	-	-	-	38	-	38
Total	10	35	143	50	73	10	321

Table 1.4: Adjusted sample size

RSP	FANA	Balochistan	Punjab	NWFP	Sindh	AJK	Total
AKRSP	22	-	-	-	-	-	22
BRSP	-	29	-	-	-	-	29
GBTI	-	-	9	7	-	-	16
NRSP	-	22	50	22	22	25	141
PRSP	-	-	50	-	-	-	50
SRSP	-	-	-	42	-	-	42
SRSO	-	-	-	-	25	-	25
TRDP	-	-	-	-	38	-	38
Sub-total	22	51	109	71	85	25	363

The stratified sampling results for six strata (AKRSP-FANA, GBTI-NWFP, GBTI-PUNJAB, NRSP-NWFP SRSO-Sindh, NRSP-SINDH, NRSP-AJK) present relatively smaller sample sizes. Therefore, for these six strata, the sample size was adjusted higher as enough number of subgroup cases is required in each stratum to deduce statistically meaningful conclusions and conduct comparisons

(Table1.4) In the case of stratum NRSP-PUNJAB and PRSP-PUNJAB the sample size for each stratum was reduced to 50 as the bigger sample sizes yield only marginally higher precision for *only* these strata out of the 11 strata in the study. A sample size of 50 for these strata ensure that precision levels for all the strata are at similar levels which is a practical approach for the survey.

Table 1.4 shows the adjusted sample size for each stratum. In two strata of GBTI-PUNJAB and GBTI NWFP the sample size adjustment for these strata was conducted taking into consideration that total population size is small and therefore a complete census of have to be performed in these strata. Therefore, the total sample size at this stage results to 363 CLEWs. The random sampling in this sample design was performed in two stages by first randomly selecting the districts and at the second stage randomly selecting the CLEWs in the randomly selected districts.

Random Selection of Districts

The sampled CLEWs are spread over a total of 85 districts. Five districts of NWFP (Malakand, Swat, Hangu and Shangla) and two districts of Balochistan (Mastung and Kalat) were removed from the sampling frame as the local security situation posed high risks to the surveyor and the completion of the study. A total of 31 districts were sampled out of a total number of 85 districts taking into consideration the total number of districts in each stratum (Appendix 1). In the next step the districts in each stratum were selected through simple random sampling (Appendix 2)

Random Selection of CLEWs

There are a total of 734 CLEWs in sampled districts (Appendix 1) across 13 strata. In three strata (GBTI-PUNJAB, GBTI-NWFP and SRSO-SINDH) a complete census was undertaken since the total number of CLEWs was approximately equal to the sample size for the stratum. In the other strata the sample of CLEWs (Table 1.4) was selected in each district in proportion to district size through simple random sampling. In each of these strata an additional 20% of CLEW respondents were taken into account for non-sampling error as shown in Table 1.5:

Table 1.5: Extended sample size

Stratum	CLEWs in Selected Districts	Number of CLEWs in Sample	Extended sample by 20%
AKRSP FANA	32	22	26
BRSP Balochistan	99	29	35
NRSP AJK	37	25	30
NRSP NWFP	33	22	26
NRSP Punjab	100	50	60
NRSP Balochistan	33	22	26
NRSP Sindh	58	22	26
PRSP Punjab	65	50	60
SRSO Sindh	28	25	28
SRSP NWFP	90	42	50
TRDP Sindh	143	38	46
GBTI Punjab	9	9	9
GBTI NWFP	7	7	7
Total	734	363	429

ACTUAL DISTRIBUTION OF DIFFERENT RESPONDENT TYPES

The respondents were informed of the interview schedule through the District Livestock Officer, DVM or senior representative of the RSPs. The RSPs organised interviews at the Field Unit clinics and villages according to the sample list and instructions provided to them. Table 1.6 shows that a total of 372 CLEWs were interviewed across six regions indicating that the sample size of 363 has been achieved. The extended sample size (Table 1.5) of 429 allowed minimization of the non-sampling error that mainly arose from the non-availability of CLEWs at the field unit clinics. The main reasons for the non-availability of CLEWs were:

a. CLEWs had become inactive and the DVM did not have any contact information or communication links with the CLEWs;
b. CLEWs had migrated from their village or began pursuing other income generating activities; or
c. The CLEWs could not afford to make the long distance trips to Field Unit clinics.

The CLEWs interviewed, reached the meeting venue through their own means as the Project could not provide daily or travelling allowance. In Gilgit only one CLEW was interviewed as the security situation at that point had deteriorated and most CLEWs could not travel.

Table 1.6: Distribution of respondents - CLEWs

RSP	NWFP	Punjab	Sindh	Balochistan	AJK	FANA	Total
NRSP	16	61	28	22	23	-	150
AKRSP	-	-	-	-	-	12	12
PRSP	-	53	-	-	-	-	53
SRSP	37	-	-	-	-	-	37
SRSO	-	-	25	-	-	-	25
GBTI	5	7	-	-	-	-	12
TRDP	-	-	40	-	-	-	40
BRSP	-	-	-	43	-	-	43
Total	58	121	93	65	23	12	372

DVMs and DLOs were also interviewed at the Field Unit clinic where the CLEWs were interviewed. A total of 63 DVMs and 15 DLOs were interviewed in the six regions across the eight RSPs (Table 1.7 and 1.8).

Table 1.7: Distribution of respondents - DVMs

RSP	NWFP	Punjab	Sindh	Balochistan	AJK	FANA	Total
NRSP	4	10	9	-	3	-	26
AKRSP	-	-	-	-	-	4	4
PRSP	-	4	-	-	-	-	4
SRSP	6	-	-	-	-	-	6
SRSO	-	-	3	-	-	-	3
GBTI	1	1	-	-	-	-	2
TRDP	-	-	15	-	-	-	15
BRSP	-	-	-	3	-	-	3
Total	11	15	27	3	3	4	63

Table 1.8: Distribution of respondents - DLOs

RSP	NWFP	Punjab	Sindh	Balochistan	AJK	FANA	Total
NRSP	1	2	1	1	1	-	6
AKRSP	-	-	-	-	-	1	1
PRSP	-	3	-	-	-	-	3
SRSP	1	-	-	-	-	-	1
SRSO	-	-	1	-	-	-	1
GBTI	1	-	-	-	-	-	1
TRDP	-	-	1	-	-	-	1
BRSP	-	-	-	1	-	-	1
Total	3	5	3	2	1	1	15

A total of 353 semi-structured questionnaires were administered for livestock owners (both treatment and control groups) to assess the impact of CLEW services on livestock health and productivity and the owners' perception of the quality and accessibility of CLEW services (Table 1.9 and 1.10).

Table 1.9: Distribution of respondents - Livestock Owners (Treatment Group)

RSP	NWFP	Punjab	Sindh	Balochistan	AJK	FANA	Total
NRSP	11	18	23	5	12	-	69
AKRSP	-	-	-	-	-	13	13
PRSP	-	29	-	-	-	-	29
SRSP	19	-	-	-	-	-	19
SRSO	-	-	18	-	-	-	18
GBTI	-	6	-	-	-	-	6
TRDP	-	-	6	-	-	-	6
BRSP	-	-	-	18	-	-	18
Total	30	53	47	23	12	13	178

Table 1.10: Distribution of respondents - Livestock Owners (Control Group)

RSP	NWFP	Punjab	Sindh	Balochistan	AJK	FANA	Total
NRSP	13	18	18	5	12	-	66
AKRSP	-	-	-	-	-	13	13
PRSP	-	30	-	-	-	-	30
SRSP	17	-	-	-	-	-	17
SRSO	-	-	18	-	-	-	18
GBTI	6	-	-	-	-	-	6
TRDP	-	-	12	-	-	-	12
BRSP	-	-	-	13	-	-	13
Total	36	48	48	18	12	13	175

3. OVERVIEW OF STAKEHOLDERS

The PMSIL project is one of the key initiatives of the Government to address the production and poverty alleviation potential of the livestock sector by providing extension services to the farmers' doorsteps. Taking into consideration the role of the PMSIL project within the developmental goals of the Government, the following key stakeholders were identified: a) Government of Pakistan; b) MinLDD; c) Local government; d) Livestock farmers; e) RSPs; f) PMSIL project staff; f) Livestock industry; g) Training Institute. Stakeholders were chosen based on their priorities and relationships with regard to the PMSIL project.

The federal and provincial governments have a strong interest in the successful completion and sustainable impact of the PMSIL project to contribute towards the enhancement of livestock productivity and poverty reduction in Pakistan. The livestock sector plays a key role in Pakistan's economy, contributing about 51.8% value-added in agriculture over the last fiscal year which was around 11.3% of the GDP (DAWN; Nov 2009). Therefore, the federal government has a high stake in the positive outcomes of PMSIL project as an initiative towards improving economic growth and meeting longer term development objectives of building a sustainable economy and achieving MDGs. The sector provides employment to about 35 million people whereas 6.5 million households depend on it for livelihood. Therefore, for the provincial governments the PMSIL intervention is an opportunity to commercialize the livestock sector and improve livelihood and income generation in their region. Similarly, at the local government level the PMSIL project contributes to filling the gap in livestock extension services and helps in making animal health services readily available at the village level.

The important role of federal and provincial government in PMSIL intervention is also visible through how in recent years livestock has become a priority agenda with visible increase in development funds and projects in the sector both at the federal and provincial levels. The sector has experienced a higher than anticipated growth in financial year 2009, surpassing the growth target by 0.5 percentage points to 3.7 percent. The growth in the livestock sector would help reduce the problem of food insecurity in the country that has become a central developmental challenge in the current global economic downturn.

The livestock industry has a major interest in PMSIL intervention as the major contribution in value addition by livestock is from milk production followed by meat, eggs and other items. Milk is the largest commodity/product from the livestock sector. Although the livestock industry has a substantial interest in the success of the PMSIL project, currently the commercial sector is not engaged. Similarly, although the Project is using medicine and vaccines for service delivery by CLEWs and DVMs, no formal linkages have been developed with the pharmaceutical sector to support the Project and enhance its impact. Both these sectors have a primary stake in the development of the livestock sector in Pakistan.

The growth in the livestock sector helps raise farmer's income, reduce rural poverty and stabilize prices of dairy products for consumers. Rural farmers are the key beneficiaries of the PMSIL project and the success of the Project depends on the cooperation of the community members. The survey findings indicate that the Project is having a positive impact on the livestock productivity and health of the farmers. The farmers have greatly benefited through availability of services at their door steps. However, awareness is required to extend the impact among famers as many rural communities are only beginning to understand the benefits of livestock treatment and medicine. The Project has also given the RSPs an opportunity towards promoting the public-private partnership model for community development. The RSPs have successfully trained and managed a cadre of community livestock workers. The RSPs adopt a programme-based approach to development, working with the communities for an extended duration and with a long-term development agenda based on local institutional development. This makes them committed to the sustainability of the PMSIL project and CLEWs project.

The mapping of stakeholders was performed with the objective to understand the stakeholder's position, interests, role and potential in the PMSIL project and its development objectives. Table 3.1 provides further analysis of the key stakeholders based on their stake in the development of the PMSIL project as well as other similar development interventions in the livestock sector:

Table 3.1: Stakeholder analysis

Stakeholder Group	Stakeholder Characteristics	Interests at stake for stakeholder	Effect of Project on interests of stakeholders	Importance of stakeholder for success of Project	Degree influence of stakeholder over project	Potential role of stakeholder in Project reforms
Federal and Provincial Government	Responsible for management of economic growth, resource productivity and poverty alleviation	Country's economic growth, productivity, poverty alleviation, food security	Increase GDP and exports, reduce poverty and improve food security	High	Medium	Increasing funding to raise salaries, working allowances, logistical support, mobile clinics, sustainability of CLEWs, increase training duration refresher courses
MinLDD	Policy formulation, design, manage and implement sectoral interventions	Livestock productivity, livestock asset creation, disease prevalence, animal mortality	Increase livestock productivity, livestock asset ownership; expand extension services and trained veterinary service providers	High	High	Approve and implement recommended reforms in salary structure, working allowance, logistics, training duration
Local Government	Responsible for district-wide development, public service delivery, and resource management	Employment and income generation through livestock, reduction in animal health problems of the community and improvement in production of livestock products	Increase livestock productivity in district, reduce disease, enhance food security and reduce poverty; improve livestock extension services and awareness	High	Medium	Develop coordination and linkages between government veterinary officers and PMSIL DVM and CLEWs
Livestock farmers	Livestock owners, target of policy and development interventions, potential beneficiaries	Livestock health, livestock productivity, Income enhancement, food security and asset	Improvement in livestock production, livestock asset creation, improve animal health, reduction in disease, increase in livestock income	High	Low	Participate in training, community meetings, workshops; Cooperate with CLEWs, DVMs and other Project staff
Rural Support Programmes	Responsible for implementation of development interventions in the sector, capacity builders of target beneficiaries	Poverty reduction, community awareness and capacity building, COs formation	Reduction of poverty in target communities; improved food security in target communities; awareness of livestock management and health; capacity building of community members	High	Medium	Increase community awareness meetings, improve selection of CLEWs, improve medicine supply system

Stakeholder Group	Stakeholder Characteristics	Interests at stake for stakeholder	Effect of Project on interests of stakeholders	Importance of stakeholder for success of Project	Degree influence of stakeholder over project	Potential role of stakeholder in Project reforms
PMSIL Project staff	Implementation of project and indirect beneficiaries of Project	Investment in livestock sector; Capacity building of livestock sector professionals; Livestock project salary structure; Successful implementation of livestock interventions	Employment and salary; capacity building	High	Medium	Increase community awareness, development inter-departmental linkages; build capacity
Livestock industry	Influence on policy formulation and beneficiary of sectoral growth	Increase in milk, meat and wool production; Breed improvement and Profitability	Increase in production of livestock products; Lower cost of production; Affordable livestock products	Medium	Low	Lobby for better funding and support from ministry to Project
Training Institute	Training of veterinarians and para-veterinarians	Enhance image and effectiveness of livestock sector that will improve funding and training capacity of training institutes	Train CLEWs to provide proper and effective animal health services	High	Medium	Improve practical training of CLEWs and provide refresher training

4. SOCIO-ECONOMIC CHARACTERISTICS OF CLEWS

A total of 372 male Community Livestock Extension Workers (CLEWs) were interviewed as shown in Table 1.8 in the four provinces including AJK and FANA and relating to each RSP. The Table 4.1 shows the percentage distribution of the respondents across provinces[6] and RSPs:

Table 4.1: Percentage of respondents within province and RSP

Distribution		NWFP	Punjab	Sindh	Balochistan	AJK	FANA	Total
NRSP	% within RSP	10.7%	40.7%	18.7%	14.7%	15.3%		100.0%
	% within Province	27.6%	50.4%	30.1%	33.8%	100.0%		40.3%
AKRSP	% within RSP						100.0%	100.0%
	% within Province						100.0%	3.2%
PRSP	% within RSP		100.0%					100.0%
	% within Province		43.8%					14.2%
SRSP	% within RSP	100.0%						100.0%
	% within Province	63.8%						9.9%
SRSO	% within RSP			100.0%				100.0%
	% within Province			26.9%				6.7%
GBTI	% within RSP	41.7%	58.3%					100.0%
	% within Province	8.6%	5.8%					3.2%
TRDP	% within RSP			100.0%				100.0%
	% within Province			43.0%				10.8%
BRSP	% within RSP				100.0%			100.0%
	% within Province				66.2%			11.6%
Total	% within RSP	15.6%	32.5%	25.0%	17.5%	6.2%	3.2%	100.0%
	% within Province	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

In AJK and FANA there is only one RSP working exclusively i.e. NRSP and AKRSP respectively. In NWFP, Punjab and Sindh there three different RSPs operating, whereas only two RSPs are working in Balochistan. Majority of the respondents in NWFP are from SRSP and in Punjab they are largely from NRSP and PRSP. In Sindh the highest numbers of respondents are from TRDP and in Balochistan respondents from BRSP are greater in number. NRSP and GBTI are the only two RSPs working in more than one province.

AGE

Five age groups between *under 18 yrs* to *51 years and above* were used for ascertaining the ages of the respondents. The most common age of the CLEWs was between 19-25 yrs (36.56%) and 26-35 yrs (36.56%) that together represent approximately 73% of the CLEW respondents. These age groups were followed by 36-50 yrs that represents 17.74% of the respondents (Figure 4.1). Only 2.15% of the CLEWs were over 51 yrs.

The criterion for selection of the CLEWs does not include an age criteria. However, age patterns indicate that the current criteria and method for selection has a high tendency of selecting CLEWs between the ages 19 and 35 yrs. This an appropriate age group for several reasons. Firstly, it meets the requirement that the selected trainee must have matriculated and should have the overall learning ability for technical learning and practice. However, maturity and responsibility is a strong determinant of the ability of individual to conscientiously provide extension services. At the same time the Project has to depend on independence and reliability of these trained individuals as their performance directly reflects on the community's perception of the Project. DVM supervisors

[6] 'Provinces' in this chapter and following refers to all four provinces including AJK and FANA.

interviewed have indicated that applicants in their late teens and early 20s do pose problems of commitment and management. Therefore the ideal age group maybe between 25 and 35 years.

The interviewed representatives of training institutes stated that old aged trainees exhibit challenges in learning especially in the case of technical modules. They also suggested that younger trainees have a quicker ability to internalize and apply newer material and technical knowledge. Therefore, the age group of 36-50 yrs that represents 17.74% of the respondent group is problematic as it seems to be inappropriate for new learning, particularly in cases where education levels are also low. One of the reasons that this group is disadvantaged for training is that substantial time has passed since members of this group were involved in learning and education. Similarly, 4.57% of the respondents were 18 yrs and under which is also an unsuitable age group for training extension workers as these trainees are likely to pursue further education, lack maturity and responsibility.

Overall, the two age groups of *36-50 yrs* and *18yrs and under* are significant areas for improvement in the selection process as together they represent more than 22% of the existing operations of the CLEWs i.e. approximately over 500 CLEWs belong to these age brackets.

Figure 4.1: Age distribution of CLEWs

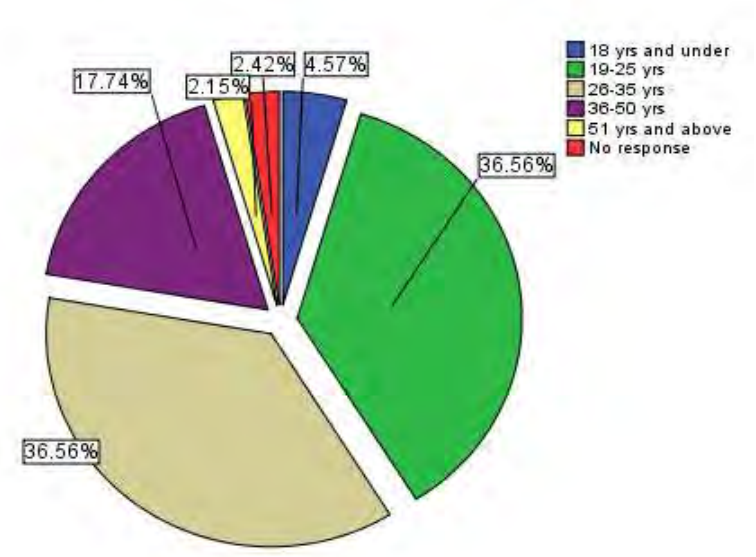


Table 4.3: Percentage age distribution by RSPs

RSP	18 yrs and under	19-25 yrs	26-35 yrs	36-50 yrs	51 yrs and above	No response	Total
NRSP	4.7%	36.0%	37.3%	15.3%	2.7%	4.0%	100.0%
AKRSP		8.3%	50.0%	25.0%	16.7%		100.0%
PRSP	1.9%	30.2%	30.2%	32.1%	1.9%	3.8%	100.0%
SRSP	8.1%	37.8%	37.8%	16.2%			100.0%
SRSO	4.0%	44.0%	40.0%	8.0%		4.0%	100.0%
GBTI	16.7%	50.0%	25.0%	8.3%			100.0%
TRDP		25.0%	50.0%	22.5%	2.5%		100.0%
BRSP	7.0%	55.8%	25.6%	11.6%			100.0%
Total	4.6%	36.6%	36.6%	17.7%	2.2%	2.4%	100.0%

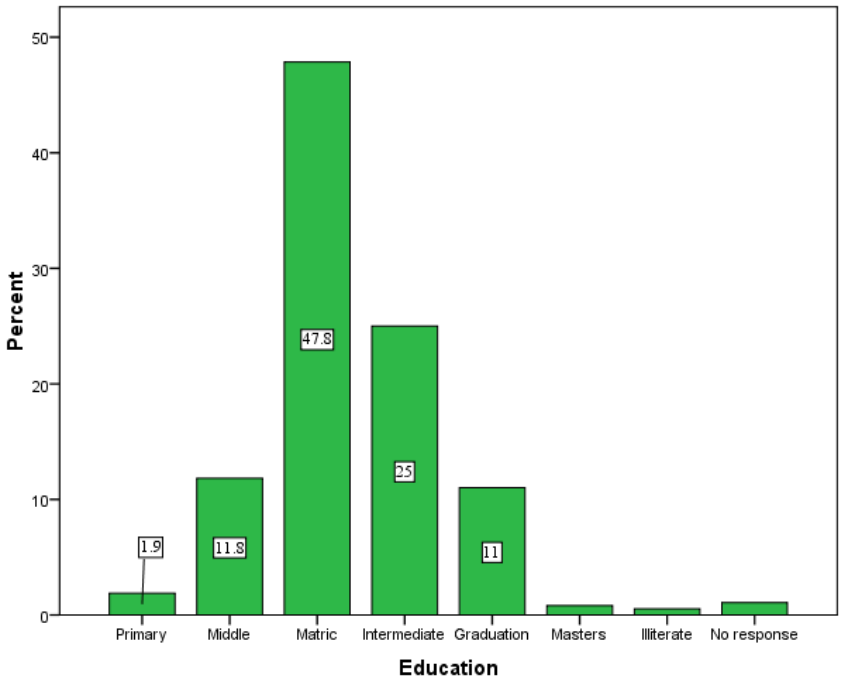
We can see in Table 4.3 the spread of two problematic age groups: 18 yrs and under and 36 to 50 yrs. In age group 18 yrs and under the majority of the respondents are from GBTI (16.7%) followed by 8.1% from SRSP and 7% from BRSP. The rest are from NRSP, PRSP and SRSO. In 18 yrs and under we can see that the age grouping problem is fairly well distributed across the different RSPs as GBTI has a smaller sample than other RSPs. Similarly, in the case of 36-50 yrs the respondents are spread across all the RSPs but are heavily concentrated mostly among PRSP (32%), AKRSP (25%) and

TRDP (22.5%). In the age group 51 yrs and above we can see that majority of the respondents (16.7%) belong to AKRSP.

