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Mapping lymphatic filariasis in Loa loa endemic health districts naïve for ivermectin mass administration and situated in the forested zone of Cameroon

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Supplementary material

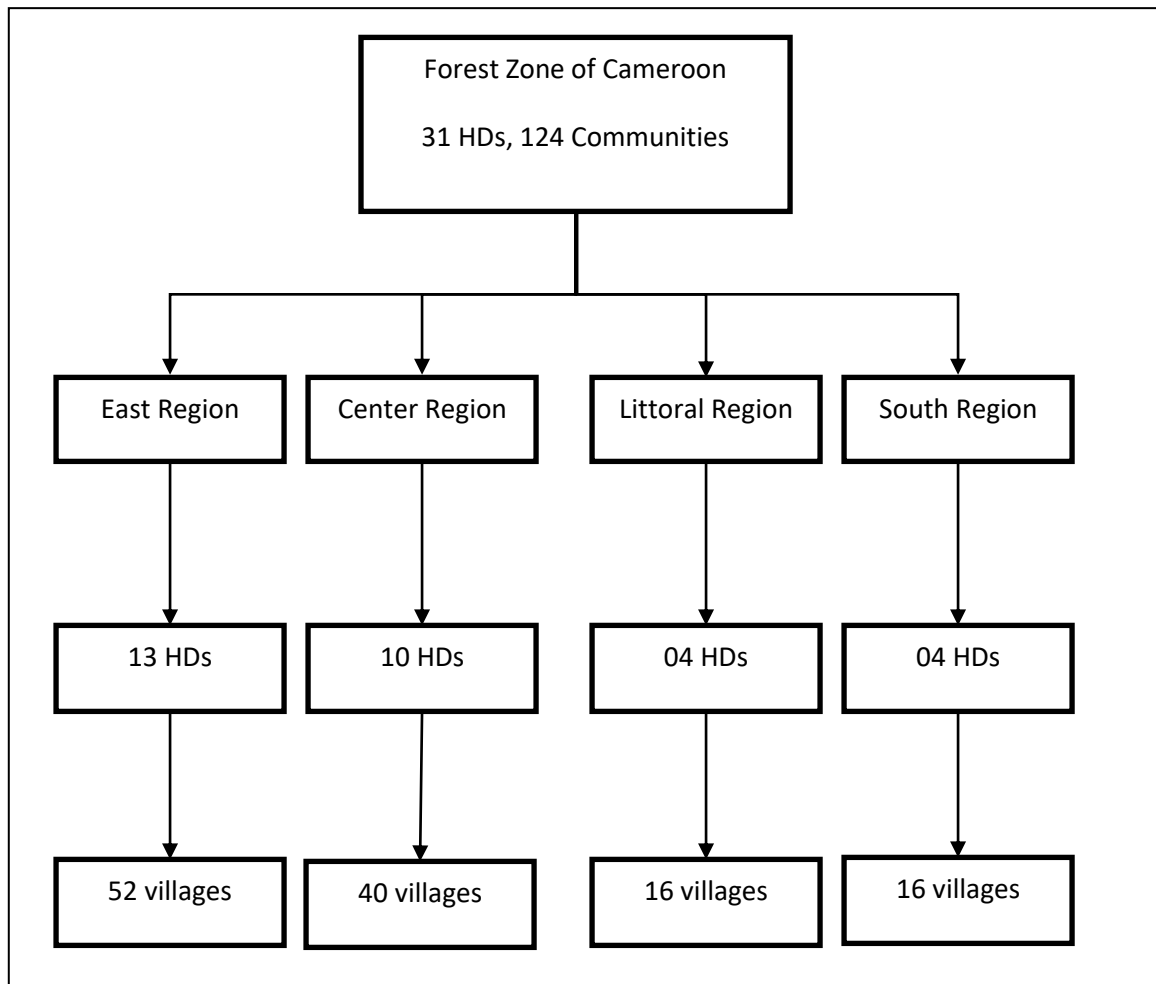


Figure S1: Selection of the study sites

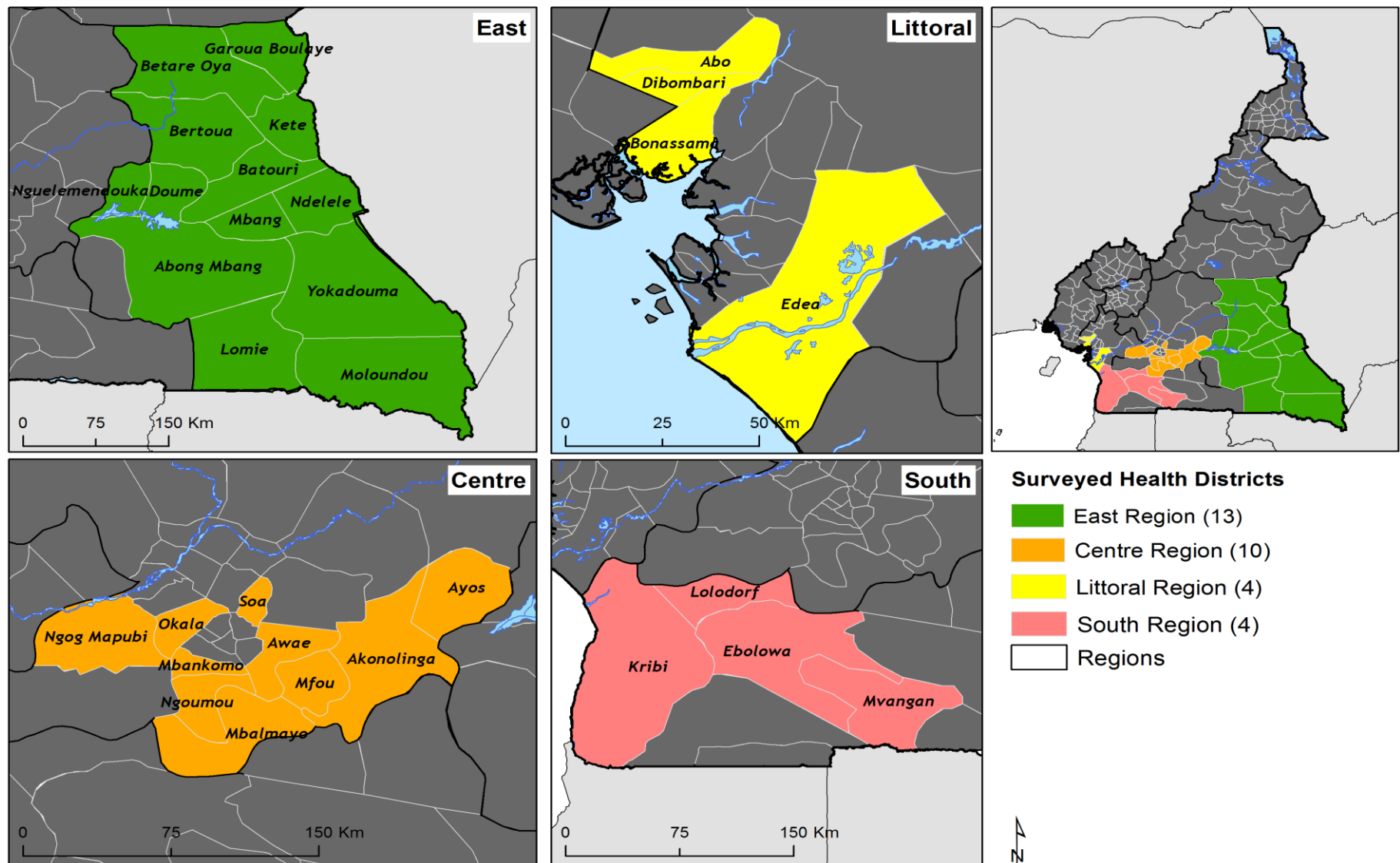


Figure S2: Map of the study area.

