His Majesty's Government
Ministry of Health
Department of Health

Vector Borne Disease Research & Training Center

A

FIELD REPORT

OF

KALA-AZAR ELIMINATION PROGRAM

IN

MAHOTTARI

(A COMMUNITY BASED RESULT OREINTED PROGRAM)

Prepared By:
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His Majesty's Government
Ministry of Health

Vector Borne Disease Research and Training Center

Makawanpur, Hetauda

Abstract

Visceral Leimaniasis a fatal disease is highly increasing as an outbreak in rural areas of southeast terai region of Nepal affecting particularly those people living with poor socio-economic condition. Due to cross border of Nepal and India, the south belt of Nepal bordering with Bihar State is highly affected and presently, there are twelve districts except Makawanpur are mostly infected and Mahottari district is one of them. Therefore, to explore the hidden cases of kala-azar as a reservoir in rural society, the kala-azar elimination program was conducted in a grass root level as an active case detection campaign from June 19, 2003 to July 04, 2003 in 56 VDCs of Mahottari.

In this campaign 175 suspected cases of kala azar were found positive to kala azar by using of k39 dipstick test kit. Among 175 kala azar cases 99 (56.6%) were male and 76 (43.4%) were female. All diagnosed cases were referred to Hospital and Primary Health Center for appropriate treatment. In order to understand the socio behavioral characteristics of the community, KAP survey was carried out during the campaign. During this survey, it has been found that only 27% were literate, 44% unemployed/seasonal labors, 48% were landless, 56% cases do not know that what the kala-azar is, and those patients who knows the kala-azar have very few knowledge about the sign and symptoms and transmission of disease. Like wise, about 48% cases never used the bed net whereas 42% used occasionally and only 10% cases found almost of year used. Lastly, when they become ill very few per cent (only 18%) people goes to clinic or hospital, 12% goes to faith healer and great amount i.e. 70% do not go any where for treatment.

Now, we can conclude that those cases suffering from kala azar are badly affected by socio economic factors. Their lives are depending on the mercy of **god**. Hence, to reduce such types of disasters from the grass root level a long term community level's program of literacy, health awareness, income generating, and self-promotion program should be conducted in rural area. Similarly, diagnostic and medicinal treatment facilities for village people should be provided as a prevention and disease control campaign in health post or sub health post by formulating the especial policy regarding to improve health education and awareness and the socio economic status in community level. His Majesty's Government can play the vital role through the local NGOs to achieve the goal in this respect.

Thank You.

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D. B. Moktan
Social Scientist
(Field Coordinator)

Elimination Program of Kala Azar in Mahottari, 2060, B. S.

(A COMMUNITY BASED RESULT ORIENTED PROGRAM)

Summary:

Visceral Leishmaniasis (VL) known as kala azar (KA) is caused by protozoan parasites Leishmaniasis Donovani (LD), is a parasitic disease spread by the bite of infected female sand flies **Phlebotomus Argentipes**. It is endemic in about 88 countries around the world and approximately 350 million people are under threatening including 17 developed nations. More than 90% of the world cases of visceral leishmaniasis are India, Bangladesh, **Nepal,** Sudan, and Brazil. It has been known that India is one of the world's hotbeds for visceral leishmaniasis. If left untreated it has a mortality rate of 100%. Mid, and southeast part of terai Nepal, bordering with Bihar State of northern India is highly infected by this disease. Now, more than 5.5 million people are estimated at high risk of this disease in Nepal.

In Nepal, passive case detection is prevailing for a long time as a method of detection of VL cases. Only those cases are recorded who present themselves to the hospitals or sometimes to private clinics. So that the actual prevalence rate are difficult to estimate as many patients or cases go to India for further treatment. Similarly, the study on vector borne diseases like kala azar is very limited in Nepal. No one research in a national level for kala azar has been done neither kala azar elimination program as a national campaign in the past. As per annual report of EDCD, department of health, HMG/N, a total of 17848 cases with 452 deaths were reported during 1980-2000, and during 2000 a total cases of 2090 were reported with incidence rate of 50/100,000 population followed by 2.39% case fatality rate. Like wise, in 2001 total cases of 2020 with 22 deaths were recorded in the country from district and zonal hospitals with the incidence rate of 49/100,000 populations. But, this figure mentioned above is taken from only government hospitals based on passive case detection and patients treated elsewhere are not included. Therefore, it does not represent the actual situation of VL of the country. Hence, it can be concluded that many more victims of kala azar might be missing in the country.

On the other hand, the majority of Nepalese people have got a tendency to have consultation in a later and advanced stage of a disease. It is universal truth that visceral leishmaniasis is a fatal disease. The incidences of this disease among Nepalese people is increasing rapidly day to day but even though there are no significant remarks that how many victims are victimized from kala azar in current situation. Therefore, it is very necessary to discover of this disease as a national campaign in order to take interventions for public awareness. His majesty's government's department of policy and strategy development requires vital information about such disease but due to gaping of adequate information no remarkable policy and strategy could be formulated, so that no any research program could get the success. However, the main objective of this research is to discover the existing situation of kala azar cases with socio economic, environmental and socio behavioral risk factors through the active case detection in a grass root level as a door-to-door service.

Number of people having a house of bamboo and thatched roof and living with domestic animals under the same roof in the caw shed is very high in Nepal and they never spray the insecticide medicines surrounding the house. Thus, the sand fly can suck the blood easily from infected animal or human body and may transmit to another person who is not infected. Likewise, other problem is that, that those people, who comes under sick due to any kinds of disease, they go first to see the faith healer or conjurer instead of health post/hospital or the doctor. Finally, they come to doctor when they reached to the mouth of death.

However, KA is one of the most fatal diseases, and concerned authorities are continually giving adequate emphasis to fight against the problem. Despite of continues effort from HMG/ MOH, kala azar could not kept in control as per expectation of HMG strategy. Therefore, the program of KA elimination is needed to conduct as a national campaign to control the causing factors of Kala azar focusing spot diagnosis with prompt treatment. In addition, this program convinced people for early treatment seeking behavior as systems in grass root level, that it could help to HMG strategy to reduce and control the kala azar out break in Nepal.

Objectives:

a. **General objective**
Overall objective of this project was to conduct the program to eliminate & control of Kala-azar by detecting all the kala azar cases through active case detection and providing early treatment to reduce the disease as much as possible throughout the Mahottari district as a model program.

b. **Specific objectives:**
To meet the general objective of the project these points were taken as specific objective.

- Find out the patient, suffering from long time and do not know about KA in village by visiting door to door,
- Suspected cases were detected by mobile camp as an active case detection and identified cases were referred to nearby PHC or Hospital for prompt treatment,
- Health education were delivered by conducting health awareness orientation in the field of possible health risk from vector borne diseases identifying the possible methods of transmission, infection and prevention,
- Awareness was created in general people through **IEC** program like miking, posturing, pumphleting, audio cassette, publication of local magazine and booklets about VBDs, and along with the counseling of early treatment seeking behavior system, that they could play the vital role to quit the Kala azar if treated early,
- Socio-economic background, demographic characteristics, educational status, cultural norms and value, environmental risk factors and treatment seeking behavioral aspects of patients were obtained through the questionnaire.

Findings of Project:

For more convenient the whole project was divided into two broad sections as research component like section A and B. Section A was related with socio-economic background, demographic characteristics, socio-cultural, socio-behavioral, and environmental risk factors and section B was connected with KAP of patients towards kala azar.

To find out these factors we had prepared the questionnaire and applied to patients who were diagnosed by our health mobile team through active case detection. As per record of questionnaire filled up by field assistant of cases detection team, the data and information are mentioned below in table, chart diagram and so on for further analysis as a final report.