EDUCATIONAL BACKGROUND

Seven educational groups from *illiterate to masters* were used to determine the educational background of the CLEWs. Figure 4.2 shows the highest educational qualification achieved by the 372 CLEWs interviewed. The majority of the respondents, approximately above 85%, have attained matriculation or a higher education qualification meeting the selection criteria. This is a good indication that the educational criteria for selecting CLEWs for training are largely being implemented by the RSPs effectively. In some regions it was observed during the survey that the RSPs also allowed the flexibility of including middle pass candidates for training where qualified candidates were not easily available or did not always have prior livestock experience or interest. This is visible in the data as around 11.5% of CLEWs have only middle pass qualification. Only in a small percentage of cases (approximately 2%) the selection criteria has not been adequately followed as these CLEWs have only primary level educational qualifications (Figure 4.2).

Figure 4.2: Educational background of CLEWs



However, it is important to mention here that several training institute representatives interviewed have insisted that several training candidates did not have minimum matriculation qualification. Training institutes have expressed the need for selection of candidates that are better suited for learning technical material and practices in a short span of time. As the ability of the candidates directly affects the effectiveness of training, more effort should be made towards minimizing candidates that do not have matriculation qualifications. Moreover, a general screening and review of candidates' marks should be added to the selection process to include competitive candidates that are better qualified for learning.

Table 4.4 shows the distribution of educational groups by province. CLEWs that have only achieved primary level education are concentrated only in FANA, NWFP and Sindh. Illiterate respondents were only found in NWFP and not in any other province. Therefore, the selection process needs corrective action especially in the NWFP province and also in Sindh. The middle pass candidates are found in each province but are significant in AKRSP, Punjab, NWFP and Sindh. The RSPs in these provinces

should make an effort to improve the educational selection criteria to minimize the number of middle pass candidates.

Table 4.4: Educational qualification by province

Education	NWFP	Punjab	Sindh	Balochistan	AJK	FANA	Total
Primary	3.4%		3.2%			16.7%	1.9%
Middle	12.1%	14.0%	10.8%	7.7%	4.3%	33.3%	11.8%
Matriculation	46.6%	57.9%	35.5%	49.2%	60.9%	16.7%	47.8%
Intermediate	22.4%	20.7%	33.3%	21.5%	30.4%	25.0%	25.0%
Graduation	10.3%	5.8%	15.1%	20.0%		8.3%	11.0%
Masters		.8%		1.5%	4.3%		.8%
Uneducated	3.4%						.5%
No response	1.7%	.8%	2.2%				1.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

INCOME AND OCCUPATION

Income through CLEW Services

Seven income groups ranging between *no income* to *above 8,001* were used to determine the average monthly income earned through provision of services. Figure 4.3 shows that that the average monthly income through CLEW services are fairly well spread across all the income groups and are not concentrated within any one income group. However, the majority of the CLEWs (over 80%) have incomes between the range of below 1,000 and 8,000 while the mean income of CLEWs is PKR 2,521. The main reason for a broader spread of income across the groups is that there are many underlying geographical, environmental and cultural factors that influence the income generation capability of the CLEWs in their region. The core factors observed in the fieldwork that affect the income from CLEW services are:

a. Mountain communities generally have lower disposable incomes and their economic activity is seasonal while in other regions the community is simply poverty ridden and cannot afford any extra expense on the animals;
b. Ownership and value of animals varies by region and this directly affects the community's spending behaviour on animals;
c. Certain communities, particularly in Punjab, have relatively greater commercial disposition in selling livestock products and therefore are more open to spending money on the preventive and curative health of the animals. Similarly, in other regions like Balochistan and FANA the communities have a greater reliance on subsistence livestock farming and therefore generally allocate relatively lower expenditure towards animal maintenance;
d. Disease prevalence and nutrition availability also play a factor in a communities spending behaviour locally.

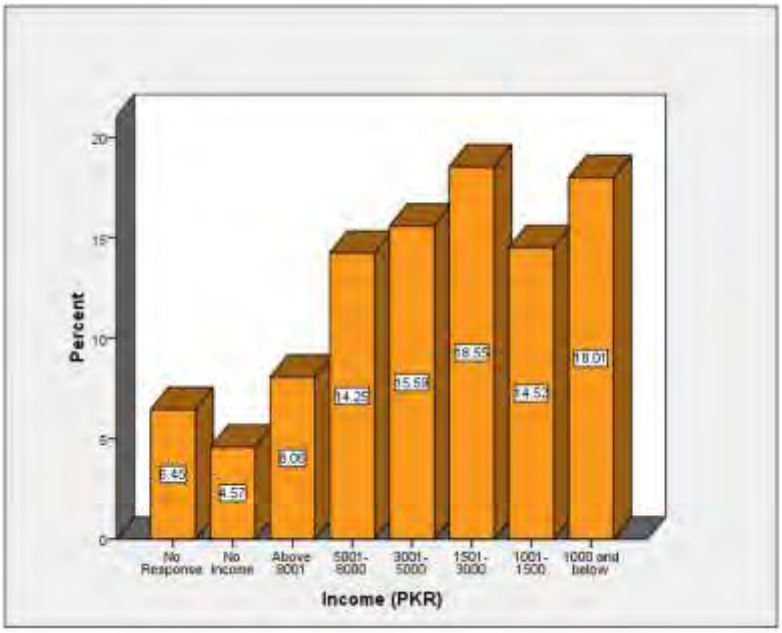
Table 4.5: Average monthly income distribution of CLEWs by RSP (% RSP)

Income Group	NRSP	AKRSP	PRSP	SRSP	SRSO	GBTI	TRDP	BRSP	Total
1000 and below	12.0%	33.3%	3.8%	16.2%	20.0%	33.3%	20.0%	46.5%	18.0%
1001-1500	11.3%	25.0%	15.1%	8.1%	4.0%	16.7%	27.5%	20.9%	14.5%
1501-3000	18.0%	8.3%	18.9%	10.8%	44.0%	25.0%	22.5%	9.3%	18.5%
3001-5000	14.7%	16.7%	26.4%	27.0%	20.0%	8.3%	7.5%	2.3%	15.6%
5001-8000	24.0%		7.5%	16.2%	8.0%		10.0%	2.3%	14.2%
Above 8001	14.7%	8.3%	7.5%	5.4%			2.5%		8.1%
No Income	3.3%		15.1%			8.3%	5.0%	2.3%	4.6%
No Response	2.0%	8.3%	5.7%	16.2%	4.0%	8.3%	5.0%	16.3%	6.5%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 4.5 shows the average monthly income of CLEWs by RSP. In the overall scenario, the number of CLEWs falling in the income ranges of between zero and 8,000 is more or less similar; but when the same data is analysed with reference to each RSP individually, the scenario is different. In the 1,000 and below income groups BRSP, AKRSP and GBTI represent majority of the CLEWs as each

has over 30% of CLEWs that earn income in this range, with BRSP having as many as 46.5% CLEWs in this category. However, in the no income group CLEWs from NRSP (3.3%), PRSP (15.1%), GBTI (8.3%), TRDP (5%) and BRSP (2.3%) are included. This table clearly shows that the CLEWs from NRSP are earning a relatively better income with almost 53% earning more than 3,000 rupees per month. Around 40% of the CLEWs relating to PRSP and SRSP also fall in the same category. Whereas majority of the CLEWs relating to AKRSP, SRSO, GBTI, TRDP and BRSP are earning less than 3,000 rupees per month.

Figure 4.3: Average monthly income distribution of CLEWs



Geographically, table 4.6 shows that CLEWs operating in AJK are certainly doing much better than in any other area, whereas CLEWs operating in Balochistan and FANA are more concentrated in the income group of below 3,000. The distribution of CLEWs belonging to NWFP, Punjab and Sindh is spread almost evenly across all income groups. However amongst these three provinces, a closer look reveals that the percentage of CLEWs earning more than 5,000 rupees a month is found most in Sindh, followed by Punjab and then NWFP.

Table 4.6: Average monthly income distribution of CLEWs by Province

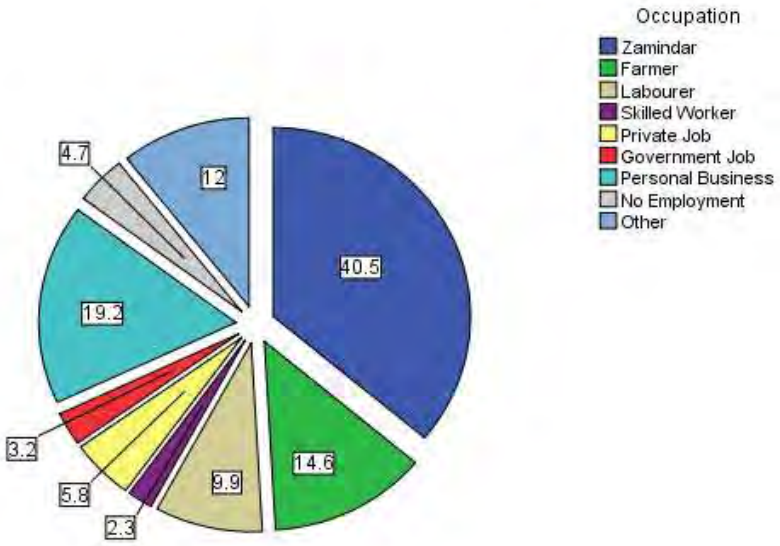
Income Group	NWFP	Punjab	Sindh	Balochistan	AJK	FANA	Total
1000 and below	20.7%	10.7%	15.1%	36.9%		33.3%	18.0%
1001-1500	13.8%	14.9%	12.9%	16.9%	8.7%	25.0%	14.5%
1501-3000	10.3%	20.7%	24.7%	16.9%	13.0%	8.3%	18.5%
3001-5000	25.9%	17.4%	9.7%	6.2%	30.4%	16.7%	15.6%
5001-8000	12.1%	14.0%	22.6%	3.1%	26.1%		14.2%
Above 8001	6.9%	10.7%	7.5%		21.7%	8.3%	8.1%
No Income		7.4%	2.2%	9.2%			4.6%
No Response	10.3%	4.1%	5.4%	10.8%		8.3%	6.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

It is also important to note that service fees and margin on medicine for CLEWs are not fixed across RSPs or even within RSPs. As a result, the income generation capability of CLEWs is also directly related to the performance of field unit clinics. Similarly income of CLEWs is also certainly determined by training quality and self-motivation of the CLEWs; however, one cannot deny that the income of CLEWs certainly depends on several other factors such as awareness and poverty levels of the local communities. CLEWs largely do not report their incomes to the DVMs and in their progress reports simply because they do not earn enough. The Project is not financially supporting the CLEWs and they have a high degree of independence on how they can charge for their services and the

medicines they sell to livestock owners. In certain regions it was noted that although CLEWs do not directly charge fees, instead they indirectly add their fee to the cost of medicine paid by the livestock owner.

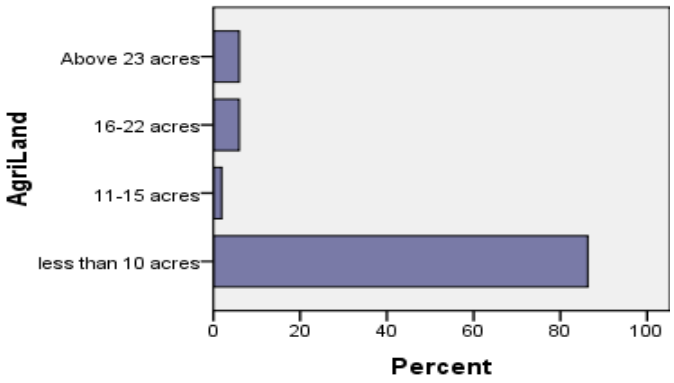
Other Sources of Income

Figure 4.4: Secondary occupation of CLEWs



Totals are based on total number of respondents[7]

Figure 4.5: Agricultural land ownership of CLEWs

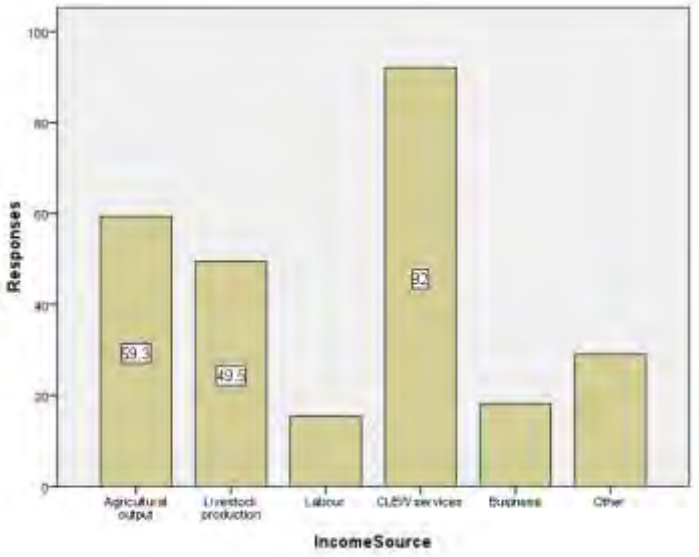


Eight occupational categories were used to measure the secondary occupations that CLEWs may pursue. Figure 4.4 shows that the majority of the respondents (40.5%) are also working as *zamindars* while around 14.6% are working as farmers. However, the agricultural land ownership show in the Figure 4.5 shows that the majority of respondents do not own more than 10 acres of land that indicates that over 80% are small farmers. As a result the majority of the respondents are earning income agricultural and livestock farming at a small scale and are also working as CLEWs. Other significant

[7] 'Total are based on total number of respondents' indicates that a table or figure is based on multiple response and each response type has its own cumulative figures.

occupations groups among the CLEWs are personal business (19%) and labourer (10%). Overall, a relatively high number of CLEWs are pursuing other occupations and are from low income background. Only a small percentage (4.7%) do hold another occupation (Figure 4.4). Figure 4.6 identifies that the three main sources of income for CLEWs interviewed are CLEW services (92%), agricultural output (59%) and livestock production (49%). These figures are in alignment with the finding that the two main sources of income for the CLEWs are agricultural and livestock farming.

Figure 4.6: Major sources of income of the CLEWs



5. ASSESSMENT OF CLEW SERVICES

One of the main objectives of the PMSIL project is to overcome the gap in delivery of veterinary extension services for small farmers by the government. The Project addresses this gap by establishing a community based system for providing livestock extension services to a larger number of small farmers with the aim of improving animal health and livestock productivity while reducing poverty conditions.

The CLEWs focus on extending preventive healthcare, first aid and awareness to the target communities under the supervision of the DVMs at the Field Unit clinic. CLEWs are selected through the COs with the help of DVMs and social mobilisation teams of the RSPs. A selection criterion was used to choose suitable candidates for training and attachment to field unit clinics under DVM supervision. The training candidates are not required to have any prior training or specialized experience in livestock. Community-based service delivery is a proven, cost-effective and efficient method of providing accessible veterinary services to farmers. The community-based approach ensures that local communities are active and involved in their own development; service providers are responsive and accountable; and a network of service providers is formed to ensure sustainability. The use of Rural Support Programmes (RSPs) augments the effectiveness of the community-based approach as RSPs are experienced in addressing the needs of local communities through social mobilisation and by fostering community organisations (COs).

PROVISION OF SERVICES

The survey findings show that CLEWs provide services in five main domains: vaccination, de-worming, first aid, awareness and advisory (Figure 5.1). Vaccination is the most popular serviced provided by around 98% of the CLEWs, closely followed by de-worming (93.2%) and awareness (92.3%). Advisory services on nutrition, poultry management and animal husbandry are also common as they are provided by around 45 to 70% of the CLEWs. Advisory services on range management, livestock management, and breed improvement are less popular provided by only 15 to 30% of the CLEWs. Comparatively, only around 57% of the CLEWs are providing first aid services. There is a strong need for extending the coverage of first-aid services as one of the main functions of the CLEWs is to be 'first responders' providing initial care for animal illness or injury. Population dispersion, geographical terrain and lack of medical facilities do not allow people to access medical treatment on time in most of rural Pakistan. The accessibility and timely availability of first aid services is crucial for saving animal lives in these regions.

Approximately 85% of the CLEWs have also stated that they provide medical treatment services to the community (Figure 5.1). The reporting of treatment should be interpreted cautiously as the majority of the CLEWs have not been trained nor have the experience to provide curative services. Only a very small percentage of CLEWs were observed in the field that may have the experience or training to provide some common types of treatment. These reported treatment services are those largely provided through the DVM's assistance and guidance. The high rate of 'assisted treatments' indicates that the CLEWs invariably are playing a major role in assisting DVMs in curative services. There are several reasons for the high rate of CLEW involvement in treatment services. Firstly, the CLEW is the first animal healthcare resource livestock owners approach for advice as DVMs are located in more populated areas. The CLEWs generally approach DVMs for advice on treatment who may share treatment and care procedures or if necessary pay a visit himself. Secondly, the CLEWs also have a monetary incentive in conducting treatment as they are buying medicine from the DVMs and selling at a margin to the community. Medicine provision is an important service for the community as availability of timely medicine is important for saving animal lives and villager's time and money. The medicine supply chain between the Project and CLEWs ensures that there is better availability of medicine at the village level that did not exist before.

