Final Report on

Post distribution HHs survey for assessing LLINs availability and its use

Submitted to;
Epidemiology & Disease Control Division
Teku, Kathmandu

Submitted by;
SUSTAINABLE DEVELOPMENT INITIATIVE NETWORK- NEPAL (SUDIN-Nepal)
New Baneswor, Kathmandu, Nepal
Email: sudinnenepal@gmail.com

10th August 2019

Acknowledgement

We are grateful to Save the Children and Epidemiology and Disease Control Division (EDCD) for entrusting the responsibility to undertake this "Post distribution HHs survey for assessing LLINs availability and its use". The study team acknowledges the professional support provided by the personnel of the Save the Children and EDCD carry out the study.
This survey would not have been possible without the collective efforts of the survey team, project team and enumerators as well as the respondents of selected Wards of the districts. Much information was collected and provided by head of the households and married/pregnant women. Therefore, we extend our sincere thanks to all those respondents for providing valuable information that sufficed the ground for this study.

We wish to express our sincere gratitude to the personnel of EDCD and malaria program management unit.

We would also like to thank HOs of selected districts, Ward committee of the selected wards and concerned Health facilities for their support in order to accomplish the field survey in time.

Most notably the survey team would like to value the time, energy and openness of the respondents, formal and leaders in social, cultural and political sphere of selected wards. The study would not have been completed without their voluntary participation and support.

We would highly appreciate the support and ethical approval from Nepal Health Research Council (NHRC).

STUDY TEAM

Acronyms

API	: Annual Parasite Incidence
DCC	: District Coordination Committee
HO	: District Health Office/Officer
DPHO	: District Public Health Office/Officer
EDCD	: Epidemiology and Disease Control Division
FCHVs	: Female Community Health Volunteers
GP	: Gaun Palika
HHs	: Households
HP	: Health Post
LLINs	: Long Lasting Insecticide treated Nets
MoHP	: Ministry of Health and Population
NHRC	: Nepal Health Research Council
NP	: Nagar Palika
PHCC	: Primary Health Care Center
PPS	: Probability Proportional to Size
SPSS	: Scientific Package for Social Science
VDC	: Village Development Committee
WHO	: World Health Organization

Table of Contents

List of Tables

Executive Summary

Introduction and objective:
In Nepal, as per microstratification report 2018, approximately 3.96% of total populations are living in malaria endemic (high & moderate risk) areas. Among them, 0.22 million live in high-risk areas (49 wards), 0.93 million in moderate risk areas (253 wards) and 11.34 million in low risk areas (2543 wards). In this context, vector control with long-lasting insecticide treated nets (LLINs) has been identified as a major component of malaria prevention and control. So, GoN has been distributing LLINs with support of stakeholders and development agencies in high and moderate risk area to protect from mosquito biting and to break malaria transmission in population. So, this survey had been designed to access the Behavioral Change Communication impact, LLINs availability and its use in distributed households for the evidence of programmatic strategies and revising modalities of activities. Additionally, results of the survey could be used for meeting stakeholder and donor information needs in terms of intervention performance and advocacy as appropriate.

Methodology:
A cross sectional designed has been implemented to collect information through interview with head of households & married/pregnant women and observation of LLINs and households. Multistage sampling method has been used to select sample households for survey. So, at first stage, a total 20 districts have been selected, who have high and/or moderate risk wards namely- Jhapa, Bara, Dhanusha, Saptari, Sarlahi, Sindhuli, Nawalparashi (E), Banke, Bardiya, Dang, Kapilbastu, Rupandehi, Mugu, Salyan, Surkhet, Baitadi, Bajura, Dadeldhura, Kailali and Kanchanpur. Bara and Sarlahi districts from Province-1 do not have high and moderate risk wards so excluded from survey. Similarly, Salyan and Dadeldhura district has been excluded as per suggestion of Save the Children and their household count has been included in Surkhet and Baitadi District respectively because of having similar geographical pattern. Out of total 202 risk wards of these 16 districts, 69 risk wards (that is 34.16%) has been selected for survey by using by using PPS method i.e. high-risk ward-16 and moderate risk wards-53. Total sample size for HHs survey = 1,107. However, this survey includes a total of 1,111 households as sample size. Survey questionnaire and observation check list were developed, pre-tested and implemented. Two days orientation was organized for supervisors and enumerators and discussed about objective, process and data collection tools.

Conclusion and recommendation:
Only 90.4 percent have heard about malaria, 5% don't know about malaria transmission and about 20 percent don't know the signs and symptoms of malaria. Level of knowledge about the high risk of malaria among children (23.4%) and pregnant women (5.9%) is low. Twenty percent do not have idea about the use of LLINs is one of the preventive measures of malaria infection. So, individual, group and mass media related IEC/BCC material should be developed and disseminated focused on signs and symptoms, mode of transmission, high risk of malaria among children and pregnant women and importance and proper use of LLINs to protect from malaria infection. Behavioral change efforts should be focused for promotion and daily use of LLINs to protect from malaria; particularly for children and pregnant women.

Large majority (98.9%) of the households received LLINs at the time of last distribution. Only 74.0 percent of the LLINs packets are opened and used, 18.4% of the LLINs packets are not opened and 7.7 percent of the LLINs packets are opened but not used at all. Currently 90.7 percent of LLINs are fully used, 5.8 percent of LLINs are partially used and 3.5 percent of LLINs are not used. Significant majority (91.3%) of population has access to an LLIN within their households and nine out of ten (90.4%) of households have at least one LLIN for every two people. Similarly, seven out of then (72.6%) of existing LLINs were used last night and eight out of ten (79.6%) of the people who spend last night at surveyed households and 85.7 percent of the under five years children slept under LLINs during last night, so individual, group and mass media related IEC/BCC material should be developed and disseminated focused to proper use of LLINs and its role and importance in malaria prevention.

Users do not have proper information and knowledge about protection/safeguarding including washing procedures of LLINs. So, complete and proper information should be disseminated about the protection/safeguarding and washing procedure of LLINs.

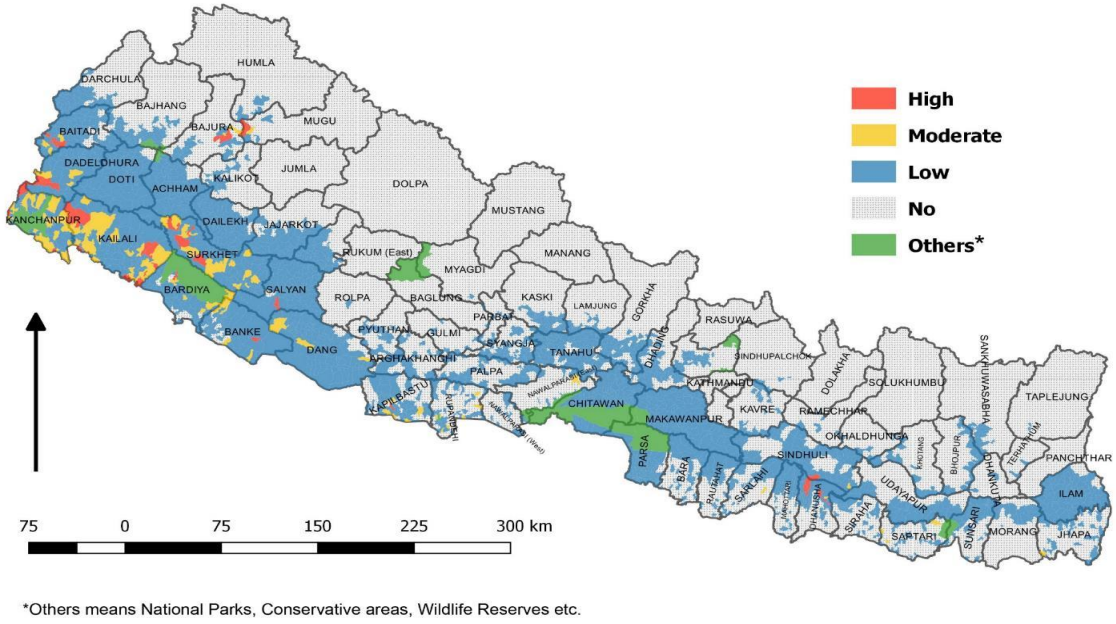
Large numbers of LLINs are not found in good condition, which is not encouraging. Most of the LLINs are found torn/holes. So, information and education should be provided for proper caring and importance of LLINs to protect from malaria. Education and information focused to proper placing/hanging of LLINs including protecting from fire and damage is most essential for lasting/life of LLINs.

In addition, people are not comfortable with the LLINs that were distributed recently due to its materials.

CHAPTER I: INTRODUCTION

1.1 Background

Malaria remains a horrendous disease constituting a global burden. Malaria was responsible for an estimated 219 million cases and 435 000 deaths globally.[1] The recent study on 2018 concluded that 67 districts out of the 77 districts of Nepal and about 43.26% of the total population are residing in areas at risk (high, moderate and low) of malaria (Fig-1). The study further streamlined that 202 wards in 20 districts (as per new federal structure) are at high or



*Others means National Parks, Conservative areas, Wildlife Reserves etc.

Figure: 1 Malaria risk districts of Nepal

moderate risk of malaria. Approximately 3.96% of total populations are living in malaria endemic (high & moderate risk) areas.

Among them, 0.22 million live in high-risk areas (49 wards), 0.93 million in moderate risk areas (253 wards) and 11.34 million in low risk areas (2543 wards).[2]

Furthermore, the ecological and entomological context may be different in such a diverse geographical spread and generalization may not be appropriate since the hill tops sloping environment may not sustain mosquitoes because of low temperatures and fast-moving streams despite adequate rainfall and humidity. However, the plain area in the foothills may be ideal for vector breeding with appropriate temperature and rainfall and slow-moving streams. A review of malaria information since the last three years reveals that even within a ward, malaria is concentrated within some *tole* while other *toles* are not affected at all.

Transmission of malaria is dependent on the receptivity and vulnerability characteristics of an area. Receptivity is dependent on the presence and behavior bionomics of vectors, and ecological/climatic conditions favorable for transmission of malaria. Vulnerability depends

1. WHO (2018). World malaria report: 2018 World Health Organization (WHO), Geneva, Switzerland, 2018.
2. MoHP/EDCD (2018). Malaria Micro-Stratification, 2018

on the population movement to malaria risk/endemic areas, possibility of influx of malaria patients or vectors or the possibility of malaria parasite introduction. The pool of reservoir of infection in an area is determined by the level of disease burden – proportion of people infected in a year in a defined population. Micro stratification is the study of the three critical factors that determine malaria transmission: disease burden (API) - confirmed malaria cases per 1000 risk population) in the last three years, receptivity (ecology) in an environment which support the vectors, vector behaviors and bionomics that define relative efficiency of the vector, and the duration of transmission; and lastly vulnerability in terms of population movement.

Major challenges in malaria prevention and control

A total of 2,745 wards out of total 6,743 wards were found to be at some level of risk of transmission. Out of these, 49 wards in 25 municipalities (G.P and N.P.) of 13 districts were found to be at high risk (0.73% of total risk wards), 153 wards (2.27% of total risk wards) across 66 municipalities of 19 districts were categorized as moderate risk and 2,543 wards (37.71% of total risk wards) were categorized as low risk wards whereas the remaining 3,998 wards (59.29% of total risk wards) came under no risk categories. Based on the latest population census, a total of 2,16706 people (0.75%) live-in high-risk wards, similarly 9,27,414 people (3.21%) live in moderate risk wards and 1,13,41,464 people (39.30%) live in low risk wards and 1,63,71,406 (56.73%) live under no risk wards. At a provincial level approximately 64% of the high risk's wards are in Sudurpashchim Province. Among the 49 high risk wards, 31 wards (63.27%) are in Sudurpashchim Province alone with the remaining 8 wards (16.33%) in Karnali Province, 3 wards (6.12%) in province 5, 1 ward (2.04%) in Province 3 and 6 wards (12.24%) in Province 2. Province 1 and Gandaki Province don't not have any high-risk wards.[3]

National Malaria Control Program of Nepal has set an ambitious vision of a malaria-free Nepal by 2026. Nepal Malaria Strategic Plan 2014-2025 has projected to: i. Achieve zero death due to malaria by 2015 and sustain it thereafter; ii. Reduce the incidence of indigenous malaria cases by 90% and number of VDCs having indigenous malaria cases by 70% of 2012 levels by 2018. Over the next 5 years, our priority will be to consolidate the gains we have made and sustain the downward trend in malaria morbidity and mortality and maintain outbreak free status of the country.[4]

LLIN and malaria prevention and control

Vector control with long-lasting insecticide treated nets (LLINs) has been identified as a major component of malaria prevention and control.[5] Synergetic efforts through vector surveillance approach, educational campaigns, and wide distribution of long-lasting insecticidal nets (LLINs) have successfully reduced malaria burden in endemic regions. Among several interventions, long-lasting insecticidal nets (LLINs) have played an important role in reducing the global malaria burden since 2000.[6] Efforts should not be relented on continuous use of these tools in regions where increased ownership and usage have been recorded. Also, owners of LLINs should be educated on proper and correct usage of the nets.

[3] MoHP/EDCD (2018). Malaria Micro-Stratification, 2018

[4] MoHP/EDCD (2014). Nepal Malaria Startegy Plan (2014-2025)

[5] Adetunji Omonijo and Adejumoke O. Omonijo (2019). *Assessment of the Status of Awareness, Ownership, and Usage of Long-Lasting Insecticide Treated Nets after Mass Distribution in Ekiti State, Nigeria*. Journal of Parasitology Research Volume 2019, Article ID 1273714.

[6] W. H. Organization, "Achieving and maintaining universal coverage with long-lasting insecticidal nets for malaria control," 2017.

Although the awareness and usage of LLINs are high in the study area, there is uneven utilization among socioeconomic groups; hence, free distribution of LLINs to increase household ownership could be a catalyst to increased open equitable usage across age groups and gender.[7]

GoN has been also distributing LLINs with support of stakeholders and development agencies in high risk area to protect from mosquito biting and to break malaria transmission in population. So, this survey had been designed to access the Behavioral Change Communication impact, LLINs availability and its use in distributed households for the evidence of programmatic strategies and revising modalities of activities. Additionally, results of the survey will be used for meeting stakeholder and donor information needs in terms of intervention performance and advocacy as appropriate.

1.2 Objective of the HH survey

1.2.1 General objective

The overall objective of the survey is to monitoring key behavior and behavioral factors related to use of LLINs in the household amongst population at risk of malaria of 30 districts. Therefore, the study will also aim to assess change in knowledge of malaria and exposure to malaria behavior change campaign in program areas.

1.2.2 Specific objectives

1) Proportion of population that slept under an insecticide-treated net the previous night
2) Proportion of children under five years old who slept under an insecticide-treated net the previous night
3) Proportion of population with access to LLINs within their household
4) Proportion of households with at least one insecticide-treated net for every two people
5) Percentage of existing LLINs used the previous night

1.3 Rational of the HH survey

Ownership and usage of LLINs affect vector population survival and offer protection to those not sleeping under it, thereby achieving mass protection.[8] In Nepal, LLINs are distributed to combat malaria epidemic since a decade in collaboration with EDCD and other stakeholders. In this context, it is mandatory to monitor the use of the nets in the field condition, the experience of which could be utilized for the implementation of such programs in the other districts in terms of its utilization to achieve the goal of malaria eradication from the country by 2026.

The durability and the ownerships of the LLINs are affected by many factors. In individual level, age and gender, education, occupation, malaria knowledge, beliefs and risk perceptions, perceived benefits and disadvantages of nets, trust in health workers providing health education, knowledge of appropriate net use and care practices and net hanging skills.

[7] Adetunji Omonijo and Adejumoke O. Omonijo (2019). *Assessment of the Status of Awareness, Ownership, and Usage of Long-Lasting Insecticide Treated Nets after Mass Distribution in Ekiti State, Nigeria*. Journal of Parasitology Research Volume 2019, Article ID 1273714.

[8] A. M. Noor, V. C. Kirui, S. J. Brooker, and R. W. Snow, "The use of insecticide treated nets by age: implications for universal coverage in Africa," *BMC Public Health*, vol. 9, p. 369, 2009.

In the present study, heterogeneous groups of the population from children to adults to pregnant women were involved and the relevant information regarding the use of LLINs were collected for implementation of further program to control malaria in the days ahead.

CHAPTER II: METHODOLOGY

Methodology is a product of their epistemology used to put philosophy into action in the world and prescribes an investigation which entails deploying the various paradigms in a serial manner for the purpose of exploring and appreciating the world.[9] So, to fulfill the established purpose and objectives of this HH survey, to accomplish agreed tasks and achieve deliverables as mentioned in TOR, following methodology and strategies were adopted.

2.1 Study design

As a survey, it is cross section in nature. From design perspective, quantitative inquiry are focused to answer questions like how many or how frequently and are measured/reported on a numerical scale, permitting categorization of pooled data, numerical reporting, and statistical analysis, so focused to answer objectives (quantitative) facts of social life.[10]

2.2 Study area/site

The HHs survey has covered 442 Wards of 30 malaria high risk districts with 352,505 households, where LLINs were distributed during 2017, 2018 and 2019

2.3 Sampling frame and selection of districts/Wards/HHs

2.3.1 Selection of districts

Districts have been identified/ selected based on the high and moderate risk wards within the districts. Out of 30 districts; a total 16 districts have been selected, who have high and/or moderate risk wards namely-Jhapa, Dhanusha, Saptari, Sindhuli, Nawalparashi (E), Banke, Bardiya, Dang, Kapilbastu, Rupandehi, Mugu, Surkhet, Baitadi, Bajura, Kailali and Kanchanpur. Additionally, at least one district has been selected from each province *(refer appendix-1).*

2.*3.2 Selection of Wards/VDC/Municipalities*

- After selecting the districts, list of high and moderate risk wards and total HHs visited (LLIN distributed) during 2017-2019 prepared of those selected 20 districts.
- There are total 202 risk wards (comprised of high-risk wards-49 and moderate risk wards-153) in those selected 20 districts.
- Out of those total 202 risk wards, 69 risk wards (that is 34.16%) has been selected for survey by using by using PPS method i.e. high-risk ward-16 and moderate risk wards-53 *(refer appendix-1).*
- Unfortunately, high and moderate risk wards of Bara and Sarlahi districts from Province-could not be included for study. So, finally Bara and Sarlahi districts and its risk wards are not included in further sampling process and survey. Similarly, Salyan and Dadeldhura districts are also excluded as per suggestion of Save the Children and their household count has been included in Surkhet and Baitadi District respectively because of having similar geographical pattern.
- By this way, numbers of high and moderate risk wards from 16 districts are sampled and identified for the survey.

[9] Creswell, J. W. (2009). Research Design: Quantitative, Qualitative, and Mixed Methods Approaches. SAGE Publication, Thousand Oaks. USA.

[10] Morgan, D.L. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Method Research***,** 1(1), pp 48-76.

- Then after, by using simple random sampling method, desired number of high and moderate risk wards of each 18 district will be selected based on micro-stratification sheet 2017/18 (detail list of high and moderate risk wards, municipalities, districts) and *appendix-1* at district level.