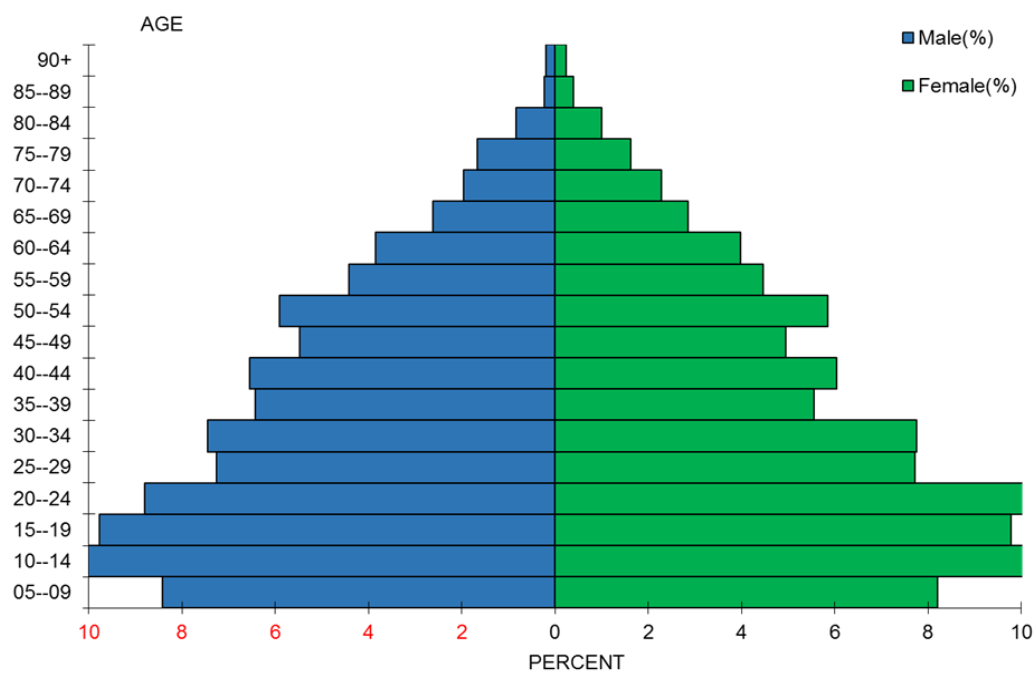


Figure S3: Distribution of participants according to age and gender

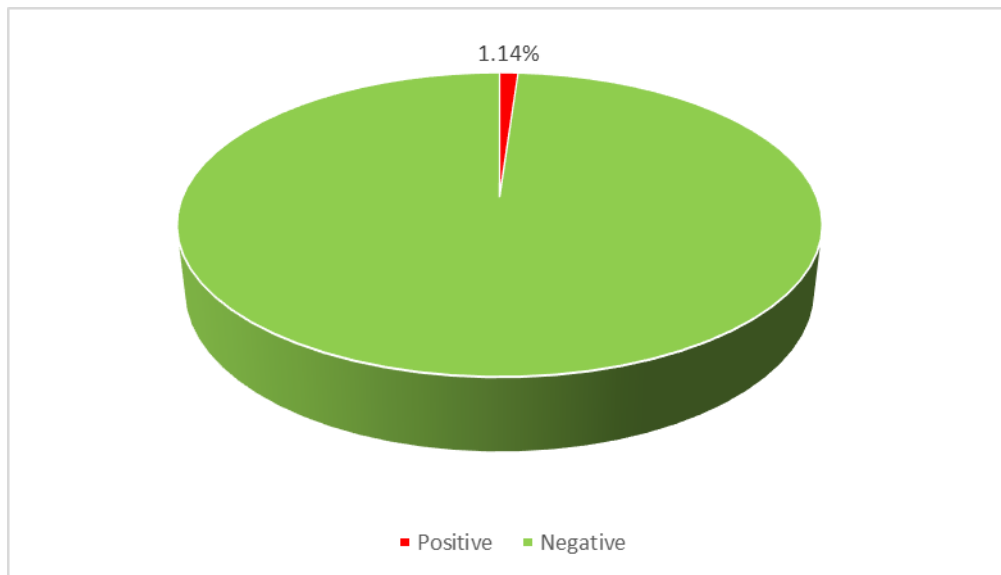


Figure S4: Overall prevalence of lymphedema in the study area

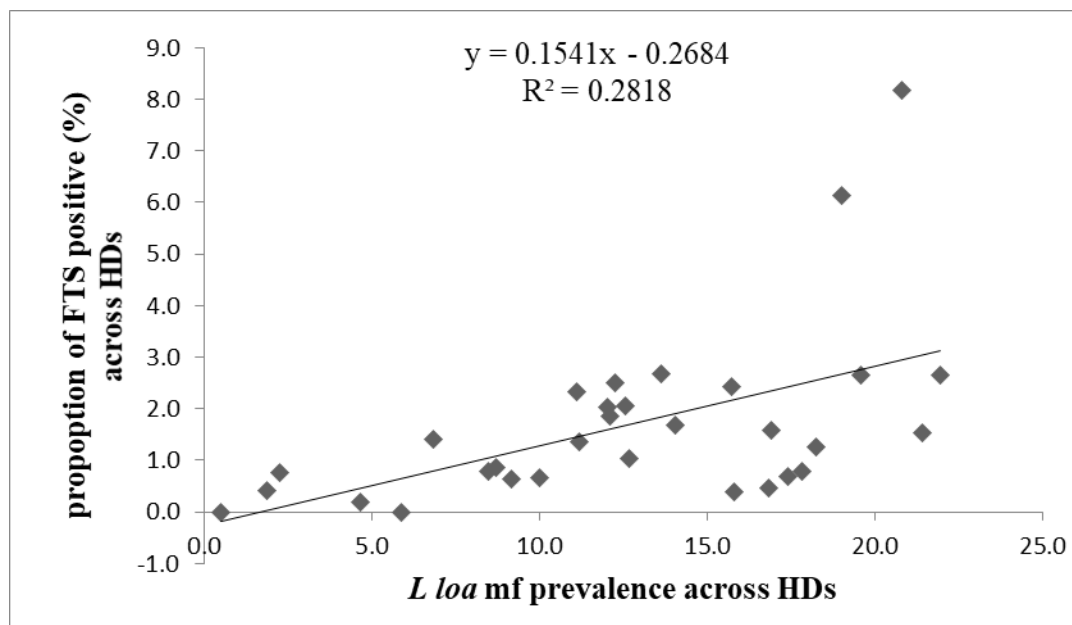


Figure S5: Relationship between the proportion of positive FTS and the prevalence of *Loa loa* microfilaremia in 31 HDs of Cameroon.