Figure 5.1: Services provided by CLEWs

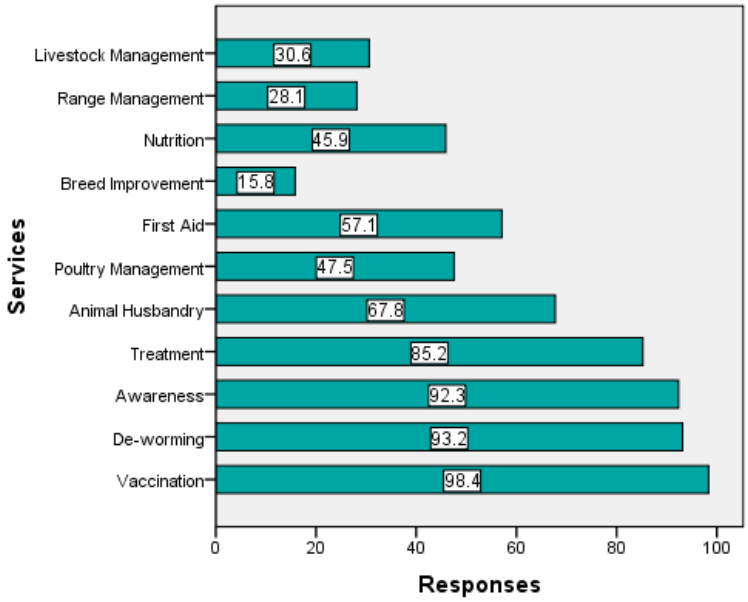


Table 5.1: CLEW services by RSP

Services	Responses	NRSP	AKRSP	PRSP	SRSP	SRSO	GBTI	TRDP	BRSP	Total
Vaccination	Count	146	12	50	36	24	11	40	41	360
	%	98	100	98	100	100	100	100	95	
De-worming	Count	144	9	48	30	24	7	40	39	341
	%	97	75	94	83	100	64	100	91	
Awareness	Count	139	12	44	35	21	8	36	43	338
	%	93	100	86	97	88	73	90	100	
Treatment	Count	134	11	43	33	16	11	26	38	312
	%	90	92	84	92	67	100	65	88	
Animal Husbandry	Count	89	10	40	29	14	8	23	35	248
	%	60	83	78	81	58	73	58	81	
Poultry Management	Count	69	10	24	23	3	6	11	28	174
	%	46	83	47	64	13	55	28	65	
First Aid	Count	93	9	21	26	11	4	27	18	209
	%	62	75	41	72	46	36	68	42	
Breed Improvement	Count	32	2	11	3	1	2	0	7	58
	%	21	17	22	8	4	18	0	16	
Nutrition	Count	67	9	24	21	12	4	15	16	168
	%	45	75	47	58	50	36	38	37	
Range Management	Count	46	6	16	16	1	2	4	12	103
	%	31	50	31	44	4	18	10	28	
Livestock Management	Count	46	6	12	20	3	3	11	11	112
	%	31	50	24	56	13	27	28	26	
Total	Count	149	12	51	36	24	11	40	43	366

Table 5.1 shows distribution of CLEW services by RSP that indicates to what extent CLEWs are providing certain services in each RSP's target area. The service record on vaccination is excellent as almost hundred percent of the CLEWs are providing vaccination services. One of the reasons for the

high rate of vaccination services is also that it is relatively a better income generating service, particularly in comparison to awareness and advisory services that yield no income at all. In the case of the de-worming and awareness, the majority of the CLEWs are performing well but there is room for improvement for the CLEWs working with AKRSP and GBTI in these services (Table 5.1). In the case of first aid services, RSPs fall into two tiers of performance: between 50 to 75% provision (NRSP, AKRSP, SRSP, and TRDP and between 35 to 45% provision (PRSP, SRSO, GBTI, BRSP). There is a significant need for increasing the number of CLEWs providing first aid services particularly in those RSPs where the first aid service records are below 50% (Table 5.1).

Comparatively, Table 5.2 shows results of data collected from DVMs on the types of services not provided by CLEWs under their supervision. The majority of the DVMs (79%) have reported that CLEWs do not provide breed improvement services, followed closely by 50% of DVMs that have reported no advisory services on poultry management. Around 10% of DVMs have reported CLEWs are not providing first aid services which collaborates findings from CLEW interviews that is there is a gap in first aid service provision. Also 11 DVMs have reported a gap in awareness activity whereas the over 90% of the CLEWs had indicated providing awareness. One of the reasons that the CLEWs maybe overstating awareness activity is that they included informal advise given to farmers also as awareness. Responses on vaccination, de-worming, awareness and other advisory services are largely aligned with the CLEWs responses (Figure 5.1).

Table 5.2: Services not provided by CLEWs as reported by DVMs

Service	No. of Responses	Percent of Cases
First Aid	5	10
Vaccination	1	2
De-worming	1	2
Animal Husbandry	12	23
Breed Improvement	41	79
Awareness	11	21
Animal Nutrition	14	27
Poultry Management	31	60
Total	116	223

Totals and percentages are based on total number of respondents[8]

The livestock owners also shared the type of CLEWs services that have most benefited their livestock productivity, health and management. Vaccination and de-worming are the most popular CLEWs services among farmers. Around 90% of the users stated that vaccination is the most beneficial service provide by the CLEWs (Table 5.3) because it has helped farmers reduce animal disease and mortality. In second place, 65% of the farmers have identified de-worming as the most beneficial service for their animal's health. These are the two services farmers have benefited most from. In addition, a fair number of farmers have identified animal nutrition (27%), awareness (22%), and treatment (17%) as beneficial services. These results indicate that these services should be continued and expanded to achieve as there is a significant demand for them and their impact is also high.

Table 5.3: Community usage of CLEW services

Services	N	Percent	Percent of Cases
Vaccination	160	38.4%	89.9%
De-worming	116	27.8%	65.2%
Treatment/First Aid	31	7.4%	17.4%
Breed Improvement	1	.2%	.6%
Animal Nutrition	49	11.8%	27.5%
Awareness	40	9.6%	22.5%
Provision of Medicine	20	4.8%	11.2%
Total	417	100.0%	234.3%

Totals and percentages are based on number of respondents

[8] Total are based on total number of respondents' indicates that a table or figure is based on multiple response and each response type has its own cumulative figures.

ACCESSIBILITY AND AVAILABILITY OF SERVICES

Initiation of Services

Initiation of service delivery is an important factor for judging Project efficiency and availability of CLEW services. Table 5.4 shows that 61% of the CLEWs began service delivery within a week of training, 25% began within a month and around 12% began after one month. Training is the first formal exercise on veterinary services for majority of the CLEWs and it is essential that CLEWs begin provision of services immediately to improve knowledge and practice. Delay in initiation of services lowers the effectiveness of the training and motivation level of the CLEWs.

There is a need for increasing the number of CLEWs that begin services within a week of training so that they can begin practically applying their knowledge and working with the DVMs. This is also important as many DVMs have stated that it takes a period of one to three months before a CLEW becomes able to independently handle cases and use tools on the animals in real life conditions. Early initiation period may also help in minimizing the high inactivity rate the Project is experiencing for a variety of reasons (Table 6.7 and 6.8).

Table 5.4: Initiation of services after training

Initiation period	Frequency	Percent
Within a week	228	61
Within a month	92	25
After one month	45	12
Not started yet	4	1
No response	3	0.8
Total	372	100

Daily Working Hours

Time allocated for service provision is a good indicator of the availability of the CLEW within the village communities. The number of hours a CLEW is devoting to veterinary services is directly proportional to the impact on health and productivity of livestock in that community. The amount of daily hours CLEWs commit to their work also reveals their level of commitment to veterinary services and their sustainability as para-veterinarians.

Figure 5.2 shows the average number of hours CLEWs allocate to providing services. Only around 5% of the CLEWs devote over 10 hours of their day to CLEW services, whereas around 14% of the CLEWs are devoting 7-10 hours. These are important segments of the CLEW population as they are most likely devoting their full day to veterinary work and are the most highly committed workers with a high degree of sustainability. Majority of the CLEWs are spending between 4-6 hours (42.7%) while a significant portion are allocating less than 3 hours (35.8%) to service provision. 4-6 hours is the average commitment level for CLEWs and this is mostly because a larger percentage are involved in farming or other income generating activities (Figure 4.4 and 4.6). Workers devoting less than three hours to service provision have low impact on livestock productivity, particularly because they represent a large segment of the CLEW population. Low allocation of time to services reduces the availability and accessibility of services for the community. This is an unfavourable trend for taking service delivery to the farmers' doorstep. These CLEWs also have a lower sustainability in their community as self-employed veterinary workers as they have a higher dependency on their primary occupation for income generation.

The daily service hours of CLEWs by RSP (Table 5.5) depicts that low commitment CLEWs (i.e. those spending less than 3 hours working) is above 20% in all RSPs and in significantly higher proportion in PRSP, GBTI and BRSP. In the 4-6 hour commitment level, AKRSP, SRSO, NRSP and TRDP have a relatively greater number of CLEWs.

Figure 5.2: Average daily hours of CLEW services

Table 5.5: Percentage of daily service hours by RSP

RSP	Less than 3 hours	4-6 hours	7-10 hours	Over 10 hours	No response	Total
NRSP	28	43	19	9	1	100
AKRSP	33	50	17			100
PRSP	45	32	11	6	6	100
SRSP	35	32	24	3	5	100
SRSO	28	60	8	4		100
GBTI	50	33	8		8	100
TRDP	20	65	8	5	3	100
BRSP	67	33				100
Total	36	43	14	5	2	100

Method of service delivery

Majority of the CLEWs are providing services at either the door step (68%) and/or from their own homes (48%) (Table 5.6). Only around 19% were able to begin providing services through a clinic and a small number provides telephonic services (6%). These are positive findings indicating that by and large the Project was able to provide veterinary services to the farmer's doorsteps. These findings have also been confirmed in the farmers' interviews in which many have identified easy availability and accessibility of services in their village as the one of the most beneficial aspects of the CLEWs intervention.

Table 5.6: Method of service delivery by the CLEWs

Method of Service	N	Percent of Cases
Home	173	48
Clinic	68	19
Doorstep	243	68
Phone	23	6
Other	10	3
Total	517	144

Percentages and totals are based on respondents

Nevertheless, Table 5.7 shows that certain regions need to expand their method of services by increasing accessible services at the door step or through the CLEWs' home in the village particularly

in Punjab, NWFP and Balochistan. The method of delivery needs improvement in these regions to improve the accessibility of the services.

Table 5.7: Method of service delivery by province

Method	Response	NWFP	Punjab	Sindh	Balochistan	AJK	FANA	Total
Home	Count	26	49	51	38	5	4	173
	%	15.0%	28.3%	29.5%	22.0%	2.9%	2.3%	
Clinic	Count	22	10	13	7	9	7	68
	%	32.4%	14.7%	19.1%	10.3%	13.2%	10.3%	
Doorstep	Count	24	95	74	21	22	7	243
	%	9.9%	39.1%	30.5%	8.6%	9.1%	2.9%	
Phone	Count	0	18	2	0	3	0	23
	%	.0%	78.3%	8.7%	.0%	13.0%	.0%	
Other	Count	0	6	4	0	0	0	10
	%	.0%	60.0%	40.0%	.0%	.0%	.0%	
Total	Count	56	117	87	65	23	12	360

Percentages and totals are based on respondents

REPORTING AND COMMUNICATION

Reporting and communication are important indicators of the performance and effectiveness of CLEW services. Reporting signifies the commitment and quality of service being provided by the CLEWs. Communication indicates the effectiveness of the linkages between the Project and the CLEWs as well indicating sustainability of CLEWs as animal health extension workers.

Record-keeping

Overall, around 85% of the CLEWs are performing record keeping and 11% are not keeping any records (Table 5.8). Record keeping is an essential component for verifying if the CLEWs are providing services in the community. The gap in recordkeeping signifies that these workers cannot be monitored by the DVMs as they do not have any records as proof of their activity or delivery of services. The CLEWs not keeping records are located in the four provinces of NWFP, Sindh, Punjab and Balochistan while in FANA and AJK there is hundred percent reporting. The gap in Punjab is the highest with 15% CLEWs expressing lack of recordkeeping, approximately 12-13% have expressed negligence in recordkeeping in Sindh and Balochistan and only around 7% of NWFP CLEWs are not maintaining records (Table 5.8).

Table 5.8: Percentage of CLEWs performing record keeping

Province	Yes	No	No response	Total
NWFP	93.1	6.9		100
Punjab	79.3	14.9	5.8	100
Sindh	81.7	12.9	5.4	100
Balochistan	86.2	12.3	1.5	100
AJK	100.0			100
FANA	100.0			100
Total	85.2	11.3	3.5	100

Medicine, services and income are three main categories of records that are essential for evaluating CLEWs performance and effectiveness. 86% of the CLEWs are recording medicine sales, 77% are recording service delivery and only 56% are recording income. Services are the main component of CLEWs intervention and 77% record maintenance rate is low. Medicine recordkeeping ratio is relatively better, however, it needs further improvement to ensure DVMs can properly assess the quality of CLEWs performance through medicine sale and delivery. Income records are not mandatory as CLEWs are not employed or financially supported by the Project. However, 56% income recordkeeping ratio does not provide reliable evidence to DVMs to judge capability for income generation and self-sustainability among more than half of the trained livestock workers.

Table 5.9: CLEWs recordkeeping practice by (%)

Recording period	NWFP	Punjab	Sindh	Balochistan	AJK	FANA	Total
Immediately	16	21	16	23	30	33	20
Daily	48	40	40	35	48	58	42
Weekly	7	11	18	3	17		11
Biweekly	5	2	2	2			2
Monthly	9	3	5	22	4		8
Occasionally	9	2	2	5		8	3
No Recordkeeping	3	2	2	9			3
No Response	3	18	14	2			10
Total	100	100	100	100	100	100	100

Table 5.10: Types of record maintained by CLEWs

Category	Responses	Percent of Cases
Medicine	294	86
Services	265	77
Income	193	56
Other	29	8
Total	781	228

Totals are based on total number of respondents

Table 5.11 identifies that the gap in medicine recordkeeping is mostly found among CLEWs in NRSP, PRSP and SRSO. Gaps in service records are predominantly found among CLEWs from all RSPs, however, the problem is negligible in AKRSP and BRSP. Income recordkeeping is relatively better among SRSP and TRDP CLEWs. In general, significant improvement in record keeping needs to be emphasized by the RSPs.

Table 5.11: Type of CLEW records by RSP

Records	Response	NRSP	AKRSP	PRSP	SRSP	SRSO	GBTI	TRDP	BRSP	Total
Medicine	Count	113	11	32	35	18	9	36	40	294
	%	81	100	68	100	86	100	95	98	
Services	Count	117	10	25	29	15	6	23	40	265
	%	84	91	53	83	71	67	61	98	
Income	Count	67	7	15	27	14	6	31	26	193
	%	48	64	32	77	67	67	82	63	
Other	Count	17	0	9	1	1	0	1	0	29
	%	12	0	19	3	5	0	3	0	
Total	Count	140	11	47	35	21	9	38	41	342

Communication

The assessment measured frequency of communication between CLEWs and respective DVMs, initiated by the CLEWs, to gauge their commitment levels. The results show that 16% of the CLEWs contact DVMs few times a week, 29% of the CLEWs contact DVMs weekly and 17% contact DVMs biweekly (Table 5.12). Around 30% of the CLEWs only contact DVMs once a month (Table 5.12) which is insufficient for optimum performance and efficient service delivery in the target areas. Weak communication linkages lower the commitment and motivation of the CLEWs as well as the probability of them sustaining service provision.

Table 5.12: Frequency of meeting with DVM

Period	Frequency	Percent
Few times a week	62	16
Weekly	109	29
Biweekly	64	17
Once a month	111	30
Never	14	4
No Response	12	3
Total	372	100

The survey also inquired from DVMs the frequency of verbal feedback they received from the CLEWs (Table 5.13). More than 50% of the DVMs reported that CLEWs provided verbal feedback few times a week, around 10% reported CLEWs provided biweekly feedback and 11% reported that only received monthly feedback from the CLEWs (Table 5.13). The verbal feedback rate from CLEWs is satisfactory but can be improved for CLEWs that are communicating only monthly or 'as required' to improve communication.

Table 5.13: Frequency of verbal feedback from CLEW

	Few times a week	Biweekly	Monthly	As required	Total
NWFP	6	2	1	2	11
Punjab	5		4	6	15
Sindh	19	3	1	4	27
Balochistan	2	1			3
AJK	3				3
FANA	2		1	1	4
Total	37	6	7	13	63

Progress Reporting by CLEWs

The survey measured reporting rate and frequency to gauge performance of CLEWs. Overall, 53 DVMs reported submission of progress reports by CLEWs and while around 16% or 11 DVMs reported lack of progress reports submission (Table 5.14)[9]. DVMs of SRSO and GBTI reported hundred percent submissions of progress report from CLEWs. The majority of DVMs from NRSP, AKRSP, PRSP, and TRDP reported regular submission of reports from CLEWs. SRSP CLEWs have lower performance as 3 out of 6 DVMs reported non-submission of progress reports (Table 5.15).

Table 5.14: CLEWs submission of progress reports to DVM

Response	NRSP	AKRSP	PRSP	SRSP	SRSO	GBTI	TRDP	BRSP	Total
Yes	88.5%	75.0%	75.0%	50.0%	100.0%	100.0%	86.7%	100.0%	84.1%
No	11.5%	25.0%	25.0%	50.0%			13.3%		15.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

DVMs were further questioned on the percentage of CLEWs that submitted progress reports. Only 18 (29%) of the DVMs reported 91-100% progress reporting by CLEWs. 19% of DVMs reported 26-50% reporting and 51-75% progress reporting respectively. 8 DVMs (13%) reported 1-25% progress reporting by CLEWs. Therefore, there are major gaps in progress reporting by CLEWs that is natural considering earlier findings regarding the weak communication linkages between the CLEWs and DVMs. There is a significant need for RSPs to improve reporting as it directly reflects performance and commitment levels of the CLEWs and ensures better monitoring of Project activities.

[9] These findings are based on verbal reporting by DVMs only. Verbal reports could not be cross verified with actual reports.

Table 5.15: Percentage of CLEWs submitting progress reports to DVMs by RSP

RSP	No reporting	1-25%	26-50%	51-75%	76-90%	91-100%	Total
NRSP	3	2	3	9	2	7	26
AKRSP	1	-	-	-	-	3	4
PRSP	-	1	1	2	-	-	4
SRSP	3	3	-	-	-	-	6
SRSO	-	-	1	-	1	1	3
GBTI	-	-	1	-	-	1	2
TRDP	2	1	6	1	1	4	15
BRSP	-	-	-	-	1	2	3
Total	10	8	12	12	5	18	63

One of the main reasons for the weakness in communication and reporting is that the CLEWs are essentially self-employed workers who are not financially or contractually tied to the RSPs or the field unit clinics. The DVMs have expressed a lack of authority in managing CLEWs as they have no leverage to enforce procedures and instructions because the CLEWs are not provided any allowance for daily activities and travel. Moreover, DVMs have identified transportation and financial constraints as a challenge for enforcing communication and reporting standards.

UTILIZATION OF CLEW SERVICES BY LOCAL COMMUNITIES

Livestock owners have also been interviewed regarding their views on the availability, accessibility and usage of CLEW services. There is no clear regularity in the usage of CLEW services by community (Table 5.16). Majority of community respondents (70%) have stated that they use services as and when required. Around 26% of the community respondents have given an indication that they are regular customers and use the service either weekly (11%) or monthly (13%). The regularity in service usage is low largely because the popular services (vaccination and de-worming) are required seasonally. First aid, awareness and other services are still gaining popularity that may increase the regularity rate in the future.

In terms of method of usage, the majority of the respondents (60%) use services by calling CLEWs to their homes. 13% of the community respondents have stated they visit the clinics while 21% wait for CLEW to make his rounds. A small percent (6%) also visit the CLEW's residence where the CLEW lives nearby in the same village (Table 5.17).

Table 5.16: Frequency of usage of CLEW services

Period	Frequency	Percent
Weekly	19	11
Once a month	24	13
Occasionally	10	6
As required	125	70
Total	178	100

Table 5.17: Method of service usage

Method of Usage	Frequency	Percent
Visit Clinic	23	13
Call to Own Home	107	60
Wait for CLEW visit	37	21
Visit CLEWs Residence	10	6
No response	1	1
Total	178	100

The farmers questioned about the availability of CLEWs during survey have overwhelmingly stated that the CLEWs are easily available and provide timely service (Table 5.18). These results indicate that the current users are being provided with accessible services and that CLEWs are able to reach the farmers on time.

Table 5.18: Availability of CLEWs

RSP	Yes	No	Total
NRSP	69		69
AKRSP	13		13
PRSP	29		29
SRSP	19		19
SRSO	17	1	18
GBTI	6		6
TRDP	6		6
BRSP	18		18
Total	177	1	178

CONSTRAINTS IN SERVICE PROVISION

The goal of the Project is building the capacity of the CLEWs through training and enabling them to sustainably deliver veterinary services at the village. The Project has supported the CLEWs in the post-training phase by providing DVMs as supervisors, selling medicine at discount prices, providing training kits and mobilizing farmers for service demand. However, these support facilities have largely been insufficient in enabling CLEWs to efficiently and sustainably deliver work in the target communities. CLEWs and key Project staff have pinpointed several important constraints that are harming the ability of CLEWs to function efficiently and sustain themselves as independent veterinary workers.

Reporting by CLEWs is a fundamental Project activity as keeps check on communication, linkages, service performance, record keeping and achievement. Progress reports are crucial for monitoring purposes and evaluating progress of each CLEW. However, over 50% of the CLEWs are facing some type of constraint in writing and delivering progress reports (Table 5.19). The primary constraint faced by more than 48% of the CLEWs is difficulty in mobility and transportation. There are two types of transportation problems faced by the CLEWs. Firstly, in many areas transportation is sporadic and the CLEWs cannot travel promptly, find difficulty in addressing emergencies and are constrained in visiting more clients. Secondly, CLEWs are largely from poor and needy families and therefore find it difficult to afford hiring transportation for only reporting to DVM. This is also limits some CLEWs to working only in their own village. Around 20% of CLEWs have cited 'lack of time as a constraint in reporting to DVMs. The time constraint is largely for two reasons. Firstly, the lack of transportation facilities does not allow CLEWs living in far flung areas to travel long distances to visit the DVMs. Secondly, some of the CLEWs are engaged in other sources of income generation that are they primary occupation and they do not find time to report but are still providing some level of services in their community.