2.3.3 Selection of HHs

- After selection of high and moderate Wards of each 16 districts, list of HHs of those selected moderate and high-risk Wards of each 16 districts were prepared
- A total number of households of those selected high and moderate risk wards of 16 districts were identified from GPS Log-Book for LLIN Distribution, the distributing agency which specify the name of the head of household, date, GPS coordinates, number of existing nets in household (LLIN; non-LLIN); number of LLINs distributed at those selected high and moderate risk Wards of each districts.
- Then after, desired numbers of households were selected by using Systematic Random Sampling method from selected high and moderate risk Wards accordance to *appendix-1* in consultation with HO for interview from each 18 study districts at districts level.

2.4 Sampling and sample size

A statistically sound and representative sample of households (HHs) were identified by using multistage cluster sampling method. For this purpose, each Wards of Municipalities/VDCs were considered as a cluster and each household were sampling unit for household survey.

- The sample size for household survey has been calculated by using Yamane formula $(n) = N/ (1+Ne^2)$
  Where,
  N= population under study
  n = sample size
  e = level of precision (3%) with 95% Confidence and P=0.5
- Total number of households within study area/sites is 352,505.
- Thus, required sample size for HHs survey is $(n) = 352,505/ \{1+352,505* (0.03)^2\}$ = **1,107**
- So total sample size for HHs survey = **1,107.** However, **this survey includes a total of 1,111 households as sample size.**
- Following desired sample size of each district has been calculated by using Probability Proportional to Size (PPS) method for this HHs survey *(refer appendix-1).*

2.5 Data collection techniques and tools

Surveys that are carried out at a just one point in time are known as a **cross-sectional** in design and provides a snapshot of what is happening in that group at that particular time.[11] So, household survey method was applied to collect data from households. For household survey method of data collection, a semi structured interview questionnaire was developed in standard format based on objectives of the survey. Similarly, checklist was developed for of net condition and check list was developed and provided to the supervisor for quality data collection. All survey tools were finalized in close consultation with SCI team *(refer appendix-2).*

[11] Babbie, E (2001). The Practice of Social Research. 9th Edition. Wadsworth Thomson Learning, Inc. USA.

2.6 Respondents for HHs survey

The head of the household and mothers/caregivers of children under five or currently married women of reproductive age in households with no children under five years of age were respondents for HHs survey. Before doing interview with respondents, the interviewer made a good and effective rapport with respondents and s/he was also explain about the purpose of interview and made assure about the confidentiality as well. While doing the interview, time and place were as convenience of respondent. Place of interview was little far and in separate area where other people could not disturb during the interview process and respondent feels comfortable to give interview. Sufficient time was given to the respondent to think and express feeling, views and ideas as well. Necessary probing was done by interviewer when information became unclear and insufficient.

2.7 Staff hiring and capacity development

- All the field staffs i.e. field supervisors and enumerators were trained before commencing data collection.
- Two-day training was provided to all field staffs and training was focused on familiarizing the field staffs on brief description of survey, research methodology and sampling procedure, sample size, data collection tools/techniques and on the research ethics to be strictly followed by the field staffs.
- A 2-day training schedule was developed and shared with SCI Nepal and stakeholders *(refer appendix-3).*
- In addition to the classroom training, field practice and mock interviews were conducted to allow training participants to gain familiarity with the questionnaires/tools and experience in interviewing.
- Supervisors were further trained on supervising field work, editing questionnaires in the field and managing logistics.
- Along with training on the questionnaires, the field staffs were also made familiar about their survey districts and respective Municipalities/locality.
- The resource people and core survey team members of this survey facilitated the training sessions.

2.8 Pre-testing of survey questionnaire/tools

- The pre-testing of survey questionnaire/tools were done immediate after training of the field staffs. All the supervisors/enumerators participated in pre-testing of survey questionnaire/tools.
- The purpose of the pre-testing is to check the clarity and relevance of the tools, ease or reluctance of the respondents in answering questions and time taken to complete the questionnaire.
- After the pre-testing all the field staffs were brought together and confusions and problems encountered in the field were thoroughly discussed and addressed by technical experts.
- The results of the pre-testing were used to further refine the both tools and prevent possible difficulties.

2.9 Mobilization of the field staffs and data collection

- All trained field work staffs were mobilized to the assigned districts and Wards as per their movement plan/schedules along with data collection tools and logistics,
- Field implement schedule was developed and shared with SCI team *(refer appendix-6).*

- A total of 10 enumerators and 5 supervisors were mobilized to the field. There were 5 teams (one for each project area) and 2 persons in each team (10 enumerators). Five supervisors were assigned to monitor each team activities.
- Further, the supervisors were also instructed to cross check, edit the tools filled/completed by enumerators, support and supervise enumerators to accomplish field work within the stipulated time.
- Similarly, the route plan for each supervisor and enumerators was designed and provided to each of them before deploying them to the field.
- Further, letter from MOHP/ EDCD were also provided to the field staffs to facilitate data collection *(appendix-7).*
- In addition, other Core team members also conducted monitoring support visits in project area.
- Data collection from field was the prime responsibilities of field work staffs and core team members also supported them for data collection and help to create supportive environment for data collection.
- Data collections from each districts/Wards area were completed accordance to the plan and schedule.
- There was regular contact and communication with field team for daily updates of field works.

2.10 Supervision and monitoring

- At district level, supervisors were responsible for supervision and monitoring of all field work/activities. In addition to data collection, supervisors also monitored to his/her team in each project area/Wards/district.
- Core team members also carried out supervision and monitoring visits to the field during data collection period. These supervision and monitoring visits checked for progress, data quality and provide support to field work staffs.
- Monitoring mechanism was established at local level. So, Ward committee and health facilities (PHCCs, HPs) were also involved to ensure the quality of work and for proper implementation of data collection as per data collection plan and procedure.

2.11 Inception modality-coordination collaboration

- At central level- close coordination and collaboration was done with EDCD, SCI and concerned stakeholders by core team members
- At districts, municipalities and Ward level- basically supervisors and enumerators were responsible for coordination and collaboration. Additionally, core team members also visited to districts and municipalities along with data collection team before data collection to establish the coordination and collaboration mechanism. Coordination was done with DPHO, DCC, Municipalities, Ward committees, PHCC, HPs and other stakeholders
- At community level: Coordination was done with FCHVs, health mother groups, school teachers, social workers/institutions and other concerned stakeholders.

2.12 Quality assurance

- **Capacity building:** The first part of the quality assurance process started with the training of supervisors and the enumerators.
- **Monitoring and communication:** Supervision and communication between the center and field team was maintained in order to verify and respond to any issues in the field that might undermine the quality of data collected.

- **Cross checking and verification at field level**: Before leaving the households/respondents, on the spot cross checking of completed tools were done by enumerators for any incompleteness and inconsistencies. Next, supervisors of each team were also check the filled/completed form/tools on same evening for quality assurance.
- **Cross checking and verification by Core team:** Core team members and Researcher team also assured the quality of data during their visits of data collection.
- **At Kathmandu**: The data entry persons were supervised and supported by the Sr. Researcher and Core team members during data entry. All data were entered and then systematically cleaned to ensure that the analyzed data is of good quality. Development of the coding frame and categories used in the qualitative data analysis was done and then comparing their coding frames. The fact that the data comes from several different sources allows triangulation and further ensures quality.

2.13 Reliability and validity

Translation of tools in Nepali language and use of language: Survey tools were translated in Nepali language. The local language was used to minimize the biasness. Good, effective and purposeful rapport with respondents/research participants and objectified relationship with the people of study area was in high priority during study. Purposes of the assessment were made clear to all participants/respondents before collection of information from different sources.

For ensuring the external validity of the study: Adequate concerned literatures were reviewed; opinions from the experts in the concerned field were obtained, comments from experts were invited and shared with assessment team throughout the process. Data collection tools were pre-tested and refined and findings of different methods triangulated.

2.14 Data management, analysis and presentation plan

Following approaches were applied for data management and analysis for this HHs survey;

- Data processing was done in three phases namely data entry program development, data entry and data cleaning.
- The following process were carried out for overall management of quantitative data:
    - Development of coding system: A scientific coding system was developed using alphabets and numbers denoting district, municipalities and wards of survey.
    - Selection of software, data masking and data entry: SPSS and MS-Excel were used for the data entry purpose. The data validation feature in excel were used as per the need/requirement of the data. In case of data masking, all the variables used in the questionnaire were properly labeled along with the corresponding value codes in English and entered in the Excel database.
    - Data cleaning and reporting: In the final step, data entered SPSS format and were check for all the inconsistencies. The analyses are only as good as the quality of the data; so much time was devoted to checking for file accuracy.
    - Data analysis: All the collected data were validated and updated before the start of data analysis. As per requirements, some intervening variables were developed for cross-tabulations. The cross-tabulations were done to examine the relationship between two variables. While doing cross tabulations independent and dependent variables were identified and percentage values and observed values (frequency) are calculated for each category of the independent variable.

2.15 Ethical considerations

Participant's rights during the data collection were in high priority and were ensured. The respondents selected for survey were asked to voluntarily participate in the study. Enumerators were trained to explain the purpose of the study before starting data collection and to clarify that the respondent were NOT forced to participate, but that if s/he is willing to participate, everything s/he wanted to share will remain confidential and all results will be anonymous.

Next, approval was obtained from the ethical review committee of Nepal Health Research Council (NHRC) *(refer appendix-4)* and a consent letter was prepared both in English Language and Nepali language (The format following the guidelines of NHRC) *(refer appendix-5)*. The study survey was done after receiving the ethical approval letter from NHRC.

2.16 Management of survey team and survey team Ethical considerations

Core survey team comprised of expert with Public health and Statistics background and past experiences of data management, analysis and survey. Core team members have significant skills and experiences of such research activities.

2.16.1 Core team

1) Lead Consultant: Mr. Keshab Parajuli
2) Technical Expert: Mr. Nabraj Adhikari
3) Data Manager/Analyst: Mr. Prem Prasad Panta
4) Research Assistance: Mr. Biswa Raj Pokharel

2.16.2 Field research team

Whole field research team is comprised of fifteen persons (5 supervisors and 10 enumerators). All of them are Qualified and with long past experiences of collecting qualitative and quantitative data and involved in survey activities.

CHAPTER III: BASIC CHARECTERSTICS OF RESPONDENTS AND HOUSEHOLDS

3.1 Basic characteristics of respondents

3.1.1 Age, sex and marital status of respondents

Out of total 1,111 respondents, 24.4 percent of the respondents belongs to 20-29 age group followed by 23.5 percent of the respondents fall under 30-39 age group. Likewise, 60.9 percent of the respondents were female and remaining 39.1 percent were male. Large majority (91.5%) of the respondents were married followed by unmarried (6.8%) and single (1.7%) (table-3.1).

Table 3.1 Age, sex and marital status of survey respondents

Description	HHs	Percentage
Age (in yrs.)		
Below 20	37	3.3
20-29	271	24.4
30-39	261	23.5
40-49	242	21.8
50-59	160	14.4
60-69	96	8.6
70-79	34	3.1
80 and above	10	0.9
Total	**1,111**	**100.0**
		Sex
Male	434	39.1
Female	677	60.9
Total	**1,111**	**100.0**
Marital Status		
Married	1,017	91.5
Unmarried	75	6.8
Single	19	1.7
Total	**1,111**	**100.0**

Source: HH survey, 2019

3.1.2 Religion and ethnicity of survey respondents

Table-3.2 reveals that large majority of the respondents were Hindu (96.0%) followed by Muslim, Buddhist and Christian. By caste/ethnicity, 46% of the respondents were Brahmin/Chhetri followed by Janjati (30.7%), Dalit (13.5%), and Madhesi (6.8%).

Table 3.2 Religion and ethnic distribution of survey respondents

Description	HHs	Percentage
Religion		
Hindu	1,067	96.0
Buddhist	13	1.2
Muslims	17	1.5
Christian	14	1.3
Total	**1,111**	**100.0**
Ethnicity/Caste		
Dalit	150	13.5
Janajati	341	30.7
Madhesi	75	6.8
Musalman	18	1.6
Brahmin/Chhetri	511	46.0
Others	16	1.4
Total	**1,111**	**100.0**

Source: HH survey, 2019

3.1.3 Occupation and educational status of survey respondents

By occupation, most of the respondents were engaged on agriculture (38.1%) and housewife (32.4%) followed by business (10.2%), service (7.5%), students (5.0%) and daily wages (3.8%). Out of 1,111 respondents, 25.6 percent of them have attained secondary education and 24.7 were literate while 11.7 percent were illiterate and 18.5 percent attained primary level education (table-3.3).

Table 3.3 Occupation and educational status of survey respondents

Description	HHs	Percentage
Occupation of respondents		
Housewife	360	32.4
Agriculture	423	38.1
Business	113	10.2
Service	83	7.5
Daily Wage	42	3.8
Foreign Employed	5	.5
Student	56	5.0
Others	29	2.6
Total	**1,111**	**100.0**
Educational status of respondents		
Illiterate	130	11.7
Literate	274	24.7

Primary Education	205	18.5
Secondary Education	284	25.6
Higher Secondary	123	11.1
Bachelor	73	6.6
Master	22	2.0
Total	**1,111**	**100.0**

Source: HH survey, 2019

3.2 Basic characteristics of households (HHs)

3.2.1 Age and sex distribution of HHs

Table-3.4 disclosed that all total there were 5841 family members within 1,111 surveyed households. Out of 5841 family members, 91.2 percent of the household members fall under age group above 5 years, while 8.2 percent belongs to less than 5 ages. Slightly more than half (51.49%) of the household family members were female and remaining were male (48.51%).

Table 3.4 Age and sex distribution of households

Description	Number	Percentage
Age distribution of family members		
Under 5 (male)	255	4.37
Under 5 (female)	223	3.82
Above 5 (male	2579	44.15
Ab0ve 5 (female)	2784	47.66
Total	**5841**	**100.00**
Sex wise distribution		
Male	2834	48.51
Female	3007	51.49
Total	**5841**	**100.00**

Source: HH survey, 2019

3.2.2 Occupation and level of education of HHs (above 5 yrs. only)

Table-3.5 reveals that out of 3,226 (above 18 yrs.) household members of 1,111 households, 27.8% of them were engaged in agriculture followed by students (22.7%), service (11.1%), business (7.1%) and daily wages (6.5%). Out of 4,256 family members of the households (above 5 yrs.), nearly one third (31.2%) of the household members have attained secondary level of education followed by primary level education (26.1%). However, 14.4 percent of the family members of the households were illiterate.

Table 3.5 Occupation and level of education of households

Description	Number	Percentage
Occupational status of HHs (above 18 yrs.)		
Agriculture	897	27.8
Business	228	7.1
Service	357	11.1
Daily Wage	209	6.5
Foreign Employed	36	1.1
Student	731	22.7
Others	70	2.2
Total	**3,226**	**100.0**
Not applicable (under 18 yrs.) And not provided information	*2615*	*44.47*
Educational level of HHs (above 5 yrs.)		
Illiterate	613	14.4
Literate	265	6.2
Primary Education	1,112	26.1
Secondary Education	1,328	31.2
Higher Secondary Education	577	13.6
Bachelor	267	6.3
Master	94	2.2
Total	**4,256**	**100.0**
Not applicable (under 5 yrs.) And not provided information	*1585*	*27.13*

Source: HH survey, 2019

CHAPTER IV: RESULTS OF HOUSEHOLD SURVEY

Results mentioned in this chapter are based on the data generated from interview with respondents and observation method. Knowledge about malaria, availability and use of LLINs, and use and protection/safeguarding of LLINs related results are derived from interview with respondents, while data related to the condition of LLINs are collected from observation method.

4.1 Knowledge about malaria and prevention

4.1.1 Awareness about malaria and source of information

Table 4.1 Awareness about malaria and source of information

Description	HHs	Percent
Heard about malaria		
Yes	1,004	90.4
No	107	9.6
Total	**1,111**	**100.0**
***Source of information (n=1004)**		
Radio	221	22.0
Television	101	10.1
Newspaper	37	3.7
Training	16	1.6
LLIN distributer	71	7.1
Poster/Pamphlet	39	3.9
Health personnel	552	55.0
School Health Education	243	24.2

Source: HH survey, 2019 *Multiple response

Respondents were asked whether they have heard about malaria or not. Table-4.1 disclosed that significant majority (90.4%) of the respondents have heard about the malaria, however only 9.6% of them have not heard about the malaria. Major sources of knowing about malaria were from health personnel (55.0%), radio (22.0%), television (10.1%), LLIN distributer (7.1%) and IEC/BCC material (3.7%-3.9%).

4.1.2 Knowledge about transmission of malaria

During survey respondents were also asked "how does malaria transmit from one person to another". Table- 4.2 shows that large majorly (95.5%) know that malaria is transmitted by mosquito bite.

Table 4.2 Knowledge about malaria transmission

Mode of malaria transmission *	HHs (n=1,004)	Percentage
Flies Bite	42	4.2
Cockroach Bite	7	0.7
Mosquitoes Bite	959	95.5
Sun Burn	33	3.3
Soaked in the rain	14	1.4
Cold	0	0
Polluted Environment	175	17.4
Infected with malaria	21	2.1
Don't know	12	1.2

Source: HH survey, 2019 * Multiple answers

4.1.3 Knowledge on signs and symptoms of malaria

Table-4.3 states that overall 80% of the respondents were aware about the one or more sign and symptoms of malaria fever. Major signs and symptoms of malaria as stated by respondents were high fever (83.9%), headache and malaise (44.1%), chill and rigor (30.2%), loss of appetite (19.9%). However, 8.9 percent of them did not know the sigh and symptoms of malaria and 11% stated wrong sign and symptoms of malaria.

Table 4.3 Sign and symptoms of malaria

Signs and symptoms of malaria*	Number of surveyed HHs (n=1004)	Percentage
High Fever	842	83.9
Chills and rigor	303	30.2
Headache and malaise	443	44.1
Excessive sweating	69	6.9
Loss of Appetite	200	19.9
Don't know	89	8.9
Other	110	11.0

Source: HH survey, 2019 * Multiple answers

4.1.4 Aware about people with high risk of malaria infection

Out of 1,004 respondents, 56.5 percent of them responded that all people have high risk of having malaria infection followed by under five children (23.4%), old people (20.5%), female (5.8%), and pregnant women (5.3%). However, 10.4 of them do not know about the categories of people with high risk of malaria infection (table-4.4).

Table 4.4 People who have high risk of malaria infection

Category of people who have high risk of malaria*	Number of surveyed HHs (n=1004)	Percentage
All people	567	56.5
Male	20	2
Female	58	5.8
Pregnant women	53	5.3
Post-partum women	14	1.4
Under 5 children	235	23.4
Old people	206	20.5
Lactating mothers	25	2.5
Don't know	104	10.4
Others	76	7.6

Source: HH survey, 2019 * Multiple answers

4.1.5 Awareness on prevention of malaria

Table 4.5 Malaria preventive measures stated by respondents

Method to be applied for prevention of malaria*	Number of surveyed HHs (n=1004)	Percentage
Use of ordinary net	406	40.4
Use of LLIN	802	79.9
Safe from mosquito bite	159	15.8
Indoor residual spray	144	14.3
Cover ditches	402	40.0
Use of screen in doors and windows	58	5.8
Keep environment clean	589	58.7
Away from malaria infected person	0	0
Don't know	17	1.7
Other	102	10.2

Source: HH survey, 2019 * Multiple answers

Respondents were asked to answer about the preventive measures to protect from malaria infection. Out of 1,004 respondents, use of LLINs (79.9%), keep environment clean (58.7%), use of ordinary net (40.4%), cover ditches (40.0%), safe from mosquito bites (15.8%) and indoor residual spray (14.3%) were the major preventive measures to be applied to protect from malaria infection. However, only 1.7 percent doesn't know about the preventive measures to protect from malaria infection (table-4.5).

