Risk of *Leishmania* transmission in visceral leishmaniasis non-endemic districts of Nepal: An explorative entomological survey

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CONTEXT

- Geographical expansion of visceral leishmaniasis in Nepal
  - in non-endemic/endemicity doubtful districts
  - areas considered not suitable for the presence of *Leishmania* parasite transmitting agent, the vector sand flies *Phlebotomus argentipes*

OBJECTIVE

- To explore the risk of transmission of *Leishmania* parasite through entomological evidences

METHODOLOGY

- An exploratory survey: 2021-2022

- 21 districts (Figure 1)
- 2-3 Clusters per district
- 5-6 Households per cluster

Sand fly collection methods

Morphological and Anatomical Identification

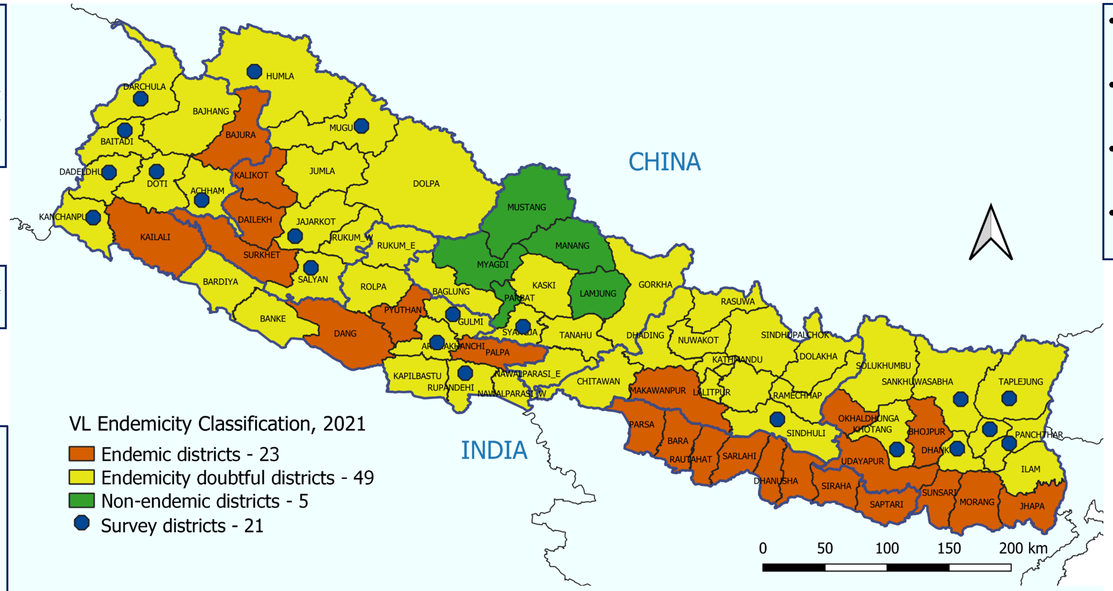

Figure 1: A geographical location of the areas selected for entomological survey in endemicity doubtful districts, Nepal (2021)

CONCLUSION

- The risk of transmission of *Leishmania* parasite in VL non-endemic/endemicity doubtful districts was evident due to presence of incriminated and suspected vectors of *Leishmania* species
- The national/regional VL elimination program needs to extend the surveillance and control activities to curb the spread of the disease in the country

RESULTS

- A total of 2,879 sand flies (1,586 ♂+ 1,293 ♀) captured from 62 clusters of 21 surveyed districts
- Presence of the incriminated vector species, *Phlebotomus argentipes* in all districts except two (Humla and Mugu)
- Other suspected vector species, *P. major* s.l. and *P. (Adlerius)* spp. were abundant at higher altitude districts including Humla and Mugu
- In Serological investigation, 3.9% of inhabitants of the surveyed areas were positive in the direct agglutination test (DAT) (Courtesy: Epi-team)

Table 1: Phlebotomine sand fly collections in 21 surveyed districts

Districts	Male	Female
Achham	79	32
Arghakhanchi	39	34
Baitadi	135	51
Dadeldhura	54	120
Darchula	41	19
Dhankuta	8	4
Doti	18	21
Gulmi	29	36
Humla	129	89
Jajarkot	157	85
Kanchanpur	235	319
Khotang	84	97
Mugu	297	66
Panchthar	30	50
Rupandehi	103	93
Salyan	23	7
Sankhuwasabha	15	45
Sindhuli	11	20
Syangja	27	35
Taplejung	44	43
Terhathum	28	27
Total	**1,586**	**1,293**

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