Table 5.19: Reporting constraints faced by CLEWs

Type of constraint	N	Percent of Cases
Lack of time	67	19.1%
Transport constraint	167	47.6%
Lack of skill	16	4.6%
Lack of reporting material	32	9.1%
No constraint	144	41.0%
Other	14	4.0%
Total	440	

Totals are based on respondents

The survey results have also ascertained major constraints in service delivery to the community. Around 58% of the CLEWs have identified transportation difficulties as a major constraint in the delivery of services. Transportation difficulty is largely because of lack of transport availability, inability to afford transport and lack of working allowance from the Project. Another major constraint is 'lack of community awareness' expressed by around 40% CLEWs. This is an important finding as it point towards the difficulty CLEWs have working in the community. The main community awareness issues observed in the field are:

a) In certain regions farmers are not used to using veterinary medicine and rely on traditional or religious methods of managing livestock issues;
b) Similarly, in certain regions communities are not used to spending money on medicine or livestock and therefore CLEWs do not earn any income working in these regions;
c) In some regions government and NGO projects have a tendency to run free or highly subsidized Project and the communities have adopted a habit of availing of free of cost products and services; and
d) In some regions of NWFP and Balochistan, communities have developed sceptical religious views on NGOs through propaganda of religious personalities which has resulted in a non-cooperative attitude towards social development interventions.

Lack of community trust has also been cited as constraint (28%) by CLEWs because sometimes the community does not trust that the one month training is enough for CLEWs to acquire the ability to treat their valuable animals. It is also because of this reason that communities do not think that CLEWs are worthy of payment because they are novices and inexperienced. Moreover, the CLEWs have stated that if received official certificates from the health department and received long training it would easier for them to earn the trust of the community. Issues in the medicine supply system have also been noted as 21% of the CLEWs have cited lack of medicine as a constraint while 25% have cited 'expensive medicine' as a constraint. Other minor constraints shared by CLEWs are substandard medicine (6%), lack of time (15%), competitor services (11%), lack of income generation (3%) lack of time (16%) and high work load (6%).

Table 5.20: Service constraints faced by CLEWs

Type of constraint	N	Percent of Cases
Lack of medicine	72	21.1%
Substandard medicine	21	6.1%
Lack of community awareness	125	36.5%
Lack of community trust	96	28.1%
Lack of time	53	15.5%
Competitor services	39	11.4%
Transport constraints	196	57.3%
Expensive medicine	80	23.4%
High workload	19	5.6%
Lack of income generation	8	2.3%
No constraints	35	10.2%
Other	14	4.1%
Total	758	

Totals are based on respondents

DVMs have reinforced some of the findings related to constraints faced by the CLEWs: transportation difficulties, lack of financial support, lack of income generation and lack of community support. The DVM has also shared two additional constraints that are significant for improving CLEWs services. Poor selection was cited of the many reasons for low quality of services because selection criteria has not been followed properly and people not interested in working in livestock or people with higher income ambitions were recruited. Similarly, lack of interest was cited as a constraint that is related to the selection concern.

Table 5.21: Constraints faced by CLEWs in providing services according to DVM

Type of constraints	NWFP	Punjab	Sindh	Balochistan	AJK	FANA	Total
Lack of financial support from Project	6	4	3	2	1	1	17
Engaged in other income generating work	4	5	1	1	1	0	12
Unable to generate income	0	2	12	1	2	1	18
Poor selection	3	5	2	1	0	3	14
Lack of interest	1	11	7	0	2	0	21
Lack of skill	0	5	1	0	0	1	7
Lack of community support	0	1	4	0	0	0	5
Transportation constraints	1	1	5	0	0	0	7
Total	11	15	19	3	3	4	55

Totals are based on respondents

6. CLEWS PERFORMANCE ANALYSIS AND ASSESSMENT

DVMS' PERCEPTION OF CLEWS PERFORMANCE

The impact of the Project is a direct effect the quality of CLEW services. The survey measured the perceptions of CLEWs performance to understand the effectiveness and sustainability of CLEWs services. It also explored the reasons for different performance levels and constraints for better performance in the views of the DVMs, DLOs and the community.

A total of 63 DVMs were interviewed out of which 28 DVMs (44%) expressed 'satisfied' and 19 DVMs (30%) stated 'very satisfied' with CLEWs performance. A total of 7 DVMs (15%) stated dissatisfaction with the performance of the CLEWs out of which only 1 expressed 'very unsatisfied'. 9 DVMs (14%) were extremely satisfied with CLEWs performance (Figure 6.1). Overall around 90% of the DVMs have expressed satisfaction with CLEWs performance. Nonetheless, the majority of the results (44%) fall into the midpoint range of the scale indicating that most of the DVMs have expressed only 'borderline satisfaction' and consider CLEWs performance as mediocre. The main reasons for mediocre performance of the CLEWs is closely related the effectiveness and quality of the following Project activities and outcomes. The following reasons were cited by the DVMs for the mediocre performance of the CLEWs:

a) A systematic merit-based selection process has not been followed in most regions (Chapter 4) as a result of which disinterested, unmotivated and unqualified candidates were selected for training. Moreover, in some areas inadequate time was given to the selection process as a result of which the selection criteria was severely compromised;
b) The CLEWs do not receive any working allowance for participating (especially for transportation) in Project activities and this has severely affected their motivation and performance levels;
c) The DVMs largely do not provide medicine on credit and it is difficult for the CLEWs to afford the medicine on a cash delivery method. This constraints the CLEWs in expanding their services and generating sufficient income;
d) Training duration and lack of refresher training has not adequately prepared the CLEWs to perform services. Substantial support from the DVMs is required to develop and nurture the CLEWs even after the training period. However, the DVMs do not have the support system to invest time in CLEWs development as they are being paid very low salaries and do not receive any working allowance in most areas.

Figure 6.1: DVM satisfaction with CLEW performance

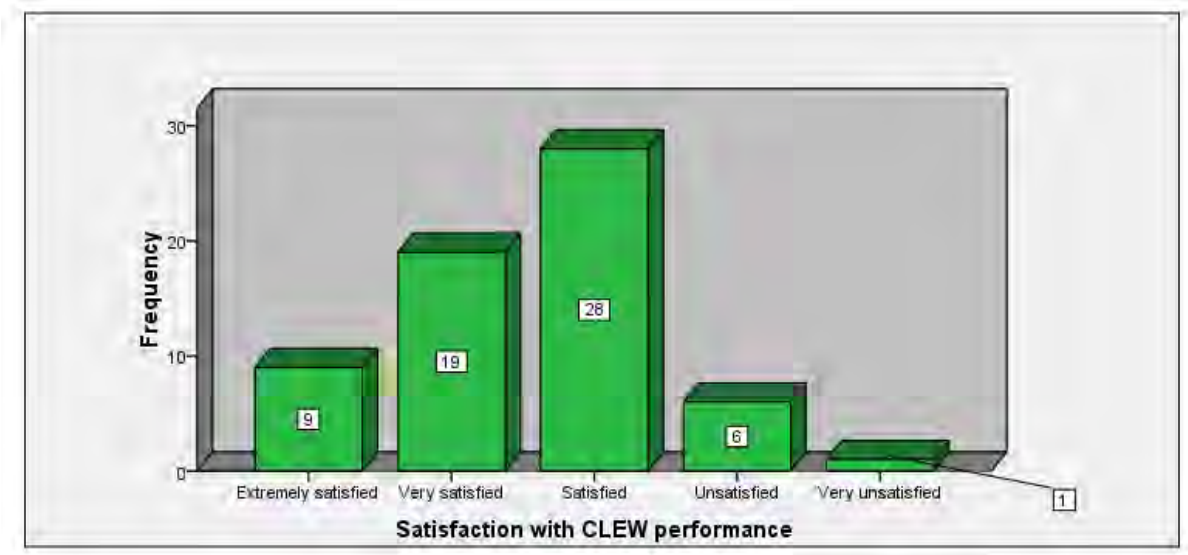


Table 6.1 provides the distribution of DVM responses on CLEWs performance by provinces identifies that the majority of the 'satisfied' responses and all of the unsatisfied respondents are from DVMs in Sindh. DVMs in other provinces have responded positively to CLEWs performance except for NWFP where one DVM has expressed 'very unsatisfied'. In the 'satisfied', there are DVMs from each province except Balochistan and FANA.

Table 6.1: DVM satisfaction with CLEWs performance

Province	Extremely satisfied	Very satisfied	Satisfied	Unsatisfied	Very unsatisfied	Total
NWFP	2	6	2	0	1	11
Punjab	2	7	6	0	0	15
Sindh	0	3	18	6	0	27
Balochistan	3	0	0	0	0	3
AJK	1	0	2	0	0	3
FANA	1	3	0	0	0	4
Total	9	19	28	6	1	63

Comparatively, none of the DLOs have expressed dissatisfaction with CLEWs performances. Majority of the DLO responses fall in between 'very satisfied' and 'satisfied' scale, while only 2 DLOs have indicated a high level of satisfaction with CLEWs performance (Table 6.2).

Table 6.2: DLO satisfaction with CLEWs performance

Satisfaction	Frequency	Percent
Extremely satisfied	2	13
Very satisfied	6	40
Satisfied	7	47
Unsatisfied	0	0
Very Unsatisfied	0	0

ASSESSMENT OF CLEWS BY DVM

DVMs also categorised CLEWs under their supervision into three categories of high performance, average performance and poor performance. Table 6.3 shows the means values of each performance level compared to the mean value of supervised CLEWs. These results suggest 70% of the CLEWs are performing average or above average while 30% are performing poorly. These figures indicate that significant proportion of the CLEWs trained are not delivering quality services and will not sustain as self-employed community veterinary workers. There is a strong need for improving the performance rate so that the Project can meet its objectives of livestock productivity enhancement and poverty alleviation among the target communities. Low performance of CLEWs is directly co-related to the magnitude of impact as poor performing CLEWs are not contributing towards the development objectives of the Project.

Table 6.3: Comparison of CLEW performance mean

CLEW categories	N	Minimum	Maximum	Mean
High Performance CLEWs	63	0	10	4
Average Performance CLEWs	63	0	8	3
Poor Performance CLEWs	63	0	15	3
Number of Supervised CLEWs	63	1	21	10

The survey also collected on the DVM's perceptions of the factors that influence high and poor performance of CLEWs. The majority of the DVMs have identified 'high interest, motivation and commitment' as primary reasons for the high performance of CLEWs under their supervision. This is an important finding as it reinforces that 'proper selection' and screening of training candidates is

essential for developing better performances CLEWs. Commitment and motivation are intangible measures that are difficult to measure and only a through selection process can ensure that largely those CLEWs are selected that have a strong interest in pursuing work in the livestock services and as well be committed to social betterment of their communities.

Engagement with the community has also been cited a strong reason for high performing CLEW as it points towards the importance that selected CLEWs must also have a passion for social work and a positive relationship with their community. Ability to generate income, previous livestock experiences, proper selection and better skills have also been identified as important factors for the performance of the CLEWs. Both veterinary and entrepreneurial skills are closely related to the ability to generate income and they signify the importance of previous background and experiences of the CLEW selected. The findings suggest that experienced CLEWs that were involved in commercial and particularly livestock-related jobs have a higher success rate as CLEWs. Proper selection is crucial as many performance factors are related to the previous employment activities and their interest in working as CLEWs

Table 6.4: Reasons for CLEW high performance stated by DVMs

Reasons	Response	NWFP	Punjab	Sindh	Balochistan	AJK	FANA	Total
High interest, motivation and commitment	Count	9	13	17	2	2	3	46
	%	40.9%	34.2%	56.7%	25.0%	50.0%	25.0%	
Ability to generate sufficient income	Count	4	2	3	1	1	1	12
	%	18.2%	5.3%	10.0%	12.5%	25.0%	8.3%	
Previous livestock experience and skills	Count	2	5	0	1	0	3	11
	%	9.1%	13.2%	.0%	12.5%	.0%	25.0%	
Geographical and environmental advantage	Count	2	1	1	0	0	0	4
	%	9.1%	2.6%	3.3%	.0%	.0%	.0%	
Proper selection	Count	3	5	0	2	0	1	11
	%	13.6%	13.2%	.0%	25.0%	.0%	8.3%	
Engaged with community	Count	0	9	6	1	1	0	17
	%	.0%	23.7%	20.0%	12.5%	25.0%	.0%	
Better veterinary and entrepreneurial skills	Count	2	3	3	1	0	4	13
	%	9.1%	7.9%	10.0%	12.5%	.0%	33.3%	
Total	Count	22	38	30	8	4	12	114

Totals are based on respondents

In the case of poor performance CLEWs, DVMs have identified lack of interest as one of the primary reasons for low performance, followed closely by 'unable to generate sufficient income' and 'lack of financial support from the Project'. In third tier of poor performance factors, the DVMs have identified engagement in other income activity and poor selection as the main reasons affecting the performance of the CLEWs.

Table 6.5: Reasons for CLEW poor performance stated by DVMs

Reasons	Response	NWFP	Punjab	Sindh	Balochistan	AJK	FANA	Total
Lack of financial support from Project	Count	6	4	3	2	1	1	17
	%	40.0%	11.8%	8.6%	40.0%	16.7%	16.7%	
Engaged in other income generating work	Count	4	5	1	1	1	0	12
	%	26.7%	14.7%	2.9%	20.0%	16.7%	.0%	
Unable to generate sufficient through service provision	Count	0	2	12	1	2	1	18
	%	.0%	5.9%	34.3%	20.0%	33.3%	16.7%	
Poor selection	Count	3	5	2	1	0	3	14
	%	20.0%	14.7%	5.7%	20.0%	.0%	50.0%	
Lack of interest	Count	1	11	7	0	2	0	21
	%	6.7%	32.4%	20.0%	.0%	33.3%	.0%	
Lack of skill	Count	0	5	1	0	0	1	7
	%	.0%	14.7%	2.9%	.0%	.0%	16.7%	
Lack of community support	Count	0	1	4	0	0	0	5
	%	.0%	2.9%	11.4%	.0%	.0%	.0%	
Transportation constraints	Count	1	1	5	0	0	0	7
	%	6.7%	2.9%	14.3%	.0%	.0%	.0%	
Total	Count	15	34	35	5	6	6	101

Totals are based on total number of respondents

CLEW inactivity rate is a good indicator of the sustainability of CLEWs as service providers in the local communities. Table 6.7 indicates that the mean value of inactive CLEWs is around 4 which is

very close to the mean value of poor performing CLEWs. On average about 4 CLEWs under each DVM are inactive where each DVM is supervising about 10 CLEWs.[10]

DVMs have identified several reasons for CLEW inactivity. Two main reasons for CLEW inactivity are 'finding another job' and 'lack of income'. Lack of motivation and interest has also been cited as an important reason for CLEW inactivity.

Table 6.7: Mean value of inactive CLEWs

Inactive CLEWs	Minimum Inactive	Maximum Inactive	Mean
63	0[11]	15	3.95

Table 6.8: Reasons for CLEW inactivity

Reasons for inactivity		NRSP	AKRSP	PRSP	SRSP	SRSO	GBTI	TRDP	BRSP	Total
Lack of motivation and interest	Count	3	1	1	2	1	1	7	1	17
	%	5	13	14	13	11	25	22	10	
Lack of income	Count	10	2	2	1	2	1	11	1	30
	%	16	25	29	6	22	25	34	10	
Lack of experience and confidence	Count	5	-	-	1	-	-	1	-	7
	%	8	-	-	6	-	-	3	-	
Lack of support from community	Count	4	-	-	1	-	-	2	-	7
	%	6	-	-	6	-	-	6	-	
Found another job	Count	22	4	3	4	2	2	6	3	46
	%	35	50	43	25	22	50	19	30	
Lack of support facilities	Count	6	-	-	4	2	-	4	2	18
	%	10	-	-	25	22	-	13	20	
Involved in other income generating activities	Count	1	-	-	-	-	-	-	-	1
	%	2	-	-	-	-	-	-	-	
No monetary incentive	Count	5	-	-	1	-	-	-	2	8
	%	8	-	-	6	-	-	-	20	
Improper selection	Count	6	1	1	1	2	-	1	1	13
	%	10	13	14	6	22	-	3	10	
Local competition	Count	-	-	-	1	-	-	-	-	1
	%	-	-	-	6	-	-	-	-	
Total	Count	62	8	7	16	9	4	32	10	148

DLOs have also identified constraints in CLEWs service provision and suggested possible measure for improving their performance. The DLO's suggestions can be categorised into four main tiers by response size (Figure 6.2):

a. Refresher training (8 responses);
b. Working allowance and support facilities (6-8 responses);
c. Increased duration of training period (4 responses); and
d. Proper selection; improve DVM support (3 responses).

DLO's feedback on CLEWs performance carry a lot of weight as they have the oversight of complete districts consisting of several Tehsils and Field Unit Clinics. Generally, DLOs are also among the oldest Project staff previously holding DVM positions and their turnover is lower than those of the DVMs.

[10] The 63 DVMs interviewed are supervising a total of 641 CLEWs and of these 249 CLEWs are inactive.
[11] The '0' indicates that some DVMs have all CLEWs active.

Figure 6.2: How to Improve CLEWs Performances (DLO response)

COMMUNITY'S VIEW OF CLEWS SERVICES

A total of 178 interviews were held with male and female livestock owners to determine the quality of services provided to them. Over 60% of the farmers expressed high level of satisfaction with quality of CLEWs services. 34% expressed average level of satisfaction with and only 3% indicate below satisfactory views. It is important to note that none of respondents were dissatisfied with the quality of services (Table 6.9). These results are not based on representative sampling and therefore these findings cannot be generalized for the entire target population. Nonetheless, the results suggest a positive trend in satisfaction of the target community with the quality of CLEW services. Furthermore, discussion with the farmers on type of benefits, affordability of services, change in livestock productivity and change in economic conditions provide further insight into effectiveness of the services and their systematic impact on the beneficiaries.

Table 6.9: Overall satisfaction with CLEW services

Satisfaction level	Frequency	Percent
Very satisfied	111	62.4
Satisfied	61	34.3
Somewhat satisfied	6	3.4
Dissatisfied	0	0
Very dissatisfied	0	0
Total	178	100.0

Table 6.10 shows the 9 different types of benefits that the community has highlighted as indicators of the positive impact of CLEW services on their household and livestock assets. The two most common type of benefits expressed by the community are 'accessible, timely and cheaper service' (64%) and 'improvement in animal health, reduction in disease and mortality' (48%). These results indicate CLEW services were reaching the farmers 'at their door steps' and that the qualities of services are effective enough to have a visible effect on their animal health.

A sizeable segment of the farmers have also directly identified the type of services that was most beneficial to them: vaccination and de-worming. Considering that these services also have a system effect on animal health; this is indicative that a very high percentage of farmers receiving services are experiencing an impact on their livestock security and sustainability. Other key benefits highlighted by many farmers include increase in community awareness, productivity and medicine provision. Comparatively, a very low number of respondents have highlighted 'income enhancement' (3%). There are two possible reasons that a higher percentage of farmers have not cited income enhancement as a major benefit although their animal health and productivity has improved. Firstly, the farmers may not be realising the monetary benefit they as they generally do not record cost and benefit of their livestock. Secondly, the farmers may not be properly utilising the benefits they are receiving as their livestock management and production systems may still contain certain inefficiencies. Lack of perceived income enhancement is also confirmed by responses on the overall

economic change of the farmer's household. More than 50% of the farmers point out that they have not experienced any improvement in economic conditions due to CLEW services (Table 6.11).

Table 6.10: Benefits of CLEWs services highlighted by the community

Benefits highlighted	Frequency	Percent of Cases
Accessible, timely and cheaper services (including treatment)	112	64
Improvement in animal health, reduction in disease and mortality	85	48
Increase in community awareness	23	13
Increase in productivity	29	16
Accessible and timely provision of medicine and nutrition	37	21
Vaccination services	50	28
De-worming services	23	13
Income enhancement	5	3

Table 6.11: Change in economic condition due to CLEW services (%)

Province	Significant Increase	Some Increase	No Change	Some Decrease	Total
NWFP	17	11	2	0	30
Punjab	20	17	10	6	53
Sindh	3	9	25	10	47
Balochistan	11	8	3	1	23
AJK	2	6	4	0	12
FANA	6	6	1	0	13
Total	59	57	45	17	178

The farmers' response that 'accessibility and cheaper services' are one of the most common benefits is verified by their responses on the affordability of CLEW services. Around 87% of the respondents (Table 6.12) have indicated that services provided are affordable while only 13% have responded in the negative regarding affordability.