4.1.6 HHs member with malaria infection

Table-4.6 reveals that out of 1,111 households, only 535 (48.2 percent) of the households has fever during this year. Similarly, only 7 (0.6%) of the households have malaria fever during this year. Within those 7 households, only 4 women and 3 men suffered from malaria during this year.

Table 4.6 Household members with malaria infection in this year

Description	HHs	Percentage
Any family members suffered from fever in this year		
Yes	535	48.2
No	576	51.8
Total	**1,111**	**100.0**
Suffered from malaria in this year		
Yes	7	0.6
No	1104	99.4
Total	**1,111**	**100.0**
Person have malaria fever in this year		
Under 5 children	0	0
5-15 years children	0	0
Post-partum women	0	0
Pregnant Women	0	0
Lactating women	0	0
Men	3	42.9
Women	4	57.1
Other	0	0
Total	**7**	**100**

Source: HH survey, 2019

4.2 Use of nets and malaria infection among married/pregnant women

During the survey, specific questions were asked with the married and/or pregnant women of the households. A total 60 married or/and pregnant women (married women-11 and pregnant women-49) were interviewed during the survey. So, results of this section (4.2) about the use of nets and malaria infection among married/pregnant women have been obtained based on the responses of those married or/and pregnant women during one year.

4.2.1 Use of nets by married women/pregnant women in this year

Table- 4.7 discloses that out of 60 married/pregnant women, 85 percent of them slept inside the net last night and 15 percent slept outside the net. Only 9 respondents provided reasons of not using net other did not answered. Ninety four percent of net used by married/pregnant women were treated and 3.9 percent of nets were not treated. Likewise, 75 percent of married/pregnant women always (every night) use net, 11.7 percent married/pregnant women use sometime (less than 3 nights), 8.3 percent married/pregnant women use net most often (4-6 night) and 5 percent married/pregnant women never use net at night.

Table 4.7 Use of nets by married and pregnant women in this year

Description	Number	Percentage
Category of respondents		
Pregnant woman	49	81.7
Married woman	11	18.3
Total	**60**	**100**
Place of sleeping during last night		
Inside net	51	85.0
Outside net	9	15.0
Total	**60**	**100**
Reason of not using net(n=9)		
Not sufficient net	2	22.2
Not interested	2	22.2
Other	5	55.6
Used net was treated or not (n=51)		
Yes	48	94.1
No	2	3.9
Don't know	1	2.0
Used of net		
Always (every night)	45	75.0
Most often (4-6 nights)	5	8.3
Sometimes (less than 3 nights)	7	11.7
Never sleep	3	5.0
Total	**60**	**100.0**

Source: HH survey, 2019

4.2.2 Usual sleeping time of married women/pregnant women and malaria infection

Table 4.8 Usual sleeping time of married/pregnant women and malaria infection

Description	Number	Percentage
Usual sleeping time		
7-8 PM	3	5.0
8-9 PM	28	46.7
9-10 PM	28	46.7
10-11PM	1	1.6
After 11 PM	0	0
Total	**60**	**100.0**
Infected from malaria or not		
Yes	2	3.3
No	58	96.7
Total	**60**	**100.0**
When you infected (n=2)		
During pregnant	1	50.0
Another time	1	50.0

Source: HH survey, 2019

Majority of married/pregnant women (46.7%) goes to bed in between 8-9 PM and 9-10 PM; while 5 of the married/pregnant women go to bed between 7-8 PM and 1.6 percent at 10-11 PM. Out of 60 married/pregnant women, 1 of them got malaria infection during pregnancy period, while another women got infected by malaria during non-pregnancy period during last year (table-4.8)

4.2.3 Pregnancy visits and received LLINs by married women/pregnant women

Out of 60 married/pregnant women, 75 percent of them visited health facilities during their pregnancy period last year, while 25 percent of them did not visited to health facilities during their pregnancy period. More than one third (35.6%) of those married/pregnant women who visited the health institution received LLINs during their 1st ANC visit.
ANC visits from health facilities and 73.3 percent did not received LLINs (table-4.9).

Table 4.9 Pregnancy visits and LLINs received by married/pregnant women

Description	Number	Percentage
Visited to health institution during pregnant period		
Yes	45	75.0
No	15	25.0
Total	**60**	**100.0**
Received LLINs during 1st ANC visits from HFs or not		
Yes	16	35.6
No	29	64.4
Total	**45**	**100**

Source: HH survey, 2019

4.3 Availability and use of long-lasting insecticide treated nets (LLINs)

4.3.1 HHs with types of nets available

Out of total 1,111 households, more than half households (53.7%) have treated nets only, while 45.6 percent of households have both treated and not treated nets and 0.6 percent of the households have only ordinary nets in their households (table-4.10)

Table 4.10 Distribution of HHs by types of nets

Types of available nets	Numbers of HHs	Percentage
Having treated net only	597	53.7
Having both nets	507	45.6
Ordinary only	7	0.6
Total Household	**1,111**	**100.0**

Source: HH survey, 2019

4.3.2 Awareness about LLINs and households received LLINs

There were total 4,414 nets in surveyed households. Out of those, 3,468 nets were LLINs and 946 were ordinary net in 1,111 households. Out of total 3,468 LLINs, 3,314 of the LLINs were received during last distribution. Among 1,111 households, 1099 (98.9 percent) of the households received LLINs at the time of last distribution and only 1.1 percent did not receive LLIN at that time. Out of 1,099 respondents, 96 percent were aware about nets were treated or not and 4 percent of them were not aware about treatment status of the nets. (table-4.11).

Table 4.11 Awareness about LLINs and HHs who received LLINs

Description	HHs	Percentage
Received net at the time of last distribution		
Yes	1,099	98.9
No	12	1.1
Total	**1,111**	**100**
Aware about net whether it is treated or not (n=1,099)		
Yes	1,055	96.0
No	44	4.0
Total number of LLINs received	**3,314**	**-**

Source: HH survey, 2019

4.3.3 Situation of LLINs packet and use of LLINs

During the survey, questions were asked about the situation of LLIN packets and its use. Survey reveals that out of 3,314 LLINs, 74.0 percent of the LLINs packets were opened and used, 18.4% of the LLINs packets were not opened and 7.7 percent of the LLINs packets were opened but not used at all. Similarly, out of the LLINs packets opened and used, currently 90.7 percent of LLINs were fully used, 5.8 percent of LLINs were partially used and 3.5 percent of LLINs were not used (table-4.12).

Table 4.12 Situation of LLINs packets and use of LLINs

Description	Number of nets	Percentage
Situation of LLINs packets		
LLINs packet opened and used	2,451	74.0
LLINs packet not opened	609	18.4
LLINs packet opened but not used	254	7.7
Total	**3,314**	**100.0**
Current use of LLINs		
Fully used	2,224	90.7
Partial used	141	5.8
Not used	86	3.5
Total	**2,451**	**100.0**

Source: HH survey, 2019

4.3.4 Reasons for not using nets

Major reasons for not using net were not required (67.14%), material of nets was not good (19.8%), given to relatives/other (14.7%), had torn/holes (2.2%) (Table- 4.13).

Table 4.13 Reasons for not using nets

Reason of not using net	Net One	Net two	Net Three	Net Four	Net Five	Total	Percentage
Had Torn/hole	13	6	5	3	0	27	2.4
Given to relatives/others	78	39	20	19	7	163	14.7
Not required	289	221	135	69	32	746	67.14
Materials of net were not good	57	76	52	28	7	220	19.8
Suffocated	7	3	2	4	0	16	1.4
No season of mosquito	22	22	18	8	3	73	6.6
Total	**466**	**367**	**232**	**131**	**49**	**1,245**	

Multiple responses (out of 1111 households), percentage exceed 100%

Source: HH survey, 2019

4.3.5 Person slept under net last night

Survey shows that a total 5,510 person spent last night in 1,111 households. Out of those 5,510 persons, 79.6 percent slept under LLINs and under ordinary net last night; while 10.9 percent slept without using any nets. Likewise, 85.7 % of under 5 age of children slept under LLINs last night (table-4.14).

Table 4.14 Distribution of persons who slept under net last night

Category of person	No. of persons spent last night in HHs	Slept under LLINs	Slept under ordinary net	Slept without using net
Under 5 children	463	397	35	31
5-15 years children	1,090	910	79	101
Women	2,080	1,621	237	222
Men	1,744	1,362	170	212
Pregnant women	44	38	3	3
Post-partum women	6	5	1	0
Guests	83	55	16	12
Total	**5,510**	**4,388 (79.6%)**	**541 (9.8%)**	**581 (10.5%)**

Source: HH survey, 2019

Indicators

* Number of individuals who slept under an LLINs the last night = 4,388
* Total number of individuals who spend last night in surveyed HHs= 5,510
* **Proportion of population that slept under LLINs last night =79.6%**

* Number of children of under five years slept under LLINs last night = 397
* Total number of children of under five years who spend last night in surveyed HHs = 463
* **Proportion of under five years children those slept under LLINs last night =85.7%**

* Total number of potential users = 5,030
* Total number of individuals who spent last night in surveyed HHs = 5,510
***Proportion of population with access to an LLINs within their HH= 91.3%**

* Number of households with at least one LLINs for every two people =1,004
* Total number of household surveys = 1,111
* **Proportion of households with at least one LLINs for every two people = 90.4%**

* Number of LLINs in surveyed households that were used by anyone last night= 2,519
* Total number of LLINs in surveyed households = 3,468
* **Percentage of existing LLINs used last night = 72.6%**

Table 4.14.1 Distribution of persons who slept under net last night

Category of person	No. of persons spent last night in HHs	Slept under LLINs			Percentage
		Male	Female	Total	
Under 5 children	463	186	211	397	85.74
5-15 years children	1,090	408	502	910	83.48
Women	2,080	-	1621	1,621	77.93
Men	1,744	1362	-	1,362	78.09
Pregnant women	44	-	38	38	86.36
Post-partum women	6	-	5	5	83.33
Guests	83	25	30	55	66.26
Total	**5,510**	**1981**	**2407**	**4,388**	**79.6%)**

4.3.6 Usual time to go for bed

More than half (56.8%) of the family members of the households goes to bed in between 9-10 PM, while 28.4 percent goes to bed in between 8-9PM; remaining 9.6 percent at 10-11 PM and 5.1 percent goes to bed in between 7-8 PM (table-4.15).

Table 4.15 Distribution of households by usual time for bed

Usual time to go to bed	HHs	Percentage
7-8 PM	57	5.1
8-9 PM	315	28.4
9-10 PM	626	56.8
10-11 PM	107	9.6
After 11 PM	6	.5
Total	**1,111**	**100.0**

Source: HH survey, 2019

4.3.7 Months in which nets are commonly used

Table-4.16 disclosed that Baisakh, Jestha, Ashad, Sharwan and Bhadra are the months in which nets are commonly used and Poush and Magh are the months in which nets are less used compared to other months of the year.

Table 4.16 Months in which nets are commonly used

Months in which nets are commonly used *	HHs	Percentage
Baishakh	1,035	93.2
Jestha	1,051	94.6
Ashad	1,061	95.5
Shrawan	1,071	96.4
Bhadra	1,058	95.2
Ashwin	964	86.8
Kartik	706	63.5
Mangsir	486	43.7
Poush	329	29.6
Magh	329	29.6
Phalgun	788	70.9
Chaitra	944	85.0

Source: HH survey, 2019
*Multiple answers

4.3.8 Attitude toward LLINs

During the survey, attitude of the respondents regarding to LLINs were also assessed. Table-4.17 reveals that about 80.2 percent of the respondents strongly agree/agree that insecticide treated mosquito nets are more effective to kill mosquito, 89.6 percent strongly agree/agree that insecticide treated nets protect people from mosquito bites because they repel mosquitoes and 88.7 percent strongly agree/agree that insecticide treated mosquito nets are more effective to kill mosquito.

Table 4.17 Distribution of households by attitude toward LLINs

Description	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Insecticide treated mosquito nets are more effective to kill mosquito	337(30.6%)	547(49.6%)	139(12.6%)	76(6.9%)	3(0.3%)
Insecticide treated nets protect people from mosquito bites because they repel mosquitoes	377(34.2%)	610(55.4%)	87(7.9%)	23(2.1%)	4(0.4%)
Insecticide treated mosquito nets are more effective to kill mosquito	385(35%)	591(53.7%)	106(9.6%)	16(1.5%)	3(0.3%)

Source: HH survey, 2019

4.4 Use and protection/safeguarding of long-lasting insecticide treated nets (LLINs)

4.4.1 Placement of LLINs in households

Study shows that most of the households (53.8%) put or hang the LLINs on the bed, 37.2 percent on the palang and 9 percent of households hang or put the LLINs on floor (table-4.18).

Table 4.18 Placement of LLINs in households

Placement of LLINs*	HHs	Percent
Bed	604	53.8
Palang	418	37.2
Floor	101	9.0
Total	**1,123**	**100.0**

Source: HH survey, 2019
*Multiple answers

4.4.2 LLINs washing practices in households

Large majority of households (56.6%) use to wash LLINs and only 42.3 percent did not wash LLINs. However, 1.1 percent doesn't know whether to wash LLINs or not (table-4.19).

Table 4.19 Washing of LLINs in households

Washed the LLINs or not	HHs	Percent
Yes	622	56.6
No	465	42.3
Don't know	12	1.1
Total	**1099**	**100.0**

Source: HH survey, 2019

4.4.3 LLINs washing frequency/times in households

LLINs washing frequency range from 1-30 times. Overall, 652 nets were washed 1 time, 338 nets were washed 2 times, 174 nets were washed 3 times and 109 nets were washed 4 times, 63 nets washed 5 times and 28 nets were washed 10 times (table-4.20).

Table 4.20 LLINs washing frequency in households

LLINs Washing times/frequency	Net1	Net 2	Net 3	Net4	Net 5	Total Nets
1	300	198	106	41	7	652
2	142	113	58	21	5	338
3	76	51	32	12	3	174
4	39	42	20	5	3	109
5	27	20	10	5	1	63
6	8	3	0	0	0	11
7	6	5	4	1	1	17
8	2	1	2	0	0	5
9	2	0	0	0	0	2
10	9	11	4	3	1	28
12	5	3	1	0	0	9
13	1	0	0	0	0	1
15	2	1	0	0	0	3
20	2	1	0	0	0	3
30	1	1	0	0	0	2
Total	**622**	**450**	**237**	**88**	**21**	**1,417**

Source: HH survey, 2019

4.4.4 Frequency of washed LLINs

Table-4.21 reveals that 33.9 percent households washed 2 nets followed by 28.3 percent of households washed 1 net, 23.9 percent of households washed 3 nets and 10.7 percent of households washed 4 nets.

Table 4.21 Distribution of washed LLINs by households

No. of washed LLINs	No. of HHs	Percentage
1	176	28.3
2	211	33.9
3	147	23.6
4	66	10.6
5	22	3.5
Total	**622**	**100.0**

Source: HH survey, 2019

4.4.5 Methods/techniques applied to wash and dry LLINs

Most common technique/method applied to wash LLINs was by using plane water (57.7%) followed by detergent power and shop (37.1%). Shade (62.4%) was the major place used for drying the washed net and 37.6 percent placed the net on sun for drying (table-4.22).

Table 4.22 LLINs washing and drying methods/techniques

Description	No. of HHs	Percentage
Methods/techniques applied to wash LLINs		
Using plane water	359	57.7
Using soap	21	3.4
Using bleaching	9	1.4
Using hot water	2	0.3
Detergent powder and soap	231	37.1
Total	**622**	**100.0**
Place of washing nets		
Washed on rough place or stone	39	6.3
Place used for drying		
Sun	234	37.6
Shade	388	62.4
Total	**622**	**100**

Source: HH survey, 2019

4.5 Condition of long-lasting insecticide treated nets (LLINs)

Condition of LLINs were recorded through observation during survey so results described under this section is based on observation of LLINs done by the enumerators in each household

4.5.1 Condition of LLINs

Table 4.23 Condition of LLINs by households

Description	No. of LLIN	Percentage
Good condition	3,182	96%
Bad Condition	132	4%
Total	**3314**	**100%**

Source: HH survey, 2019

Out of 3314 LLINs, 96% of the received LLINs were in good condition. Only 4% were in bad condition. (Table-4.23).

4.5.2 LLINs with torn and holes

Table-4.24 reveals that 82.6% of the bad nets were torn and 98.5% had holes.

Table 4.24 LLINs with turn and holes

Description	No. of LLINs	Percentage
Types of Bad Condition		
Torn LLINs	109	82.6%
LLINs having holes	130	98.5%

Multiple responses

4.5.3 Reasons for torn in LLINs

Table 4.5.3Reasons for torn in LLINs

Reason of torn in LLINs (n=109)	No. of torn Nets	Percentage
Pulled (Taner)	21	19.3
Pinch (Ghocher)	5	4.6
Due to heavier press (Chyapiyer)	9	8.3
Burn or Destroyed by fire	1	0.9
Bite by animals	0	0.0
Bite by mouse	4	3.7
Destroyed by children	15	13.8
Damaged by insects	3	2.8
Others	27	24.8
Total	**85**	**78.0**
Households-not provided reasons of torn	24	22.0

Source: HH survey, 2019

Major reasons for torn in LLINs were Taner (19.3%), destroyed by children (13.8%), chyapiyer (8.3%), pinch (4.6) and bite by mouse (3.7%) (table-4.5.3). However, the tearing reasons of 24 nets were not provided.

4.5.5 Techniques applied to placement/hang LLINs in HHs

Table 4.27 Placement/hanging techniques applied for LLINs

Description of techniques to hang LLINs*	No. of HHs	Parcentage
Hanging above floor	99	8.9
Bamboo/wooden bed	657	59.1
Palang	426	38.3
Other	10	0.9

Source: HH survey, 2019 *Multiple answers

Large majority (59.1%) of the households placed/hanged LLINs in bamboo/wooden bed followed by palang (38.3%) and few of them also hanged above floor (8.9%) (table-4.27).

4.5.6 Materials used to build wall of the room

Table-4.28 reveals that out of 1,051 households, more than half (55.9%) of the wall of the room were made by cement, mud and bamboo (19.1%), brick and mud (13.1%) and 2.5 percent of the wall of the room were made of wood, mud and husks.

Table 4.28 Materials used to build wall of the room

Materials used to construct wall of the room	No. of HHs	Percentage
Brick and mud	138	13.1
Cemented	587	55.9
Bhata/Syaula	1	.1
Wood	26	2.5
Mud and Husks	26	2.5
Mud and Bamboo	201	19.1
Teen	2	.2
No wall (outside)	4	.4
Other	66	6.3
Total	**1,051**	**100.0**
Not reported	60	5.4

Source: HH survey, 2019

4.5.7 Materials used to build ceiling of the room

Table 4.29Material used to build ceiling of the room

Materials used to construct the ceiling of the room	No. of HHs	Percentage
Khar	39	3.7
Teen	359	34.2
Concrete Slab	430	40.9
wood/Mud	13	1.2
Tayal	184	17.5
Other	26	2.5
Total	**1,051**	**100**
Not reported	60	5.4

Source: HH survey, 2019

Out of 1,051 households, large majority (40.9%) of the ceiling of the room were made by concrete slab followed by teen (34.2%), tayal (17.5) and khar (3.7%) (table-4.29).