Table No. 1: VDC wise Distribution

S. N.	VDCs	Examined Cases	Identified Cases
1	Sundarpur	79	65
2	Shreepur	64	21
3	Khopi	74	19
4	Sonama	22	11
5	Samshi	35	10
6	Raghunathpur	29	9
7	Parsadewar	27	5
8	Khairbani	21	4
9	Damhimadai	5	3
10	Gaidha Bhetpur	4	3
11	Gaushala	4	3
12	Aurahi	5	2
13	Fulkaha	2	2
14	Hathilet	5	2
15	Sonamai	14	2
16	Banauta	2	1
17	Bathnaha	4	1
18	Belgachhi	3	1
19	Bhanagaha	4	1
20	Ram Gopalpur	5	1
21	Sahasaula	4	1
22	Sishwakataiya	3	1
23	Ram nagar	3	1
24	Pokharbhinda	3	1
25	Padaul Tilgadh	3	1
26	Gonarpura	2	1
27	Bispitti	2	1
28	Bharatpur	1	1
29	Shadha	1	1
	Total	430	175
30	Badia banchauri	1	0
31	Sahasaul	1	0
32	Balwa	1	0
33	Sanoul	2	0
34	Bardibas	8	0
35	Dhirapur	1	0
36	Bijalpur	4	0
37	Ekdara	3	0
39	Itaharwakatti	2	0
40	Kisan nsagar	2	0
41	Kolhu bagiya	1	0
42	Laxminia	1	0
45	Hatisarwa	1	0
46	Mahottari	2	0
47	MANARA	1	0
48	Matihani	3	0
49	Megh N. Gorahna	1	0
50	Nainahi	2	0
51	Pashupati nagar	1	0
52	Pipra	3	0
53	Prakauli	3	0
54	Sahorwa	1	0
55	Sarpallo	4	0
56	Simardahi	1	0
	G.Total	484	175

Table No. 6, Land Holding:

Particular	Land less	Less than 10 Kattha	< 1 Bigha	> 1 Bigha	Total
Respondent	84	45	17	29	175
Percentage	48%	26%	10%	16%	100%

It is all known fact that Nepal is an agricultural country and about 91% people of Nepal are depending on agriculture. But we can see in above table that 84 (48%) out of 175 cases are landless. If they are unable to get a full of plate rice and cover their necked body and almost time they have to fight against hand to mouth problem, how will they success to save their lives. In fact, this is clear that due to poverty and illiteracy, they are always in the high risk of suffering from these types of diseases, and this is very unfortunate matter for Nepalese.

Table No. 7, Income per year:

Particular	< Rs 20000/-	< Rs 50000/-	< Rs 1 Lakh	> Rs 1 Lakh	Total
Respondent	112	17	38	8	175
Percentage	64%	10%	22%	4%	100%

Table number 7 is also indicating the situation of poverty. The ratio of little earning group is very high i.e. 64%. They earn less than Rs. 20000/- in a year. Those family who earns only 20000/- per year, what will they do for their family member or health care?

Table No. 8, Types of house:

Particular	Made of RCC (building)	Bricks wall with GI sheet or tiles roof	Wall made of soil and wooden stick with GI sheet / tiles roof	Wall made of soil and wooden stick w/thatched roof	Total
Respondent	3	2	63	107	175
Percentage	2%	1%	36%	61%	100%

Here, we can see the situation of types of house as other model of poverty. Almost of respondents i.e. 61% have the house with wall made of soil and wooden stick with dried grass thatched roof followed by 36% cases with the house of tiles roof only. It can be seen that majority of cases used to live in the house which is made of soil; stick and thatched roof where the sand flies preferred to breed larvae.

Table No. 9, the house made of soil and wooden stick wall with straw or dry grass roof, How often plastered it in a year?

Particular	Once a year	Twice a year	Thrice a year	> 1 Lakh	Total
Respondent	66	73	33	3	175
Percentage	38%	42%	19%	1%	100%

Table No. 9 shows that repetition of wall plaster is 42% i.e. two times in a year followed by 38% of cases plastered only one time in a year, whilst it is necessary to plaster at least 3 to 4 times in a year.

Table no. 14 & 15 has clearly showed that only 44% patients have knowledge about the kala azar and 56% have no knowledge. They do not know that what the kala azar is. Indeed, it is very serious matter, and those who know the kala azar have very few knowledge about the sign and symptoms which can be seen in table 15.

Table No. 16, Knowledge about transmit ion:

Particular	Biting of sand fly	Biting of mosquito	By blood transfusion	Do not know	Total
Respondent	7	48	Nil	120	175
Percentage	4%	27%	Nil	69%	100%

Like wise, out of having knowledge about the kala azar only 4% have the knowledge that kala azar is the caused of sand fly. Table no. 16 shows that about 69% cases do not know that how it transmit and 27% cases have confusion of transmission that they understand that kala azar is the caused of mosquito biting.

Table No. 17, Knowledge of place for treatment

Particular	Local Healer	Private clinic	HP/Hospital	No where	Total
Respondent	21	14	17	123	175
Percentage	12%	8%	10%	70%	100%

About treatment, a research had been done in the field. As per their answer only 10% cases have consulted to hospital, 8% consulted to private clinic and 12% cases have consulted to faith healer, whereas 70% cases do not have consulted any where. This is a serious matter for all Nepalese and this is the caused of poverty, because the table no. 18 has clearly shows that 54% cases are unable to go for treatment due to economic problems. About 46% respondents replied that there is no economic problem. But we were observing the physical situation and their expression in their faces at the interview. Actually they want to express their demand but when they counseled that they are getting the medicine free of cost in nearby health institutions, they kept mouth silent.

Table No. 18, Problems for treatment

Particular	Economic problem	Not economic problem	Total
Respondent	95	80	175
Percentage	54%	46%	100%

Table No. 19, Using of bed net:

Particular	Almost of year	Occasionally	Never	Total
Respondents	17	74	84	175
Percentage	10%	42%	48%	100%

And lastly the the table no. 19 has identified that 48% cases have never used the bed net, 42% cases used occasionally and only 10% cases are using the bed net almost the year.
Above-mentioned table has been showed in annex - chart diagram too.

Meanwhile, one and half month later of completion the elimination program, field visit had been made as a monitoring with the objectives of to find out the number of total cases of full treatment, the number of defaulter and reason of failure, number of missing and the number of death among the cases which was identified in Sep. 02 to Sep. 09, 2003.

rooted in rural Nepalese mind. On the other hand, there is no facilities of kala azar diagnosis in the health post and sub-health post neither in PHC too and nor the medicines are available for treatment. Hence, to reduce such problems from the grass root level a community level's program of literacy, health awareness, income generating, and self-promotion program should be conducted in rural area. Like wise, diagnostic and medicinal treatment facilities for village people should be provided as a prevention and disease control campaign in health post or sub health post by formulating the especial policy regarding to improve health awareness and the socio economic status in community level.

To complete the elimination program, activities have been planned as per plan of action given below.