Table 6.12: Affordability of CLEW services

Response	Frequency	Percent
Yes	154	87
No	24	13
Total	178	100

Table 6.13: Increase in livestock productivity through CLEW services

Province	Yes	No	No response	Total
NWFP	30	-	-	30
Punjab	38	15	-	53
Sindh	40	7	-	47
Balochistan	22	-	1	23
AJK	5	7	-	12
FANA	12	-	1	13
Total	147	29	2	178

Farmers have also overwhelming indicated positive results (over 80%) regarding improvement in their livestock productivity (Table 6.13) and livestock asset creation (Table 6.14). Respondents have identified three main indicators for the increase in livestock productivity: improvement in health, increase milk production and accessible services (Table 6.14). Similarly, for reasons for increase in livestock assets the farmers have highlighted there major factors: reduction in disease, improvement in health and accessibility to services (Table 6.16).

Table 6.14: Reasons for productivity change

Change in productivity	N	Percent of Cases
Reduction in mortality	10	5.7%
Improvement in health	45	25.6%
Reduction in disease	16	9.1%
Accessible treatment and services	62	35.2%
Increase in milk production	44	25.0%
No response	4	2.3%
No change in productivity	28	15.9%
Total	209	118.8%

Totals are based on total number of respondents

Table 6.15: Increase in livestock asset through CLEW services

Province	Yes	No	Total
NWFP	29	1	30
Punjab	35	18	53
Sindh	40	7	47
Balochistan	22	1	23
AJK	6	6	12
FANA	13	0	13
Total	145	33	178

Table 6.16: Reasons for change in livestock asset ownership

Reasons for change	N	Percent of Cases
Reduction in mortality	28	15.7%
Improvement in health	36	20.2%
Reduction in disease	42	23.6%
Accessible treatment and services	58	32.6%
Livestock Management Awareness	21	11.8%
No increase in livestock	29	16.3%
No response	8	4.5%
Total	222	124.7%

7. OVERVIEW OF FEMALE CLEWS

Female CLEWs were trained in Balochistan, FANA and NWFP by BRSP, AKRSP and SRSP respectively. A total of about 27 female CLEWs were trained in the three provinces. Female livestock farmer workshops were also held in the target areas to educate female community members on better livestock management practices. Training and development of female community members was neglected in comparison to male CLEW training. Rural women play a central role in livestock management in Pakistan. A rural woman in Pakistan spends a considerable amount of her time caring for livestock. They are involved in almost all aspects of animal health and production; however, their role was underestimated and ignored. Men dominate veterinary services and largely communicate with husbands or male head of households. As a result the impact of veterinary services and awareness programmes is lower on the primary livestock caretakers – the female members of a household. There is a significant need for training women livestock workers in the target areas to enhance awareness and use of better livestock management practices in a sustainable manner.

SOCIO-ECONOMIC PROFILE OF FEMALE CLEWS

A total of 15 female CLEWs were interviewed for the assessment study in three provinces of NWFP, Balochistan and FANA (Table 7.1). Seven educational groups from *primary* to *uneducated* were used to determine educational background. Table 7.2 shows that female CLEWs interviewed are spread across the different educational groups and are not concentrated in any one group. 8 CLEWs are below matriculation level out of which 5 are uneducated. All of the uneducated CLEWs are from NWFP. Four of the female CLEWs have achieved matriculation and the highest degree achieved is graduation (Table 7.2). About 50% of the female respondents are below matriculation because it is a challenge to find educated females. It should be noted that the literacy and matriculation rate is very low for rural women in the target areas and therefore selecting qualified females is a substantial challenge.

Table 7.1: Distribution of female CLEW respondents

RSP	NWFP	Balochistan	FANA	Total
AKRSP	-	-	1	1
SRSP	9	-	-	9
BRSP	-	5	-	5
Total	9	5	1	15

Table 7.2: Education of female CLEWs

Education	NWFP	Balochistan	FANA	Total
Primary	1	-	-	1
Middle	-	2	-	2
Matriculation	2	2	-	4
Intermediate	-	-	1	1
Graduation	1	1	-	2
Uneducated	5	-	-	5
Total	9	5	1	15

Five age groups between *under 18 yrs* to *51 years and above* were used for ascertaining the ages of the respondents. Table 7.3 shows that almost half of the respondents are unmarried while the other half are married. The respondents are distributed across only three age groups of 19-25 yrs, 26-35 yrs, and 36-50 yrs and the majority of them fall into the 19-25 yrs group. In comparison to male CLEWs, all selected females are above 18 yrs.

Table 7.4 shows the distribution of income of female CLEWs across five income groups. Female CLEWs are not concentrated in any one income group and their incomes are spread across different income groups. Six of the total 15 respondents stated an income of PKR 1000 or below; another six responses fall in the income category of above PKR 1,000, while two CLEWs have stated that they do not earn any income through provision of services.

Table 7.3: Cross-tabulation of age and marriage status of female CLEWs

Age group	Single	Married	Total
19-25 yrs	5	2	7
26-35 yrs	1	2	3
36-50 yrs	0	3	3
Total	6	7	13

Table 7.4: Female CLEW income by provinces

Income Group (PKR)	NWFP	Balochistan	FANA	Total
less than 1,000	4	1	1	6
1,001 - 1,500	-	2	-	2
5,001 - 6,000	2	-	-	2
Above 8,000	2	-	-	2
No Income	-	2	-	2
No response	1	-	-	1
Total	9	5	1	15

TRAINING

The females were trained in three training institutes: GTI Gilgit, AHITI Peshawar and CASVAB Balochistan (Table 7.5) that indicates the capability of these training institutes to hold trainings for women. Table 7.6 shows that the female workers have rated the quality of training methods as satisfactory and above. Similarly, the female CLEWs have given mixed responses on duration of training (Table 7.7) between *very lengthy* and *short* and only 3 of them have classified training as short. It is important to note that women find it harder to stay away from home for training as they have many domestic responsibilities including taking care of children and household agriculture and livestock.

Table 7.5: Female CLEWs by training institute

Training Institute	NWFP	Balochistan	FANA	Total
Government Training Institute - Gilgit	0	0	1	1
AHITI - Peshawar	9	0	0	9
CASVAB University - Balochistan	0	5	0	5
Total	9	5	1	15

Table 7.6: Quality of training methodology

Quality	Government Training Institute - Gilgit	AHITI - Peshawar	CASVAB University - Balochistan	Total
Excellent	1	2	2	5
Very Good	0	5	3	8
Satisfactory	0	2	0	2
Total	1	9	5	15

Table 7.7: Feedback on duration of training

Duration	AHITI - Peshawar	CASVAB University - Balochistan	Government Training Institute – Gilgit	Total
Very lengthy	2	1	0	3
Lengthy	3	0	0	3
Satisfactory	2	3	0	5
Short	2	1	1	4
Total	9	5	1	15

The satisfaction level of the female CLEWs with DVM support is fairly high with only one respondent that has expressed dissatisfaction.

The above stated findings are not based on statistical representation as the number of females trained is very small. Nevertheless, they do suggest that the training of females is possible among the target communities and the Project has the capability to provide training and development support to female CLEWs.

Table 7.8: Satisfaction with DVM support

Satisfaction level	NWFP	Balochistan	FANA	Total
Very satisfied	8	3	1	12
Satisfied	1	0	0	1
Dissatisfied	0	1	0	1
No response	0	1	0	1
Total	9	5	1	15

ASSESSMENT OF FEMALE CLEW SERVICES

Most of female CLEWs are providing vaccination, de-worming, awareness and treatment services. Some of the CLEWs are also providing animal husbandry, poultry management, first aid and nutrition services. Breed improvement is being provided by only three female CLEWs interviewed.

Table 7.8: Services provided by Female CLEWs

Services	NWFP	Balochistan	FANA	Total
Vaccination	9	5	1	15
De-worming	9	3	1	13
Awareness	9	4	1	14
Treatment	9	4	1	14
Animal Husbandry	9	3	1	13
Poultry Management	8	4	-	12
First Aid	6	3	1	10
Breed Improvement	1	1	1	3
Nutrition	6	5	-	11
Range Management	6	2	-	8
Livestock Management	4	2	1	7
Total	9	5	1	15

The majority of the female CLEWs have stated they are maintaining service records (13 responses) while only 2 CLEWs do not maintain records. 13 female CLEWs have stated they spend largely less than 3 hours in conducting CLEWs work while the rest of the 2 female CLEWs spend between 4-6 hours. The working hours of the female CLEWs is probably limited by cultural constraints and other home responsibilities that is why they have lower time commitment level than male CLEWs (Table 7.9).

Table 7.9: Service maintenance by female CLEWs

Response	NWFP	Balochistan	FANA	Total
Yes	9	3	1	13
No	-	2	-	2
Total	9	5	1	15

Table 7.10: Daily service hours of female CLEWs

Period of service delivery	NWFP	Balochistan	FANA	Total
Less than 3 hours	9	3	1	13
4-6 hours	-	2	-	2
Total	9	5	1	15

Communication with DVM	NWFP	Balochistan	FANA	Total
Daily	1	-	-	1
Weekly	1	1	-	2
Once a month	7	3	1	11
Occasionally	-	1	-	1
Total	9	5	1	15

The following Table 7.12 provides an overview of female CLEWs through three case studies from Gilgit, Balochistan and NWFP respectively:

Table 7.12: Comparative case studies of female CLEWs

Case Study 1:	Case Study 2:	Case Study 3:
Rasheeda, a 24 year old student and housewife from Aliabad in Gilgit, began working as a CLEW to earn an income to support her family. No community livestock workers operated in the village and this provided her an opportunity to provide livestock extension services for the first time in her village. Her family also earns an income through farming and sale of fruits and vegetables while they raise livestock largely for sustenance needs. Rasheeda received training at the Government Training Institute in Gilgit and started working as a CLEW within one month of training. Rasheeda delivers services only to households in her village earning between 500 to 1,000 rupees per month. Farmers have benefited greatly from vaccination and de-worming services that has protected animals from disease and reduce mortality. This has also helped in improving milk and meat production. Rasheeda particularly emphasized the increased awareness of livestock management practices among farmers through her services. As a female CLEW worker the main challenge Rasheeda faces is mobility in the mountain region– as it is difficult for her to travel to surrounding villages and far flung houses. She requires transportation facilities and travel allowance to provide services in the difficult mountain terrain. She also has domestic responsibilities and is unable to give more than a few hours a day to livestock work. Rasheeda is satisfied with the technical support of the DVM but insisted that she needed credit to purchase medicine. In her opinion medicines are also expensive and prices should be reduced to make them affordable for the CLEWs and farmers. Overall, she suggested an increase in training duration and addition of refresher training as one of the gaps in the Project.	Haseena Karim is a 22 year old female CLEW worker from the Mastung district of Balochistan. She received training at the CASVAB University in Balochistan and began delivering services within a week of training. Haseen delivers services only to female farmers in her village because of local *purdah* customs. She does not charge any fees for services as her community is poor and cannot afford it. She used to work in embroidery to earn an income and is now also a student of FSc. Her family also earns an income through a grocery shop, property rent, and livestock products. Major benefit of Haseena's services is that the female livestock farmers in her village get proper treatment and service in their homes. In the past female livestock owners had to wait for their husbands to visit a doctor or healer and could not avail prompt treatment. Home treatment has also greatly reduced the cost of treatment for the farmers. Interaction with female CLEW has also empowered female community members as they have grown more aware of better livestock management practices. The female community members in the village have experienced improvement in animal health and suggested that more female CLEWs should be trained in their village. One of the main challenge Haseena faces as a female CLEW is that it is difficult for her to leave her home without permission and she has to traverse long distances on foot. Female *purdah* is also the main reason that it is difficult to train more female CLEWs from these regions. Haseena suggested that she required refresher courses so that she can keep on improving her knowledge and practice. She also recommended that recordkeeping forms should be provided to them for recording service history.	Parveen Bibi is a 40 year old female CLEW from Peshawar district of NWFP trained at the AHITI institute in Peshawar. Parveen also manages agricultural work at her home and has only received primary education. She chose to train as CLEW so that she could serve the poor people of her community and treat their animals. She also wanted to earn extra income through service provision and is now able to make between 5,000 to 6,000 rupees per month. The family also earns income from sale of agriculture products and her husband's private job. Parveen started working as CLEW within one week of training and provides mostly vaccination, first aid and de-worming services. She also educates female farmers on the benefits of livestock management. Parveen's main challenge in working as a CLEW is mobility and lack of time. Public transportation is scarcely available and she is unable to always walk alone to people's houses. She has suggested that female CLEWs should be provided transportation support of some kind to enable them to properly serve their communities. Domestic responsibilities allow her to give only few hours a day to CLEW work. Community members have greatly benefited through her services as their disease in their animals have reduced and productivity is significantly better than in the past. CLEW training has also enabled Parveen to manage her own livestock better and provide more milk for her family. Parveen has suggested that DVMs should regularly visit their villages to treat serious cases and a clinic should be opened at the village level to provide medicines promptly. Overall, she recommended that the training duration should be increased and frequent refresher trainings should be provided so that CLEWs can continue providing their services.

8. ASSESSMENT OF CLEWS TRAINING

Training of the Community Livestock Extension Workers (CLEWs) is an integral component of the Prime Minister's Special Initiative for Livestock (PMSIL). The training programme was initiated in May, 2007 and more than 2000 CLEWs were trained by 13 government training institutes across the four provinces including AJK and FANA (Table 8.1). Curricula and training manuals were developed by the training institutes in consultation with the RSPs. The objective of the training programme is to impart basic skills and knowledge regarding the overall management and development of livestock to enable CLEWs to provide veterinary and extension services at the grassroots level for the sustainable animal health of the rural communities. The training programme is intended to build the capacity of the CLEWs to provide sustainable livestock services in a manner that increases livestock productivity and reduces poverty of rural communities.

The survey findings suggest that although CLEWs were trained in all 13 selected government training institutes the majority of the training (approximately 70%) were conducted in five major training institutes: Rural Training Institute, Animal Husbandry In-Service Training Institute (AHITI) Peshawar, BLRPI Attock, University of Veterinary and Animal Sciences (UVAS) Lahore and Centre for Advanced Studies in Vaccinology and Biotechnology (CASVAB) in the University of Balochistan (Table 8.1). A small percentage of CLEWs were also trained by local NGOs (see 'Other' in Table 8.1) or DVMs in the initial phases of the Project and this represents around 7% of the total trainings held.

Table 8.1: Distribution of CLEWs training by Training Institute

Training Institute	Frequency	Percent
Government Training Institute - Gilgit	13	3
AHITI - Peshawar	53	14
Veterinary Research Station - Surezai	1	0.3
BLRPI Kheri Murat- Attock	42	11
NARC - Rawalpindi	22	6
Livestock Training Institute - Sheikupura	24	6
UVAS - Lahore	37	10
CASVAB - University of Balochistan	33	9
Animal Science Institute - Quetta	9	2
Rural Training Institute - Tando Jam Khan	86	23
Sindh Agriculture University - Tando Jam	16	4
Bahauddin Zakariya University - Multan	1	0.3
Livestock Training Institute - Okara	7	2
Other	25	7
No Response	3	1
Total	372	100

The survey examined the CLEWs' views on training facilities, training methodology, training manual and training duration. Figure 8.1 shows that 21.5% of CLEWs have assessed training facilities as 'excellent', 51.6% have classified them as 'very good' and 24.7% have given a 'satisfactory' assessment. These results indicate that the overwhelming majority (more than 95%) were satisfied with the quality of training facilities (Figure 8.1). The quality of training facilities have an direct impact on learning quality and these results indicate that the government institutes have provided adequate facilities to promote better learning among the participants.

The distribution of CLEW rating of training facility by training institute reveals that the 2% unsatisfied responses were from CLEWs trained from GTI Gilgit, BLRPI and LTI Sheikupura. However, overall the majority of respondents have given these institutes satisfactory or better rating and the unsatisfactory respondents are likely anomalies. AHITI, CASVAB and ASI Quetta have received the highest percentage of 'excellent' results suggesting these institutes are providing

relatively better facilities and should be used as role models for the improvement of facilities in other institutes.

Figure 8.1: CLEWs satisfaction with the quality of the training facility

Table 8.2: CLEW rating of training institute facilities

Training Institute	Excellent	Very Good	Satisfactory	Unsatisfactory	No Response	Total
Government Training Institute - Gilgit	23	46	23	8		100
AHITI - Peshawar	45	38	17			100
Veterinary Research Station - Surezai		100				100
BLRPI Kheri Murat- Attock	2	52	40	5		100
NARC - Rawalpindi	32	59	9			100
Livestock Training Institute - Sheikupura	25	38	33	4		100
UVAS - Lahore	11	65	24			100
CASVAB University - Balochistan	61	27	12			100
Animal Science Institute - Quetta	67	33				100
Rural Training Institute - Tando Jam Khan	5	67	27		1	100
Sindh Agriculture University - Tando Jam	6	56	38			100
Bahauddin Zakariya University - Multan			100			100
Livestock Training Institute - Okara		57	43			100
Other	16	48	28	8		100
No Response		67			33	100
Total	22	52	25	2	1	100

The CLEWs have also assessed the quality of the training methodology used by the institute and results show that 22% have given an excellent rating, 52.4% have given a 'very good' rating and 23% have given 'satisfactory' ratings (Figure 5.2). Unsatisfactory rating are less than 2% of the totals respondents while 'very unsatisfactory' is even lower (Figure 5.2). As a whole more than 95% of the CELWs are content with the training methodology used by the training institutes.

The distribution of CLEWs rating of training methodoogy by training insitute reveals that three institutes were given unsatisfactory or below results: BLPRI, NARC, and LIT Sheikupura (Table 8.3). However, overall the majority of respondents have given these institutes satisfactory or better rating and the unsatisfactory respondents are likely anomalies. CLEWs trained from ASI Quetta have given it the highest rating of hundred percent 'excellent rating' for training methodology. AHITI and CASVAB are notable among others for a relatively higher percentage of excellent rating. On the whole, the majority of responses for training methodology fall in between satisfactory and very good.

Figure 8.2: CLEW rating of training methodology

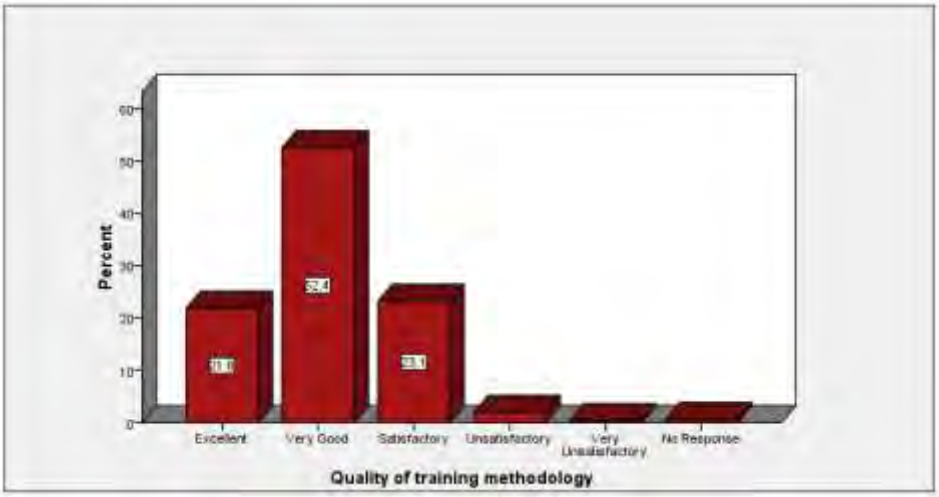


Table 8.3: CLEW rating of training institutes' training methodology

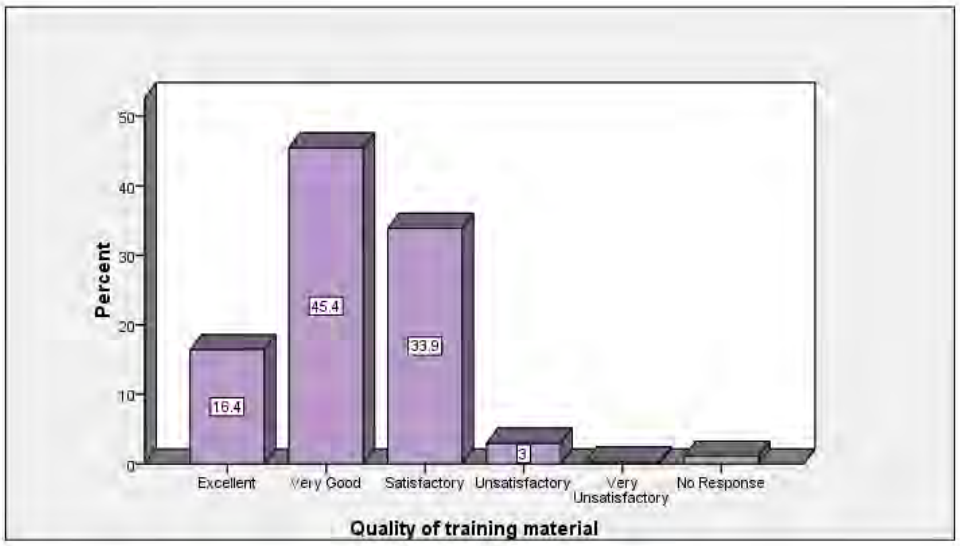
Training Institute	Excellent	Very Good	Satisfactory	Unsatisfactory	Very Unsatisfactory	No Response	Total
Government Training Institute - Gilgit	23	62	15				100
AHITI - Peshawar	42	47	11				100
Veterinary Research Station - Surezai			100				100
BLRPI Kheri Murat- Attock		55	36	10			100
NARC - Rawalpindi	27	64	5	5			100
Livestock Training Institute - Sheikupura	21	46	25	4	4		100
UVAS - Lahore	8	76	16				100
CASVAB University - Balochistan	67	21	12				100
Animal Science Institute - Quetta	100						100
Rural Training Institute - Tando Jam Khan	7	60	31			1	100
Sindh Agriculture University - Tando Jam	6	25	69				100
Bahauddin Zakariya University - Multan		100					100
Livestock Training Institute - Okara	14	57	29				100
Other	12	64	20	4			100
No Response		67				33	100
Total	22	52	23	2	0	1	100

The CLEWs have also given an overall positive assessment of the training material provided to them by the training institutes. 16.4% have given excellent rating to training material, 45.4% have given 'very good' and around 34% have given a satisfactory rating that translates into an overall positive rating from 95% of the CLEWs (Figure 8.3).