4.5.8 Source of fire near to hanged LLINs

Table 4.30 Source of fire near the hanged LLINs

Description	No. of HHs	Percentage
Source of fire near to hanged LLINs		
Yes	34	3.1
No	999	90.9
Not reported	66	6.0
Total	**1,099**	**100.0**
Type of fire near to hanged LLINs		
Wood fire	15	44.11
Wax candle/Tuki	2	5.9
Electricity bulb	4	11.8
Other	13	38.2
Total	**34**	**100.0**

Source: HH survey, 2019

Survey result shows that only 3.1 percent of the households use to hang LLINs near to source of the fire, while significant proportion (91%) households do not hang LLINs near to source of fire (table-4.30). Out of 34 LLINs almost half (44.11%) were hanged near to wood fire followed by 5.9% LLINs had hanged near to candle/tuki.11.8% electricity bulb. Remaining 38.2% LLINs were hanged near to other source of fire.

4.5.9 Condition of LLINs

Table 4.31Condition of LLINs

Condition of LLINs	HHs	Percentage
Very dirty with black spot	132	12%
Smelling the soap and detergent powder	56	6%
Torn /Holes	**130**	**11.8%**

Source: HH survey, 2019

During the survey, conditions of the LLINs were also observed. Observation result shows that 12 percent households had very dirty with black spot nets. Likewise, 11.8% households were found that the nets were torn and holes LLINs. And 6% households had the LLINs having smelling the soap and detergent powder (table-4.31).

4.5.10 Influences given during distribution of LLINs

Table 4.32 Influences given during distribution of LLINs

Description	No. of HHs	Percentage
Any influence given during LLIN distribution		
Yes	4	0.4
No	1091	98.1
Don’t know	16	1.5
Total	**1,111**	**100.0**
Types of influences given during distribution of LLINs (n=4)		
Political	1	25.0
Not answered the reasons	3	75%

Source: HH survey, 2019

Out of 1,111 respondents, significant proportion of the respondents (98.1%) reported that LLINs distributer did not have any influences over them during LLIN distribution, while 1 person reported about the political influences noted during LLIN distribution (table-4.32). And 75% of the respondents did not answer the influences during the net distribution.

CHAPTER V: CONCLUSIONS AND RECOMMENDATIONS

The results of the survey are already presented with adequate discussions and evidences from the data set in previous chapter IV. This section confines within the conclusions drawn out of the evident relationships between or among the major and important variables selected for this study.

5.1 Conclusions

Basic characteristics of respondents

Out of total 1,111 respondents, large majority belongs to 20-29 age group (24.4%) and 30-39 age group (23.5%). Around Sixty One percent of the respondents are female and 91.5 percent are married. Large majority of them are Hindu (96.0%) followed by Muslim, Buddhist and Christian. Forty six percent of the respondents are Brahmin/Chhetri followed by Janjati (30.7%), Dalit (13.5%), and Madhesi (6.8%).

Most of the respondents are engaged on agriculture (38.1%) and housewife (32.4%) followed by business (10.2%), service (7.5%), students (5.0%) and daily wages (3.8%). One forth (25.6%) of them have attained secondary education and one forth (24.7%) are literate, while 11.7 percent are illiterate.

Basic characteristics of households (HHs)

All total there are 5841 family members within 1,111 surveyed households. Out of 3,226 (above 18 yrs) household members of 1,111 households, 27.8% of them are engaged in agriculture followed by students (22.7%), service (11.1%), business (7.1%) and daily wages (6.5%). Out of 4,256 family members of the households (above 5 yrs), nearly one third (31.2%) of the household members have attained secondary level of education and primary level education (26.1%). However, 14.4 percent of the family members are illiterate.

Knowledge about malaria and prevention

Significant majority (90.4%) have heard about the malaria. Major sources of knowing about malaria are health personnel (55.0%), radio (22.0%), television (10.1%), LLIN distributer (7.1%) and IEC/BCC material (3.7%-3.9%).

Considerable majority (95.5%) know that malaria is transmitted by mosquito bite. More than Eighty percent are aware about one or more signs and symptoms of malaria fever. However, 8.9 percent don't know the signs and symptoms of malaria and 11% stated wrong signs and symptoms of malaria. Major signs and symptoms of malaria as stated by respondents are high fever (83.9%), headache and malaise (44.1%), chill and rigor (30.2%), loss of appetite (19.9%).

Nearly one forth (23.4%) and 5.9 percent knows about the high risk of malaria among under 5 children and pregnant women respectively.

Large majority (79.9%) know that the use of LLINs is one of the preventive measures of malaria infection; including keep environment clean (58.7%), use of ordinary net (40.4%), cover ditches (40.0%), safe from mosquito bites (15.8%) and indoor residual spray (14.3%) but around ten percentage does not aware on any preventive measures of malaria.

Less than half (48.2%) of the households has fever during this year. Only 7 (0.6%) of the households have malaria fever during this year. Within those 7 households, only 4 women and 3 men suffered from malaria during this year.

Use of nets and malaria infection among married/pregnant women

Eighty five percent of married/pregnant women slept inside the net last night and 94 percent of net used by married/pregnant women were treated. Seventy five percent of married/pregnant women always (every night) used net and 5 percent married/pregnant women never used net at night. Majority of married/pregnant women (46.7%) goes to bed in between 8-9 PM and 9-10 PM.

Out of 60 married/pregnant women, 1 got malaria infection during pregnancy period, while another woman got infected by malaria during non-pregnancy period during last year. Seventy five percent of married/pregnant women visited health facilities during their pregnancy period last year and 73.3 percent of the pregnant women who visited health facility did not received LLINs from health facilities during their 1st ANC checkup.

Availability and use of long-lasting insecticide treated nets (LLINs)

Slightly more than half households (53.7%) have treated nets only and 96 percent are aware about nets are treated or not. Large majority (98.9%) of the households received LLINs at the time of last distribution.

Only 74.0 percent of the LLINs packets are opened and used, 18.4% of the LLINs packets are not opened and 7.7 percent of the LLINs packets are opened but not used at all. Currently 90.7 percent of LLINs are fully used, 5.8 percent of LLINs are partially used and 3.5 percent of LLINs are not used out of the opened LLINs.

Overall, 79.6 percent of the people slept under LLINs last night. Major reasons stated for not using net are - not required (67.14%), material of net was not good (19.8%), given to relatives/other (14.7%), no season of mosquito (6.6%), had torn/holes (2.4%).

Significant majority (91.3%) of population has access to an LLIN within their households and nine out of ten (90.4%) of households have at least one LLIN for every two people. Similarly, seven out of then (72.6%) of existing LLINs were used last night and eight out of ten (79.6%) of the people who spend last night at surveyed households and 85.7 percent of the under five years children slept under LLINs during last night.

Baisakh, Jestha, Ashad, Sharwan and Bhadra are the months in which nets are commonly used and Poush and Magh are the months in which nets are less used compared to other months of the year.

About eighty percent strongly agree/agree that insecticide treated mosquito nets are more effective to kill mosquito, 89.6 percent strongly agree/agree that insecticide treated nets protect people from mosquito bites because they repel mosquitoes and 88.7 percent strongly agree/agree that insecticide treated mosquito nets are more effective to kill mosquito.

Use and protection/safeguarding of long-lasting insecticide treated nets (LLINs)
More than half households (53.8%) put or hang the LLINs on the bed, 37.2 percent on the palang and 9 percent of households hang or put the LLINs on floor.

More than half of households 622 (56.6%) use to wash LLINs. Overall, 652 nets were washed 1 time, 338 nets were washed 2 times, 174 nets were washed 3 times and 109 nets were washed 4 times, 63 nets washed 5 times and 28 nets were washed 10 times. Using plane water (58.2%) and detergent power and shop (37.6%) are the most common technique/method applied to wash LLINs. Shade (62.4%) is the major place used for drying the washed net and 37.6 percent placed the net on sun for drying.

Condition of long-lasting insecticide treated nets (LLINs)
Less than one third (32.7%) of households have 3 LLINs in good condition, 29.6 percent of the households have 2 nets in good condition followed by 16.5 percent households have 4 nets in good condition and 7 percent of households have 5 LLINs in good condition. More than half (60.0%) of households have 1 net in worse condition, 25.7 percent households have 2 nets in worse condition, 7.5 percent household have 3 nets in worse condition and 4.5 percent of the households have 4 LLINs in worse condition.

Large majority (70.7%) of households have 1 net with torn, 17.3 percent of households with 2 torn nets, 8 percent of households have 3 nets with torn and 4 percent households have 4 nets with torn. Similarly, 66.3 percent of households have 1 net with hole, 17.5 percent households have 2 nets with holes, 8.8 percent of households have 3 nets with holes and 5 percent of households have 4 nets with holes.

Major reasons for torn in LLINs are Taner (24.7%), destroyed by children (17.6%), chyapiyer (10.6%), pinch (5.9) and bite by mouse (4.7%).

Large majority (59.1%) of the households placed/hanged LLINs in bamboo/wooden bed followed by Palang (38.3%) and few of them also hanged above floor (8.9%). More than half (55.9%) of the wall of the room are made by cement, mud and bamboo (19.1%), brick and mud (13.1%) and 2.5 percent of the wall of the room are made of wood, mud and husks. Large majority (40.9%) of the ceiling of the room are made by concrete slab followed by teen (34.1%), Tayal (17.5) and Khar (3.7%)

Only 3.1 percent of the households use to hang LLINs near to source of the fire, while significant proportion (90.9%) households do not hang LLINs near to source of fire.

5.2 Recommendations

Knowledge about malaria and prevention
About 10 percent do not have heard about malaria, 5% don’t know about malaria transmission and about 20 percent don’t know the signs and symptoms of malaria. Very few of them have knowledge about the high risk of malaria among children and pregnant women. Twenty percent do not have idea about the use of LLINs is one of the preventive measures of malaria infection. So, individual, group and mass media related IEC/BCC material should be developed and disseminated focused on signs and symptoms, mode of transmission, high risk of malaria among children and pregnant women and importance and proper use of LLINs to protect from malaria infection.

Use of nets and malaria infection among married/pregnant women

Behavioral change efforts should be focused for promotion and daily use of LLINs to protect from malaria; particularly for children and pregnant women. The materials used in distributed LLINs should be user friendly as previous years.

Availability and use of long-lasting insecticide treated nets (LLINs)

Significant proportion have not opened and properly used LLINs, so individual, group and mass media related IEC/BCC material should be developed and disseminated focused to proper use of LLINs and its life/expiry.

Use and protection/safeguarding of long-lasting insecticide treated nets (LLINs)

Users do not have proper information and knowledge about protection/safeguarding including storage and washing procedures of LLINs. So, complete and proper information should be disseminated about the protection/safeguarding and washing procedure of LLINs.

Condition of long-lasting insecticide treated nets (LLINs)

Large numbers of LLINs are not found in good condition, which is not encouraging. Most of the LLINs are found torn/holes. So, information and education should be provided for proper caring and importance of LLINs to protect from malaria. Education and information focused to proper placing/hanging of LLINs including protecting from fire and damage is most essential for lasting of LLINs.

Appendix-1: Overview of sample size by risk wards, districts and provinces

SN	Province	High and moderate risk districts	# of high-risk Wards	# of moderate risk Wards	Total # of high and moderate risk Wards	Sampled # of Wards (33.65% of risk wards)	# of Sampled Wards by PPS method		# of HHs visited	# of Sampled HHs by PPS method
							High risk	Moderate risk		
1	1	Jhapa	0	1	1	1	0	1	1,349	21
2	2	Bara	0	1	1	0	0	0	0	-
3		Dhanusha	6	2	8	4	2	2	2,699	41
4		Saptari	0	3	3	1	0	1	378	6
5		Sarlahi	0	2	2	0	0	0	0	0
6	3	Sindhuli	1	1	2	1	0	1	1,250	19
7	4	Nawalparasi(E)	0	1	1	1	0	1	343	5
8	5	Banke	1	5	6	2	0	2	3,234	49
9		Bardiya	1	6	7	3	1	2	5,044	77
10		Dang	0	5	5	2	0	2	2,703	41
11		Kapilbastu	1	8	9	2	0	2	1,581	24
12		Rupandehi	0	7	7	2	0	2	2,297	35
13	6	Mugu	2	1	3	2	1	1	798	12
14		Salyan	1	0	1	0	0	0	0	0
15		Surkhet	5	19	24	8	2	6	6,008	91
16	7	Baitadi	5	3	8	5	3	2	2,141	33
17		Bajura	4	2	6	2	1	1	1,194	18
18		Dadeldhura	4	3	7	0	0	0	0	0
19		Kailali	15	43	58	19	5	14	25,189	382
20		Kanchanpur	3	40	43	14	1	13	16,846	255
		Total	**49**	**153**	**202**	**69**	**16**	**53**	**73,054**	**1,109**

Overview of Surveyed Household, Wards and Districts

S. N	Province	District	Municipality	Ward	Risk		Total HH visited	LLIN distribution year	No. of HH for survey	Remarks
					High	Moderate				
1	1	Jhapa	Gauriganj	6		✓	1,349	2019	21	
			Sub total			**1**	**1,349**		**21**	
2	2	Dhanusha	Ganesh Man Charnath	1	✓		1,146	2018	17	
3				6		✓	688	2019	11	
4			Mithila	3	✓		660	2019	10	
5			Sabaila	3		✓	205	2018	3	
			Sub total		**2**	**2**	**2,699**		**41**	
6	2	Saptari	Saptakoshi	11		✓	378	2019	6	
			Sub total			**1**	**378**		**6**	
7	3	Sindhuli	Dudhauli	9		✓	1,250	2017 1st	19	
			Subtotal			**1**	**1,250**		**19**	
8	4	Nawalparasi [E]	Gaidakot	18		✓	343	2019	5	
			Subtotal			**1**	**343**		**5**	
9	5	Banke	Baijanath	1		✓	1,094	2019	17	
10			Duduwa	2		✓	2,140	2019	32	
			Subtotal			**2**	**3,234**		**49**	
11	5	Bardiya	Thakur Baba	2	✓		1,500	2019	23	
12			Bansgadhi	2		✓	1,647	2019	25	
13			Bansgadhi	5		✓	1,897	2019	29	
			Subtotal		**1**	**2**	**5,044**		**77**	
14	5	Dang	Babai	5		✓	1,298	2019	20	
15			Tulsipur	13		✓	1,405	2019	21	
			Subtotal			**2**	**2,703**		**41**	

16	5	Kapilvastu	Buddha bhumi	7		✓	727	2019	11	
17			Krishnanagar	7		✓	854	2019	13	
			Subtotal			**2**	**1,581**		**24**	
18	5	Rupandehi	Devdaha	9		✓	1,289	2019	20	
19			Siddhartha nagar	1		✓	1,008	2018	15	
			Subtotal			**2**	**2,297**		**35**	
20	6	Mugu	Khatyad	10	✓		436	2018	7	
21			Khatyad	11		✓	362	2019	5	
			Subtotal		**1**	**1**	**798**		**12**	
22	6	Surkhet	Barattaal	2	✓		616	2019	10	
23			Barattaal	4		✓	383	2019	6	
24			Chaukune	5	✓		344	2019	5	
25			Chaukune	4		✓	216	2019	3	
26			Bheri ganga	1		✓	550	2019	8	
27			Birendranagar	10		✓	2,350	2019	36	
28			Birendranagar	2		✓	871	2019	13	
29			Birendranagar	9		✓	678	2019	10	
			Subtotal		**2**	**6**	**6,008**		**91**	
30	7	Baitadi	Melauli	1	✓		641	2019	10	
31			Melauli	6	✓		248	2019	4	
32			Melauli	3		✓	388	2019	6	
33			Pancheswor	6	✓		384	2019	6	
34			Pancheswor	3		✓	480	2019	7	
			Subtotal		**3**	**2**	**2,141**		**33**	
35	7	Bajura	Budi nanda	1	✓		729	2019	11	
36			Budi nanda	2		✓	465	2019	7	
			Subtotal		**1**	**1**	**1,194**		**18**	
37	7	Kailali	Dhangadi	9	✓		695	2018/19	11	
38			Dhangadi	1		✓	3,212	2018	49	

39			Dhangadi	2		✓	2,880	2018	44	
40			Dhangadi	4		✓	1,748	2019	26	
41			Dhangadi	5		✓	3,540	2018	54	
42			Godawari	4	✓		164	2017 2nd	2	
43			Godawari	2		✓	2,740	2019	42	
44			Janaki	6	✓		230	2019	3	
45			Lamki chuwa	10	✓		784	2018	12	
46			Tikapur	4	✓		555	2018	8	
47			Tikapur	7		✓	1,227	2019	19	
48			Tikapur	5		✓	729	2019	11	
49			Tikapur	6		✓	1,018	2019	15	
50			Baradagoriya	5		✓	1,131	2019	17	
51			Baradagoriya	2		✓	1,509	2019	23	
52			Bhajani	2		✓	293	2018	4	
53			Bhajani	3		✓	1,289	2018	20	
54			Chure	3		✓	706	2019	11	
55			Chure	4		✓	739	2019	11	
			Subtotal		**5**	**14**	**25,189**		**382**	
56	7	Kanchanpur	Bhimdutta	9	✓		1,581	2017 2nd	24	
57			Bhimdutta	3		✓	1,473	2019	22	
58			Bhimdutta	4		✓	1,422	2019	22	
59			Bhimdutta	6		✓	2,250	2019	34	
60			Bhimdutta	7		✓	1,295	2017 2nd	20	
61			Belauri	2		✓	470	2019	7	
62			Belauri	3		✓	1664	2017 2nd/2019	25	
63			Belauri	7		✓	656	2019	10	
64			Belauri	8		✓	557	2019	8	
65			Krishnanagar	7		✓	1,626	2019	25	

66			Punarbas	7		✓	687	2017 2nd	10	
67			Punarbas	11		✓	994	2019	15	
68			Mahakali	1		✓	984	2019	15	
69			Shukla fata	1		✓	1,187	2019	18	
Subtotal					**1**	**13**	**16,846**		**255**	
Grand Total					**16**	**53**	**73,054**		**1,109**	

Appendix-2: HH survey questionnaire

फारम नं. :

किटनाशकयुक्त झुल (LLIN) को उपलब्धता र यसको प्रयोग - २०१९

घर परिवार अध्ययन प्रश्नावली (एउटा घरको लागि पुरा फारम भर्नु पर्छ ।)

भाग- एक: अध्ययन गर्न लागेको घरको जानकारी

प्रदेश नं.	जिल्ला	गाउँ/न.पा.	वडा नं.	टोल	घर नं.	GPS Code				झुल वितरण वर्ष
						N				
						E				

नोट : प्रश्नकर्ताले ठिक (✓) संख्या (००) तथा प्रश्नमा उल्लेख भए अनुसार (शब्दमा) फारम भर्नुपर्छ ।

भाग- एक : घरमूली तथा घर परिवारको जानकारी *(कुनै परिवार सदस्य, घरमूली, महिला, आमा, गर्भवती तथा १८ वर्ष माथिका सदस्यसँग प्रश्न राख्न सकिनेछ) ।*

१. घरमूलिको नाम : थर _____ पहिलो नाम_____ दोस्रो नाम_____

१.१ उत्तरदाताको नाम :_____

उत्तर दाता (घरमूलीसँग नाता जनाउनुहोस्) _____ ☐

१.२ उमेरः (पुरा भएको) ☐

१.३ लिङ्ग : पुरुष ☐ महिला ☐ तेस्रो ☐

१.४ वैवाहिक स्थिति : विवाहित ☐ अविवाहित ☐ एकल ☐

१.५ तपाई कुन धर्म मान्नु हुन्छ ? हिन्दु : ☐ बुद्धिष्ठ : ☐ मुस्लिम : ☐ किरातः ☐ क्रिश्चीयनः ☐

अन्य :.....