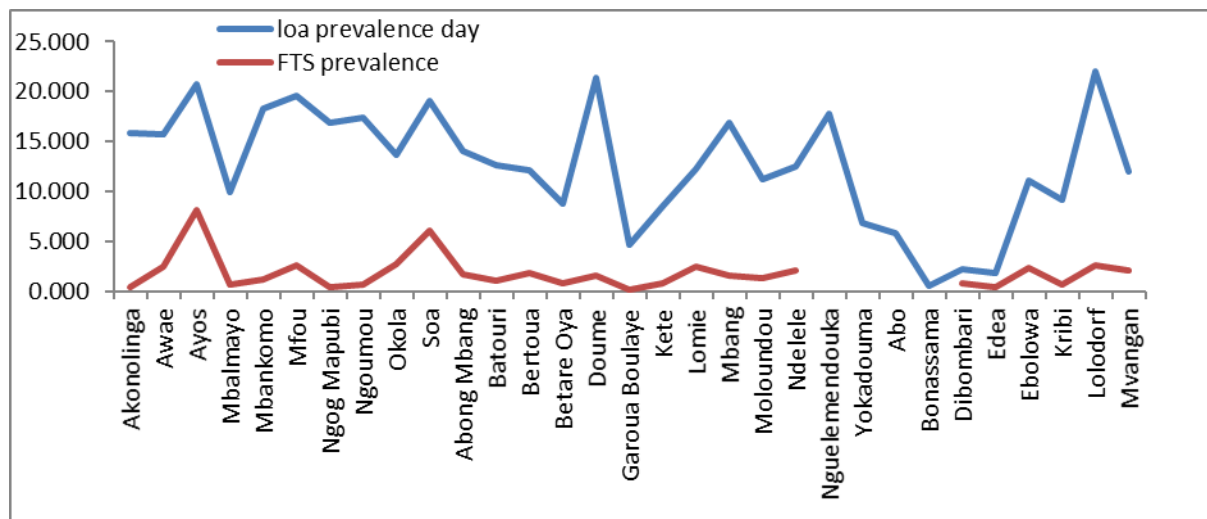


Figure S6: FTS positivity and *Loa loa* prevalence.

| Table S1. Infection profile for FTS, lymphedema and <i>loa loa</i> mf, in the 31 health districts. | | | | | | | | | | |
|--|---------------------|---------------------------|-------------|---------------|---------------------|----------------------|----------------------|-------------------------|---------------------------|-------------|
| Parameter | District | Examined participants (N) | FTS +ve (N) | FTS prev. (%) | Lymphedema +ves (N) | Lymphedema.-prev.(%) | <i>L. loa</i> +ves N | <i>L. loa</i> prev. (%) | <i>L. loa</i> GMI (mf/ml) | |
| Gender | Males | 7221 | 141 | 2.0 | 82 | 1.1 | 1071 | 14.8 | Day | Night |
| | Females | 7225 | 92 | 1.3 | 81 | 1.1 | 734 | 10.2 | | |
| Age -group | Adults (≥15Yrs) | 10295 | 218 | 2.1 | 147 | 1.4 | 1624 | 15.8 | | |
| | Children (5-14 Yrs) | 4151 | 15 | 0.4 | 16 | 0.4 | 181 | 4.8 | | |
| EAST | Abong mbang | 534 | 9 | 1.7 | 6 | 1.1 | 75 | 14.0 | 1017.7 | 84.7 |
| | Batouri | 387 | 4 | 1 | 11 | 2.8 | 49 | 12.7 | 1241.6 | 304 |
| | Bertoua | 487 | 9 | 1.8 | 8 | 1.6 | 59 | 12.1 | 2761.6 | 154.3 |
| | Betare oya | 470 | 4 | 0.9 | 1 | 0.2 | 41 | 8.7 | 115 | 59.6 |
| | Doume | 523 | 8 | 1.5 | 5 | 1 | 112 | 21.4 | 11058.3 | 112.1 |
| | Garoua boulaye | 534 | 1 | 0.2 | 2 | 0.4 | 25 | 4.7 | 0 | 0 |
| | Kete | 508 | 4 | 0.8 | 5 | 1 | 43 | 8.5 | 514.2 | 3.6 |
| | Lomie | 481 | 12 | 2.5 | 0 | 0 | 59 | 12.3 | 83.8 | 37.4 |
| | Mbang | 503 | 8 | 1.6 | 36 | 7.2 | 85 | 16.9 | 2715.1 | 487.1 |
| | Moloundou | 519 | 7 | 1.3 | 1 | 0.2 | 58 | 11.2 | 1240.7 | 111.4 |
| | Ndelelle | 486 | 10 | 2.1 | 2 | 0.4 | 61 | 12.6 | 653 | 32.8 |
| | Ngoulemendouka | 516 | 4 | 0.8 | 1 | 0.2 | 92 | 17.8 | 105.2 | 13.5 |
| | Yokadouma | 496 | 7 | 1.4 | 5 | 1 | 34 | 6.9 | 103.6 | 4.5 |
| Total | | 6444 | 87 | 1.4 | 83 | 1.3 | 793 | 12.3 | 621.3 | 61 |
| | | | | | | | | | | |
| CENTER | Akonolinga | 519 | 2 | 0.4 | 0 | 0 | 82 | 15.8 | 6956.1 | 1553.3 |
| | Awae | 451 | 11 | 2.4 | 5 | 1.1 | 71 | 15.7 | 312.7 | 47.7 |
| | Ayos | 452 | 37 | 8.2 | 20 | 4.4 | 94 | 20.8 | 17.2 | 3 |
| | Mbalmayo | 460 | 3 | 0.7 | 0 | 0 | 46 | 10 | 17675.4 | 296.7 |
| | Mbankomo | 477 | 6 | 1.3 | 0 | 0 | 87 | 18.2 | 2894.9 | 226 |
| | Mfou | 490 | 13 | 2.7 | 10 | 2 | 96 | 19.6 | 1932.9 | 108.4 |
| | Ngogmapoubi | 422 | 2 | 0.5 | 1 | 0.2 | 71 | 16.8 | 0 | 0 |
| | Ngoumou | 431 | 3 | 0.7 | 2 | 0.5 | 75 | 17.4 | 783.8 | 33.9 |
| | Okola | 447 | 12 | 2.7 | 15 | 3.4 | 61 | 13.7 | 37.9 | 7.3 |
| | Soa | 326 | 20 | 6.1 | 11 | 3.4 | 62 | 19.0 | 535.4 | 56.1 |
| Total | | 4475 | 109 | 2.4 | 64 | 1.4 | 745 | 16.6 | 210 | 18.9 |
| | | | | | | | | | | |
| SOUTH | Ebolowa | 513 | 12 | 2.3 | 0 | 0 | 57 | 11.1 | 205.2 | 44.4 |
| | Kribi | 470 | 3 | 0.6 | 4 | 0.9 | 43 | 9.2 | 74 | 0 |
| | Lolordolf | 264 | 7 | 2.7 | 0 | 0 | 58 | 22 | 2690. | 106.9 |
| | Mvangan | 491 | 10 | 2 | 0 | 0 | 59 | 12.1 | 216. | 28.4 |
| Total | | 1738 | 32 | 1.8 | 4 | 0.2 | 217 | 12.5 | 344.3 | 44.6 |
| | | | | | | | | | | |
| LITTORAL | Abo | 510 | 0 | 0 | 6 | 1.2 | 30 | 5.9 | - | |
| | Bonassama | 404 | 0 | 0 | 73 | 0.7 | 2 | 0.5 | | -- |