The training institutes therefore are performing adequately in supporting the training and development of the CLEWs by providing adequate facilities, proper training material and using effective training methodologies. One of the main reasons for the high level of satisfaction by the overwhelming trained CLEWs is that a majority of the institutes has prior experience in providing community-based training to rural populations and have highly experienced staff for that purpose. Moreover, the training institutes are generally also responsible for training DVMs, veterinary officers and stock assistants

and therefore CLEWs training is not a significant challenge in terms of the technical knowledge and skills.

Figure 8.3: CLEW rating of training material



One aspect of training, however, has received on average negative rating from CLEWs which is the training duration. Approximately 11% of the CLEWs have rated the training 'very short', 46% have rated it 'short' and around 40% have rated duration as 'satisfactory' (Figure 8.4). In stark contrast to the other aspects of training, the majority of the CLEWs feel that the training duration is insufficient for enabling them to work as community para-veterinarians. The training duration is not chosen by the training institute and therefore is not a reflection of the training institute performance. In fact, the majority of the training representatives interviewed have also insisted that a one month training period is not sufficient to enable the CLEWs to acquire basic working knowledge of livestock management and veterinary services. The CLEWs do not have prior knowledge of livestock profession and therefore one month crash course is serious limitation considering the objectives of the Project of producing self-sustainable livestock workers. Both CLEWs and training representatives stated that the training duration should be increased to two to three months and refresher courses must be added to increase impact and prolong the effect of earlier trainings.

Figure 8.4: CLEW rating of training duration

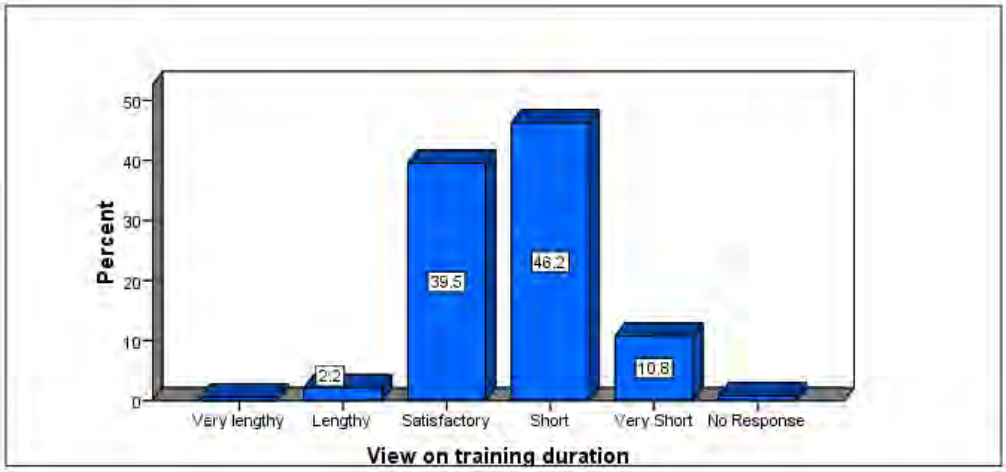
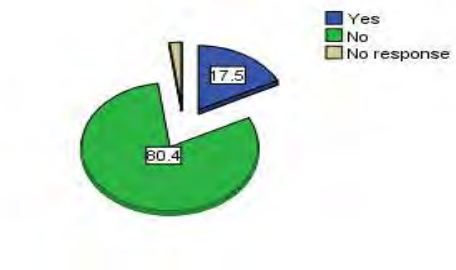


Figure 8.5 shows that more than 80% of the CLEWs have had no refresher training. The 17% that have attended refresher training are mostly those who done it independently of the Project as field interviews have revealed that only NRSP has provided refresher training on Artificial Insemination to high performing CLEWs from different regions. Lack of refresher trainings also lower the quality of

training outcomes and is the reason behind for many constraints for CLEWs including lack of confidence, lack of community trust, inability to generate income and lack of motivation.

Figure 8.5: Percentage of CLEWs with refresher training



DLO & DVM'S VIEWS ON TRAINING QUALITY

A total of 63 DVMs and 15 DLOs were interviewed regarding their perceptions of the quality of CLEWs training and suggestions for improving the training programme. The DVMs are CLEWs' supervisors and they have a good overview of the technical knowledge and capability of the CLEWs after they return from training and begin practising service delivery. Similarly, the DLOs have the advantage of managing a wider geographic area and have a greater insight on the overall impact of CLEWs training in relation to the Project objectives.

The majority of DVMs have stated that they are 'somewhat' satisfied (48%) with quality of CLEWs training while 21% are 'unsatisfied' and 2% 'very unsatisfied' with the training (Table 8.4). Only 10% of the DVMs have stated that they are 'extremely satisfied' with the training quality. As 44 of the 63 DVMs have assessing the quality of the CLEWs training as average or below average, these results indicate that there are some key weaknesses in the training programme that need to be addressed. 8 of the 15 DLOs interviews have also judged the training quality as average of below average (Table 8.6).

Table 8.4: DVM satisfaction with training of CLEWs

Satisfaction level	Frequency	Percent
Extremely satisfied	6	10
Very satisfied	13	21
Somewhat satisfied	30	48
Unsatisfied	13	21
Very unsatisfied	1	2
Total	63	100

Table 8.5: DVM satisfaction with the duration of CLEWs training

Satisfaction level	Frequency	Percent
Extremely satisfied	4	6
Very satisfied	11	17
Somewhat satisfied	13	21
Unsatisfied	25	40
Very unsatisfied	10	16
Total	63	100

One of the major weaknesses in the design of the training programme is the short duration of training session that generally lasted for between 25 to 30 days in the different training institutes. Table 8.5 shows that around 40% of the DVMs are unsatisfied with the training duration and 2% are very

unsatisfied. Only 6% are 'extremely satisfied' and 17% are 'very satisfied' with the training duration. Even those that are satisfied with the training duration have generally indicated the need for regular refresher training to augment the impact and sustainability of the training outcomes. These findings are also corroborated by the views of the DLO (Table 8.6 and 8.7) where 11 of the 15 DLOs have classified the training duration as average or below average. The majority of the CLEWs' perceptions of the training duration are also in the negative (Figure 8.4). The main reasons some DVMs and DLOs have are supportive of one month training sessions is largely because the CLEWs may not be able leave their villages for longer periods as most of them are engaged in other occupations or family responsibilities.

Table 8.6: DLO satisfaction with CLEWs training

Satisfaction level	Frequency	Percent
Extremely satisfied	3	20
Very satisfied	4	27
Satisfied	6	40
Unsatisfied	1	7
Very unsatisfied	1	7
Total	15	100

The qualitative discussions held with the DVMs and DLOs in field point towards the shortcomings in designing a one month training programme for the CLEWs. In the views of many DVMs and DLOs a one month period is insufficient to train newcomers in vaccination, de-worming, first-aid and livestock management. Majority of the DVMs have suggested increasing the training programme to at least two to three months and adding a refresher course at frequent intervals. Many DVMs have complained that CLEWs have a lack of knowledge of medicine, do not know how to use injections and lack confidence. DVMs in many cases are spending considerable efforts 'practically training' the CLEWs before allowing them to practice independently. Increasing training duration would enable CLEWs to learn more about the core preventive health medicine because orientations. Debriefing and introductory sessions in the one month sessions limit the depth of training in the key modules. Majority of the DVMs have suggested increasing the training programme to at least two to three months and adding a refresher course at frequent intervals. Many DVMs have complained that CLEWs have a lack of knowledge of medicine, do not know how to use injections and lack confidence. DVMs in many cases are spending considerable efforts 'practically training' the CLEWs before allowing them to practice independently.

Increasing training duration would enable CLEWs to learn more about the core preventive health medicine because orientations. Debriefing and introductory sessions in the one month sessions limit the depth of training in the key modules. Refresher courses are also essential as they are needed for the CLEWs to revisit basic skills they learned, prolong the impact of earlier training and address any problems they are facing in the field. Majority of the training institutes have also recommended that refresher courses are essential to maximize the impact of the training programme. In a one month programme it takes at least a week for trainers to assess the level of the students and for the students to settle into routine of the programme. The refresher courses also play role in keeping the CLEWs motivated and interested in livestock services.

Table 8.7: DLO satisfaction with duration of CLEWs training

Satisfaction level	Frequency	Percent
Extremely satisfied	3	20
Very satisfied	1	7
Satisfied	7	47
Unsatisfied	2	13
Very unsatisfied	2	13
Total	15	100

The duration of training also has an impact on community behaviour and trust. DVMs and CLEWs have stated one of the challenges CLEWs face in delivering services is that the community does not trust their competency based one month training. The community members insist that in one month CLEWs cannot become an expert and therefore either refuse to avail services or refuse to pay for services provided to them. The community tends to compare the CLEWs to private and government veterinarians and officers that have better training and this put the CLEWs at a disadvantage as it lower their confidence to provide services and ability to sustain an income.

Table 8.8: DVM Suggestions to improve training

DVM suggestions for training	N	Percent of Cases
Increase duration of training	49	80
Provide refresher courses	26	43
Provide AI training	4	7
Provide complete training kit and learning material	9	15
Increase role of DVM in training	6	10
Increase practical training	24	39
Independent clinics in market areas	8	13
Total	126	207

Therefore, training duration and refresher courses are main issues in the training programme. This is also confirmed by the suggestions given by the DVM and DLO (Table 8.8 and Table 8.9) where suggestions for increasing training duration and providing refresher courses are the highest. A number of other suggestions provided by the DVM and the DLO highlight other measures for improvement in the training programme. Around 40% of the DVMs (Table 8.8) have suggested that there is a need for increasing the amount of practical training given to the CLEWs. The DVM in their interviews pointed out that the practical training facilities were either inadequate or not enough time was given to practical training within training programme. Practical training is essential for the CLEWs as it is the best preparation for them to apply theory to practice before they take on the responsibility of interacting with livestock owners and treating animals in the field. Practical training also gives them a chance to practice use of tools provided them in the training kit.

The discussions in the field with the DVMs also revealed that the even after the training the CLEWs work closely with the DVMs for about two to three months (depending on their skill level) before they are able to independently handle cases. This shows that the CLEWs are not receiving adequate or enough practical training to prepare them to begin delivering services. This is also raises another point regarding the involvement of the DVM in the training programme. Table 8.6 shows that around 50% of the DVMs have not seen the training manuals used to train the CLEWs and Table 8.7 shows DVMs have identified the need for increasing the role of the DVMs in training. The conversations with the DVMs have revealed that they have a negligible role in planning and formulating the training programme despite the fact that they are the immediate supervisors of the CLEWs and are involved in their selection.

A common suggestion from DVMs and CLEWs was that artificial insemination (AI) training should be provided to the CLEWs. The main interest of the CLEWs in acquiring AI training is enhancement of income as the AI services are higher priced and the community is willing to pay for AI services. AI training has not been included in the current training module. NRSP is the only RSP that was sending better performing CLEWs for one week AI training courses. Taking into account the high demand for AI training, training institute representatives were inquired about the possibility of AI training for CLEWs. The training representatives have insisted that the AI training for CLEWs is not possible as they do not have required perquisite training and skills for becoming AI technicians. Moreover, the training institutes stated that AI training take a minimum of 3 months and even these are provide to

stock assistants who have already have had a training of 2 years. It has also been noted in the field that many DVMs who have had four years of rigorous training also cannot necessarily practice AI. Moreover, AI services require semen, containers and other inputs that are not available in most of the target areas. Short AI training for CLEWs is also against ethical medical practice as this stage as they cannot be allowed to practice without proper training, expertise and supervision. AI training holds greater risk is also as these there is greater risk of harming the animals that could result in a major assert loss for the livestock owners and damage the reputation of the Project and the concerned RSP.

Table 8.9: DLO Suggestions to improve training

DLO suggestions for training	N	%
Training in Urdu language	1	7
Better support to DVM	2	13
Record keeping training	1	7
Increase practical training	6	40
Increase training duration	6	40
Provide refresher courses	5	33
DVM training to CLEWs	1	7
Better support facilities	1	7
AI training	3	20
Total	26	173

A number of DVMs have also noted that the CLEWs did not received training kits and this was corroborated by the CLEWs also. Training kits are essential for the CLEWs do begin their preliminary work and this lowers the performance of the CLEWs. Moreover, as the Project is providing no working allowance or any other monetary support, it should make sure that other support facilities like the training kit are provided timely and completely so that the morale of the CLEWs is not affected.

Table 8.10: DVM Satisfaction with the quality of training manual

Satisfaction	Frequency	Percent
Yes	29	46
No	4	6
Not Seen Manual	30	48
Total	63	100

PERCEPTIONS OF THE TRAINING INSTITUTES

The training institutes have also shared their assessment of the selected participants based on capability and motivation. The training institutes representatives have generally given the CLEWs a very high motivation rating as they appreciated the ability of the RSPs to mobilize and encourage villagers to pursue livestock training and practice (Table 8.12). However, they have ranked the CLEWs lower in capability considering the demands of basic veterinary training.

Then training institutes have rated the CLEWs relatively lower in capability as shown in Table 8.11. Most of the training institutes stated that a more stringent and merit-based selection criteria should be applied for selecting candidates for training. Figure 8.6 shows that the most of the institutes have classified selection the criteria used for inducting trainees at the 50% satisfaction mark or below. The training institutes have highlighted two main issues in the selection criteria: a) low education qualification and b) old age. Some participants selected for training have not completed their matriculation and as result face difficulties in learning, comprehending Urdu and understanding technical terms. The training institutes have insisted that the participants should at least have achieved matriculation because the training modules are technical and require basic educational qualifications. Higher educational qualification also prolongs the impact of the training as the participant is not discouraged and is more likely continue using and applying the knowledge they have learned. As low confidence and community trust is a significant issues for the CLEWs in the post-training period, it is

important qualified candidates are selected that can actually benefit from the training and not feel discouraged because they do not enough education. Selecting candidates with the minimum matriculation is a significant challenge for RSPs as generally those who are experienced in working with livestock in the communities tend to have lower educational qualifications and those that have gained matriculation or above pursue more popular or mainstream jobs. Nevertheless, compromising on minimum educational standards has its own risks because it lowers training impact, produces CLEWs with lower confidence and lowers the sustainability of the Project.

Table 8.11: Capability rating of CLEWs by training representatives

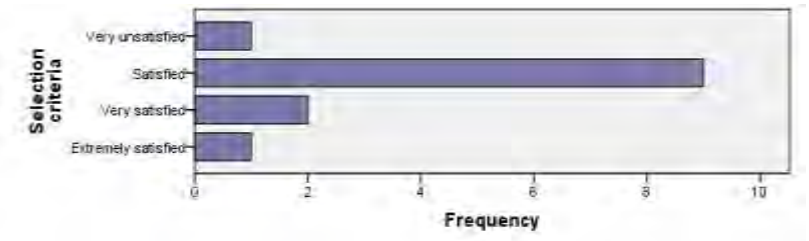
Capability rating	Frequency	Percent
Extremely capable	1	8
Very capable	6	46
Somewhat capable	6	46
Total	13	100

Similarly, trainers have suggested that age is also an important criteria for selection because younger participants possess faster learning ability in comparison to older participants. Moreover, younger participants have usually finished their education recently and therefore have better vocabulary and comprehension of technical terms and common English words Younger trainees are also quicker at learning practical skills by watching and applying theoretical knowledge.

Table 8.12: Motivating rating of CLEWs by training representatives

Motivation rating	Frequency	Percent
Extremely motivated	4	31
Very motivated	5	38
Somewhat motivated	4	31
Total	13	100

Figure 8.6: Number of training institutes satisfied with the selection criteria



By and large, the training institutes have identified a strong need for streamlining the selection process. Training representatives have insisted that the selection process should be merit based and general assessment or IQ test should be done to make the process competitive and select better candidates. The general assessment should also evaluate the interest and motivation of the candidates.

One of the unintended outcomes of the training programme was that a formal and institutionalized learning environment has brought positive behavioural change among the rural participants. The trainers noted that initially the participants were undisciplined and untidy as they were unaware of the norms of behaving in urban training and professional environment. The mentoring of the trainers drastically brought a positive personality change among the participants and they started to improve discipline, confidence and physical appearance that strongly contributed to learning and their post-training experiences.

9. COMPARISON OF TREATMENT AND CONTROL GROUPS

The lack of baseline data and representative sampling poses a challenge in eliminating all extraneous factors. However, the survey results are suggestive of an overall positive impact of the services on the livestock health and productivity of the beneficiary communities. The treatment group consists of 178 male and female livestock owners that have used CLEW services (Table 1.9). The comparison group consists of 175 male and female livestock owners that have not used CLEWs services but are living in similar socio-economic conditions as the treatment groups (Table 1.10). However, the following findings are indicative as these area based on a very small sample. To assess the project's impact on income, livelihoods, assets, expenditure and poverty, a detailed and larger representative sample survey will need to be carried out with a before and after or with or without survey design.

INCOME

The mean income figures of the treatment group (Table 9.1) and the comparison groups (Table 9.2) exhibit a very marginal difference of 300 rupees. There is greater variation between the household expenses of the two groups as treatment group's mean expenses are PKR 11,703 and those of the comparison group are PKR 9,328 which is a difference of approximately PKR 2,400. Considering that expenses are a generally a more reliable figure than household income in household surveys; we can say that on average the household income of the treatment groups is 25% higher than the comparison groups. The comparison of the income groups shows that the treatment group has a higher percentage of respondents in the higher income brackets (Figure 9.1) while the comparison group has higher percent of respondents in the lower income brackets (Figure 9.2).