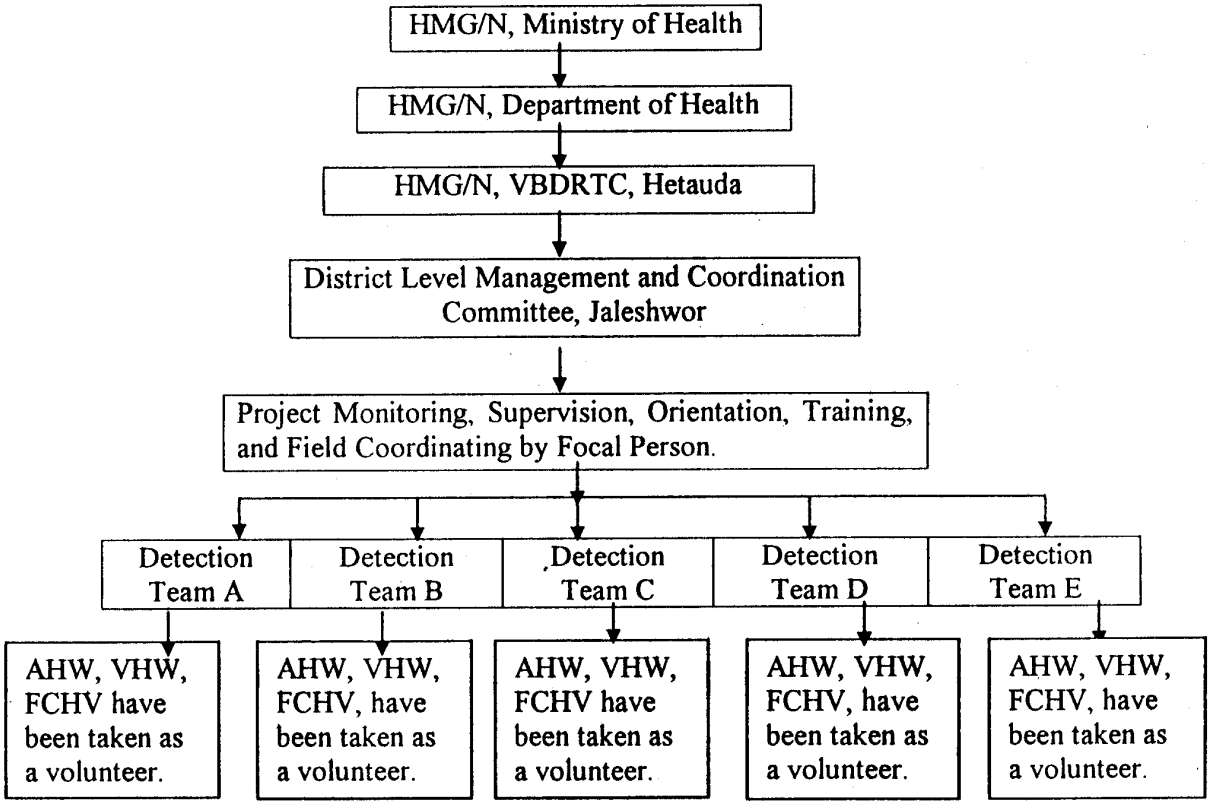
Plan of Action

S N	Activities	Jeshtha (May-June)				Ashadh (June)				Remarks
		1	2	3	4	1	2	3	4	Result
1	**Advocacy & Planning Meeting:** Participants: CDO, LDO, DPO Chief, DEO, I/NGOs Chiefs, DHO, PHO, VCA, Lab Tech., Media and VBDRTC Staffs									Jeshtha 06, 2060 (Done)
2	**Training of Trainer (TOT), Resource Person:** DHO, M/O, PHO, Entomologist, Parasytologist, Sociologist, & Participants will be H/A 2, Lab Tech 2, from PHO and Field assistant 2 from EHP									Jeshtha 16, 2060 (Done)
3	**One Day Orientation for Detection Team** had been provided by TOT member and Participant were H/A-3, L/A-3, and F/A-3 =9 persons.									Jeshtha 20, 2060 (Done)
4	**Advocacy/Campaign Team:** 5 team (at least 3 person in each team) with 5 vehicles; visited 56 VDCs with miking, posturing, leafleting, bannering and pumphleting.									Jestha 28 to 05, Ashad 2060 (Preparation of material for advocacy campaign, detection team & advertising
5	**Case Detection Team** of Dr. HA, LA, and FA were formed in 5-group and evolved in mobile camp and VHW, FCHV, AHW assisted as volunteers.									Ashadh 06 to 21, 2060 Mobile camp of detection team will visit village to village
6	**Field Supervision / Monitoring:** had been conducted by DHO, PHO and VBDRTC senior staffs.									Ashadh 1st week to 3rd week of 2060
7	**District Level Management and Coordination Committee** worked as a steering committee to provide the guidance for whole project									Ashadh 1st week to 3rd week of Ashadh, 2060
8	**Field Coordinator as a Focal point** coordinated and follow up all the working team and collected report of fieldwork.									Jeshtha 4th week to 3rd week of Ashadh, 2060.
9	**Monitoring and Supervision**									Should be conducted as on Bhadra, 2060.

7. **Field Coordinator** was a focal point for all kinds of necessary information, communication, coordination, and management to carry out the fieldwork.

   He managed frequently visit and short monitoring of on-going project day to day. Data, information, and report received from mobile case detection team were kept systematically and stored in computer for final report.

A. Organizational Design of Project.



Member of District Level Management and Coordination Committee:

a. Program Director	: Executive Director, VBDRTC, Hetauda
b. Chairperson	: DHO, Mahottari
c. Member	: Medical Officer, Mahottari
d. Member	: PHC Chief
e. Member	: Staff Nurse of District Hospital
f. Member	: Statistician, of District Hospital
g. Member	: Care Nepal, Canadian Cooperation, EHP chief
h. Member	: Medical Inspector of DHO
i. Member	: VCA of PHO
j. Member Secretary	: PHO, Mahottari
k. Field Coordinator/Focal Person	: Social Scientist, VBDRTC

Daily Case detection Report.

Detection Group No: ..... Date.....
Name of Detection Place.....
Total No. Of Screened Patient: ..... .Positive: ..... Negetive: .....
List of positive cases:

S. N.	Name of Patient	age	sex	Address	Referred Institution
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

....
Signature of clinician signature of Technician Signature of Reporter

Kala Azar Diagnosis and Referral Slip

His Majesty's Government
Ministry of Health
Vector Borne Disease Research and Training Center, Hetauda

Registration No:..... Date:.....
Referral No:..... Name of Referred Institution:.....
Name of Patient:..... Age/ Sex:.....
Address:.....Ward No.:..... District:.....

Clinical Dignosis

i. Days of Fever ☐ ii. Spleenomegaly ☐ iii. Hepatomegaly ☐
iv. Anaemia ☐ v. Loss of Weight ☐ vi. Others ☐

Diagnostic Tools and Procedure:

i. K39 Dipstick, ☐ ii. Bone Marrow aspiration ☐ iii. Spleen puncture ☐

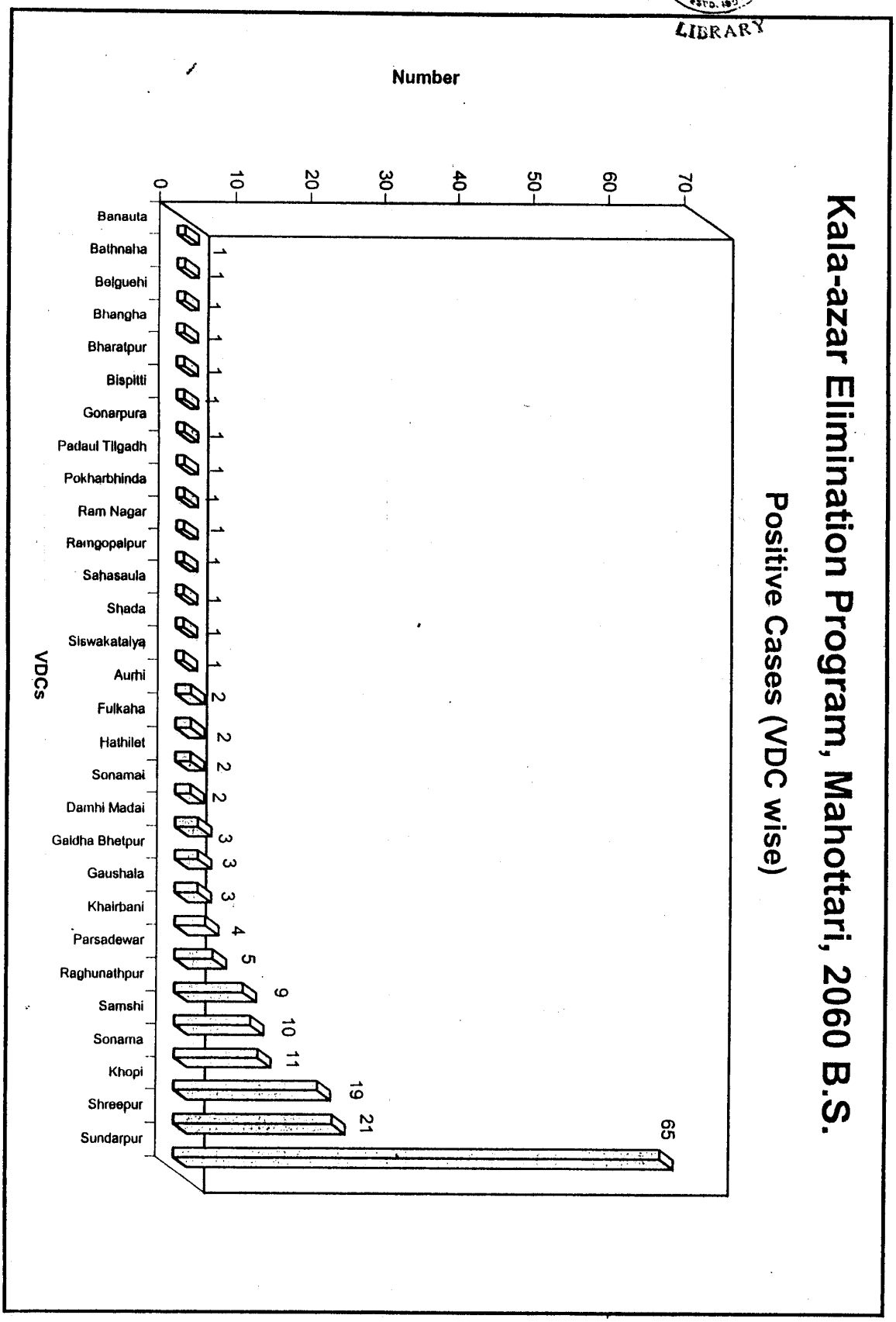
Result:

i. Positive ☐ ii. Negative ☐

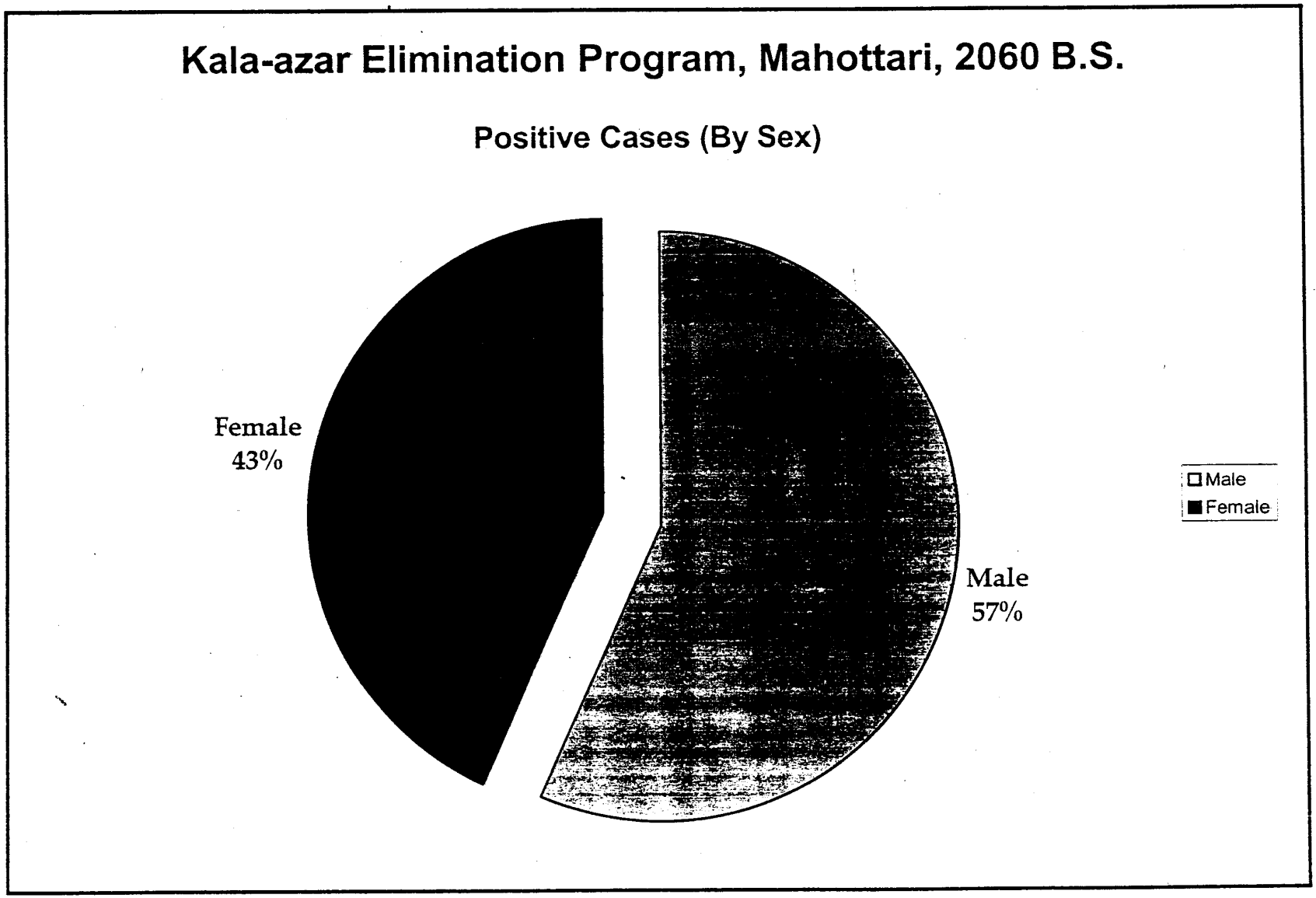
....
Referred officer Diagnostic Officer

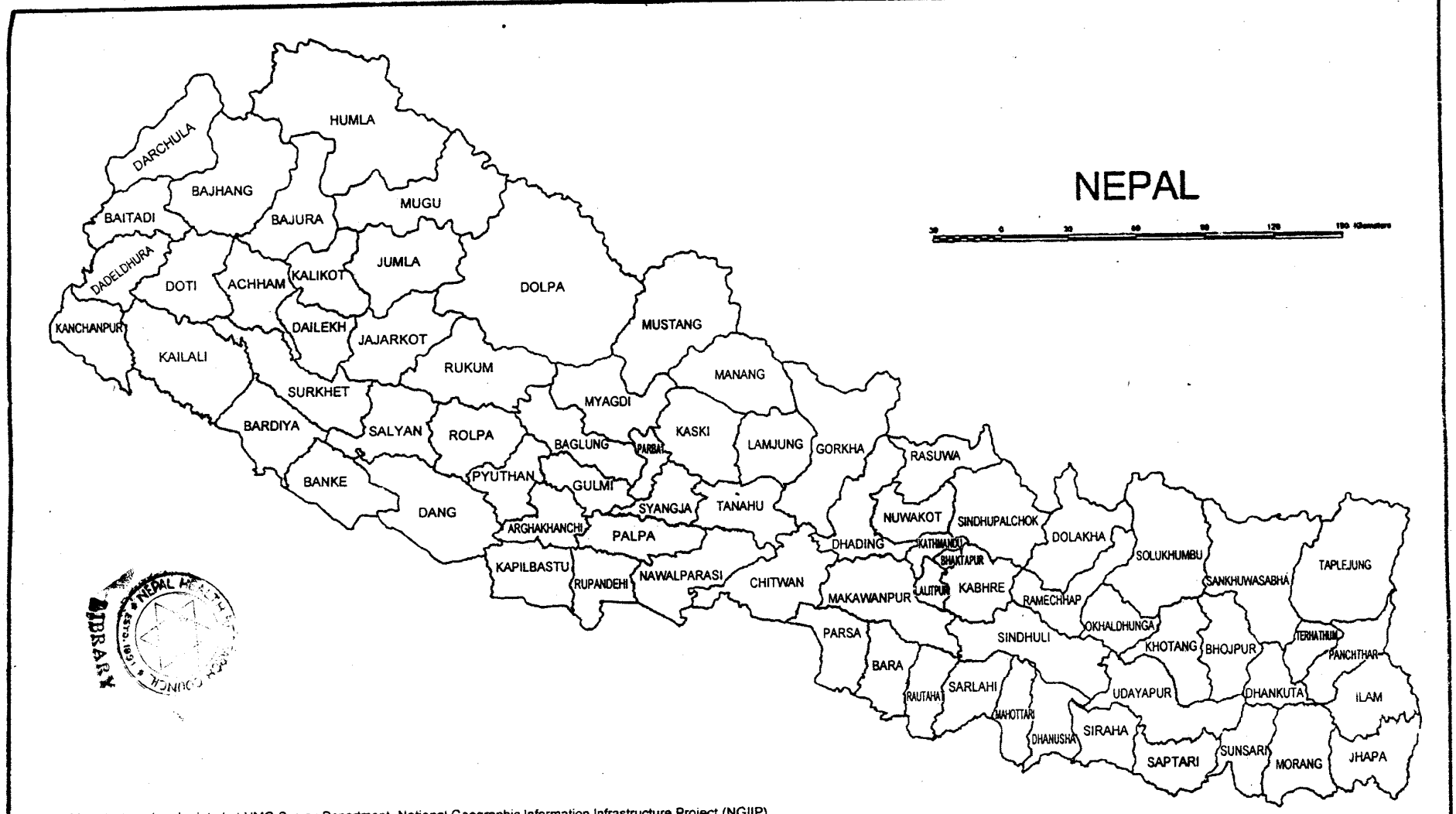
Kala-azar Elimination Program, Mahottari, 2060 B.S.