१.६ जाति : दलित : ☐ जनजातिः ☐ मधेशीः ☐ मुस्लिम ☐ ब्राह्मण/क्षेत्री ☐ अन्य ☐

१.७ व्यवसाय : घरायसी ☐ व्यापार ☐ नोकरी ☐ दैनिक ज्यालादारी ☐

वैदेशिक रोजगारी ☐ विद्यार्थी ☐ अन्य (उल्लेख गर्नुहोस्) _____

१.८ शैक्षिक स्तर ? निरक्षर ☐ साक्षर ☐ प्राथमिक शिक्षा ☐ माध्यामिक शिक्षा ☐

उच्च माध्यामिक शिक्षा ☐ स्नातक ☐ स्नातकोत्तर ☐

१.९. हाल यस घरमा सँगै बस्ने तपाइको परिवार संख्या कति छ ?

पाँच वर्ष मुनि		पुरुष	महिला	पाँच वर्ष माथिका	पुरुष	महिला
☐		☐	☐	☐	☐	☐

१.१० यस घरमा हाल तपाई को को संग संगै वस्नु हुन्छ ? १८ वर्ष मुनिका लागि पेशा नलेख्ने/५ वर्ष मुनिकोलागि शिक्षा नलेख्ने

क्र.स.	उत्तरदातासँगको नाता	उमेर (दिन महिना वर्ष खुलाउने)	लिंग	पेशा	शिक्षा
१.					
२.					
३.					
४.					
५.					

१.११ एकै घरमा बस्ने गर्भवती/महिला तथा केटाकेटीहरूको विवरण :

विवरण	५ वर्षमुनिका बालबालिका	पाँच वर्षमुनिका बालबालिका लाई हेरचाह गर्ने आमा	सुत्केरी आमा	गर्भवती महिला	अन्य महिला
जम्मा संख्या					

भाग- दुई : औलो (मलेरिया) सम्बन्धी ज्ञान ।

२ तपाइले औलोको बारेमा जानकारी पाउनुभएको छ ? छ ☐ छैन ☐

यदि छैन भने, प्रश्न नं.२.६ सोध्नुहोस् ।

२.१ यदि जानकारी पाउनुभएको छ भने कहाँबाट कसरी थाहा पाउनुभयो ? (बहु उत्तर आउन सक्छ)

रेडियो ☐ टिभी ☐ पत्रपत्रिका ☐ तालिम ☐ झुल वितरणगर्न आउनेहरु ☐

पोष्टर/पम्प्लेट ☐ स्वास्थ्य कार्यकर्ता ☐ विद्यालय स्वास्थ्य शिक्षा ☐ अन्य.....

२.२ औलो (मलेरिया) कसरी लाग्न सक्छ ? (बहुउत्तर आउन सक्छ)

झिंगा/भुसुनाले टोकेर ☐ साङ्लाले टोकेर ☐

लामखुट्टेले टोकेर ☐ घाममा काम गर्नाले ☐ झरीमा भिज्नाले ☐ चिसोले ☐

दूषित वातावरणले ☐ औलो भएको व्यक्तिद्वारा सनाले ☐ थाहा छैन ☐ माथिका सबै ☐

अन्य_____

२.३ औलोको लक्षणहरू के के हुन् ? (बहुउत्तर आउन सक्छ) अधिक ज्वरो आउनु ☐

जाडो भएर कम्पन आउनु ☐ टाउको तथा शरिर धेरै दुख्नु ☐ पसिना धेरै आउनु ☐

खान मन नलाग्नु ☐ थाहा छैन ☐ अन्य उल्लेख गर्नुहोस _____

२.४ औलोले मुख्यतया कस्ता व्यक्तिलाई बढी सताउँछ ? (बहुउत्तर आउन सक्छ)

सबैलाई ☐ पुरुष ☐ महिला ☐ गर्भवती महिला ☐ सुत्केरी ☐

५ वर्ष मुनिका ☐ वृद्ध वृद्धा ☐ स्तनपान गराउने ☐ थाहा छैन ☐ अन्य उल्लेख गर्नुहोस _____

२.५ औलोबाट बच्ने प्रमुख उपायहरू के के हुन् ? (बहुउत्तर आउन सक्छ)

सामान्य झुल भित्र सुत्ने ☐ किटनाशकयुक्त झुल भित्र सुत्ने ☐ लामखुट्टेको टोकाइबाट बच्ने ☐

घर भित्र औषधी छर्कने ☐ घर वरिपरि पानीजम्न नदिने ☐ झयाल ढोकामा जाली राख्ने ☐

वातावरण सफा राख्ने ☐ औलो लागेको बिरामीबाट टाढा बस्ने ☐ थाहा छैन ☐ अन्य उल्लेख गर्नुहोस _____

२.६ गत एक वर्ष भित्र तपाईको घर परिवारका कसैलाई ज्वरो आएको थियो ?

थियो ☐ थिएन ☐ थाहा भएन ☐

२.६.१ यदि थियो भने के त्यो ज्वरो औलोको थियो ?

औलोको ज्वरो ☐ अन्य ज्वरो ☐

२.७ गत एक वर्ष भित्र तपाईको घर परिवारमा कसैलाई औलो भएको थियो ? थियो ☐ थिएन ☐

२.७.१ थियो भने, कस कसलाई भएको थियो ? ५ वर्षमुनिका बालबालिका ☐

५-१५ वर्षका बालबालिका ☐ सुत्केरी महिला ☐ गर्भवती महिला ☐

दुध खुवाउने आमा ☐ पुरुष ☐ महिला ☐ अन्य_____

यदि यस घरमा हालै (एक वर्ष भित्र) विवाहित महिला/गर्भवती हुनुहुन्छ भने मात्र निम्न प्रश्नहरु सोध्ने । गर्भवतीलाई प्राथमिकता दिने । दुवै जना छैनन् भने यो खण्ड भर्नु पर्दैन । भाग ३ मा जानुहोस् ।

अन्तर्वार्ता दिने व्यक्तिको नामः .....

अन्तर्वाता दिने व्यक्ति : गर्भवती ☐ महिला ☐

२.८ गत रात तपाईं कहाँ सुत्नुभयो ? भुलभित्र ☐ भुलबाहिर ☐ २.१२ मा जानुहोस्

२.८.१ भुल बाहिर सुत्नुभएको भए किन भुलबाहिर सुत्नुभयो ?

भुल नपुगेर ☐ भुलभित्र सुत्न मन लागेन ☐ लामखुट्टे नभएर ☐ अन्यः.....

२.८.२ भुल भित्र सुतेको भए, के तपाईंले प्रयोग गरेको भुल किटनाशक युक्त भुल हो ?

हो ☐ होईन ☐ थाहा छैन ☐

२.९ तपाई कहिले कहिले भुलभित्र सुत्नु हुन्छ ?

सधैं (सातै रात) ☐ प्राय सधैं (४-६ रात) ☐ हप्तामा कहिले काहीं (३ रात वा कम) ☐

कहिले पनि सुत्दिन (० रात) ☐

२.१० तपाई प्राय बेलुका कुन समयमा भुलभित्र सुत्न जानु हुन्छ ?

७-८ बजे ☐ ८-९ बजे ☐ ९-१० बजे ☐ १०-११ बजे ☐ ११ बजेपछि ☐

२.११ के तपाईंलाई हालसम्म औलो लागेको छ ? छ ☐ छैन ☐

२.११.१ छ भने कुन अवस्थामा

गर्भवती ☐ अन्य समयमा ☐

२.१२ के तपाई गर्भवती भएको वेलामा गर्भवती जाँचको लागि सरकारी स्वास्थ्य संस्थामा जानु भएको छ ?

छ ☐ छैन ☐

२.१३ के तपाइले गर्भपरिक्षणको समयमा तोकिएको सरकारी स्वास्थ्य संस्थाबाट किटनाशकयुक्त भुल पाउनु भएको छ ?

छ ☐ छैन ☐

भाग- तीन : भुलको उपलब्धता तथा प्रयोग

३.१. तपाईको घरमा सबै गरेर जम्मा कतिवटा भुल छन् ? (संख्या उल्लेख गर्नुहोस्) _____

३.२. तपाईसँग भएको भुलहरूमा कतिवटा किटनाशकयुक्त, कतिवटा साधारण भुलहरू छन् ?

किटनाशकयुक्त भुल ☐ साधारण भुल ☐

३.३. पछिल्लो पटक किटनाशक भुल वितरण गरेको बेलामा तपाईले कति वटा भुल पाउनु भयो ?

वटा ☐ पाएको छैन ☐

३.३.१ नपाएको कारण :.....(प्रश्न नं. ३.८ मा जानुहोस्)

३.४. वितरण भएको भुल किटनाशकयुक्त छ भन्ने कुरा थाहा छ ? छ ☐ छैन ☐

३.४.१ तपाईंले प्राप्त गरेका किटनाशक भुलहरु मध्ये भुलको अवस्था (संख्या उल्लेख गर्ने)

प्रयोगमा ☐ पाकेट नखोलेको ☐ पाकेट खोलेको तर त्यसै थन्काएर राखेको ☐

३.५. ती सबै किटनाशकयुक्त भुलहरू प्रयोग भएका छन् ? (संख्यामा लेख्नुहोस्)

सबै प्रयोग भएका छन् ☐ आंशिक प्रयोगमा छन् ☐ प्रयोगमा छैनन् ☐

३.६ गए राती कति वटा किटनाशक भुलहरु सुत्नमा प्रयोग गर्नुभयो ?

संख्या ☐

३.७ किटनाशकयुक्त झुल प्रयोग नभएका वा आंशिक प्रयोग भएका छन् भने प्रश्न गर्नुहोस् । किन सबै झुल प्रयोग नगर्नु भएको ?

प्रयोगमा नआउनुको कारण	झुल १	झुल २	झुल ३	झुल ४	झुल ५
च्यातिएर / प्वाल परेर					
चोरिएर					
नष्ट भएर					
खर्च नपुगेर (बेचिएको)					
नातेदार वा अरूलाई दिएर					
आवश्यकता नपरेर					
सुत्न मन नपरेर					
झूलमा प्रयोग भएको समाग्री राम्रो नभएर					
अन्य (जनाउनुहोस)					
झुलभित्र सुत्न निशासिन्छ					
थाहा छैन					
हाल लामखुट्टे नभएकोले					

३.८ गएको रात यस घरमा जम्मा कति जना सुत्नु भयो ? (संख्या जनाउनुहोस्) _____

५ वर्ष मुनिका ☐ ५-१५ वर्ष ☐ महिला (गर्भवती र सुत्केरी आमाबाहेक) ☐

पुरुष ☐ गर्भवती महिला ☐ सुत्केरी आमा ☐ पाहुना ☐ अन्य ☐

३.९ गए राति तपाईंहरु मध्ये कति जना झुलभित्र सुत्नुभयो ?

झुलभित्र

म	पु

झुलबाहिर

म	पु

३.१० गए राती तपाईंको घरमा कति वटा झुल प्रयोग भएको थियो ?

किटनाशक झुल संख्या ☐

साधारण झुल संख्या ☐

३.११ गए राति तपाईंहरु मध्ये कति जना झुलभित्र सुत्नुभयो ? (संख्या उल्लेख गर्ने)

परिवार सदस्य	किटनाशक झुल	साधारण झुल	झुलबाहिर
५ वर्ष मूनिका			
५–१५ वर्ष			
महिला			
पुरुष			
गर्भवती महिला			
सुत्केरी			
पाहुना			
अन्य			
जम्मा			

३.१२ प्रत्येक किटनाशकयुक्त झुल भित्र गत रात कति/कति जना सुत्नु भयो ? (संख्या उल्लेख गर्ने)

उमेर वर्ष	झुल १		झुल २		झुल ३		झुल ४		झुल ५		जम्मा		
	म.	पु.	म.	पु.	म.	पु.	म.	पु.	म.	पु.	म.	पु.	जम्मा
५ वर्ष मूनिका													
५-१५ वर्ष													

महिला													
पुरुष													
गर्भवती महिला													
सुत्केरी													
पाहुना													
अन्य													
जम्मा													

३.१३ तपाईं प्राय कति बजे सुत्न जानुहुन्छ ?
७-८ बजे ☐ ८-९ बजे ☐ ९-१० बजे ☐ १०-११ बजे ☐ ११ बजेपछि ☐

३.१४ गत रात तपाईको घर परिवारहरू जम्मा कति ठाउँमा झुल टाँगेर सुत्नु भयो ?(संख्या जनाउनुहोस्) _____
घर भित्र ☐ घर बाहिर ☐ अन्य ठाउँ ☐

३.१५ तपाइको घरमा तपाईहरू कुन कुन महिना झुल हालेर सुत्ने गर्नु भएको छ ?

बैशाख	जेष्ठ	आषाढ	साउन	भाद्र	आश्विन	कात्तिक	मार्ग	पौष	माघ	फाल्गुन	चैत्र

३.१६ किटनाशकयुक्त झुलको बारेमा निम्न विषयमा तपाईको के धारणा रहेको छ ? सहमति वा असहमति ।

विवरण		पूर्ण सहमती	सहमती	न सहमति न असहमति	असहमती	पूर्ण असहमती
३.१६.१	लामखुट्टेलाई मार्न किटनाशकयुक्त झुल बढी प्रभावकारी हुन्छ					
३.१६.२	किटनाशकयुक्त झुलले लामखुट्टे भगाएर यसको टोकाइबाट बचाउछ ।					
३.१६.३	किटनाशकयुक्त झुल भित्र सुत्दा औलो हुनुबाट बच्ने एउटा प्रभावकारी तरिका हो ।					

भाग- चार : किटनाशकयुक्त झुलको प्रयोग/ संरक्षण

४.१. तपाईले किटनाशकयुक्त झुलहरु कुन कुन ठाउँमा टाँग्नु भएको छ ?

खाटमा ☐ पलङमा ☐ भूईंमा ☐ अन्य_____

४.२ के तपाइले किटनाशकयुक्त झुल धुनु भएको छ ?
छ ☐ छैन ☐ (भाग ५ मा जानुहोस) थाहा छैन ☐

४.२.१ धोएको छ भने
झुल संख्या १ पटक ☐
झुल संखया २ पटक ☐
झुल संख्या ३ पटक ☐
झुल संखया ४ पटक ☐
झुल संख्या ५ पटक ☐

४.२.२ धोएको झुल संख्या : ☐

४.३ झुल धुदा केले धुनु भयो ?
सादा पानीले ☐ साबुन ☐ ब्लीचिङ्ग ☐ तातोपानी ☐
डिटरजेन्ट पाउडर र साबुन दुवै ☐ खरानी ☐ थाहा भएन ☐

४.४ के झुल धुँदा दुङ्गा तथा खस्रो ठाउँमाथि राखेर मिच्नु भयो वा मुङ्गो पनि प्रयोग गर्नु भएको थियो ?

थियो ☐ थिएन ☐ थाहा छैन ☐

४.५ झुल धोइसके पछि कस्तो ठाउँमा सुकाउनु भएको थियो ?
घाममा ☐ छायाँमा ☐

भाग- पाँच : किटनाशकयुक्त झुलको अवस्था *(अवलोकन गर्ने)*

५.१ झुलको अवस्था (संख्या उल्लेख गर्ने)

राम्रो ☐ कैफियत ☐

५.२ कैफियत देखिएका किटनाशक झुलहरुको विवरण

च्यातिएको झुल संख्या ☐

प्वाल परेको झुल संखया ☐

५.३ च्यातिएको कारण : तानेर ☐ घोचेर ☐ च्यापिएर ☐ पोलेर ☐ जनावरले टोकेर ☐

मुसाले टोकेर ☐ केटाकेटीले ☐ किराले ☐ अन्य.....

५.४ प्वाल संख्या : झुल १ ☐ झुल २ ☐ झुल ३ ☐ झुल ४ ☐ झुल ५ ☐

लामखट्टे लगायत अन्य किराहरु छिर्न सक्ने भएमा मात्र गणना गर्ने

५.५ झुल राखिएको कोठाको अवलोकन गर्नुहोस्? (हेर्नुहोस्)

झुल टाँगिएको कोठा भुईं ☐ बाँसको/काठको खाट ☐ पलङ्ग ☐ अन्य ☐

५.६ झुल रहेको कोठाको गाह्रो के ले बनेको छ ? (हेर्नुहोस)

इँटा माटोले ☐ सिमेन्ट गाह्रोले ☐ भाटा तथा स्याउला ☐

काठले ☐ माटो/परालले ☐ माटो/वाँसले ☐ टिनले ☐

खिया लागेको फलाम ☐

गाह्रो नै नभएको (कोठा बाहिर) ☐ अन्य_____ जनाउनुहोस)

५.७ झुल रहेको कोठाको छत के ले बनेको छ ? (हेर्नुहोस्)

खरको ☐ जस्ताको ☐ ढलान (कंक्रिट) ☐ काठ/माटो ☐

टायल ☐ म्याट ☐ गहुँको छ्वाली ☐

अन्य (जनाउनुहोस्) _____

५.८ झुल रहेको ठाउँ नजिकै आगो वा तातोको स्रोत छ ? (हेर्नुहोस)

छ ☐ छैन ☐ प्रश्न नं. ५.१० सोध्नुहोस् ।

५.९ छ भने के गरिएको छ ?

काठको आगो वालेको ☐ कोईला वालेको ☐ मैनवत्ती/टुकी बालेको ☐

बिजुलीको चिम ☐ लालटिन बत्ती ☐

हिटर वालेको ☐ अन्य (जनाउनुहोस्) _____

५.१० निजले प्राप्त गरेको किटनाशकयुक्त झुलको हालको वस्तुस्थिति कस्तो छ ? (हेर्नुहोस् र जनाउनुहोस्) _____

प्र.नं.	विवरण	झुल १		झुल २		झुल ३		झुल ४		झुल ५	
		छ	छैन	छ	छैन	छ	छैन	छ	छैन	छ	छैन
५.१०.१	धेरै मैलिएको कालो रङ भएको धब्बाहरू रहेको (जनाउने)										
५.१०.२	साबुन सर्फको गन्ध आउने										
५.१०.३	प्वाल परेको / च्यात्तिएको										
५.१०.४	अन्य										

भाग ६ विविध

६. यो भुल दिँदा तपाईंलाई कुनै किसिमको प्रलोभनबाट प्रेरित भएको थियो ?