| | | | | | | | | | | |
|---------------------|-----------|--------------|------------|------------|------------|-------------|-------------|-------------|------------|-------------|
| | Dibombari | 397 | 3 | 0.8 | 0 | 0 | 9 | 2.3 | 23.7 | 0 |
| | Edea | 478 | 2 | 0.4 | 3 | 0.6 | 9 | 1.9 | 0 | 0 |
| Total | | 1789 | 5 | 0.3 | 12 | 0.8 | 50 | 2.7 | 5.9 | 0 |
| OVERAL L | | 14446 | 233 | 1.6 | 163 | 1.14 | 1805 | 12.5 | 311 | 30.9 |

Table S2. Gender and age related prevalence of FTS, lymphedema and diurnal microfilaramia.

| Variable | No examined | FTS positive (%) | Lymphedema positive | <i>Loa loa</i> positive /(%) | <i>Loa loa</i> GMI | #<i>P-value</i> for FTS | *<i>P-value</i> for <i>L.loa</i> |
|----------------------------|------------------------|---------------------------------|--------------------------------|---|-------------------------------|------------------------------------|---|
| Gender | | | | | | | |
| Males | 7221 | 141 (2.0) | 82(1.1) | 1071(14.8) | 2.9 | P < 0.05 | p<0.001 |
| Female | 7225 | 92 (1.3) | 81(1.1) | 734 (10.2) | 2.9 | | |
| Age group | | | | | | | |
| Adults (≥15) | 10295 | 218 (2.1) | 147(1.4) | 1624 (15.8) | | P < 0.05 | p<0.001 |
| Children (5-15) | 4151 | 15 (0.4) | 16(0.4) | 181 (4.8) | | | |
| 5-20 | 3659 | 72(2.0) | 26(0.7) | 417(11.4) | 2.8 | | |
| 21-36 | 2681 | 69(2.6) | 40(1.5) | 461(17.2) | 2.9 | | |
| 37-52 | 5591 | 22(0.4) | 25(0.5) | 290(5.2) | 2.9 | | |
| 53-68 | 1903 | 44(2.3) | 49(2.6) | 450(23.6) | 3.4 | | |
| 69-84 | 722 | 28(3.9) | 21(2.9) | 182(25.2) | 1.8 | | |
| 85+ | 79 | 1(1.3) | 2(2.5) | 11(!3.9) | 2.3 | | |

Table S3: Distribution of FTS positivity across health districts, gender and age groups

| Region | District | overall | | Age group | | | | Sex | | | |
|--------|-------------------|---------------|--------------------|--------------------|-----------------|-----------------------|-----------------|---------------|-----------------|---------------|-----------------|
| | | | | Adults (>15 years) | | Children (5-15 years) | | Females | | Males | |
| | | Exa- mined | FTS(%) positive | Exami- ned | FTS positive | Exami- ned | FTS positive | Exami- ned | FTS positive | Exami- ned | FTS positive |
| Center | Akonolinga | 519 | 0.4 | 343 | 2 | 176 | 0 | 269 | 1 | 250 | 1 |
| | Awae | 451 | 2.4 | 356 | 11 | 95 | 0 | 227 | 6 | 224 | 5 |
| | Ayos | 452 | 8.2 | 331 | 32 | 121 | 5 | 238 | 16 | 214 | 21 |
| | Mbalmayo | 460 | 0.7 | 299 | 2 | 161 | 1 | 231 | 0 | 229 | 3 |
| | Mbankomo | 477 | 1.3 | 330 | 6 | 147 | 0 | 236 | 4 | 241 | 2 |
| | Mfou | 490 | 2.7 | 400 | 13 | 90 | 0 | 257 | 5 | 233 | 8 |
| | Ngog Mapubi | 422 | 0.5 | 325 | 2 | 97 | 0 | 209 | 1 | 213 | 1 |
| | Ngoumou | 431 | 0.7 | 330 | 2 | 101 | 1 | 234 | 1 | 197 | 2 |
| | Okola | 447 | 2.7 | 362 | 12 | 85 | 0 | 215 | 5 | 232 | 7 |
| | Soa | 326 | 6.1 | 236 | 19 | 90 | 1 | 201 | 8 | 125 | 12 |
| | Total | 4475 | | 3312 | 101 | 1163 | 8 | 2317 | 47 | 2158 | 62 |
| | Prevalence | - | 2.4% | - | 3.0% | - | 0.7% | - | 2.0% | - | 2.9% |
| | p. value | | | | <0.001 | | | | <0.066 | | |
| East | Abong Mbang | 534 | 1.7 | 344 | 7 | 190 | 2 | 259 | 2 | 275 | 7 |
| | Batouri | 387 | 1.0 | 288 | 4 | 99 | 0 | 208 | 1 | 179 | 3 |
| | Bertoua | 487 | 1.8 | 331 | 8 | 156 | 1 | 229 | 4 | 258 | 5 |
| | Betare Oya | 470 | 0.9 | 292 | 2 | 178 | 2 | 214 | 2 | 256 | 2 |
| | Doume | 523 | 1.5 | 334 | 8 | 189 | 0 | 242 | 4 | 281 | 4 |
| | Garoua Boulaye | 534 | 0.2 | 321 | 1 | 213 | 0 | 273 | 1 | 261 | 0 |
| | Kete | 508 | 0.8 | 361 | 4 | 147 | 0 | 199 | 0 | 309 | 4 |
| | Lomie | 481 | 2.5 | 338 | 12 | 143 | 0 | 258 | 6 | 223 | 6 |
| | Mbang | 503 | 1.6 | 381 | 8 | 122 | 0 | 242 | 3 | 261 | 5 |
| | Moloundou | 519 | 1.3 | 416 | 7 | 103 | 0 | 212 | 3 | 307 | 4 |
| | Ndelele | 486 | 2.1 | 300 | 9 | 186 | 1 | 209 | 4 | 277 | 6 |
| | Nguelemdouka | 516 | 0.8 | 343 | 4 | 173 | 0 | 300 | 3 | 216 | 1 |