Positive Cases (VDC wise)



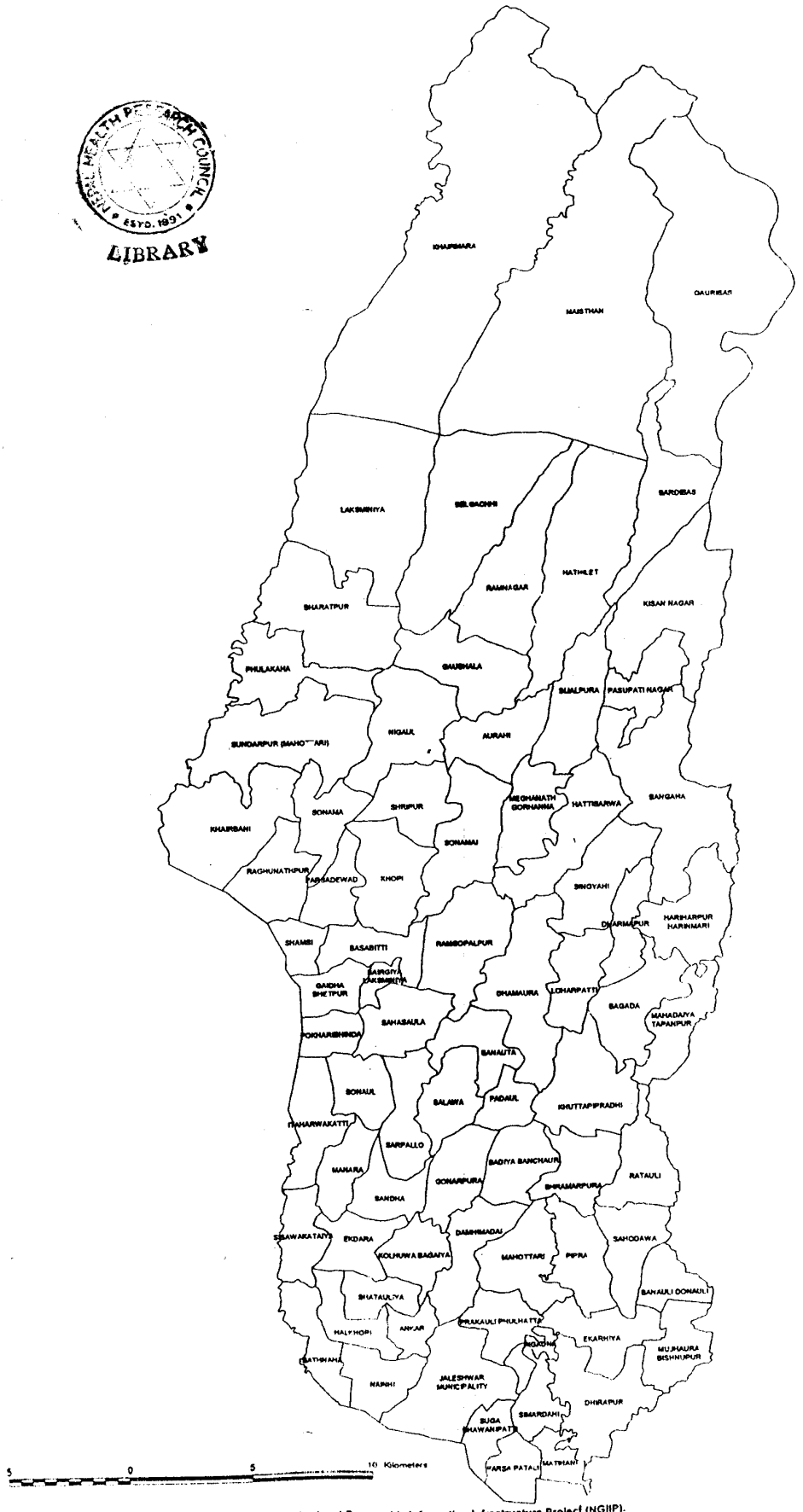
Kala-azar Elimination Program, Mahottari, 2060 B.S.





Map designed and printed at HMG Survey Department, National Geographic Information Infrastructure Project (NGIIP).