Table 9.1: Mean income and expense of the treatment group

Category	N	Minimum	Maximum	Mean
Monthly Income	178	0	100,000	11,819
Monthly Expense	178	0	150,001	11,703

Table 9.2: Mean income and expense of comparison group

Category	N	Minimum	Maximum	Mean
Monthly Income	175	0	100,000	11,530.29
Monthly Expense	175	0	55,000	9,328.29

Figure 9.2: Income distribution of comparison group

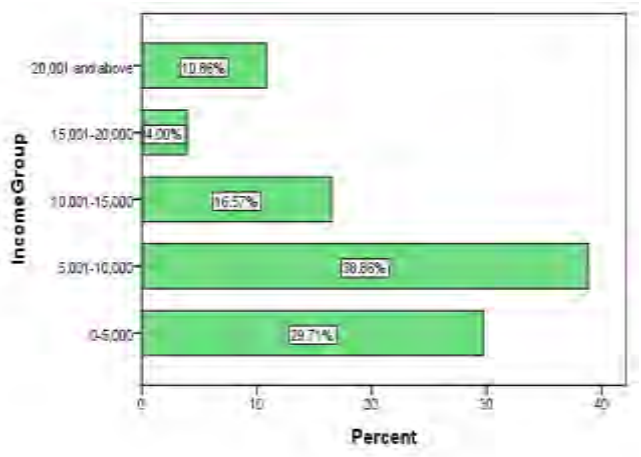
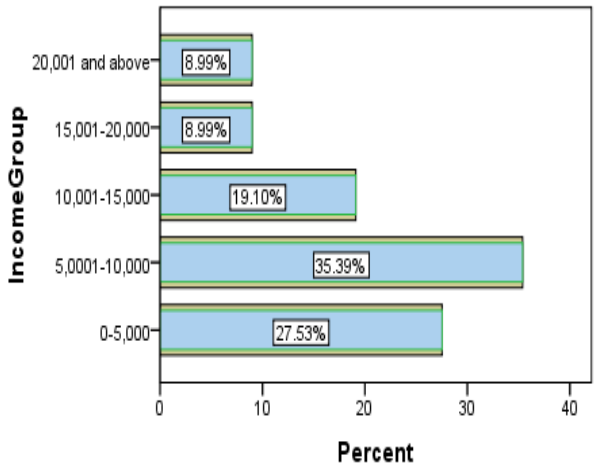


Figure 9.1: Income distribution of treatment group



LIVESTOCK ASSET CREATION

One of the core objectives of the intervention is to increase the average household ownership of livestock among the target areas through improved health, awareness and productivity. Table 9.3 shows that the mean livestock ownership among the treatment group is about 10 to 15% higher than the livestock ownership of the comparison group (Table 9.4). The difference is most significant in the case of sheep and poultry.

Table 9.3: Mean household ownership of livestock – Treatment Group

Animal	N	Minimum	Maximum	Mean
Cow	178	0	30	2.37
Buffalo	178	0	22	1.68
Goat	178	0	130	4.60
Sheep	178	0	60	2.12
Poultry	178	0	200	6.22
Other	178	0	15	1.35

Table 9.4: Mean household ownership of livestock – Control Group

Animal	N	Minimum	Maximum	Mean
Cow	175	0	21	2.13
Buffalo	175	0	16	1.34
Goat	175	0	80	3.42
Sheep	175	0	15	0.70
Poultry	175	0	25	2.57
Other	175	0	12	0.27

The general perceptions of the treatment and comparison group farmers have also been gathered on changes in their livestock population, health and income over the past 12 months. The dynamic of livestock asset creation is slightly different than other livestock variables as evident through differences in asset increase and decrease as shown in Table 9.5. The treatment group as experienced around 9% more 'significant increase' and 11% more 'some increase' than the comparison group. Similarly, decrease figures are also revealing as 'some decrease' is 13% greater in the comparison and 'significant decrease' is about only one percent greater. The effect of CLEW service is recognized through both the increase in livestock asset and prevention of further decrease possibly through improved health and better management. These results co-relate with the results on mean household of livestock (Table 9.3 and 9.4).

Table 9.5: Change in Livestock Asset – Treatment and Control Group (all values in %)

Province	Significant Increase		Some Increase		No Change		Some Decrease		Significant Decrease		No response		Total
	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	
NWFP	26.7	5.6	56.7	27.8	3.3	13.9	10.0	47.2	3.3	5.6			100.0
Punjab	15.1	10.4	49.1	39.6	13.2	31.2	17.0	16.7	5.7	2.1			100.0
Sindh	21.3	10.4	51.1	47.9	17.0	10.4	6.4	16.7	4.3	14.6			100.0
Balochistan	13.0	5.6	60.9	22.2	4.3	16.7	17.4	50.0	4.3			5.6	100.0
AJK	25.0		50.0	75.0	16.7	16.7	8.3			8.3			100.0
FANA	15.4		46.2	53.8	7.7	15.4		23.1	23.1	7.7	7.7		100.0
Total	19.1	7.4	52.2	41.1	11.2	18.3	11.2	25.7	5.6	6.9	.6	.6	100.0

Similarly, treatment group respondents have reported an overall higher increase in income through livestock stock asset creation than control group respondents. 'Significant increase' is 11% higher in treatment group and 'some increase' is 16% higher. 'Some decrease' is 15% greater in the control group and significant decrease is about 2% greater (Table 9.5 and Table 9.6).

Table 9.6: Income though livestock asset creation (all values in %)

Province	Significant Increase		Some Increase		No Change		Some Decrease		Significant Decrease		No Response		Total
	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	
NWFP	26.7	5.6	56.7	19.4	3.3	16.7	10.0	50.0	3.3	5.6		2.8	100.0
Punjab	9.4	2.1	43.4	31.2	26.4	43.8	17.0	16.7	3.8	4.2		2.1	100.0
Sindh	10.6	4.2	63.8	45.8	21.3	20.8	2.1	16.7	2.1	12.5			100.0
Balochistan	17.4		56.5	27.8	4.3	22.2	17.4	44.4	4.3			5.6	100.0
AJK			41.7	50.0	41.7	50.0	8.3		8.3				100.0
FANA	23.1		46.2	61.5	15.4	15.4		15.4	15.4	7.7			100.0
Total	14.0	2.9	52.8	36.0	18.5	28.0	10.1	25.1	4.5	6.3		1.7	100.0

LIVESTOCK PRODUCTIVITY

Livestock productivity data also shows significant improvement in the conditions of the treatment group in comparison to non-users. 'Significant increase' is around 18% greater in the treatment group and 'some increase' is 15% greater. Similarly, 'some decrease' is 10% greater in the comparison group and 'significant decrease' is about 5% greater (Table 9.7). Similar, level of differences are notable in the income through livestock productivity as shown in Table 9.8

Table 9.7: Change in Livestock Productivity – Treatment and Control Group (all values in %)

Province	Significant Increase		Some Increase		No Change		Some Decrease		Significant Decrease		No response		Total
	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	
NWFP	30.0	5.6	53.3	19.4	3.3	27.8	10.0	41.7	3.3	5.6			100.0
Punjab	20.8	6.2	50.9	39.6	13.2	29.2	11.3	10.4	1.9	2.1	1.9	12.5	100.0
Sindh	17.0	6.2	46.8	39.6	12.8	18.8	6.4	10.4	6.4	18.8	10.6	6.2	100.0
Balochistan	17.4		65.2	16.7	4.3	27.8	8.7	44.4			4.3	11.1	100.0
AJK	58.3		33.3	58.3		33.3	8.3			8.3			100.0
FANA	23.1	7.7	53.8	46.2	7.7	23.1		7.7	15.4	15.4			100.0
Total	23.6	5.1	51.1	34.9	9.0	25.7	8.4	19.4	3.9	8.6	3.9	6.3	100.0

Table 9.8: Change in income through change in livestock productivity – Treatment and Control Group (all values in %)

Province	Significant Increase		Some Increase		No Change		Some Decrease		Significant Decrease		No response		Total
	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	
NWFP	30.0	5.6	53.3	19.4	6.7	36.1	6.7	33.3	3.3	5.6			100.0
Punjab	13.2	2.1	54.7	25.0	22.6	43.8	7.5	12.5	1.9	2.1		14.6	100.0
Sindh	14.9	10.4	40.4	39.6	23.4	16.7	6.4	10.4	4.3	16.7	10.6	6.2	100.0
Balochistan	17.4		65.2	27.8	4.3	22.2	8.7	33.3	4.3			16.7	100.0
AJK	25.0		41.7	25.0	25.0	66.7	8.3			8.3			100.0
FANA	15.4	7.7	53.8	53.8	15.4	23.1		7.7	15.4	7.7			100.0
Total	18.0	5.1	51.1	30.3	17.4	32.6	6.7	17.1	3.9	7.4	2.8	7.4	100.0

DISEASE AND MORTALITY

The treatment group livestock farmers have identified improvement in animal health, reduction in disease and mortality as one of the key benefits of CLEW services. These benefits are visible in the comparison between disease incidence and mortality rates of the treatment and comparison groups.

Table 9.9: Change in incidence of animal disease – Treatment Group (all values in %)

Province	Significant Increase		Some Increase		No Change		Some Decrease		Significant Decrease		No response		Total
	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	
NWFP	23.3	11.1	16.7	19.4	3.3	22.2	23.3	38.9	33.3	8.3			100.0
Punjab	9.4	8.3	9.4	20.8	5.7	27.1	37.7	20.8	37.7	22.9			100.0
Sindh	4.3	8.3	2.1	33.3		10.4	48.9	33.3	44.7	14.6			100.0
Balochistan		11.1	13.0	50.0		5.6	43.5	27.8	43.5			5.6	100.0
AJK					25.0	41.7	33.3	25.0	41.7	33.3			100.0
FANA	15.4	30.8	30.8	15.4		23.1	38.5	7.7	15.4	23.1			100.0
Total	9.0	10.3	10.1	25.1	3.9	20.0	38.8	28.0	38.2	16.0		.6	100.0

Treatment group respondents have reported 15% less increase in animal disease than comparison group. Similarly, they have also a higher rate of decrease by 10% in the 'some decrease' category and over 20% in the 'significant decrease' category (Table 9.9).

Treatment group respondents have also reported higher rate of decrease in animal mortality. 'Significant decrease' was reported 24% more in treatment group while 'some decrease' was reported about 15% greater. These are both significant figures and indicate the impact that vaccination and de-worming are having on the treatment group's livestock. The comparison has also reported 20% greater increase in animal mortality (Table 9.10).

Table 9.10: Change in animal mortality – Treatment and Control Group (all values in %)

Province	Significant Increase		Some Increase		No Change		Some Decrease		Significant Decrease		No response		Total
	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	
NWFP	23.3	8.3	16.7	25.0	3.3	22.2	23.3	30.6	33.3	8.3		5.6	100.0
Punjab	7.5	4.2		16.7	9.4	31.2	37.7	14.6	45.3	33.3			100.0
Sindh		10.4		35.4	6.4	8.3	40.4	29.2	53.2	16.7			100.0
Balochistan		11.1	17.4	44.4		11.1	34.8	27.8	47.8			5.6	100.0
AJK					25.0	41.7	16.7	8.3	58.3	50.0			100.0
FANA	15.4	23.1	23.1	30.8	7.7	30.8	38.5		15.4	15.4			100.0
Total	7.3	8.6	6.7	26.3	7.3	21.7	34.3	21.7	44.4	20.0		1.7	100.0

ECONOMIC CONDITIONS

The farmers were also questioned regarding their perceptions of the overall change in their household economic conditions over the past year. The treatment group respondents have also been experiencing better economic conditions than the comparison group. Firstly, the treatment has not reported any decrease any economic conditions (Table 9.11) while the comparison group has reported overall 21% decrease in economic conditions. This is evidence that economic conditions of the beneficiaries have largely stabilized due to improvement in livestock health and productivity. Moreover, around 32% of the treatment respondents have reported significant improvement in economic conditions while only 17% of the control group respondents have reported the same.

Table 9.11: Change in household economic conditions – Treatment Group (all values in %)

Province	Significant improvement		Some improvement		No change		Some decrease		Significant decrease		No response		Total
	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	TRT	CTL	
NWFP	33.3	5.6	53.3	52.8	6.7	25.0		13.9		2.8	6.7		100.0
Punjab	30.2	29.2	49.1	35.4	18.9	14.6		10.4		10.4	1.9		100.0
Sindh	25.5	10.4	55.3	52.1	17.0	14.6		20.8		2.1	2.1		100.0
Balochistan	39.1		56.5	33.3	4.3	16.7		33.3		11.1		5.6	100.0
AJK	33.3	25.0	58.3	41.7	8.3	33.3							100.0
FANA	46.2	38.5	38.5	38.5	15.4	7.7		15.4					100.0
Total	32.0	16.6	52.2	44.0	13.5	17.7		16.0		5.1	2.2	.6	100.0

10. RECOMMENDATIONS

The CLEW assessment study has evaluated the progress and achievements of the CLEWs training and services in the context of the PMSIL project. The study has focused on the implementation and effectiveness of CLEWs selection, training, service provision, linkages and impact after two years of service provision. The assessment provides an independent and objective feedback on the outcomes of the PMSIL project in the context of its development objectives. This section of the study summarizes the main findings of the study while presenting key recommendations related to the findings.

SELECTION CRITERIA AND PROCESS

1. There is a strong need for streamlining the selection process and criteria as shown by the socio-economic analysis of CLEWs and feedback from training representatives (see Chapter 4). A standard selection criterion should be developed and implemented across all RSPs. In the existing cadre of CLEWs, two age groups of *36-50 yrs* and *18yrs and under* (representing 22% of CLEWs) are areas for improvement representing more than 22% of the CLEWs. The age group of 36-50 yrs that currently represents 17.74% of respondent group is not suited for new learning. Training institute representatives stated that old aged trainees exhibit challenges in learning especially in the case of technical modules. Younger trainees, on the other hand, have a quicker ability to internalize and apply newer material and technical knowledge. One of the reasons that this group is disadvantaged for training is that substantial time has passed since members of this group were involved in learning and education. Similarly, 4.57% of the respondents were 18 yrs and under which is also an unsuitable age group as these trainees are likely to pursue further education, lack maturity and responsibility. An ideal age group maybe slightly above 18 yrs and lower than 35 that should become part of standardized selection criteria.

2. The majority of CLEWs, approximately above 85%, have attained matriculation or a higher education qualification. This is a good indication that a stringent educational criteria is being followed for selecting CLEWs for training. However, in some regions it was observed during the survey that the RSPs also allowed the flexibility of including middle pass candidates for training where qualified candidates were not easily available or did not always have prior livestock experience or interest. More effort should be made towards minimizing candidates that do not have matriculation qualifications as the ability of the candidates directly affects the quality of training.

3. The PMSIL project needs to develop a systematic merit-based selection process for future recruitment of CLEWs so that motivated and qualified candidates are selected. 'Finding another job' and 'lack of motivation and interest' was defined two of the most important reasons for CLEW inactivity by DVMs. The selection process and criteria should take into account these weaknesses of previous selection methods.

TRAINING

4. One of the major weaknesses in the design of the training programme is the short duration of training session that generally lasted for between 25 to 30 days in the different training institutes. Lack of refresher trainings is also a core drawback of the training programme that is affecting quality of the training outcomes and impact. The duration of training also has an impact on community behaviour and trust. DVMs and CLEWs have stated one of the challenges CLEWs face in delivering services is that the community does not trust their competency based one month training. The basic training period should be increased to at least 45-60 days and refresher training should be provided every 6 months to provide sustainability to the CLEWs. In order to maintain a manageable duration for training, the total proposed basic-training days can also be divided into two parts. Majority of the training institutes have recommended refresher courses as essential for maximizing the impact of the

training programme. The refresher courses also play role in keeping the CLEWs motivated and interested in livestock services while countering the inactivity rate in the Project.

5. There is also a need for enhancing the role of DVMs in the training and increasing practical training hours. After the training programme generally CLEWs work closely with the DVMs for about two to three months before directly handling cases. CLEWs require adequate and better practical training to prepare them to begin delivering services. Similarly, the DVMs have a negligible role in planning and formulating the training programme despite the fact that they are the immediate supervisors of the CLEWs and are involved in their selection. It is recommended that DVMs are allotted a more central role in the training programme because they have better field experience working with and supervising CLEWs.

6. The positive experience of female CLEWs training shows that there is strong potential and needs for developing them. The main beneficiaries of female CLEWs are female livestock farmers managing livestock in their homes. However, the main challenges female CLEWs face are mobility and low availability hours. These factors have to be addressed to improve the effectiveness of female workers in the field.

SERVICE PROVISION

7. There is a strong need for extending the coverage of first-aid services. First-aid services are only being provided by 57% of the CLEWs. One of the main functions of the CLEWs is to be 'first responders' providing initial care for animal illness or injury. Population dispersion, geographical terrain and lack of medical facilities do not allow people to access medical treatment on time in most of rural Pakistan. The accessibility and timely availability of first aid services is crucial for saving animal lives in these regions.

8. Medicine provision and assisted treatment area also services provided by CLEWs that should be recognized and proper training should be provided to them. A number of high performing CLEWs have also started clinics and are independently giving medicine among the community. This is a legal and ethical issue as CLEWs do not have the training to conduct treatment and by law are not permitted to prescribe drugs. Better monitoring of CLEWs is required to ensure that legal and ethical norms are not being violated in practice and corrective supervision from DVMs should be ensured.

CLEW PERFORMANCE

9. The ratio of inactive CLEWs is currently 4:10 indicating that around 40% of CLEWs trained have become inactive. CLEWs have mainly become inactive because they have found other jobs, could not generate enough income or were not motivated enough to work as CLEWs. An improved selection process should be developed to select only interested and highly motivated candidates have an interest in social work. However, to develop CLEWs that are sustainable as self-employed workers the Project should provide some form of financial support to enable CLEWs to purchase medicine and commute for service provision.

10. There is a need for increasing the number of CLEWs that begin services within a week of training so that they can begin practically applying their knowledge and working with the DVMs. This is also important as many DVMs have stated that it takes a period of one to three months before a CLEW becomes able to independently handle cases and use tools on the animals in real life conditions. Early initiation period may also help in minimizing the high inactivity rate the Project is experiencing for a variety of reasons. Better monitoring of CLEW activity should be conducted after their return from the training programme to ensure that they begin applying their knowledge in the field as soon as possible.

11. CLEWs's time commitment needs to be improved by ensuring better supervision from DVMs, offering tangible incentives to CLEWs and providing refresher training. This is also entails that the DVM has to be better financially and logistically supported to track the working hours and commitment of the CLEWs in the field. Workers devoting less than three hours to service provision are having a low impact on livestock productivity, particularly because they represent a large segment of the CLEW population. Low allocation of time to services reduces the availability and accessibility of services for the community and is an unfavourable trend for the objective of taking service delivery to the farmers' doorsteps. These CLEWs also have a lower sustainability in their community as self-employed veterinary workers as they have a higher dependency on other occupation for income generation.

12. Survey findings also suggest that there is sizeable communication gap between the DVM and CLEWs as indicated by the substantial proportion of the CLEWs that only communicate on a monthly or occasional basis or do not submit progress reports. There is a significant need for RSPs to improve reporting as it directly reflects performance and commitment levels of the CLEWs and ensures better monitoring of Project activities Reporting is also a strong measurement of DVM and CLEWs linkages and survey findings suggest that the communication linkages between DVM and CLEWs are fairly weak.