| | | | | | | | | | | | |
|-----------------|-------------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|
| | Yokadouma | 496 | 1.4 | 390 | 7 | 106 | 0 | 302 | 1 | 194 | 6 |
| | Total | 6444 | | 4439 | 81 | 2005 | 6 | 3147 | 34 | 3297 | 53 |
| | Prevalence | - | 1.40% | - | 1.80% | - | 0.30% | - | 1.10% | - | 1.60% |
| | p. value | | | | <0.001 | | | | | <0.067 | |
| Littoral | Abo | 510 | 0.0 | 421 | 0 | 89 | 0 | 255 | 0 | 255 | 0 |
| | Bonassama | 404 | 0.0 | 289 | 0 | 115 | 0 | 227 | 0 | 177 | 0 |
| | Dibombari | 397 | 0.8 | 246 | 3 | 151 | 0 | 214 | 1 | 183 | 2 |
| | Edea | 478 | 0.4 | 305 | 2 | 173 | 0 | 240 | 1 | 238 | 1 |
| | Total | 1789 | | 1261 | 5 | 528 | 0 | 936 | 2 | 853 | 3 |
| | Prevalence | - | 0.30% | - | 0.40% | - | 0.00% | - | 0.20% | - | 0.40% |
| | p. value | | | | <0.330 | | | | <0.067 | | |
| South | Ebolowa | 513 | 2.3 | 335 | 11 | 178 | 1 | 250 | 4 | 263 | 8 |
| | Kribi | 470 | 0.6 | 357 | 3 | 113 | 0 | 222 | 1 | 248 | 2 |
| | Lolodorf | 264 | 2.7 | 216 | 7 | 48 | 0 | 113 | 1 | 151 | 6 |
| | Mvangan | 491 | 2.0 | 375 | 10 | 116 | 0 | 240 | 3 | 251 | 7 |
| | Total | 1738 | | 1283 | 31 | 455 | 1 | 825 | 9 | 913 | 23 |
| | Prevalence | - | 1.80% | - | 2.40% | - | 0.20% | - | 1.10% | - | 2.50% |
| | p. value | | | | <0.001 | | | | 0.674 | | |

FTS positivity (%) in Bold ($\geq 1\%$).

Table S4: Logistic regression analysis of FTS results according to *L loa* load among MF carriers

| Region | Loa Mf load | Odds ratio | 95% C.I OR | P. value |
|---------------------------------|--------------------|-------------------|-------------------|------------------|
| Over all All regions | 0 | Reference | - | - |
| | 1-8000 | 6.1 | 4.4-8.6 | <0.001 |
| | 8001-20000 | 53.2 | 35.2-80.4 | <0.001 |
| | 20001-30000 | 103.1 | 55.4-192 | <0.001 |
| | >30000 | 151.9 | 85.4-270.2 | <0.001 |
| Sex | female | reference | - | - |
| | -male | 1.3 | 0.973-1.735 | <0.075 |
| Age group | Children | - | - | - |
| | -Adults | 3.395 | 1.942-5.935 | <0.002 |

Table S5. Comparison of day and night parasitological indices in lymphedema cases

| Region | Number of lymphedema examined | Day | | Night | |
|--------------|-------------------------------|-----------------|------------|---------------|------------|
| | | Loa positive | mf (mf/ml) | Loa positive | mf (mf/ml) |
| Centre | 64 | 18(28.1) | 2.2 | 3(4.7) | 2.4 |
| East | 83 | 13(15.7) | 2.4 | 1(1.2) | 3.1 |
| Littoral | 15 | 2(16.7) | 3.2 | 0(0.0) | 0 |
| South | 4 | 1(25.0) | 2.1 | 0(0.0) | 0 |
| Total | 163 | 34(20.0) | 9.9 | 4(2.4) | 5.4 |

Table S6. The relationship between FTS positivity and *Loa loa* infection intensity.

| <i>Loa loa</i> mf load Mf/ml | Participants examined N | FTS positives N | Percentage % |
|--|-------------------------------|--------------------|--------------|
| 0 | 12652 | 85 | 0.7 |
| 1 to 8,000 | 1530 | 59 | 3.9 |
| 8001-20,000 | 163 | 42 | 25.8 |
| 20001-30,000 | 47 | 19 | 40.4 |
| >30,000. | 54 | 27 | 50.0 |
| TOTAL | 14446 | 232* | 1.6 |
| Linear to Linear association Test | | P < | 0.002 |