थियो ☐ थिएन ☐ थाहा भएन ☐

६.१ थियो भने

धार्मिक ☐
राजनैतिक ☐
आर्थिक ☐
अन्य ☐
☐

तपाई यस कार्यक्रममा सहभागी रहनु भएकोमा धन्यवाद ज्ञापन गर्दछु !

प्रश्नावली भर्ने-

मितिः|_ _|__|/|__|__|/|__|__|__|__|

दस्तखतः_____

नाम : _____

जाँच गर्ने :

मितिः|__|__|/|__|__|/|__|__|__|__|

दस्तखतः _____

नामः _____

सुपरभाइजरः-

म प्रश्नावली राम्ररी भरिएकोमा विश्वस्त छु ।

मितिः |__|__|/|__|__|/|__|__|__|__|

दस्तखतः_____

नामः_____

Appendix-3: Two-day orientation/training schedule

Sustainable Development Initiative Network- Nepal (SUDIN-Nepal)

Post distribution HHs Survey for assessing LLINs availability and its use (CRF/058/2019)

Date 20-21 June 2019 **Venue: Ala Carte, Bhimsen gola, Kharibot, New Baneshwor**

Orientation Program

First Day: 20 June 2019			
Opening Session			
1	10:00 - 10:30	Registration	Kanchan Parajuli
3	10:30- 10:50	Introduction	Participants
4	10:50 - 11:00	Welcome Speech	SUDIN-Nepal: Arjun Nepal
5	11:00 - 11:10	Introduction of Project	Ashok Poudel
6	11:10 - 11:25	Few words: LLIN Distribution Guidelines	Save the Children Representative
7	11:25 - 11:45	Objective of the study	EDCD Representative
8	11:45 - 12:00	Tea Break	
Afternoon Session			
9	12:00 - 01:00	Procedure of data collection Methodology of HHs Survey, District Selection, VDCs Selection Ward Selection, HHs Selection	Prem Prasad Panta
10	1:00 - 2:00	Questionnaire Fill up guidelines	Biswa Raj Pokharel
11	2:00 - 2:45	Refreshment	
12	2:45 - 5:00	Discussion on Questionnaire	Prem Prasad Panta
	End of 1st day Program		
Second Day: 21 June 2019			
1	10.00 – 10.30	Review of the first day program	Participants
2	10.30 – 12.00	Practice on Questionnaire	Participants
3	12.00- 12.30	Tea Break	
4	12.30 – 01.30	Practice on Questionnaire	
5	1.30- 2.00	Refreshment	
6	2.00- 3.00	Problem/ Solution on Questionnaires	
7	3.00-03.30	Role and Responsibilities of Interview Team	Hari Bista
Closing			
8	3:30-4.30	Commitment (Few words)	Enumerator Team
		Advice/ Suggestions about program	Save the Children Representative
		Advice/ Suggestions about program	EDCD Representative
		Vote of Thanks	Arjun Nepal

Thank you

Appendix-4: Ethical clearance from NHRC

Government of Nepal
Nepal Health Research Council (NHRC)
Estd. 1991

Ref. No.: 297

4 August 2019

Dr. Bibek Kumar Lal
Principal Investigator
Epidemiology and Disease Control Division
Teku, Kathmandu

Ref: **Approval of research proposal** entitled **Assessment of availability and use of LLIN in malaria endemic districts of Nepal**

Dear Dr. Lal,

It is my pleasure to inform you that the above-mentioned proposal submitted on **24 June 2019** (**Reg. no. 469/2019)** please use this Reg. No. during further correspondence) has been approved by Nepal Health Research Council (NHRC) Ethical Review Board on **24 July 2019**.

As per NHRC rules and regulations, the investigator has to strictly follow the protocol stipulated in the proposal. Any change in objective(s), problem statement, research question or hypothesis, methodology, implementation procedure, data management and budget that may be necessary in course of the implementation of the research proposal can only be made so and implemented after prior approval from this council. Thus, it is compulsory to submit the detail of such changes intended or desired with justification prior to actual change in the protocol. Expiration date of this proposal is **September 2019.**

If the researcher requires transfer of the bio samples to other countries, the investigator should apply to the NHRC for the permission. The researchers will not be allowed to ship any raw/crude human biomaterial outside the country; only extracted and amplified samples can be taken to labs outside of Nepal for further study, as per the protocol submitted and approved by the NHRC. The remaining samples of the lab should be destroyed as per standard operating procedure, the process documented, and the NHRC informed.

Further, the researchers are directed to strictly abide by the National Ethical Guidelines published by NHRC during the implementation of their project proposal and **submit progress report in between and full or summary report upon completion.**

As per your research proposal, the total research amount is **Rs 12,45,700** and accordingly the processing fee amounts to **Rs 37,371.** It is acknowledged that the above-mentioned processing fee has been received at NHRC.

If you have any questions, please contact the Ethical Review M & E Section at NHRC.

Thanking you,

Prof. Dr. Anjani Kumar Jha
Executive Chairperson

Tel: +977 1 4254220, Fax: +977 1 4262469, Ramshah Path, PO Box: 7626, Kathmandu, Nepal
Website: http://www.nhrc.gov.np, E-mail: nhrc@nhrc.gov.np

Appendix-5: Consent from respondents/participants

प्रतिबद्धता पत्र

(घरमुली, पाँच वर्ष मुनिका बच्चालाई हेरचाह गर्ने महिला, हालै विवाहित तथा गर्भवती महिला, १८ वर्षदेखि माथिका कुनै पनि घरपरिवार सदस्य)

नमस्ते म, ...नेपाल सरकार स्वास्थ्य तथा जनसंख्या मन्त्रालय, स्वास्थ्य सेवा विभाग महामारी तथा रोग नियन्त्रण महाशाखा, टेकु, काठमाडौंद्वारा सञ्चालित यस कार्यक्रममा सहभागि छु । इस्वी सन् २०१७,२०१८ र २०१९ मा विभिन्न जिल्लामा वितरित **"औषधीयुक्त झुलको उपलब्धता तथा यसको प्रयोग"** वारे घर घरमा गई सर्वेक्षण कार्यक्रम अध्ययन गरिरहेका छौं ।

घर छान्ने क्रममा यो घर पनि अध्ययनमा परेकोले तपाइको बारेमा तथा यस कार्यक्रममा स्वैच्छिक सहभागिता हुनेछ । यदि सहभागी हुनुभयो भने तपाई र घर परिवारमा किटनासक झुलको उपलब्धता र प्रयोग आदि विषयमा प्रश्न सोधिने छ । यस कार्यको लागि करिब ४५ मिनेट लाग्दछ । यस कार्यक्रममा सहभागी भए वापत तपाईलाई सोझै कुनै फाइदा छैन । तैपनि भविष्यमा औलो खतरा भएका जिल्लामा औलोबाट जन्मिने समस्यालाई कमगर्न औषधीयुक्त झूल वितरण तथा प्रयोगमा सुधार ल्याउन सकिनेछ ।

तपाई कुनै पनि वेला विना कारण आफूले चाहेको समयमा, तपाई यो अध्ययनबाट बाहिरिन सक्नु हुनेछ । कुनै प्रश्नको उत्तर दिन आवश्यक ठान्नु भएन भने नदिन पनि सक्नु हुनेछ । तपाईको सम्पूर्ण विवरण गोप्य राखिनेछ । तपाइले चाहेको वेलामा यस अध्ययन वारे कुनै पनि प्रश्न राख्न सक्नु हुनेछ । यस अध्ययनको दौरानमा तपाईलाई कुनै आर्थिक वा अन्य भार पर्ने छैन । तपाईलाई कुनै जिज्ञासा रहेमा वा यस कार्यको सहभागितामा असहज महशुस तल उल्लेखित ठेगानामा सम्पर्क गरी बुझ्न सक्नु हुनेछ ।

सहभागी हुनु अगाडि कुनै कुरामा अस्पस्टता छ भने प्रश्न सोधी प्रष्ट हुनुहोस । तपाईलाई दिएको जानकारी र तपाईसँग भएको कुराकानी, तथा तपाई छलफलमा यहाँ रहनु भएकोले तपाई यो कार्यक्रममा सहभागि रहनु भएको बुझिएको छ ।

.....

सहभागिको हस्ताक्षर

मिति :

सम्पर्क फोन

१ महामारी तथा रोग नियन्त्रण महाशाखा, टेकु, काठमाडौ फोन नं. ०१ ४२५५७९६

लिला बिक्रम थापा

२ SUDIN-Nepal

विश्वराज पोखरेल : ९८४१२८२०६३

Appendix-6: Field implementation plan

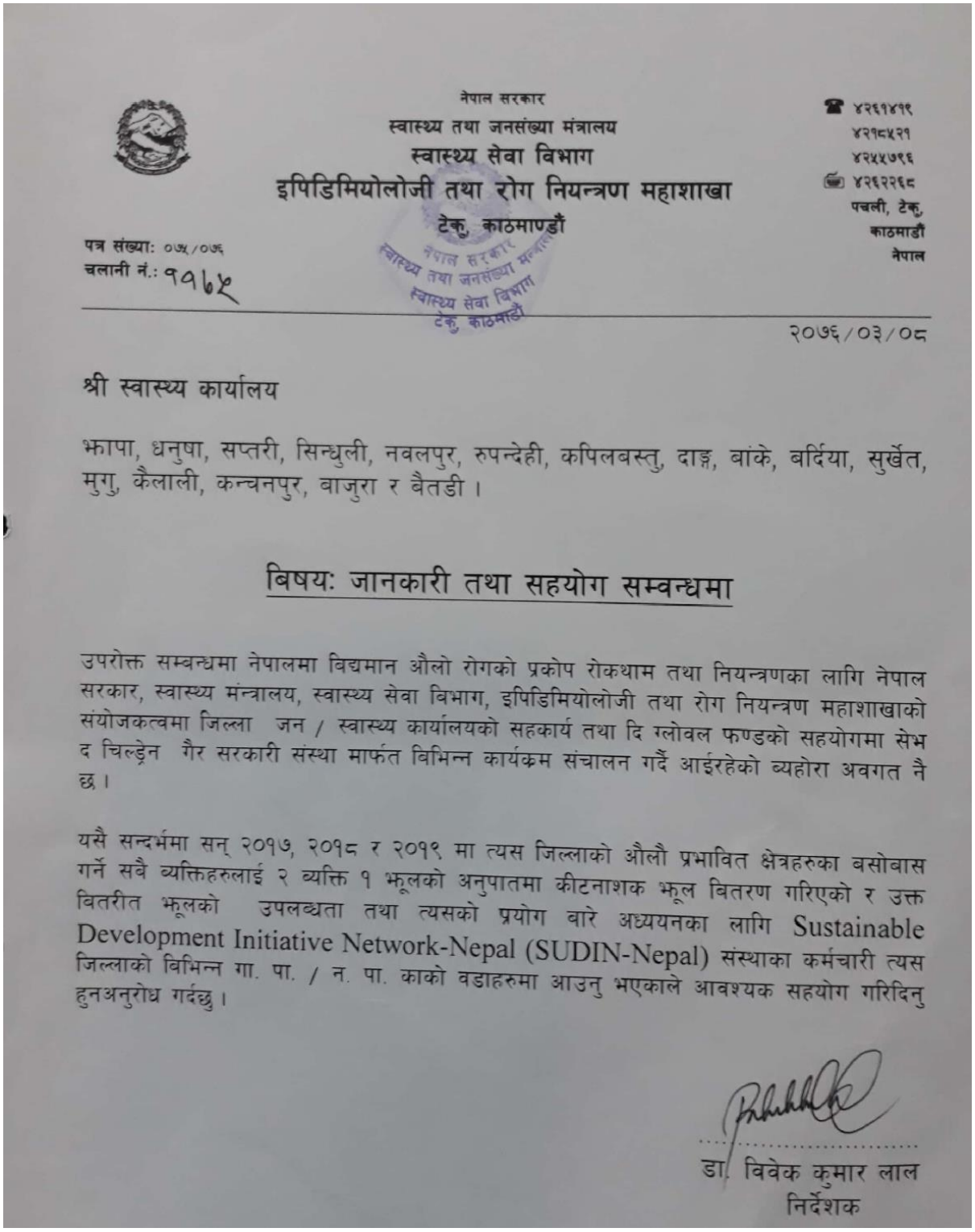
- It is assumed that 1 surveyor can survey 10 household in 1 day. It is estimated that maximum time to complete one household is 45 minutes (excluding time to travel between two household).
- Total five group shall be involved in survey where each group includes two members. Therefore each group shall complete 20 Household each day.
- The supervision shall be made to the team by Coordinator and supervisors.

Covered District: **Jhapa, Saptari, Dhanusha, and Sindhuli**		
Total Household to be surveyed: **87**		
Activities	**Date**	**Approx. Days**
Group A		
Travel Kathmandu to **Jhapa**	June 24 to 25	2
Preparation and Coordination	26	1
Field Survey (21 HHs) including travel time	27 to 28	1.5
Feedback Session/Meeting with HO	28	1/2
Travel Jhapa to **Saptari**	29	1
Preparation and Coordination	30	1
Field Survey (6 HHs) including travel time	July 1	1
Feedback Session/Meeting with HO	2	1
Travel Saptari to **Dhanusha**	3	1
Preparation and Coordination	4	1
Field Survey (41 HHs) including travel time	5 to 7	3
Feedback Session/Meeting with HO	8	1
Travel Dhanusha to **Sindhuli**	9	1
Preparation and Coordination	10	1
Field Survey (19 HHs) including travel time	11 to 13	3
Feedback Session/Meeting with HO	14	1
Travel Sindhuli to Kathmandu	15	1
Total for Group A		**22**
Covered District: **Dang, Kapilvastu, Rupandehi, and Nawalparasi**		
Total Household to be surveyed: **105**		
Activities	**Date**	**Approx. Days**
Group B		
Travel Kathmandu to Dang	June 24 to 25	2
Preparation and Coordination	26	1
Field Survey (41 HHs) including travel time	27 to 29	3
Feedback Session/Meeting with HO	30	1
Travel Dang to Kapilvastu	July 1	1
Preparation and Coordination	2	1
Field Survey (24 HHs) including travel time	3 to 4	2
Feedback Session/Meeting with HO	5	1
Travel Kapilvastu to Rupandehi	6	1
Preparation and Coordination	7	1
Field Survey (35 HHs) including travel time	8 to 9	2
Feedback Session/Meeting with HO	10	1

Travel Rupandeshi to Nawalparasi [E]	11	1
Preparation and Coordination	12	1
Field Survey (5 HHs) including travel time	13	1/2
Feedback Session/Meeting with HO	13	1/2
Travel Rupandehi to Kathmandu	14	1
Total for Group B		**21**
Covered District: **Banke, Bardiya and Surkhet**		
Total Household to be surveyed: **217**		
Activities	**Date**	**Approx. Days**
Group C		
Travel Kathmandu to **Banke**	June 24 to 25	2
Preparation and Coordination	26	1
Field Survey (49 HHs) including travel time	June 27 to July 1	5
Feedback Session/Meeting with HO	2	1
Travel Banke to **Bardiya**	3	1
Preparation and Coordination	4	1
Field Survey (77 HHs) including travel time	5 to 9	5
Feedback Session/Meeting with HO	10	1
Travel Bardiya to **Surkhet**	11	1
Preparation and Coordination	12	1
Field Survey (91 HHs) including travel time	13 to 21	9
Feedback Session/Meeting with HO	22	1
Travel Surkhet to Kathmandu	23 to 24	2
Total for Group C		**31**
Covered District: **Kailali and Baitadi**		
Total Household to be surveyed: **415**		
Activities	**Date**	**Approx. Days**
Group D		
Travel Kathmandu to **Kailali**	June 24 to 25	2
Preparation and Coordination	26	1
Field Survey (**382** Household) including travel time	June 27 to July 18	22
Feedback Session/Meeting with HO	19	1
Travel Kailali to **Baitadi**	20	1
Preparation and Coordination	21	1
Field Survey (**33** Household) including travel time	22 to 24	3
Feedback Session/Meeting with HO	25	1
Travel Baitadi to Kathmandu	26 to 27	2
Total for Group D		**34**
Covered District: **Kanchanpur, Bajura, and Mugu**		
Total Household to be surveyed: **285**		
Activities	**Date**	**Approx. Days**
Group E		

Travel Kathmandu to **Kanchanpur**	June 24 to 25	2
Preparation and Coordination	26	1
Field Survey (**255** Household) including travel time	June 27 to July 10	14
Feedback Session/Meeting with HO	11	1
Travel Kanchanpur to **Bajura**	12 to 13	2
Preparation and Coordination	14	1
Field Survey (**18** HHs) including travel time	15 to 17	3
Feedback Session/Meeting with HO	18	1
One Enumerator: Travel Bajura to Kathmandu	19 to 21	3
Another Enumerator: Travel Bajura to **Mugu**	19 to 20	2
Preparation and Coordination	21	1
Field Survey (**12** HHs) including travel time	22 to 24	3
Travel Mugu to Kathmandu	26 to 28	3
Total for Group E		**34**

Appendix-7: Letter from EDCD and Save the Children



नेपाल सरकार
स्वास्थ्य तथा जनसंख्या मंत्रालय
स्वास्थ्य सेवा विभाग
इपिडिमियोलोजी तथा रोग नियन्त्रण महाशाखा
टेकु, काठमाण्डौं