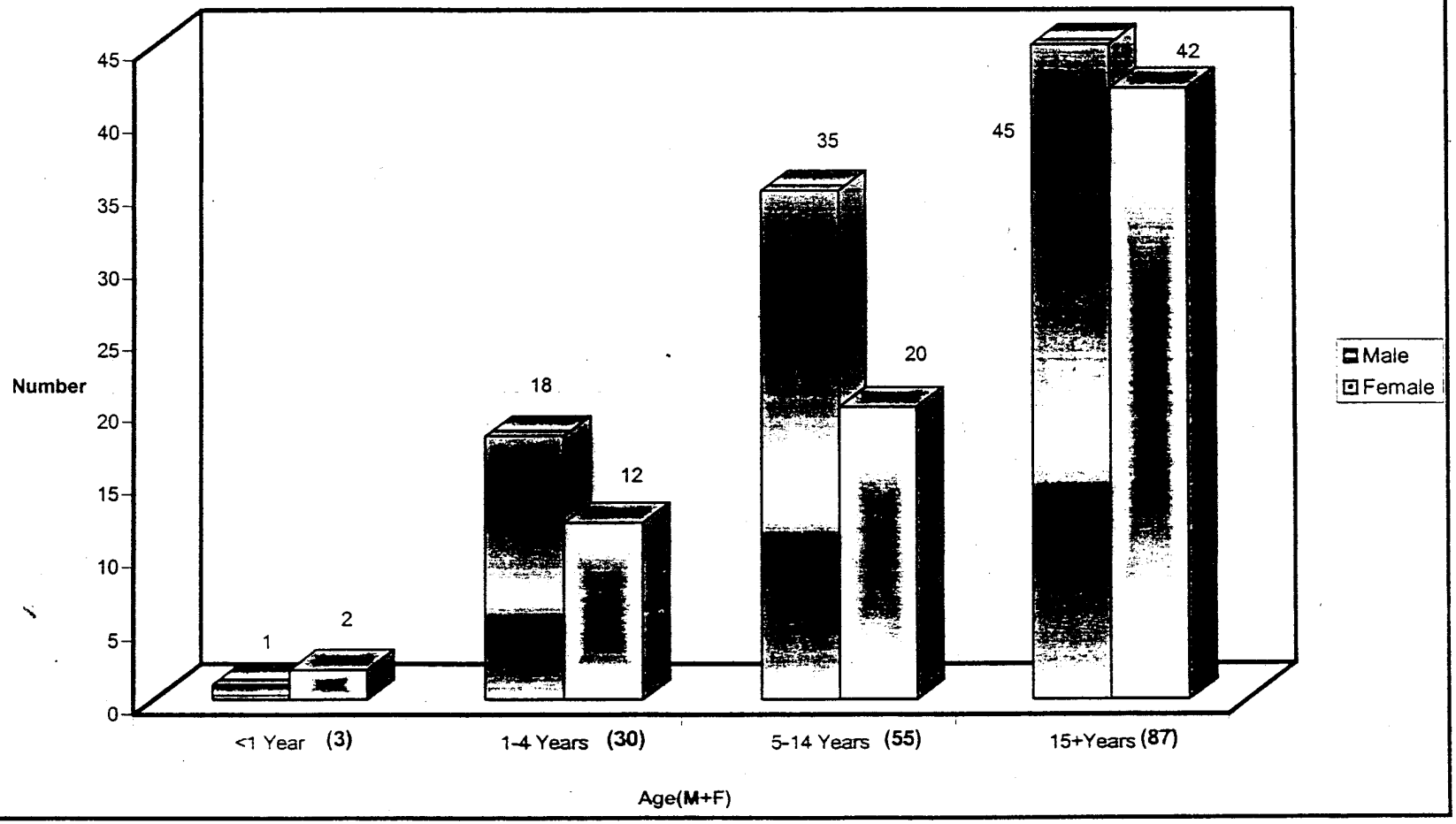
DISTRICT : MAHOTTARI



Map designed and printed at HMG Survey Department, National Geographic Information Infrastructure Project (NGIIP).

Kala-azar Elimination Program, Mahottari, 2060 B.S.

Positive Cases (Agewise)



Group wise team was formulated as per Name of Detection Team Member and Related VDCs given below in ascending order like 1, 2, 3, 4, ...

Group	Name of Team Member	Village Development Committee
A	1. Dr. Ishwor Upaddhyay 2. L/A Mr. Binit Pandey 3. F/A Ms. Kamini Chaudhari	1. Fulkaha, 2. Sundarpur , 3. Sonama, 4.Shreepur, 5. Laxminia, 6. Bharatpur, 7. Aurahi, 8. Nigaul, 9. Belgachhi, 10. Ramnagar, 11. Gaushala,
B	1. H/A Raj Kishore Yadav 2. H/A Mr. Devendra Yadav 3. L/A Abhirendra Thakur 4. F/A Ms. Durga K. C.	1. Sahasaul, 2. Sonaul 3. Laxminia, 4. Bispitti Gaidha Bhetpur, 6. Pokharbhinda, 7. Samshi, 8. Parsadewar, 9. Khopi, 10. Raghunathpur, 11. Khairbani,
C	1. Dr. Bijay Kumar Singh 2. H/A Rajdhe Shyam Jha 3. L/A Mr. Halkhori Mahto 4. F/A Mr. Sanjaya Sah	1. Harinmari, 2. Hatisarwa, 3. Bhangaha, 4. Meghnath Gorhana, 5. Pashupatinagar, 6. Kisannagar, 7. Ram Gopalpur, 8. Sonamai, 9. Bijalpura, 10. Hathilet, 11. Bardibas,
D	1. H/A Mr. Deep Narayan sah 2. H/A Mr. Binod Mishra 3. L/A Ram Binay sah 4. F/A Durga K. C.	Nainahi 2. Halkhori, 3. Bathnaha, 4.Sishwakataiya, 5. Itaharwakatti, , 6. Manara, 7 .Sadha, 8. Kolva Bagia, 9. Ekdara, 10. Sarpallvo, 11. Balwa, 12. Simardahi,
E	1. H/A Prem Chandra Pathak 2. H/A Mr. Rajendra Roy 3. L/A Jeetendr Thakur 5. F/A Raj Nandan Yadav	1. Paraul Tilgadh, 2. Badiyavanchauri, 3. Banauta, 4. Gonarpura, 5. Damhi Madai, 6. Mahottari, 7. Parikauli, 8. Matihani, 9. Dhirapur, 10. Soharwa, 11. Pipara,
5	19 personnel	56 VDCs

Above mentioned list was prepared as per conclusion of discussion held on 2060/02/16 and 20th date at PHO meeting hall, Mahottari on the representative of DHO, PHO, M/O, Lab Tech and senior staffs of VBDRTC.

The end

B. Monitoring and Training Committee

a. DHO/PHO of Mahottari and officers of VBDRTC were responsible to provide all the Training and Information/Communication orientation for detection team and frequently monitoring after completion of work for 1.5 months and evaluation report was prepared for final report.

List of essential material for elimination program and staff will be as follow:

Field coordinator /Focal point	1: For field research management and coordination
Computer /field assistant	1: For compilation and entry of data & office work
Peon	1: For office helper
Apartment consisted of 2 or 3 rooms	1: For office use
Vehicle (Motor bike or Jeep)	1: For field visit and follow up of the program
Computer	1: For office work and day to day data entry
Chair, Table, Almirah	3: For office use
Vehicle for 19 days	5: For advocacy campaign and detection team
Advocacy person (ladies and boys)	15: For each team has 3 person for miking
Mike and accessories	5 Nos. for 5 team for miking
Wall Pamphlet	11200 PCs (200 PCs x 56 VDCs)
Leaflet for massage distribution	20,000 PCs (250 PCs x 56 VDCs)
Poster in calendar form	500 PCs (only for patients)
Banner	40 Nos
Referral Slip	500 PCs
Questionnaire	1500 PCs
Case detection reporting form	500 PCs

24. Material for detection:

a. K 39 dipstick test kit = 1,000 PCs **b. Chase Buffer= 80 Vials**

c. Lancets = 1,200 PCs **d. Cotton =10 Rolls**

e. Sprit =20 Bottles **f. Ice box = 5 No**

Schedule of Activities for the Elimination Program at Field

Date	Description	Responsed Person
Jestha 28-31, 2060	Preparation of departure with material like: banner, pamphlet, posture, leaflet, detection tools and accessories for field.	Focal point/ Field coordinator
Ashadh 1-2, 2060	Identifying of miking persons, preparation of audiocassette for advocacy, and orientation for them, arrangement of vehicle for miking, mikes, and finalizing of root for mobile camp.	Senior staff of VBDRTC with the help of PHO, staffs
Ashadh 3-5, 2060	Mobilization of advocacy campaign team in village to village with vehicle	Advocacy campaign team
Ashadh 6-21, 2060	Mobilization of detection team in village	Detection team
Ashadh 22 & 23, 2060	Final collection of field report and final payment of health worker, volunteer, and vehicle charges	Focal point and Accountant
Ashadh 24, 2060	Departure to Hetauda	VBDRTC staffs
Ashadh 25-32, 2060	Computing, editing, and submission of report	Computer Assistant and field coordinator

1. **Advocacy and Planning Meeting**

Implementation of activities for kala azar elimination program with scientific systems in grass root level had been concluded according to the discussion of **Advocacy and Planning Meeting** conducted in Jestha 06, 2060 at the conference hall of PHO, Mahottari. The participant as supporting agencies were District Administration Office Mahottari, Office of DDC Mahottari, District Police Office Mahottari, DHO and PHO of Mahottari and related I/NGOs working in the field of vector borne disease control and prevention program. All they had ensured that they would have help to make this project as a model program from their side as much as possible.