*one positive FTS slide was lost

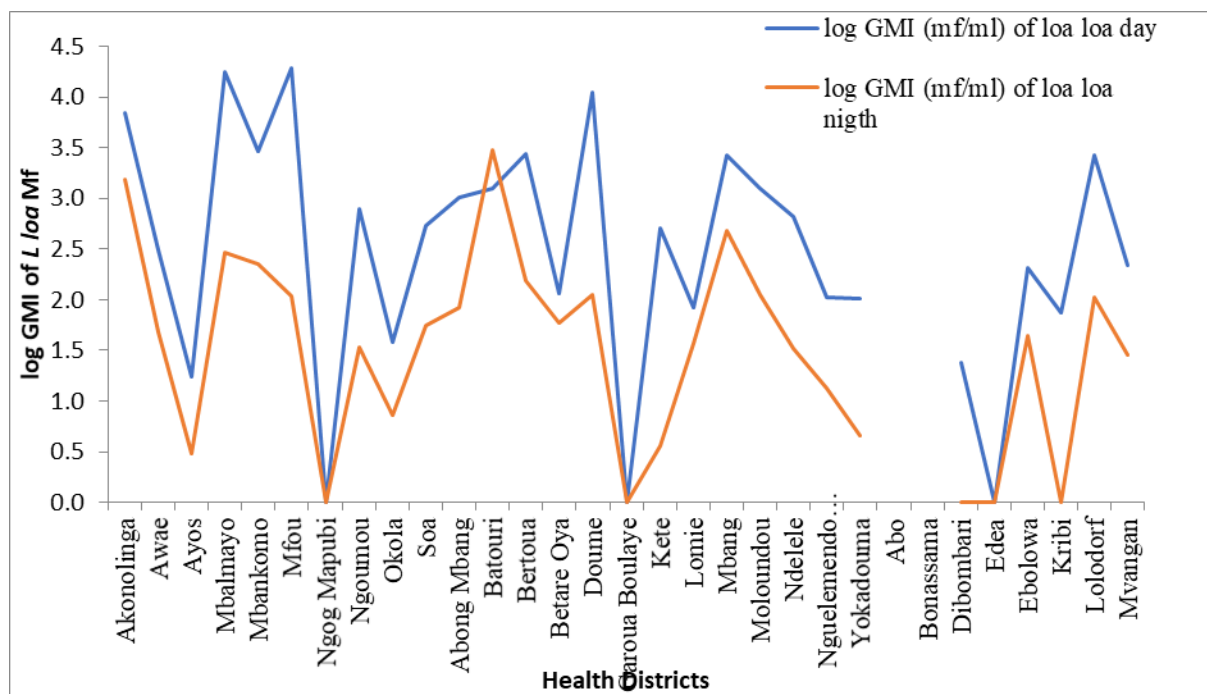


Figure S7: Plot of log GMI (Mf/ml) of loasis night against day

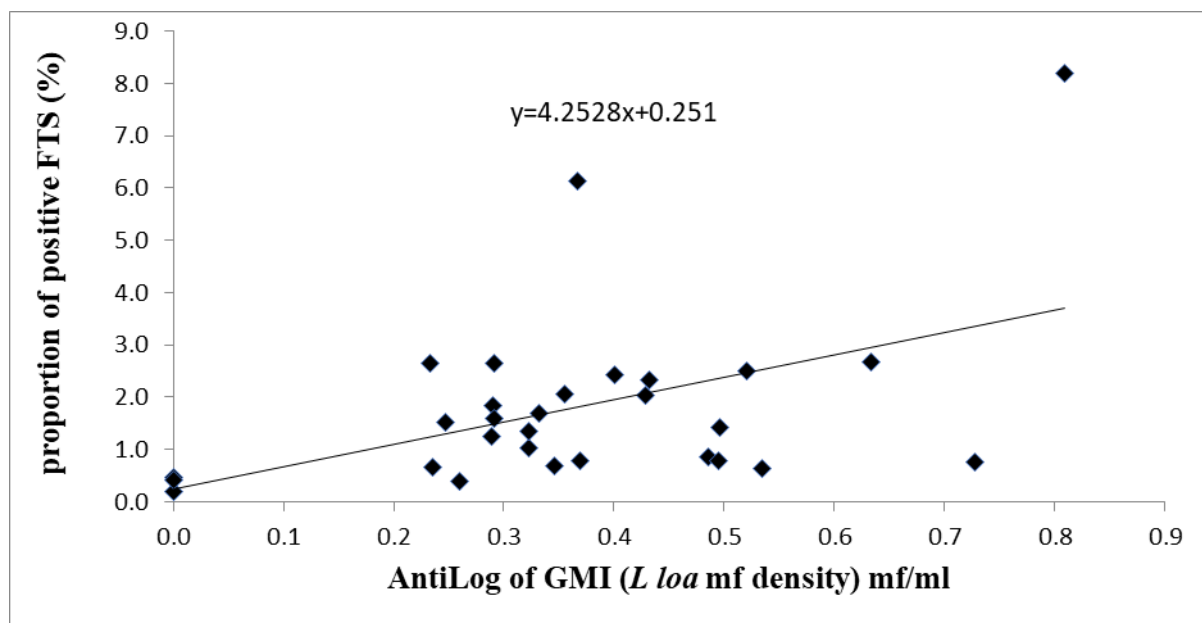


Figure S8: Relationship between the proportion of positive FTS and the GMI of *L loa* mf densities (mf/ml) in 31 HDs of Cameroon

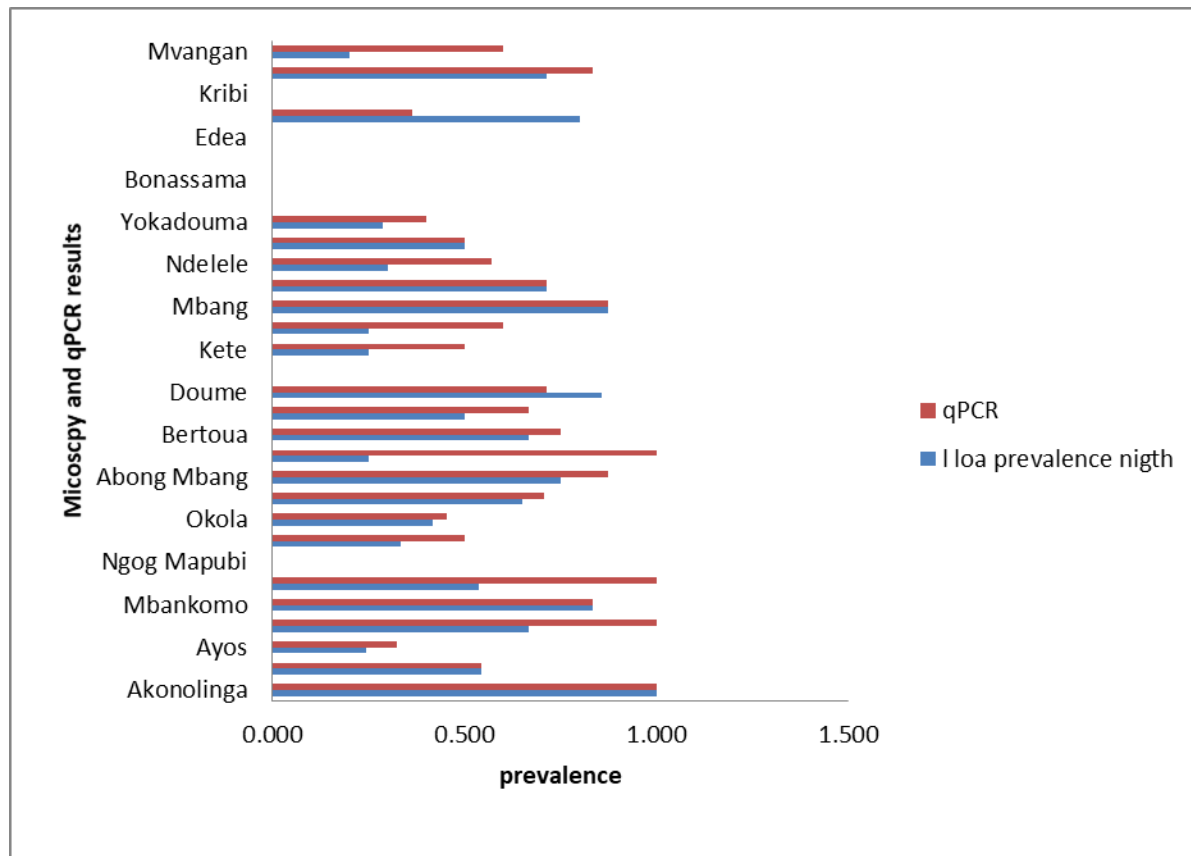


Figure S9: Prevalence of *Loa loa* microscopy at night and qPCR

Table S7: FTS positivity (%) in the 31 Health Districts

| REGION | District | Examined Participants (N) | FTS Positive (N) | Prevalence (%) |
|--------------------------------|-----------------|----------------------------------|-------------------------|-----------------------|
| EAST | Abong Mbang | 534 | 9 | 1.7 |
| | Batouri | 387 | 4 | 1 |
| | Bertoua | 487 | 9 | 1.8 |
| | Betare Oya | 470 | 4 | 0.9 |
| | Doume | 523 | 8 | 1.5 |
| | Garoua Boulaye | 534 | 1 | 0.2 |
| | Kete | 508 | 4 | 0.8 |
| | Lomie | 481 | 12 | 2.5 |
| | Mbang | 503 | 8 | 1.6 |
| | Moloundou | 519 | 7 | 1.3 |
| | Ndelele | 486 | 10 | 2.1 |
| | Nguelemendouka | 516 | 4 | 0.8 |
| | Yokadouma | 496 | 7 | 1.4 |
| Overall(EAST region) | | 6444 | 87 | 1.4 |
| CENTER | Akonolinga | 519 | 2 | 0.4 |
| | Awae | 451 | 11 | 2.4 |
| | Ayos | 452 | 37 | 8.2 |
| | Mbalmayo | 460 | 3 | 0.7 |
| | Mbankomo | 477 | 6 | 1.3 |
| | Mfou | 490 | 13 | 2.7 |
| | Ngog Mapubi | 422 | 2 | 0.5 |
| | Ngoumou | 431 | 3 | 0.7 |
| | Okola | 447 | 12 | 2.7 |
| Overall(Center region) | Soa | 326 | 20 | 6.1 |
| | | 4475 | 109 | 2.4 |
| SOUTH | Ebolowa | 513 | 12 | 2.3 |
| | Kribi | 470 | 3 | 0.6 |
| | Lolodorf | 264 | 7 | 2.7 |
| | Mvangan | 491 | 10 | 2 |
| Over all (South region) | | 1738 | 32 | 1.8 |
| LITTORAL | Abo | 510 | 0 | 0 |
| | Bonassama | 404 | 0 | 0 |

| | | | | |
|----------------------------------|-----------|--------------|------------|-------------|
| | Dibombari | 397 | 3 | 0.8 |
| | Edea | 478 | 2 | 0.4 |
| Overall (Littoral region) | | 1789 | 5 | 0.3 |
| Grand total | | 14446 | 233 | 1.61 |