☎ ४२६१४१९
४२१८५२१
४२५५७९६
फ्याक्स ४२६२२६८
पचली, टेकु,
काठमाडौं
नेपाल

पत्र संख्या: ०७५/०७६
चलानी नं.: ९१६५

नेपाल सरकार स्वास्थ्य तथा जनसंख्या मन्त्रालय स्वास्थ्य सेवा विभाग टेकु, काठमाडौं

२०७६/०३/०८

श्री स्वास्थ्य कार्यालय

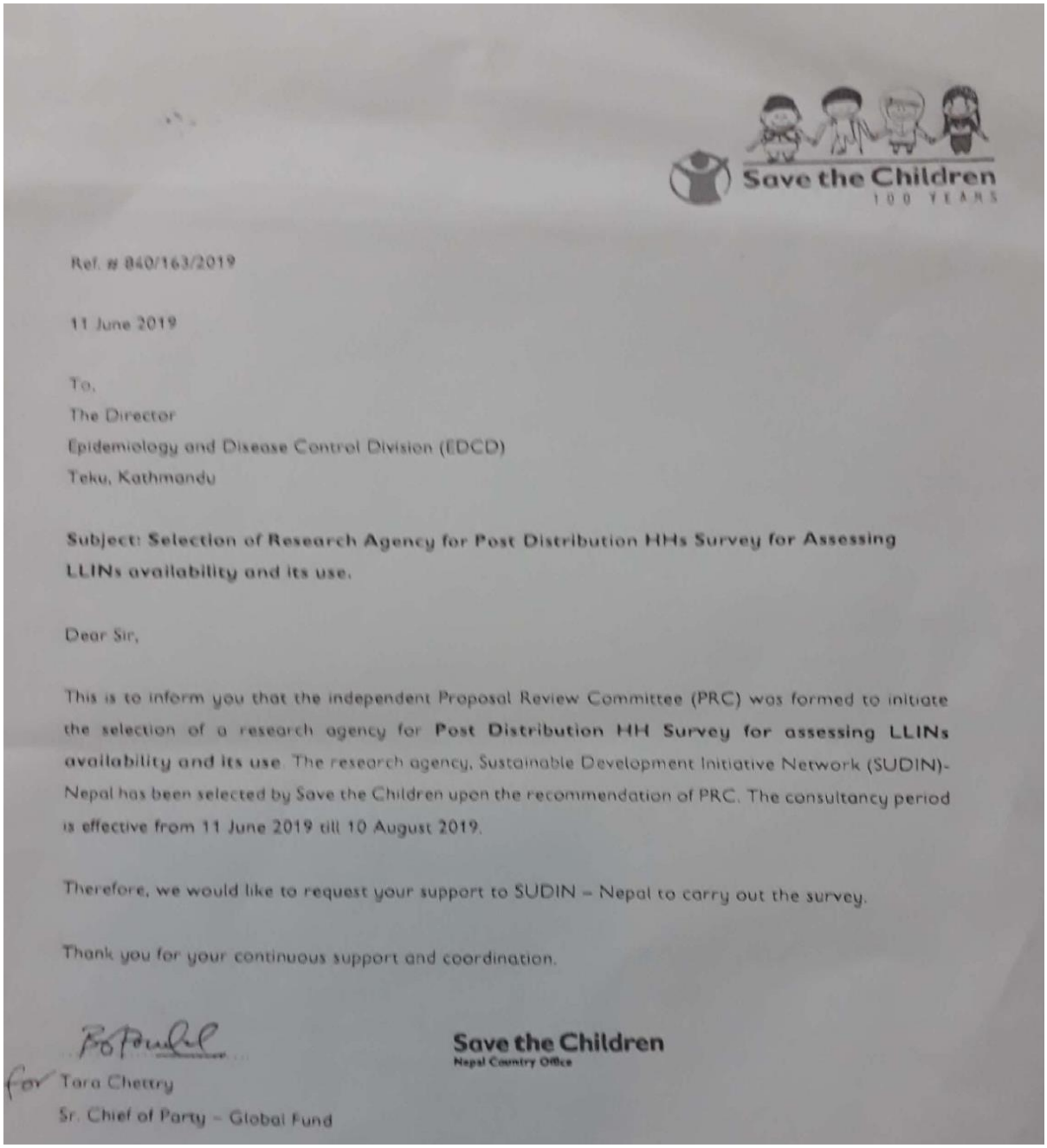
झापा, धनुषा, सप्तरी, सिन्धुली, नवलपुर, रुपन्देही, कपिलबस्तु, दाङ्ग, बांके, बर्दिया, सुर्खेत, मुगु, कैलाली, कन्चनपुर, बाजुरा र बैतडी ।

बिषयः जानकारी तथा सहयोग सम्वन्धमा

उपरोक्त सम्बन्धमा नेपालमा बिद्यमान औलो रोगको प्रकोप रोकथाम तथा नियन्त्रणका लागि नेपाल सरकार, स्वास्थ्य मंन्त्रालय, स्वास्थ्य सेवा बिभाग, इपिडिमियोलोजी तथा रोग नियन्त्रण महाशाखाको संयोजकत्वमा जिल्ला जन / स्वास्थ्य कार्यालयको सहकार्य तथा दि ग्लोवल फण्डको सहयोगमा सेभ द चिल्ड्रेन गैर सरकारी संस्था मार्फत बिभिन्न कार्यक्रम संचालन गर्दै आईरहेको व्यहोरा अवगत नै छ ।

यसै सन्दर्भमा सन् २०१७, २०१८ र २०१९ मा त्यस जिल्लाको औलौ प्रभावित क्षेत्रहरुका बसोबास गर्ने सबै व्यक्तिहरुलाई २ व्यक्ति १ झूलको अनुपातमा कीटनाशक झूल बितरण गरिएको र उक्त बितरीत झूलको उपलब्धता तथा त्यसको प्रयोग बारे अध्ययनका लागि Sustainable Development Initiative Network-Nepal (SUDIN-Nepal) संस्थाका कर्मचारी त्यस जिल्लाको बिभिन्न गा. पा. / न. पा. काको वडाहरुमा आउनु भएकाले आवश्यक सहयोग गरिदिनु हुनअनुरोध गर्दछु ।

.....
डा. विवेक कुमार लाल
निर्देशक



Save the Children
100 YEARS

Ref. # 840/163/2019

11 June 2019

To,
The Director
Epidemiology and Disease Control Division (EDCD)
Teku, Kathmandu

Subject: Selection of Research Agency for Post Distribution HHs Survey for Assessing LLINs availability and its use.

Dear Sir,

This is to inform you that the independent Proposal Review Committee (PRC) was formed to initiate the selection of a research agency for **Post Distribution HH Survey for assessing LLINs availability and its use**. The research agency, Sustainable Development Initiative Network (SUDIN)-Nepal has been selected by Save the Children upon the recommendation of PRC. The consultancy period is effective from 11 June 2019 till 10 August 2019.

Therefore, we would like to request your support to SUDIN – Nepal to carry out the survey.

Thank you for your continuous support and coordination.

for Tara Chettry
Sr. Chief of Party – Global Fund

Save the Children
Nepal Country Office

Source of information

District	Heard About Malaria			Radio		Television		Newspaper		Poster		Health person		School	
	Yes	No	%	HHs	%	HHs	%	HHs	%	HHs	%	HHs	%	HHs	%
Baitadi	34	0	100.0	6	17.6	2	5.9	0	0.0	0	0.0	11	32.4	13	38.2
Bajura	17	2	89.5	5	29.4	0	0.0	1	5.9	0	0.0	9	52.9	6	35.3
Banke	38	11	77.6	1	2.6	4	10.5	4	10.5	4	10.5	34	89.5	2	5.3
Bardia	68	9	88.3	13	19.1	6	8.8	2	2.9	10	14.7	54	79.4	14	20.6
Dang	36	5	87.8	3	8.3	7	19.4	4	11.1	1	2.8	24	66.7	6	16.7
Dhanusa	40	1	97.6	16	40.0	9	22.5	3	7.5	0	0.0	37	92.5	5	12.5
Jhapa	21	0	100.0	11	52.4	7	33.3	3	14.3	0	0.0	13	61.9	5	23.8
Kailali	364	18	95.3	47	12.9	20	5.5	8	2.2	15	4.1	145	39.8	116	31.9
Kanchanpur	212	43	83.1	73	34.4	22	10.4	3	1.4	3	1.4	120	56.6	54	25.5
Kapilvastu	18	6	75.0	4	22.2	3	16.7	1	5.6	0	0.0	10	55.6	5	27.8
Mugu	12	0	100.0	6	50.0	0	0.0	0	0.0	1	8.3	11	91.7	1	8.3
Nawalparasi	5	0	100.0	3	60.0	2	40.0	0	0.0	0	0.0	3	60.0	0	0.0
Rupendehi	30	5	85.7	13	43.3	6	20.0	1	3.3	1	3.3	17	56.7	3	10.0
Saptari	6	0	100.0	1	16.7	2	33.3	0	0.0	0	0.0	4	66.7	1	16.7
Sindhuli	12	7	63.2	5	41.7	1	8.3	0	0.0	2	16.7	9	75.0	5	41.7
Surkhet	91	0	100.0	14	15.4	10	11.0	7	7.7	2	2.2	51	56.0	7	7.7
Total	**1004**	**107**		**221**		**101**		**37**		**39**		**552**		**243**	

Knowledge on Transmission of Malaria

District	Flies bite	Cockroch	Mosquitoes	Sun Burn	Soaked in the rain	P0lluted Env	Infected with malaria
	%	%	%	%	%	%	%
Baitadi	0.0	0.0	100.0	2.9	0.0	0.0	0.0
Bajura	0.0	0.0	100.0	5.9	0.0	0.0	0.0
Banke	23.7	0.0	81.6	10.5	0.1	0.0	5.3
Bardia	16.2	1.5	92.6	8.8	0.0	0.0	4.4
Dang	2.8	0.0	83.3	11.1	0.1	0.0	0.0
Dhanusa	5.0	7.5	92.5	2.5	0.1	0.0	10.0
Jhapa	14.3	0.0	90.5	4.8	0.2	0.0	14.3
Kailali	0.5	0.5	98.4	2.5	0.0	0.0	1.1
Kanchanpur	0.9	0.0	95.8	0.9	0.0	0.0	1.4
Kapilvastu	5.6	0.0	100.0	0.0	0.0	0.0	0.0
Mugu	0.0	0.0	100.0	0.0	0.0	0.0	0.0
Nawalparasi	0.0	0.0	100.0	0.0	0.0	0.0	0.0
Rupendehi	13.3	0.0	86.7	0.0	0.0	0.0	0.0
Saptari	50.0	0.0	100.0	16.7	0.0	0.0	0.0
Sindhuli	8.3	0.0	100.0	0.0	0.1	0.0	16.7
Surkhet	3.3	1.1	96.7	3.3	0.0	0.0	0.0

Knowledge on Sign and symptoms of malaria

District	High Fever	Chills rigor	Headache and Malaine	Excessive sweating	Loss of apetite	Don't know	Others
	%	%	%	%	%	%	%
Baitadi	85.3	23.5	50.0	0.0	11.8	14.7	23.5
Bajura	70.6	29.4	29.4	0.0	0.0	23.5	5.9
Banke	86.8	34.2	44.7	0.0	42.1	2.6	7.9
Bardia	88.2	44.1	42.6	1.5	54.4	5.9	1.5
Dang	94.4	41.7	33.3	0.0	16.7	5.6	2.8
Dhanusa	67.5	62.5	45.0	32.5	27.5	0.0	0.0
Jhapa	47.6	71.4	61.9	57.1	71.4	0.0	0.0
Kailali	85.4	23.9	41.2	4.9	16.5	8.0	20.3
Kanchanpur	78.3	23.6	49.5	3.8	8.5	19.3	5.7
Kapilvastu	88.9	22.2	22.2	11.1	0.0	5.6	0.0
Mugu	91.7	16.7	58.3	0.0	8.3	8.3	0.0
Nawalparasi	100.0	60.0	40.0	0.0	60.0	0.0	0.0
Rupendehi	93.3	43.3	30.0	3.3	20.0	0.0	0.0
Saptari	66.7	83.3	50.0	66.7	66.7	0.0	0.0
Sindhuli	66.7	58.3	50.0	33.3	33.3	0.0	8.3
Surkhet	96.7	23.1	50.5	6.6	16.5	1.1	9.9

Knowledge of HH who suffers from malaria

District	Every one	Male	female	pregnant women	Post-partum	under 5	Old	lactating	don't know	Others
	%	%	%	%	%	%	%	%	%	%
Baitadi	67.6	0.0	2.9	0.0	0.0	8.8	2.9	11.8	5.9	5.9
Bajura	35.3	0.0	0.0	5.9	11.8	41.2	17.6	0.0	23.5	0.0
Banke	71.1	5.3	15.8	2.6	0.0	34.2	23.7	2.6	0.0	0.0
Bardia	80.9	0.0	11.8	14.7	1.5	32.4	27.9	4.4	2.9	0.0
Dang	63.9	0.0	5.6	2.8	0.0	30.6	36.1	5.6	2.8	0.0
Dhanusa	27.5	32.5	50.0	5.0	0.0	40.0	30.0	0.0	0.0	0.0
Jhapa	52.4	4.8	0.0	14.3	4.8	47.6	33.3	0.0	0.0	0.0
Kailali	60.2	0.0	1.1	1.1	0.3	9.6	8.8	3.0	12.9	14.6
Kanchanpur	43.4	0.5	1.9	8.0	1.4	22.6	18.9	1.4	19.8	7.5
Kapilvastu	83.3	0.0	0.0	0.0	0.0	55.6	55.6	0.0	0.0	0.0
Mugu	50.0	0.0	0.0	8.3	0.0	33.3	8.3	0.0	16.7	0.0
Nawalparasi	60.0	0.0	0.0	0.0	0.0	0.0	40.0	0.0	0.0	0.0
Rupendehi	70.0	3.3	16.7	6.7	0.0	53.3	63.3	0.0	6.7	0.0
Saptari	50.0	0.0	0.0	16.7	16.7	50.0	33.3	0.0	0.0	0.0
Sindhuli	33.3	8.3	25.0	8.3	0.0	33.3	41.7	0.0	0.0	8.3
Surkhet	52.7	1.1	5.5	9.9	5.5	36.3	34.1	1.1	2.2	4.4

Knowledge on preventive measures

District	Use of Net	Use of LLIN	safe from MB	spraying	cover ditches	use of screen in W/D	Clean env	don't know	Others
	%	%		%	%	%	%	%	%
Baitadi	38.2	97.1	8.8	5.9	47.1	11.8	52.9	0.0	8.8
Bajura	52.9	64.7	0.0	17.6	64.7	11.8	82.4	0.0	5.9
Banke	26.3	44.7	26.3	21.1	39.5	0.0	73.7	0.0	2.6
Bardia	29.4	77.9	16.2	13.2	35.3	1.5	66.2	4.4	0.0
Dang	11.1	75.0	27.8	11.1	38.9	0.0	52.8	8.3	0.0
Dhanusa	57.5	97.5	27.5	42.5	55.0	5.0	57.5	0.0	2.5
Jhapa	47.6	95.2	57.1	19.0	42.9	19.0	52.4	0.0	0.0
Kailali	48.1	90.1	6.0	13.7	37.1	7.1	55.8	0.5	20.1
Kanchanpur	51.9	58.5	13.7	6.1	33.0	6.1	60.8	3.8	8.0
Kapilvastu	22.2	83.3	22.2	22.2	27.8	0.0	55.6	0.0	0.0
Mugu	50.0	50.0	8.3	16.7	25.0	0.0	58.3	0.0	0.0
Nawalparasi	20.0	100.0	20.0	40.0	20.0	0.0	80.0	0.0	0.0
Rupendehi	26.7	83.3	13.3	23.3	30.0	3.3	63.3	0.0	0.0
Saptari	50.0	100.0	0.0	50.0	0.0	16.7	16.7	0.0	0.0
Sindhuli	58.3	91.7	50.0	33.3	41.7	0.0	50.0	0.0	25.0
Surkhet	3.3	90.1	38.5	13.2	69.2	4.4	57.1	1.1	3.3

Materials used for washing

District	Washed Net HH		Plain water	Soap	Bleaching	Hot water	detergent	Place used for washing	Drying place
	%	%	%	%	%	%	%	%	%
Baitadi	21	61.8	57.1	4.8	4.8	0.0	33.3	14.3	42.9
Bajura	13	68.4	84.6	0.0	0.0	0.0	15.4	0.0	0.0
Banke	13	28.9	46.2	7.7	0.0	7.7	38.5	0.0	46.2
Bardia	40	52.6	69.2	0.0	0.0	0.0	33.3	0.0	17.5
Dang	21	52.5	42.9	0.0	0.0	0.0	61.9	0.0	52.4
Dhanusa	38	92.7	21.6	40.5	0.0	0.0	37.8	0.0	59.5
Jhapa	15	71.4	93.3	0.0	0.0	0.0	6.7	6.7	13.3
Kailali	209	56.0	58.5	0.5	3.4	0.0	36.7	14.4	41.3
Kanchanpur	165	66.0	62.8	1.2	0.6	0.6	34.1	1.2	33.3
Kapilvastu	20	83.3	65.0	0.0	0.0	0.0	70.0	0.0	40.0
Mugu	2	16.7	50.0	0.0	0.0	0.0	50.0	0.0	50.0
Nawalparasi	3	60.0	33.3	0.0	0.0	0.0	66.7	0.0	33.3
Rupendehi	22	62.9	57.1	0.0	0.0	0.0	42.9	0.0	31.8
Saptari	1	16.7	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Sindhuli	18	100.0	17.6	0.0	0.0	0.0	82.4	11.1	72.2
Surkhet	21	23.1	81.0	0.0	0.0	0.0	19.0	4.8	19.0

Availability and use of nets according to district wise

Districts	Surveyed HHs	Total nets in the households	Total LLINs	Total ordinary Nets	Received LLINs by HHs last distribution period	Last night used LLINs by HHs	Total no. of Family members slept	Total numbers of members slept under LLINs	Used nets	Packet not opened	Opened but not used	Always used	partially used	Never used
Baitadi	34	117	97	20	97	74	161	129	81	9	5	76	1	4
Bajura	19	92	80	12	70	48	102	81	48	18	4	41	6	1
Banke	49	186	137	49	130	115	251	189	88	43	6	87	1	
Bardia	77	329	228	101	201	158	334	263	146	33	41	143	2	1
Dang	41	169	126	43	102	85	189	155	80	28	15	80	0	
Dhanusa	41	156	126	30	125	128	246	240	121	1	2	121		
Jhapa	21	110	69	41	69	72	132	123	69			69		
Kailali	382	1446	1195	251	1190	880	1882	1535	927	145	57	817	59	51
Kanchanpur	255	1064	843	221	828	529	1322	935	523	207	73	433	65	25
Kapilvastu	24	110	91	19	68	54	113	96	49	20	15	49		
Mugu	12	39	34	5	35	18	49	31	18	9	4	14	1	3
Nawalparasi	5	22	20	2	15	13	25	21	13	3	3	8	4	1
Rupendehi	35	146	126	20	91	63	147	109	61	36	17	59	2	
Saptari	6	24	19	5	19	19	35	32	13	5		13		
Sindhuli	19	63	46	17	45	50	95	87	43	1	1	43		0
Surkhet	91	341	231	110	229	213	427	362	171	51	11	171		
Total	**1111**	**4414**	**3468**	**946**	**3314**	**2519**	**5510**	**4388**	**2451**	**609**	**254**	**2224**	**141**	**86**

Appendix-8: Highlights of Survey

2 days orientation for supervisors and enumerators in Kathmandu

Enumerator with female respondent during survey in Kailali

Observation of LLINS by District supervisiors in Bardiya

Female respondent showing condition of LLINs to enumerators in Bardiya

Unopened packet of LLIN in Bardiya

Female enumerator with respondent in Bardiya

Website : www.dphobanke.gov.np
Email : dpho-bank@mohp.gov.np
dphobanke@yahoo.com

प्रदेश सरकार
प्रदेश नं. ५
सामाजिक विकास मन्त्रालय
स्वास्थ्य निर्देशनालय

फोन नं. ०८१-५२०१५८

स्वास्थ्य कार्यालय
बाँके, नेपालगंज ।

प.सं. : २०७५।०७६
च.नं. ६४८

मिति : २०७६।३।१६

विषय : जानकारी सम्बन्धमा ।

श्री इपिडिमियोलोजी तथा रोग नियन्त्रण महाशाखा
टेकु काठमाण्डौं ।

प्रस्तुत विषयमा त्यहाँ कार्यालयको मिती २०७६।३।८ गते च.न.११७५ को पत्रानुसार किटनाशक झुल वितरण गरिएको स्थानमा वितरित झुलको उपलब्धता र प्रयोग बारे अध्ययनका लागी Sustannabale Dwdelopment Initiative Network- Nepal (SUDNI-Nepal) संस्था बाट बाँकेको डुडुवा गाउपालीकाको वाड नं २ र बैजनाथ गाउपालीकाको वाड न. १ मा अध्ययन कार्य सम्पन्न गरेको व्यहोरा अनुरोध छ ।

प्रेम बहादुर के.सी.
नि. कार्यालय प्रमुख

"स्वस्थ नागरिक, स्वस्थ देश, दक्ष जनशक्ति, प्रगति र समृद्धि"

प्रदेश सरकार
सामाजिक विकास मन्त्रालय
स्वास्थ्य निर्देशनालय
स्वास्थ्य कार्यालय, सुर्खेत
वीरेन्द्रनगर, सुर्खेत, नेपाल

प्रमुख ज्यू :- ०८३-५२०२१६
प्रशासन शाखा :- ०८३-५२०३४६
फ्याक्स :- ०८३-५२०२१६
लेखा :- ०८३-५२१७२०
Email :- hosurkhet75@gmail.com

प.सं.:- २०७६/०७७
च. नं. :- ९७

मिति :-२०७६/०४/०६

बिषय :- कार्यक्रम सम्पन्न भएको बारे ।

श्री इपिडिमियोलोजी तथा रोग नियन्त्रण महाशाखा
टेकु, काठमाण्डौ ।

प्रस्तुत विषयमा तहां कार्यालयको मिति २०७६।०३।०८ गते, च.न. ११७५ को पत्रानुसार किटनाशक झुल वितरण गरिएको स्थानमा बितरित झुलको उपलब्धता र प्रयोग बारे अध्ययनका लागी Sustainable Development Initiative Network-Nepal (SUDNI-NEPAL) संस्था बाट सुर्खेतको वीरेन्द्रनगर नगरपालीका वडा नं. २,९,१०, भेरीगंगा नगरपालीका वडा नं. १, बराहताल गाउपालीका वडा नं. २,४, चौकुने गाउपालीका वडा नं. ५,४ मिति २०७६।०३।२५ देखि २०७६।०४।०६ सम्म अध्ययन कार्य सम्पन्न गरेको व्यहोरा अनुरोध छ ।

गणेशभक्त गौतम
प्र. स्वास्थ्य कार्यालय प्रमुख

प्रदेश सरकार
प्रदेश नं. २
सामाजिक विकास मन्त्रालय
स्वास्थ्य निर्देशनालय

स्वास्थ्य कार्यालय जनकपुरधाम
धनुषा

फोन नं. ०४१-५२०६२८
०४१-५२६२७१
फ्याक्स : ५२६२७१

पत्र संख्या :- ०७५।७६
चलानी नं. :- १३८६

मिति ०७६।३।१८

विषय : आवश्यक सहयोग गरी दिनु हुन बारे।

श्री ....