2. **One day Orientation for Training of Trainer (TOT)**

One-day orientation of TOT had been conducted for the H/A -2, Lab Assistant -2 of Mahottari district hospital, and Field Assistant -2 of Dhanusha/Mahottari EHP field office regarding campaign program that they could provide one day orientation training for remained 9 persons of detection team for clinical examination of suspected cases/patients, using of k39 dipstick for laboratory test, filling of referral slip for positive cases for further treatment process, maintaining of register for the record keeping, and fill up the questionnaires to determine socio-economic background, demographic characteristics, educational status, and environmental condition of concerned patients.

3. **Advocacy/Campaign Team**

5 groups as a campaign team comprised at least 3 people in each group have been formulated along with 5 vehicle with local boys to visit village to village with miking, pumphleting, posturing, leafleting, and banner as a massage of IEC program for 3 days.

4. **Detection Team / Volunteer team**

a. 5 team as a detection team have been formulated and every team was consisted of 4 persons i.e. Dr., H/A, L/A, from health institutions, and Field assistant from EHP, and AHW, VHW, FCHV were taken from concerned HPs as a volunteer services.
b. 5 vehicles were hired for transportation facilities for 16 days.

5. **Case Detection and Disease Screening Tools**

a. Cases were detected with the use of k39 dipstick test kit. Positive cases had been referred to PHC, or Hospital with referral slip and negative cases were to HP or SHP for further treatment. For this, k39 requisition form was filled up as a case detection sheet for further record.
b. All the referral slip filled up for the positive cases were maintained in register for record.
c. Treatment card of referral patients was monitored after getting treatment in concerned PHC or Hospital.
d. Register was maintained for every kinds of function for official record.
e. Report was sent day to day by detection team to the field coordinator for further documentation and recording for data analysis.

6. **Supervision and Monitoring**

DHO, PHO of Mahottari and officer of VBDRTC were responsible to follow up the program as supervision and monitoring of the identified cases that treatment is completed or not and report of monitoring should inform to **Project Coordinator.**

According to result of that field visit there were only 34.3% of total cases were taking full course of treatment, and 5.7% were defaulter and 1.1% were died whereas 58.9% were missing. This is sure that, this situation can create a great problem as reservoir.

Conclusion

As per analysis of above findings we can make a list as a conclusion of research program.

- The total number of literate people among the identified cases found only 27%, whereas the numbers of illiterate were 54% followed by 19% not identified cases. There is very vast different between literate and illiterate ratio. It is just opposite of national data as per (literacy rate 56%) censuses by HMG/N, CBS on 2058 BS.
- The number of joint family is found 73%. It has been seen in rural society that, that member who lives in joint family can not get best opportunity for any kinds of work and can not paid more attention neither for medical treatment nor for the family health. That's why it has been found that rural people are severely dominated by the disease.
- Regarding to distribution of sex wise infection of kala azar, nearly 57% cases have been found infected in male. It can be imagined that reason of high ratio in male might be caused of travelling heather and thither for subsistence.
- In the respect of occupation 44% cases found dependent on agriculture whilst 40% were unemployed and seasonal labor. There are only 2% cases were involved in business and person involved in any field of service was nil. Therefore, it can be declare that those patients who are suffering from Kala azar are almost economically poor.
- Similarly, regarding to land distribution, about 48% cases found land less followed by 26% and 10% with the land of less than 10 kattha and less than 1 bigha respectively. This statement clearly declared that almost cases are economically very poor and they don't have any sufficient food for eat or clothes for cover their body. This is why; they could not pay any more attention for health.
- Like wise, the type of house almost found made by bamboo stick and mud with thatched roof adjoining the animal shed where the larvae of sand fly can easily breed because they plastered hardly 2 times in a year.
- Sleeping behavior of cases are 56% found sleeps on khatiya and only 44% sleeps on the mat over the ground, but 84% of cases found never cover the body with sleeping clothes neither repellent systems. Only 16% cases found occasionally covered the body with sleeping clothes and use the repellent.
- Similarly, regarding the KAP of patients towards the Kala azar, only 44% cases have knowledge but 56% cases do not know that what are kala azar, and those patients who know the kala azar have very few knowledge about the sign and symptoms and transmission of disease. Like wise, about 48% cases never use the bed net following by 42% occasionally and 10% almost of year used respectively.
- Lastly, when they become ill only 18% people goes to clinic or hospital, 12% goes to faith healer and great amount i.e. 70% do not go any where for treatment.

Recommendation

Above listed points of conclusion have clearly defined that those cases suffering from kala azar are badly affected by socio economic factors. Their lives are depending on the mercy of **god**. Illiteracy, poverty, unemployment, lack of knowledge of health, cultural and traditional norms and values, beliefs on fate are the main causes of illness due to deeply

Table No. 10, Sleeping behavior:

Particular	Bed on Khatiya	Straw met on ground	Directly on ground	Total
Respondent	98	77	Nil	175
Percentage	56%	44%	Nil	100%

It has been found that 56% of cases used to sleep on the khatiya followed by 44% cases which used to sleep on straw mats on ground and no one sleeps on the directly ground.

Table No.11, Habit of covering the body by clothes at the sleeping time:

	Covering habit by clothes			Repellent habit		
Particular	Never	Occasionally	Total	Never	Occasionally	Total
Respondent	147	28	175	148	27	175
Percentage	84%	16%	100%	85%	15%	100%

But table no. 11 clearly shows that habit of never covering the body at the sleeping time is 84% and those cases that occasionally cover the body at the sleeping time is 16% only. Whereas the cases of never repellent has been found 85%. Above-mentioned data shows that chances of transmission of disease are very high in such condition.

Table No. 12, Status of Livestock and shed adjoining with house:

Particular	Having domestic animal	Have not domestic animal	Total	Adjoining	Not adjoining	Total
Respondent	120	55	175	84	91	175
Percentage	69%	31%	100%	48%	52%	100%

The respondents having domestic animal are 69% whereas only 48% found adjoining the shed with house. But all they are found suffering from the same disease.

Table No. 13, Sleeping behavior in the animal shed:

Particular	Almost of the year	Occasionally	Never	Total
Respondent	22	30	123	175
Percentage	13%	17%	70%	100%

As per table no. 13 the cases almost used to sleep in animal shed is found very few i.e. 13%, whereas 70% cases never sleep in animal shed.

Section B, KAP towards Kala Azar and Treatment Seeking Behavior

Table No. 14, Knowledge of Kala azar as a fatal disease:

Particular	Yes	No	Total
Respondent	77	98	175
Percentage	44%	56%	100%

Table No. 15 Knowledge of sign and symptoms:

Particular	Hepatomegaly		Spleenomegaly		Fever		Weight loss		Anaemic	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Respondent	10	165	10	165	77	98	25	150	17	158
Percentage	6%	94%	6%	94%	44%	56%	14%	86%	10%	90%

The figure mentioned above has clearly shows that nearly 29 VDCs were infected by the same disease and the Sundarpur VDC has highest cases i.e. 65 positive followed by Shreepur, Khopi, Sonama, Samshi, and Raghunathpur VDC with 21, 19, 11, 10, and 9 positive cases respectively.

Table No. 2: Age / Sex wise Distribution.

Particulars	Total No. (%)	Male (%)	Female (%)
Less than 1 Year	3 (1%)	1 (33.3%)	2 (66.7 %)
1 – 4 Year	30 (18%)	18 (60%)	12 (40%)
5 – 14 Year	55 (35%)	35 (63.6%)	20 (36.4%)
15 + Year	87 (46%)	45 (52.3%)	42 (47.7%)
Total	175 (100%)	99 (56.6%)	76 (43.4%)

Above mentioned table shows that the people of 15 + year is highly infected. About 46% cases of the total detected cases found suffering from this disease in this age group followed by 35%, and 18% of the age group of 5-14 and 1-4 respectively. In this figure 63.6% male of the 5-14 age group has been found seriously infected from the same.