Table S8: Prevalence of *Loa loa* among age groups and across gender

| Region | District | Overall | | Females | | Males | | Adult (>15 years) | | Children (5-15 years) | |
|--------|-------------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|----------------------|-----------------|--------------------------|-----------------|
| | | Exami- ned | Loa Positive | Exami- ned | Loa Positive | Exami- ned | Loa Positive | Exami- ned | Loa Positive | Exami- ned | Loa Positive |
| Center | Akonolinga | 519 | 82 | 269 | 31 | 250 | 51 | 343 | 68 | 176 | 14 |
| | Awae | 451 | 71 | 227 | 31 | 224 | 40 | 356 | 66 | 95 | 5 |
| | Ayos | 452 | 94 | 238 | 46 | 214 | 48 | 331 | 86 | 121 | 8 |
| | Mbalmayo | 460 | 46 | 231 | 23 | 229 | 23 | 299 | 42 | 161 | 4 |
| | Mbankomo | 477 | 87 | 236 | 36 | 241 | 51 | 330 | 75 | 147 | 12 |
| | Mfou | 490 | 96 | 257 | 39 | 233 | 57 | 400 | 90 | 90 | 6 |
| | Ngog Mapubi | 422 | 71 | 209 | 31 | 213 | 40 | 325 | 64 | 97 | 7 |
| | Ngoumou | 431 | 75 | 234 | 32 | 197 | 43 | 330 | 71 | 101 | 4 |
| | Okola | 447 | 61 | 215 | 26 | 232 | 35 | 362 | 58 | 85 | 3 |
| | Soa | 326 | 62 | 201 | 25 | 125 | 37 | 236 | 55 | 90 | 7 |
| | Total | 4475 | 745 | 2317 | 320 | 2158 | 425 | 3312 | 675 | 1163 | 70 |
| | Prevalence | - | 16.6% | - | 13.8% | - | 19.7% | - | 20.4% | - | 6.0% |
| | p. value | | | | | <0.001 | | | <0.001 | | |
| East | Abong | 533 | 75 | 259 | 38 | 275 | 37 | 344 | 63 | 190 | 12 |
| | Mbang | | | | | | | | | | |
| | Batouri | 387 | 49 | 208 | 20 | 179 | 29 | 288 | 42 | 99 | 7 |
| | Bertoua | 487 | 59 | 229 | 21 | 258 | 38 | 331 | 56 | 156 | 3 |
| | Betare Oya | 470 | 41 | 214 | 18 | 256 | 23 | 292 | 37 | 178 | 4 |
| | Doume | 522 | 112 | 242 | 49 | 281 | 63 | 334 | 86 | 189 | 26 |
| | Garoua | 534 | 25 | 273 | 17 | 261 | 8 | 321 | 18 | 213 | 7 |
| | Boulaye | | | | | | | | | | |
| | Kete | 508 | 43 | 199 | 10 | 309 | 33 | 361 | 42 | 147 | 1 |
| | Lomie | 481 | 59 | 258 | 16 | 223 | 43 | 338 | 56 | 143 | 3 |
| | Mbang | 503 | 85 | 242 | 36 | 261 | 49 | 381 | 81 | 122 | 4 |

| | | | | | | | | | | | |
|------------------------|---------------------|--------------|--------------|-------------|--------------|-------------|--------------|--------------|--------------|-------------|-------------|
| | Moloundou | 519 | 58 | 212 | 15 | 307 | 43 | 416 | 56 | 103 | 2 |
| | Ndelele | 486 | 61 | 209 | 24 | 277 | 37 | 300 | 54 | 186 | 7 |
| | Nguelemen- douka | 516 | 92 | 300 | 51 | 216 | 41 | 343 | 76 | 173 | 16 |
| | Yokadouma | 496 | 34 | 302 | 17 | 194 | 17 | 390 | 34 | 106 | 0 |
| | Total | 6442 | 793 | 3147 | 332 | 3297 | 461 | 4439 | 701 | 2005 | 92 |
| | Prevalence | - | 12.3% | - | 10.5% | - | 14.0% | - | 15.8% | - | 4.6% |
| | p. value | | | | | <0.001 | | | <0.001 | | |
| Littoral | Abo | 510 | 30 | 255 | 4 | 255 | 26 | 421 | 28 | 89 | 2 |
| | Bonassama | 404 | 2 | 227 | 0 | 177 | 2 | 289 | 2 | 115 | 0 |
| | Dibombari | 397 | 9 | 214 | 2 | 183 | 7 | 246 | 9 | 151 | 0 |
| | Edea | 478 | 9 | 240 | 4 | 238 | 5 | 305 | 9 | 173 | 0 |
| | Total | 1789 | 50 | 936 | 10 | 853 | 40 | 1261 | 48 | 528 | 2 |
| | Prevalence | - | 2.8% | - | 1.1% | - | 4.7% | - | 3.8% | - | 0.4% |
| | p.value | | | | | <0.001 | | | <0.001 | | |
| South | Ebolowa | 511 | 57 | 250 | 23 | 263 | 34 | 335 | 51 | 178 | 6 |
| | Kribi | 470 | 43 | 222 | 12 | 248 | 31 | 357 | 40 | 113 | 3 |
| | Lolodorf | 264 | 58 | 113 | 17 | 151 | 41 | 216 | 56 | 48 | 2 |
| | Mvangan | 491 | 59 | 240 | 19 | 251 | 40 | 375 | 53 | 116 | 6 |
| | Total | 1736 | 217 | 825 | 71 | 913 | 146 | 1283 | 200 | 455 | 17 |
| | Prevalence | - | 12.5% | - | 8.6% | - | 16.0% | - | 15.6% | - | 3.7% |
| | p. value | | | | | <0.001 | | | <0.001 | | |
| Grand Total | N | 14442 | 1805 | 7225 | 733 | 7221 | 1072 | 10295 | 1624 | 4151 | 181 |
| | Prevalence | - | 12.5% | - | 10.1% | - | 14.8% | - | 15.8% | - | 4.4% |
| | p. value | | | | | <0.001 | | | <0.001 | | |