....

प्रस्तुत विषयमा इपिडेमियोलोजी तथा रोग नियन्त्रण महाशाखा टेकुको आ.व.को च.नं. ११६८ मिति ०७६।३।१७ को प्राप्त पत्र बमोजिम तहाँ अन्तर्गत वार्ड नं. ....मा २०१६, २०१८ र २०१५ मा औलो प्रभावित क्षेत्रमा वसोवास गरेका परिवार एवं व्यक्तिहरू लाई २ व्यक्ति १ झुल को अनुपातमा दिर्घकालिन झुल वितरण गरिएको र उक्त वितरित झुल को उपलब्धता तथा प्रयोग सम्बन्धमा सर्वे गरेका अध्ययन टोली लाई आवश्यक सहयोग गरी दिनु हुन अनुरोध छ।

(चन्द्र प्रसाद यादव)
वरिष्ठ जनस्वास्थ्य प्रशासक

Sustainable Development Initiative Network- Nepal

Kathmandu, Nepal

Post Distribution HHS Survey for assessing LLINs availability and its use 2019

Supervision Checklist Form

Name : Madhusudan Koirala Designation: ~~SDHA~~ SDDHA

Organization : DPHO, Jhapa Supervision Date and Time: 2076/3/12

Supervision Field Station : Gauri Ganj, 6, Khajurbachhi 12:50 o'clock

Province	District	Municipality	Ward No.	Tole	HH No.
1	Jhapa	Gauri Ganj	6	Khajur Gachhi	9

Was there enumerator/s present on the field as per work plan Yes [✓] No [ ]

If yes, Name of enumerator/s: Dinesh Kumar Sharma

Was the enumerator visiting HH as per sampling? Yes [✓] No [ ]

Did enumerator fill-up the consent paper first? Yes [✓] No [ ]

Was enumerator discussing with the respondent smoothly? Yes [✓] No [ ]

Did he check the filled questionnaire after completing? Yes [✓] No [ ]

How much time did he spend to fill a questionnaire? 50 minutes [ ]

Was there any problem in filled forms and enumerator? Yes [ ] No [✓]

If yes, what were the problems?

-
-
-

Did you provide the suggestion solve the problem/s? Yes [ ] No [✓]

If yes, what suggestions did you provide?

-
-
-

Your opinion about LLIN household Survey: It is right time to LLIN household Survey. ~~Bat~~ because due to ↑temp, family members were feeling in their house with boring. ~~So~~ Enumerator was Competent in his duty. Regular LLIN distribution were public demand.

Signature: Date: 12-07-2076

DD MM YYYY

Sustainable Development Initiative Network- Nepal

Kathmandu, Nepal

Post Distribution HHS Survey for assessing LLINs availability and its use 2019

Supervision Checklist Form

Name : Bed Pd. Ghimire Designation: VCI 7th

Organization : DPHO Jhapa Supervision Date and Time: 2076/3/12 12:45 'oclock

Supervision Field Station : Gauri Ganj. 6. Khajur Gachhi

Province	District	Municipality	Ward No.	Tole	HH No.
1	Jhapa	Gauriganj	6	Khajur Gachhi	11

Was there enumerator/s present on the field as per work plan Yes [✓] No [ ]

If yes, Name of enumerator/s: Birendra Gupta

Was the enumerator visiting HH as per sampling? Yes [✓] No [ ]

Did enumerator fill-up the consent paper first? Yes [✓] No [ ]

Was enumerator discussing with the respondent smoothly? Yes [✓] No [ ]

Did he check the filled questionnaire after completing? Yes [✓] No [ ]

How much time did he spend to fill a questionnaire? ..11.. minutes [ ]

Was there any problem in filled forms and enumerator? Yes [ ] No [✓]

If yes, what were the problems?

-
-
-

Did you provide the suggestion solve the problem/s? Yes [ ] No [✓]

If yes, what suggestions did you provide?

- Use bed net
- Health education
-

Your opinion about LLIN household Survey: Every family use bed net in good condition.

Signature: Date: 12/03/2076

Sustainable Development Initiative Network- Nepal

Kathmandu, Nepal

Post Distribution HHS Survey for assessing LLINs availability and its use 2019

Supervision Checklist Form

Name: श्री निरञ्जन प्रसाद यादव Designation: DPHO

Organization: DPHO सप्तरी Supervision Date and Time: 2076-3-16 12.oclock

Supervision Field Station: सप्तकोशी न.पा. 11 भगनी

Province	District	Municipality	Ward No.	Tole	HH No.
	Saptari	Saptakoshi	11	Bhagani Malekh	3

Was there enumerator/s present on the field as per work plan Yes [✓] No [ ]

If yes, Name of enumerator/s: Birendra Kumar Gupta

Was the enumerator visiting HH as per sampling? Yes [✓] No [ ]

Did enumerator fill-up the consent paper first? Yes [ ] No [ ]

Was enumerator discussing with the respondent smoothly? Yes [✓] No [ ]

Did he check the filled questionnaire after completing? Yes [✓] No [ ]

How much time did he spend to fill a questionnaire? ......40........ minutes

Was there any problem in filled forms and enumerator? Yes [ ] No [ ]

If yes, what were the problems?

-
-
-

Did you provide the suggestion solve the problem/s? Yes [ ] No [ ]

If yes, what suggestions did you provide?

-
-
-

Your opinion about LLIN household Survey: औलो सम्बन्धी ज्ञान भएको र त्यसबाट आफू बच्न को लागि सधैं झुल प्रयोग गर्ने भन्ने थाहा भएको र घर वरिपरि खाल्डा खुल्डी मुरी पानी जम्न नदिने भन्ने बारे सबै ले बुझेको पाये।

Signature: Niranjan Date: __/__/____

DD MM YYYY

Sustainable Development Initiative Network- Nepal

Kathmandu, Nepal

Post Distribution HHS Survey for assessing LLINs availability and its use 2019

Supervision Checklist Form

Name Arjun Nepal Designation: ED, SUDIN.

Organization SUDIN-Nepal Supervision Date and Time: 2076.3.25

Supervision Field Station : Dudhauli 4:30 O'clock

Province	District	Municipality	Ward No.	Tole	HH No.
5	Sindhuli	Dudhauli	9	Katti	13

Was there enumerator/s present on the field as per work plan Yes ☑ No ☐

If yes, Name of enumerator/s: Birendra Gupta

Was the enumerator visiting HH as per sampling? Yes ☑ No ☐

Did enumerator fill-up the consent paper first? Yes ☑ No ☐

Was enumerator discussing with the respondent smoothly? Yes ☑ No ☐

Did he check the filled questionnaire after completing? Yes ☑ No ☐

How much time did he spend to fill a questionnaire? 50 minutes ☐

Was there any problem in filled forms and enumerator? Yes ☐ No ☑

If yes, what were the problems?

•
•
•

Did you provide the suggestion solve the problem/s? Yes ☐ No ☐

If yes, what suggestions did you provide?

•
•
•

Your opinion about LLIN household Survey: 2-4 LLI net available are asking more to be provided. More people came to one house and all were inviting us (including me) to ask all the things related in the questionnaires, as seemed their interest whether some more nets might be available to them in near future. Arjun Nepal.

Signature: Date: --/--/----

Sustainable Development Initiative Network- Nepal

Kathmandu, Nepal

Post Distribution HHS Survey for assessing LLINs availability and its use 2019

Supervision Checklist Form

Name Keshavraj pandit Designation: DHO

Organization Health office Dang Supervision Date and Time: 2076/03/18

Supervision Field Station Dhakana

Province	District	Municipality	Ward No.	Tole	HH No.
5	Dang	Tulsipur	13	Dhakana	21

Was there enumerator/s present on the field as per work plan Yes [✓] No [ ]

If yes, Name of enumerator/s: Arjun K.C.

Was the enumerator visiting HH as per sampling? Yes [✓] No [ ]

Did enumerator fill-up the consent paper first? Yes [✓] No [ ]

Was enumerator discussing with the respondent smoothly? Yes [✓] No [ ]

Did he check the filled questionnaire after completing? Yes [✓] No [ ]

How much time did he spend to fill a questionnaire? 50 minutes [ ]

Was there any problem in filled forms and enumerator? Yes [ ] No [✓]

If yes, what were the problems?

-
-
-

Did you provide the suggestion solve the problem/s? Yes [ ] No [✓]

If yes, what suggestions did you provide?

-
-
-

Your opinion about LLIN household Survey: .....

.....

.....

Signature:

Date: 2076/03/18

DD MM YYYY

Sustainable Development Initiative Network- Nepal

Kathmandu, Nepal

Post Distribution HHS Survey for assessing LLINs availability and its use 2019

Supervision Checklist Form

Name : Hajari Chand Designation: P.H.O.

Organization : Health office, Kanchanpur Supervision Date and Time:

Supervision Field Station : Naulakhet, Tilakpur, Bhimdatt municipality

Province	District	Municipality	Ward No.	Tole	HH No.
sudur Paschim	Kanchanpur	Bhimdatt municipality	03	Naulakhet	

Was there enumerator/s present on the field as per work plan Yes ☑ No ☐

If yes, Name of enumerator/s: Bhulan Prasad Fuyal

Was the enumerator visiting HH as per sampling? Yes ☑ No ☐

Did enumerator fill-up the consent paper first? Yes ☑ No ☐

Was enumerator discussing with the respondent smoothly? Yes ☑ No ☐

Did he check the filled questionnaire after completing? Yes ☑ No ☐

How much time did he spend to fill a questionnaire? ..... 5D ..... minutes ☐

Was there any problem in filled forms and enumerator? Yes ☐ No ☑

If yes, what were the problems?

-
-
-

Did you provide the suggestion solve the problem/s? Yes ☑ No ☐

If yes, what suggestions did you provide?

- Don't Bias in sampling.
- Ward office visit must done before survey.
- Result should be Provide Health office, After completing study.

Your opinion about LLIN household Survey: .....

→ it is good activities to monitor effectiveness of LLIN and functional durability of LLIN.

Signature: Ahmed Date: 13/03/2076

DD/MM/YYYY

Sustainable Development Initiative Network- Nepal

Kathmandu, Nepal

Post Distribution HHS Survey for assessing LLINs availability and its use 2019

Supervision Checklist Form

Name : Biswa Raj Pokharel Designation: P. C.

Organization : SUDIN-Nepal Supervision Date and Time: 30 June, 2019 4 PM

Supervision Field Station :

Province	District	Municipality	Ward No.	Tole	HH No.
7	Kanchanpur	Bhimdatta	6	Pragati Tole	

Was there enumerator/s present on the field as per work plan Yes [✓] No [ ]

If yes, Name of enumerator/s: Bhulan Sharma

Was the enumerator visiting HH as per sampling? Yes [✓] No [ ]

Did enumerator fill-up the consent paper first? Yes [✓] No [ ]

Was enumerator discussing with the respondent smoothly? Yes [✓] No [ ]

Did he check the filled questionnaire after completing? Yes [✓] No [ ]

How much time did he spend to fill a questionnaire? ..50.. minutes [ ]

Was there any problem in filled forms and enumerator? Yes [ ] No [✓]

If yes, what were the problems?

-
-
-

Did you provide the suggestion solve the problem/s? Yes [ ] No [✓]

If yes, what suggestions did you provide?

- Don't bias in sampling
- Strictly follow sampling rule and regulations
- Follow ethic.

Your opinion about LLIN household Survey: it is good activities for monitor effectiveness of LLIN.

Signature: [signature]

Date: 30/6/2019 DD MM YYYY

Sustainable Development Initiative Network- Nepal

Kathmandu, Nepal

Post Distribution HHS Survey for assessing LLINs availability and its use 2019

Supervision Checklist Form

Name Ram Bahadur Yadav Designation: VI

Organization : HO Supervision Date and Time : 2076/03/26 11 o'clock

Supervision Field Station :

Province	District	Municipality	Ward No.	Tole	HH No.
3	Sindhuli	Dudhauli	9	Katelakanya	14

Was there enumerator/s present on the field as per work plan Yes ☑ No ☐

If yes, Name of enumerator/s: Birendra Ku Gupta

Was the enumerator visiting HH as per sampling? Yes ☑ No ☐

Did enumerator fill-up the consent paper first? Yes ☑ No ☐

Was enumerator discussing with the respondent smoothly? Yes ☑ No ☐

Did he check the filled questionnaire after completing? Yes ☑ No ☐

How much time did he spend to fill a questionnaire? 45 minutes ☐

Was there any problem in filled forms and enumerator? Yes ☑ No ☐

If yes, what were the problems?

-
-
-

Did you provide the suggestion solve the problem/s? Yes ☐ No ☑

If yes, what suggestions did you provide?

-
-
-

Your opinion about LLIN household Survey: LLIN Distribution properly. People like to use. Net properly people slipping ground not.

Signature: Date: __/__/____

DD MM YYYY

Sustainable Development Initiative Network- Nepal

Kathmandu, Nepal

Post Distribution HHS Survey for assessing LLINs availability and its use 2019

Supervision Checklist Form

Name: Ser Brd kalekote | Designation: HO

Organization: HO | Supervision Date and Time: 2076/03/26 11 O'clok

Supervision Field Station :

Province	District	Municipality	Ward No.	Tole	HH No.
3	Sindhuli	Dhudholi	9	katelakhanpur.	16

Question	Yes	No
Was there enumerator/s present on the field as per work plan	✓	
If yes, Name of enumerator/s: Dinesh Kr. Sharma		
Was the enumerator visiting HH as per sampling?	✓	
Did enumerator fill-up the consent paper first?	✓	
Was enumerator discussing with the respondent smoothly?	✓	
Did he check the filled questionnaire after completing?	✓	
How much time did he spend to fill a questionnaire? 50 minutes		
Was there any problem in filled forms and enumerator?	✓	

If yes, what were the problems?

-
-
-

Question	Yes	No
Did you provide the suggestion solve the problem/s?	✓	✓

If yes, what suggestions did you provide?

-
-
-

Your opinion about LLIN household Survey: LLIN Distribution Properly. Right, Some people slipping in Net, Few people slipping in [illegible] ground,

Signature: [signature] | Date: __/__/____

Sustainable Development Initiative Network- Nepal

Kathmandu, Nepal

Post Distribution HHS Survey for assessing LLINs availability and its use 2019

Supervision Checklist Form

Name: Arjun Nepal — Designation: ED, SUDIN.

Organization: SUDIN- Nepal — Supervision Date and Time: 2076.3.25 1.30 oclock

Supervision Field Station: Dudhauli

Province	District	Municipality	Ward No.	Tole	HH No.
3	Sindhuli	Dudhauli	9	Katti	9

Question	Yes		No	
Was there enumerator/s present on the field as per work plan	Yes	✓	No	
If yes, Name of enumerator/s: Dinesh Sharma				
Was the enumerator visiting HH as per sampling?	Yes	✓	No	
Did enumerator fill-up the consent paper first?	Yes	✓	No	
Was enumerator discussing with the respondent smoothly?	Yes	✓	No	
Did he check the filled questionnaire after completing?	Yes	✓	No	
How much time did he spend to fill a questionnaire? ....45..... minutes				
Was there any problem in filled forms and enumerator?	Yes		No	✓

If yes, what were the problems?

-
-
-

Did you provide the suggestion solve the problem/s? Yes ☐ No ☐

If yes, what suggestions did you provide?

-
-
-

Your opinion about LLIN household Survey: found Satisfactory but Some their Coments was net which was given in begining years was nice, Soft and Satisfied, but given later or last yr. are Soon are hard, Shrinked and difficulty in make tidy at the bed.

Signature: Arjun Nepal. Date: __/__/____

Sustainable Development Initiative Network- Nepal

Kathmandu, Nepal

Post Distribution HHS Survey for assessing LLINs availability and its use 2019

Supervision Checklist Form

Name Kamal chand :

Designation: VCA

Organization Health office Dang

Supervision Date and Time: 2076/3/14 at 9:23 AM

Supervision Field Station Tulsipur 13 Dhakana

Province	District	Municipality	Ward No.	Tole	HH No.
5	Dang	Tulsipur	13	Dhakana	20

Was there enumerator/s present on the field as per work plan Yes [✓] No [ ]

If yes, Name of enumerator/s: Pramod paudel

Was the enumerator visiting HH as per sampling? Yes [✓] No [ ]

Did enumerator fill-up the consent paper first? Yes [✓] No [ ]

Was enumerator discussing with the respondent smoothly? Yes [✓] No [ ]

Did he check the filled questionnaire after completing? Yes [✓] No [ ]

How much time did he spend to fill a questionnaire? 45 minutes [ ]

Was there any problem in filled forms and enumerator? Yes [ ] No [✓]

If yes, what were the problems?

-
-
-

Did you provide the suggestion solve the problem/s? Yes [ ] No [✓]

If yes, what suggestions did you provide?

-
-
-

Your opinion about LLIN household Survey: LLIN Household survey Going smoothly. They are ecterly participation. Dowing proper councelling with household member.

Signature:

Date: 2076/03/14

DD MM YYYY