Table No. 3, Literacy Rate:

Particular	Literate	Illiterate	Not Identified	Total
Respondent	47	94	34	175
Percentage	27%	54%	19%	100%

The above table shows that only 27% cases are found literate and 19% cases found non identified (age < 6 yr.) whilst 54% cases are found illiterate, which is very unfortunate.

Table No. 4, Family Size/household:

Particular	Less than 4 member	5 or more than 5 member	Total
Respondent	47	128	175
Percentage	27%	73%	100%

The number of joint family i.e. more than 5 member living along with in a house are found 73%. It has been seen in rural society that, that member who lives in joint family can not get best opportunity for any kinds of work and can not paid more attention neither for medical treatment nor for the family health. That's why it has been found that rural people are severely dominated by the disease.

Table No. 5: Occupation of identified patients:

Particular	Service	Agriculture	Business	Study	Unemployed/Seasonal Labors	Not identified	Total
Respondent	Nil	77	3	46	70	12	175
Percentage	Nil	44%	2%	7%	40%	7%	100%

Table number 5 has clearly shows that none of the identified cases have been involved in government or non-government service. Majority of population (44%) of cases found involved in farming occupation followed by 40% unemployed and seasonal labors. About 2% found involved in business whereas 7% are not identified and 7% are studying. This figure tried to declare that the patient suffering from kala azar is in very poor condition.

Research Methodology:

Research Method

Exploratory cum experimental study had been applied (These types of research are conducted for particular area with short duration, when little is known about situation or a problem but factors are not well defined with a clinical trial).

Case definition: (It was divided into two categories).

i. **Suspected Cases**
ii. **Confirmed Cases**

i "A patient with a fever lasting for more than two weeks with swelling of liver and spleen, anaemia with substantial weight loss, and does not respond to a full course of antimalarial drugs" was considered as a suspected cases of Kala azar.

ii "A suspected cases of Kala azar as defined above have diagnosed through rK39 dipstick with serological confirmation and found positive was considered as a confirmed cases of Kala azar". All they were referred to nearby health institution with slip for treatment.

Sampling

To collect the qualitative and quantitative data, purposive and convenient sampling method, as a non-probability sampling had been applied, and sample size was not fixed.

Research Population

Suspected cases along with patients suffering for a long time with fever, with or without spleenomegaly, liver, and anaemia were also taken as research population.

Research Sites and Period

This program was conducted in 56-kala azar infected Village Development Community of Mahottari district supported by Gaushala, Loharpatti and Samshi PHC. The period of research was **one month** from initiation of this activity in endemic VDCs.

Tools for Data Collection

To obtain some useful information and current situation of patients as research data, the questionnaire comprised with socio-economic background, demographic characteristics, educational status, cultural, and individual behavior as well as treatment seeking behavior was filled up by field assistant.

Plan for Data Management and Analysis

Data collected through the questionnaires as a quantitative and qualitative out comes had been measured with the help of chart diagram, pictorial graph, and simple tabulation and cross tabulation with the percentage.

Expected Outcome:

a. Socio-environment and socio-behavioral information to assess the risk factors of KA as causing factors are identified,
b. Active case detection for village people were provided as a door-to-door service,
c. People have been advised for early treatment.
d. It has been hoped that program of elimination can be conducted smoothly in other infected district too.

Introduction:

Visceral Leishmaniasis known as Kala-azar is a chronic infection disease of the liver, spleen, bone marrow, and other lymphoid tissues. It was known to be high epidemic in southern area of Nepal bordering with Bihar State of northern India. It has been defined that kala azar is caused of protozoan parasites Leishmania Donovani. It is commonly transmitted in human body by the bite of female sandfly "Phlebotomus Argentipes".

Kala azar a fatal disease is increasing day to day in Nepal as a national health problem. It has known that, more than 5.5 million people in Nepal are estimated at high risk of kala-azar and it always proved fatal if left untreated. In present, the terai region of Nepal is highly infected by Kala-azar. Even though, diagnosis & treatment facilities are continually providing by VBDRTC through different health institutions. However, Mahottari district is known as one of the high epidemic area of kala azar. Hence, it had been selected for conduct an elimination program as a campaign to make it model district in Nepal. For this, further discussion regarding to **support** the plan of action to implement the activities was most urgent. That's why; Executive Director of VBDRTC, Hetauda, the same has been held in Baishakh 21, 2060 at the office of VBDRTC, Hetauda on the representative of different I/NGOs and Government Offices. Like wise, to implement the activities of programs in projected area the **Advocacy and Planning Meeting** was necessary that how the program can be implement in grass root level with a cheerful environment. For this, in Jestha 06, 2060 an **advocacy and planning meeting** was organized at PHO office Jaleshwor, Mahottari on the chair of CDO of Mahottari. According to decision of that meeting, the elimination program was declared to conduct as **per plan of action** submitted in proposal.

Statement of problem:

Kala azar is one of the most dreaded diseases in Nepal and also one of the commonest causes of morbidity and mortality has appeared as a national health problem. It was first recorded in 1980 A. D. with the incidence rate of 1.5 per 100,000 populations. Since then, it has gone up raising trend. The disease has now spread on thirteen districts of southeast terai region of country namely Jhapa, Morang, Sunsari, Saptari, Siraha, Udayapur, Dhanusha, Mahottari, Sarlahi, Rautahat, Bara, Parsa, and Makawanpur. However, sporadic cases have also been reported from western terai region. Now more than 5.5 million people are estimated at high risk of this disease.

It is all known fact that Nepal is one of the countries in the world having low per capita income, which reflects poverty and under developing status. Poverty, illiteracy, unawareness of health and traditional beliefs on super natural power and faith healer are deeply rooted in rural society as major factors. Likewise, unavailability of modern treatment facilities in rural society, inadequate medicine, limitation of doctors within the cities are considered as the second types of major factors for the disease like Kala azar. That's why; the health condition of rural people of Nepal is going day to day worst.

It has been also seen that, socio-economic factors are playing the vital role to contribute the kala azar in rural area. Because, kala azar endemically spreading over the rural community with polluted environmental condition where people living with very worst socio economic status. **Sand flies always prefer to live and breed the larvae in dirty places like cracked wall, hole of muddy wall, rat hole, thatched roof of straw and bamboo house etc.**

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His Majesty's Government

Ministry of Health

Vector Borne Disease Research and Training Center

Makawanpur, Hetauda

Acknowledgement

Visceral Leishmaniasis known as Kala-azar is a chronic infection disease of the liver, spleen, bone marrow, and other lymphoid tissues. It has been known that southern area of Nepal bordering with Bihar State of northern India is highly affected and is defined that kala azar is caused of protozoan parasites Leishmania Donovani. It is commonly transmitted in human body by the bite of female sandfly "Phlebotomus Argentipes".

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Hence, this research report which is in front of you is totally based on the data and information collected from case detection team. I am confirm, by going through the preparation of this report, especially the health workers who are working in the field of kala azar will be able to understand the situation of district and will also be greatly helpful to the district level's health planners, researcher, public health manager and others interested persons. Therefore, I am very much pleased and grateful to all the health worker of case detection team and DHO/PHO staffs of Mahottari for support the program along with VBDRTC staffs that helped me to carry out the program successfully. And especially, I'm very much thankful to VBDRTC for providing responsibility of managing and conducting the Kala Azar Elimination Program as a Focal Point as well as Field Coordinator and Mr. Umesh Pradhan a Computer Assistant of VBDRTC for assisting & finalizing the report.

Lastly, on the behalf of VBDRTC, I would like to express my sincere thank to EHP, Kathmandu for supply of rK-39 dipstick test kit and HMG/N, EDCD, Kathmandu for supplementary of medicine for treatment like SAG and Fungi zone to make success this elimination campaign.

Thank you.

September 17, 2003

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D. B. Moktan
(Social Scientist)
Focal Point/ Field Coordinator