APPENDIX 1: NUMBER OF DISTRICTS SAMPLED

RSP	Province	Districts	Selected
AKRSP	FANA	5	2
BRSP	Balochistan	3	2
NRSP	AJK	4	2
NRSP	Balochistan	1	1
NRSP	NWFP	3	2
NRSP	Punjab	14	4
NRSP	Sindh	9	3
PRSP	Punjab	20	5
SRSO	Sindh	9	3
SRSP	NWFP	10	3
TRDP	Sindh	5	2
GBTI	Punjab	1	1
GBTI	NWFP	1	1
Total		85	31

APPENDIX 2: RANDOM SELECTION OF DISTRICTS

RSP	Region	District Number	District	CLEWs
AKRSP	FANA	3	Ghizer	15
AKRSP	FANA	4	Gilglt	17
BRSP	Balochistan	2	Qila Saifullah	60
BRSP	Balochistan	3	Zhob	39
NRSP	AJK	1	Bagh	17
NRSP	AJK	2	Kotli	20
NRSP	NWFP	2	Mardan	25
NRSP	NWFP	3	Swabi	8
NRSP	Punjab	1	Attock	16
NRSP	Punjab	4	Bhukkar	21
NRSP	Punjab	5	Chakwal	31
NRSP	Punjab	13	Rawalpindi	32
NRSP	Sindh	4	Matiari	2
NRSP	Sindh	5	Mirpurkhas	24
NRSP	Sindh	9	Thatta	32
NRSP	Balochistan	1	Turbat	33
GBTI	Punjab	1	Attock	9
GBTI	NWFP	1	Haripur	7
PRSP	Punjab	4	Hafizabad	17
PRSP	Punjab	8	Lahore	16
PRSP	Punjab	10	Mandi Bahauddin	18
PRSP	Punjab	14	Okara	2
PRSP	Punjab	18	Sheikhupura	12
SRSO	Sindh	4	Khairpur Mir's	9
SRSO	Sindh	5	Larkana	6
SRSO	Sindh	6	Naushero Feroz	13
SRSP	NWFP	1	Abbotabad	31
SRSP	NWFP	5	Haripur	32
SRSP	NWFP	10	Peshawar	27
TRDP	Sindh	4	Tharparkar	103
TRDP	Sindh	5	Umerkot	40
Total				734

APPENDIX 3: KEY PERFORMANCE INDICATORS

S#	Aspects	Indicator Number	Performance Indicators for CLEWs Assessment (based one year time period)	Source of information
1	Livestock Productivity	1	Change in livestock assets	Livestock owners
		2	Change in income due livestock asset creation	Livestock owners
		3	Change in the yield of livestock products	Livestock owners
		4	Change in income due to livestock production	Livestock owners
2	Livestock Health	5	Change in incidence of disease among animals	Livestock owners
		6	Change in mortality rate among animals	Livestock owners
		7	Change in animal health due to CLEW services	Livestock owners
3	Poverty alleviation	8	Income from sale of livestock	Livestock owners
		9	Income from sale of livestock products	Livestock owners
		10	Ownership of household assets	Livestock owners
		11	Household milk consumption	Livestock owners
		12	Household meat consumption	Livestock owners
		13	Household food expenses	Livestock owners
		14	Change in household economic conditions	
4	Community satisfaction with CLEW services	15	Satisfaction with CLEWs selection	Livestock owners
		16	Satisfaction with availability of CLEWs	Livestock owners
		17	Satisfaction with cost of CLEWs services	Livestock owners
		18	Overall satisfaction with CLEW services	Livestock owners
		19	Increase in livestock assets through CLEW services	Livestock owners
		20	Increase in livestock productivity through CLEW services	Livestock owners
		21	Change in economic conditions due to CLEW services	Livestock owners
5	Perceptions on CLEWs performance	22	Ratio of active CLEWs	DVM
		23	Ratio of inactive CLEWs	DVM
		24	Average percentage of CLEWs submitting progress reports	DVM
		25	Frequency of CLEW reporting	DVM
		26	Number of CLEWs with highly satisfactory performance	DVM
		27	Number of CLEWs with average performance	DVM
		28	Perception of DVMs of CLEWs performance	DVM
		29	Perception of DLO of CLEWs performance	DLO
		30	Number of CLEWs with poor performance	DVM

S#	Aspects	Indicator Number	Performance Indicators for CLEWs Assessment (based one year time period)	Source of information
		31	Services provided by CLEWs by type	DVM
6	Assessment of CLEWs services	32	Percentage of CLEWs that keep record of services	CLEWs
		33	Frequency of record keeping by the CLEWs	CLEWs
		34	Average monthly income of CLEWs by RSP	CLEWs
		35	Number of camps attended by each CLEW	CLEWs
		36	No. of animals by treated	CLEWs
		37	No. of disease outbreaks reported to DVM	CLEWs
		38	No. of livestock vaccinated	CLEWs
		39	No. of livestock provided first aid	CLEWs
		40	Number of reports submitted to respective DVMs	CLEWs
		41	Frequency of verbal feedback to DVMs	CLEWs
		42	Number of CLEWs satisfied with drug delivery system	CLEWs
		43	Type of services provided CLEWs	CLEWs
		44	Perception of DVMs of CLEWs performance	CLEWs
		45	Perception of DLO of CLEWs performance	CLEWs
		46	Perception of training representatives of CLEWs capability and motivation	CLEWs
7	DVM and DLO performance	47	Number of community meetings held by DVMs in the last 12 months	DVM
		48	Perception of DVMs of change in disease outbreak in their target areas	DVM
		49	Number of disease outbreaks reported to DVMs in the last 12 months	DVM
		50	Average monthly income by DVM clinic	DVM
		51	Number of cases treated by the DVM in the last 12 months	DVM
		52	Satisfaction level of CLEWs with DVM performance	Training Institutes
		53	Satisfaction level of DVM with DLO performance	DVM
		54	Satisfaction level of DLO with DVM performance	DLO
		55	DLO satisfaction with the contribution of DVM to revolving fund	DLO
		56	Frequency of DLO meetings with DVM	DVM
		57	Change in the number of disease outbreaks in DLO's region	DLO
		58	DLO satisfaction with the management of disease outbreaks by the clinics	DLO
		59	Number of CLEWs satisfied with DVMs at the time of survey	CLEWs
8	Training assessment	60	Number of training institutes that conduct pre-assessment	Training institute
		61	Number of training institutes that conduct post-assessment	Training institute
		62	Satisfaction of DVM with CLEWs training	DVM

S#	Aspects	Indicator Number	Performance Indicators for CLEWs Assessment (based one year time period)	Source of information
		63	Satisfaction of DLO with CLEWs training	DLO
		64	Satisfaction level of CLEWs with training facility	CLEWs
		65	Satisfaction level of CLEWs with training methodology	CLEWs
		66	Satisfaction level of CLEWs with training manual	CLEWs
		67	Satisfaction level of CLEWs with training duration	CLEWs
		68	Satisfaction level of CLEWs with training module	CLEWs
		69	Satisfaction level of DVM with CLEWs training	CLEWs
		70	Perception of training representatives of CLEWs capability and motivation	CLEWs
9	Competitors	71	Number of CLEWs that have competitors working in their areas	Community
		72	Number of livestock owners using competitor services	Community
		73	Type of competitors working in CLEW areas	Community

APPENDIX 4: DVM QUESTIONNAIRE

Sampling Unit Number

A. Interview Data

(A1) Name of Interviewer

(A2) Date of Interview

		/			/				
d	d		m	m		y	y	y	y

(A3) Start Time

(A4) Field Unit Clinic Address

(A5) Province

(**1**) NWFP (**2**) Punjab (**3**) Sindh (**4**) Balochistan (**5**) AJK (**6**) FANA

(A6) District

(A7) Tehsil

(A8) RSP

(1) NRSP **(2)** AKRSP **(3)** PRSP **(4)** SRSP
(5) SRSO **(6)** GBTI **(7)** TRDP **(8)** BRSP

B. DVO Operations

(B1) Name of DVO:

(B2) Year in which the DVO completed his DVM degree:

(B3) Date of Appointment as DVO by the Project:

	Month		**Year**

(B4) Total number of CLEWs under supervision (*during Project start):*

(B5) Number of CLEWs under supervision who became inactive?

(B6) Why CLEWs have became inactive? *(more than one answer is possible)*

(a) Lack of motivation
(b) Lack of income
(c) Lack of experience
(d) Lack of support from community
Pursue
(e) education
(f) Found another job

(g) *Other* _____ (h) *Other* _____

(B7) Do you hold community meetings with villagers? (**1**) Yes (**2**) No

(B8) How many community meetings have you held in the last 12 months? _____

(B9) Do you coordinate with local Government Livestock Department representatives? (**1**) Yes (**2**) No

(B10) What is the level of your coordination with the Livestock Department? *(more than one answer is possible)*

(a) Joint community awareness activities (b) Joint livestock camps
(c) Disease outbreak meetings (d) Participate in Government Livestock Camps
(e) *Other* _____ (f) *Other* _____

(B11) How many disease outbreaks were reported to you in the last month? ☐

(B12) How many disease outbreaks were reported to you in the last 12 months? ☐

(B13) To what extent has there been a change in disease outbreaks in your area since you became DVM?

(a) High reduction in disease outbreak (b) Some reduction in disease outbreak (c) No change in disease outbreak

(b) Some increase in disease outbreak (e) Significant increase in disease outbreak

Sampling Unit Number ☐

C. Performance and Monitoring of CLEWs

(C1) Do CLEWs submit written progress reports? (**1**) Yes (**2**) No

(C3) What percentage of CLEWs under your supervision submit written progress reports? ☐

(C2) How frequently do these CLEWs submit written progress reports?

(1) Weekly **(1)** Biweekly **(3)** Monthly **(3)** Quarterly **(5)** As required **(6)** Never

(C4) Total number of reports submitted by the CLEWs during last 3 months? ☐

(C5) How often do you receive verbal feedback from the CLEWs?

(1) Weekly **(1)** Biweekly **(3)** Monthly **(3)** Quarterly **(5)** As required **(6)** Never

(C6 How do you monitor CLEWs performance?

(**a**) Joint meetings with CLEWs (b) Individual Meetings
(**c**) Progress reports by CLEWs (d) Meetings with users of CLEW services
(e) Sale of medicine (f) Income from services

(g) Verbal feedback (h) *Other*_____

(C7) What is the level of participation of CLEWs in joint meetings?

(1) Less than 25% **(2)** 26-50% **(3)** 51-75% **(4)** 76-90% **(5)** More than 90%

(C8) Does the DLO support you in running your clinic? (**1**) Yes (**2**) No

(C9) How satisfied are you with the support of the DLO?

(**1**) Extremely satisfied (2) Very satisfied (3) Somewhat satisfied (4) Unsatisfied (5) Very unsatisfied

(C10) Do you share progress reports of CLEWs with the District Livestock Officer? (**1**) Yes (**2**) No

(C11) How often do you meet the DLO?

(1) Weekly **(1)** Biweekly **(3)** Monthly **(3)** Quarterly **(5)** As required **(6)** Never

(C12) What kind of support do you provide the CLEWs? *(more than one answer is possible)*

(**a**) Technical guidance
(**b**) Help in treating cases
(**c**) Credit support to CLEWs
(**d**) Provision of medicine on discount price
(**e**) Other_____

(C13) How satisfied are you with the performance of CLEWs?

(**1**) Extremely satisfied (2) Very satisfied (3) Satisfied (4) Unsatisfied (5) Very Unsatisfied

(C14) How do you rank the total active CLEWs currently under your supervision?

(Give percentages only in such a way that the total of three categories should be equal to 100%)

(**a**) CLEWs with Highly Satisfactory Performance
(**b**) CLEWs with Average Performance
(**c**) CLEWs with Poor Performance

Sampling Unit Number

(C15) What are the main reasons for CLEWs who are in the category of " Highly Satisfactory"

(a)_____
(b)_____
(c)_____

(C16) What are the main reasons for the CLEWs who are in the category of "Poor performers"?

(a)_____

(b)_____
(c)_____

(C17) How many cases do the high performing CLEWs treat on average per month? ☐

(C18) How many cases do the poor performing CLEWs treat on average per month? ☐

(C19) What are the major constraints CLEWs face in providing their services?

_____
_____

(C20) What services are the CLEWs currently <u>not providing in your area?</u>

(a) First Aid (b) Vaccination (c) De-worming (d) Animal Husbandry (e) Breed improvement (f) Awareness

(g) Animal Nutrition (h) Poultry Management

D. DVO Clinic

(D1) In what year was your DVM clinic established? _____

(D2) How many cases do you treat in a month? _____

(D3) How many cases have you treated in the last 12 months? _____

(D3) What is average monthly income from the clinic? _____

(D4) Do you contribute to a revolving fund from your clinic income? (**1**) Yes (**2**) No

(D5) How often do you purhcase medicine for your clinic?

(1) Weekly **(1)** Biweekly **(3)** Monthly **(3)** Quarterly **(5)** As required **(6)** Never

(D7) On average, what is the value of medicine CLEWs buy each month from you? _____

(D8) What is your monthly salary you receive? _____

(D9) Are you satisfied with the performance of your clinic? (**1**) Yes (**2**) No

Please explain why or why not? _____

Sampling Unit Number ☐

E. Training

(E1) Did you receive training for DVO position through Project? (**1**) Yes (**2**) No

(E2) How satisfied are you with the training you received?

(**1**) Extremely satisfied (2) Very satisfied (3) Satisfied (4) Unsatisfied (5) Very Unsatisfied

If unsatisfied, please state why: _____

(E2) How satisfied are you with the training of the CLEWs?

(1) Extremely satisfied (2) Very satisfied (3) Satisfied (4) Unsatisfied (5) Very Unsatisfied

If unsatisfied, please state why: _____

(E4) How satisfied are you with the duration of the training of the CLEWs?

(1) Extremely satisfied (2) Very satisfied (3) Satisfied (4) Unsatisfied (5) Very Unsatisfied

If unsatisfied, please state why: _____

(E5) Are you satisfied with the CLEW training manual? (**1**) Yes (**2**) No

(E6) What would you suggest to improve the training of the CLEWs?

_____

(E7) What are your suggestions for the overall improvement of the Project?

_____

_____

_____

END

End Time **:**

Interviewer **Team Leader**

APPENDIX 5: DLO QUESTIONNAIRE

Sampling Unit Number

A. Interview Data

(A1) Name of Interviewer

(A2) Date of Interview / /
d d m m y y y y

(A3) Start Time

(A4) Province
(**1**) NWFP (**2**) Punjab (**3**) Sindh (**4**) Balochistan (**5**) AJK (**6**) FANA

(A5) District

(A6) Tehsil

(A7) RSP affiliation:
(1) NRSP **(2)** AKRSP **(3)** PRSP **(4)** SRSP
(5) SRSO **(6)** GBTI **(7)** TRDP **(8)** BRSP

B. DLO Operations

(B1) Name of DLO:

(B2) Year in which the DLO completed his DVM degree:

(B3) Date of Appointment as DLO by the Project:

	Month		Year

(B4) Total number of DVMs under your supervision?

(B5) Total number of CLEWs trained in your region? ☐

(B6) Total number of active CLEWs trained in your region? ☐

(B7) Total number of districts under your supervision? ☐

(B8) Have any DVMs left their posts after appointment? (**1**) Yes (**2**) No *If yes, how many?* ☐

C. Performance and Monitoring

(C1) Do the DVMs submit written progress reports? (**1**) Yes (**2**) No

(C2) What percentage of DVMs regularly submit written progress reports? ☐

(C3) How frequently do these DVMs submit written progress reports?

(1) Weekly **(2)** Monthly **(3)** Quarterly **(3)** Occasionally **(5)** As required

(C4) Total number of progress reports submitted by the DVMs during the last 12 months? ☐

(C5) Are you satisfied with the quality of reports received from the DVMs? (**1**) Yes (**2**) No

If NO, please explain why: _____

_____

(C6) How do you monitor the performance of the DVMs?

(**a**) Joint meetings with all DVMs
(b) Individual Meetings
(**c**) Review of Progress Reports
(d) Feedback from CLEWs

(e) Sale of medicine
(f) Contribution to Revolving Fund
(g) Verbal feedback
(h) *Other*_____

(C7) How satisfied are you with the performance of the DVMs?

(**1**) Extremely satisfied (2) Very satisfied (3) Satisfied (4) Unsatisfied (5) Very Unsatisfied

(C8) How can the performance and effectiveness of the DVMs be improved?

_____

_____

(C9) Do you hold coordintation meetings with the Livestock department representatives? (**1**) Yes (**2**) No

(C10) How often do you meet the DVMs?

(1) Weekly **(2)** Monthly **(3)** Quarterly **(3)** Occasionally **(5)** As required

(C11) What kind of support do you provide the DVMs? *(more than one answer is possible)*

(**a**) Technical guidance
(**b**) Help in treating cases
(**c**) Credit support to CLEWs
(**d**) Provision of medicine on discount price
(**e**) Other_____

(C12) How satisfied are you with the performance of the CLEWs?

(**1**) Extremely satisfied (2) Very satisfied (3) Satisfied (4) Unsatisfied (5) Very Unsatisfied

(C13) How can the performance of the CLEWs be improved?

(a)_____
(b)_____
(c)_____

D. Field Unit Clinic

(D1) What are the total number of clinics under your supervision? ☐

(D2) What was change in the number of disease outbreaks in your region in the last two years?

(a) Significant Increase (b) Some Increase (c) No change (d) Some decrease (e) Significant decrease

(D3) Are you satisfied with the management of disease outbreaks by the field unit clinic?

(1) Extremely satisfied (2) Very satisfied (3) Satisfied (4) Unsatisfied (5) Very Unsatisfied

(D4) Are you satisfied with the delivery of vaccination services by the field unit clinic? (**1**) Yes (**2**) No

(D5) Are you satisfied with the contribution of DVMs to the revolving fund? (**1**) Yes (**2**) No

Please explain why or why not?

_____

_____

E. Training

(E1) Did you receive training for DLO position through the Project? (1) Yes (**2**) No

(E2) How satisfied are you with the training you received?

(**1**) Extremely satisfied (2) Very satisfied (3) Satisfied (4) Unsatisfied (5) Very Unsatisfied

If unsatisfied, please state why: _____

(E3) How satisfied are you with the training of the DVMs?

(**1**) Extremely satisfied (2) Very satisfied (3) Satisfied (4) Unsatisfied (5) Very Unsatisfied

If unsatisfied, please state why: _____

(E4) How satisfied are you with the training of the CLEWs?

(**1**) Extremely satisfied (2) Very satisfied (3) Satisfied (4) Unsatisfied (5) Very Unsatisfied

If unsatisfied, please state why: _____

(E5) How satisfied are you with the duration of the training of the CLEWs?

(**1**) Extremely satisfied (2) Very satisfied (3) Satisfied (4) Unsatisfied (5) Very Unsatisfied

(E6) What would you suggest to improve the training of the CLEWs?

_____

(E7) What are your suggestions for the overall improvement of the Project?

_____

_____

END

End Time :

_____ _____

Interviewer **Team Leader**

APPENDIX 6: TRAINING INSTITUTE QUESTIONNAIRE

Sampling Unit Number ____

A. Interview Data

(A1) Interviewer Name ____

(A2) Date ____ / ____ / ____

(A3) Start Time ____

(A4) Province

(1) NWFP **(2)** Punjab **(3)** Sindh **(4)** Balochistan **(5)** AJK **(6)** FANA

(A5) Training Institute:

(1) Govt. Training Institute Gilgit
(2) AHITI Peshawar
(3) Veterinary Research Statation Surezai
(4) BLPRI Kheri Murat Attock
(5) NARC Rawalpindi
(6) Livestock Training Institute Sheikhupura
(7) UVAS Lahore
(8) CASVAB University of Balochistan
(9) Animal Science Institute Quetta
(10) Rural Training Institute Tando M. Khan
(11) Sindh Agriculture University Tandojam
(12) BZU Multan
(13) Livestock Training Institute Bahadur Nagar Okara

(A6) Name of the respondent ____

(A7) Designation of the respondent: (a) Principal (b) Director General (b) Other_____

Preferably that representative should be interviewed who was directly involved in training of CLEWs.

B. CLEW Training History

(B1) Date of Signing Memorandum of Understanding (MOU) with RSP: [ ] [ ]
Month *Year*

(B2) Total duration of CLEWs training programme at your institute: [ ] *in months*

(B3) How many CLEWs were trained your institute? [ ]

(B4) How do you rate the capability of the CLEWs selected by the RSP for training in your institute?

(**1**) Extremely capable (2) Very capable (3) Somewhat capable (4) Very incapable (5) Extremely incapable

(B5) How do you rate the motivation of CLEWs selected for training?

(**1**) Extremely motivated (2) Very motivated (3) Somewhat motivated (4) Not motivated (5) Very unmotivated

(B6) How satisfied are you with the facilitation and support of the RSPs in CLEWs training?

(**1**) Extremely satisfied (2) Very satisfied (3) Satisfied (4) Unsatisfied (5) Very Unsatisfied

C. Training Quality

(C1) How many CLEW training sessions has your institute held? [ ]

(C2) For how many days did each CLEWs training session last? ☐

(C3) How do you rate the duration of the CLEW training?

(**1**) Very Lengthy (**2**) Lengthy (**3**) Sufficient (**4**) Short (**5**) Very Short

(C4) What are the training modules taught by your institute? *please ask each option below*

(**a**) Basic Anatomy and Physiology (**b**) Principles of Veterinary Practice / Livestock Management
(**c**) Veterinary First Aid (**d**) Vaccinology (e) Principles of Animal Husbandry Practices
(f) Breed Improvement (g) Animal Nutrition (h) Range Management
(i) Poultry Management (j) Exposure visits (k) Marketing and Enterprise Development

(C5) How satisfied are you with the quality of training manual used for training?

(**1**) Extremely satisfied (2) Very satisfied (3) Satisfied (4) Unsatisfied (5) Very Unsatisfied

If **not satisfied**, What changes do you suggest for the improvement of the training manual?

(**a**) _____

(**b**) _____

(**c**) _____

(C6) What constraints did you face in the implementation of the training programme?

_____

_____

(C7) How satisfied are you with the selection criteria for CLEWs?

(**1**) Extremely satisfied (2) Very satisfied (3) Satisfied (4) Unsatisfied (5) Very Unsatisfied

If **not satisfied**, what improvements can you suggest for the selection criteria?

(**a**) _____

(**b**) _____

(**c**) _____

(C8) Did you conduct a pre-training assessment? (**1**) Yes (**2**) No

(C9) Did you conduct a post-training assessment? (**1**) Yes (**2**) No

(C10) Have you held any refresher trainings for the CLEWs? (**1**) Yes (**2**) No

If yes, on which training modules:

(a) Basic Anatomy and Physiology	(b) Principles of Veterinary Practice / Livestock Management	
(c) Veterinary First Aid	(d) Vaccinology	(e) Principles of Animal Husbandry Practices
(f) Breed Improvement	(g) Animal Nutrition	(h) Range Management
(i) Poultry Management	(j) Exposure visits	(k) Marketing and Enterprise Development

(C11) How do think the training programme for CLEWs can be improved? *Please answer in detail*

_____

_____

_____

(C11) End Time | | | : | | |

Interviewer **Team Leader**