Table S9: prevalence of *Loa loa* microfilaria loads (GMI mf/ml) for FTS positive individuals during the day and at Night

| Region | District | Examined | Day | | | | | Examined | Night | | | | |
|--------|-------------------|------------|------------------------|------------|---------------------------|------------|-----------|---------------|------------------------|------------|-------------------|------------|----|
| | | | <i>Loa</i> positive | <i>loa</i> | <i>loa</i> GMI (mf/ml) | <i>loa</i> | Mf | | <i>Loa</i> positive | <i>loa</i> | <i>Loa</i> GMI | <i>loa</i> | Mf |
| Center | Akonolinga | 2 | 2 | | 6956.1 | | 2 | 2 | 2 | | 1553.3 | | |
| | Awae | 11 | 7 | | 312.7 | | 11 | 6 | 6 | | 47.7 | | |
| | Ayos | 37 | 13 | | 17.2 | | 36 | 9 | 9 | | 3 | | |
| | Mbalmayo | 3 | 3 | | 17675.4 | | 2 | 2 | 2 | | 296.7 | | |
| | Mbankomo | 6 | 5 | | 2894.9 | | 6 | 5 | 5 | | 226 | | |
| | Mfou | 13 | 13 | | 19132.9 | | 8 | 7 | 7 | | 108.4 | | |
| | Ngog Mapubi | 2 | 0 | | 0 | | 1 | 0 | 0 | | 0 | | |
| | Ngoumou | 3 | 3 | | 783.8 | | 2 | 1 | 1 | | 33.9 | | |
| | Okola | 12 | 5 | | 37.9 | | 12 | 5 | 5 | | 7.3 | | |
| | Soa | 20 | 14 | | 535.4 | | 17 | 13 | 13 | | 56.1 | | |
| | Total | 109 | 65 | | 210 | | 97 | 50 | 50 | | 18.9 | | |
| | Percentage | - | 59.60% | | | | - | 51.50% | 51.50% | | | | |
| East | Abong Mbang | 8 | 7 | | 1017.7 | | 8 | 6 | 6 | | 84.7 | | |
| | Batouri | 4 | 3 | | 1241.6 | | 1 | 1 | 1 | | 3040 | | |
| | Bertoua | 9 | 7 | | 2761.6 | | 8 | 6 | 6 | | 154.3 | | |
| | Betare Oya | 4 | 2 | | 115 | | 3 | 2 | 2 | | 59.6 | | |
| | Doume | 7 | 7 | | 11058.3 | | 7 | 6 | 6 | | 112.1 | | |
| | Garoua Boulaye | 1 | 0 | | 0 | | 1 | 0 | 0 | | 0 | | |
| | Kete | 4 | 3 | | 514.2 | | 2 | 1 | 1 | | 3.6 | | |
| | Lomie | 12 | 6 | | 83.8 | | 6 | 3 | 3 | | 37.4 | | |
| | Mbang | 8 | 7 | | 2715.1 | | 8 | 7 | 7 | | 487.1 | | |
| | Moloundou | 7 | 5 | | 1240.7 | | 7 | 5 | 5 | | 111.4 | | |
| | Ndelele | 10 | 8 | | 653 | | 6 | 3 | 3 | | 32.8 | | |
| | Nguelemendouka | 4 | 2 | | 105.2 | | 4 | 2 | 2 | | 13.5 | | |

| | | | | | | | |
|--------------------|-------------------|------------|---------------|--------------|------------|---------------|-------------|
| | Yokadouma | 7 | 4 | 103.6 | 7 | 2 | 4.5 |
| | Total | 85 | 61 | 621.3 | 68 | 44 | 61 |
| | Percentage | - | 71.80% | 0 | - | 64.70% | |
| Littoral | Dibombari | 3 | 1 | 23.7 | 1 | 0 | 0 |
| | Edea | 2 | 0 | 0 | 1 | 0 | 0 |
| | Total | 5 | 1 | 5.9 | 2 | 0 | 0 |
| | Percentage | - | 20.00% | 2690.3 | - | 0.00% | |
| South | Ebolowa | 10 | 6 | 205.2 | 11 | 8 | 44.4 |
| | Kribi | 3 | 2 | 74 | 1 | 0 | 0 |
| | Lolodorf | 7 | 6 | 2690.3 | 6 | 5 | 106.9 |
| | Mvangan | 10 | 6 | 216.2 | 3 | 2 | 28.4 |
| | Total | 30 | 20 | 344.3 | 21 | 15 | 44.6 |
| | Percentage | | 66.70% | | | 71.40% | |
| grand total | Percentage | | 64.20% | | | 58.00% | |
| | | 229 | 147 | 311 | 188 | 109 | 30.9 |

Table S10: Logistic regression analysis of FTS results according *L loa* load among MF carriers

| Region | Loa Mf load | Odds ratio | 95%C.I OR | P.value |
|--------------------|--------------------|-------------------|------------------|----------------|
| Center | 0 | Reference | - | - |
| | 1-8,000 | 3.3 | 2.0-5.5 | <0.001 |
| | 8001-20000 | 32.9 | 18.3-59.2 | <0.001 |
| | 20001-30000 | 45.3 | 16.1-128.1 | <0.001 |
| | >30000 | 166.3 | 64.0-432.1 | <0.001 |
| East | 0 | Reference | - | - |
| | 1-8000 | 8.8 | 5.0-15.7 | <0.001 |
| | 8001-20000 | 73.9 | 36.5-149.9 | <0.001 |
| | 20001-30000 | 178.3 | 71.3-446 | <0.001 |
| | >30000 | 196.1 | 80.0-481.3 | <0.001 |
| South | 0 | Reference | - | - |
| | 1-8000 | 8.9 | 3.7-21.8 | <0.001 |
| | 8001-20000 | 41.7 | 13.0-134.5 | <0.001 |
| | 20001-30000 | 225.4 | 33.9-1498.6 | <0.001 |
| | >30000 | 42.9 | 7.9-232.7 | <0.001 |
| Over all | 0 | Reference | - | - |
| | 1-8000 | 6.1 | 4.4-8.6 | <0.001 |
| | 8001-20000 | 53.2 | 35.2-80.4 | <0.001 |
| | 20001-30000 | 103.1 | 55.4-192 | <0.001 |
| All regions | | | | |

| | | | | |
|------------------|----------|------------------|-------------|------------------|
| | >30000 | 151.9 | 85.4-270.2 | <0.001 |
| Sex | female | reference | - | - |
| | -male | 1.3 | 0.973-1.735 | <0.075 |
| Age group | Children | - | - | - |
| | -Adults | 3.395 | 1.942-5.935 | <0.002 |

Table S11: Comparing molecular (qPCR) with parasitological (Microscopy) of FTS positive individuals in the 31 health districts.

| Region | District | Examined | qPCR | | Microscopy | |
|--------|-------------------|-----------|--------------------|----------------|--------------------|----------------|
| | | | <i>W bancrofti</i> | <i>Loa loa</i> | <i>W bancrofti</i> | <i>Loa loa</i> |
| Center | Akonolinga | 2 | 0 | 2 | 0 | 2 |
| | Avae | 11 | 0 | 6 | 0 | 6 |
| | Ayos | 37 | 0 | 12 | 0 | 9 |
| | Mbalmayo | 2 | 0 | 2 | 0 | 2 |
| | Mbankomo | 6 | 0 | 5 | 0 | 5 |
| | Mfou | 3 | 0 | 3 | 0 | 3 |
| | Ngog Mapubi | 1 | 0 | 0 | 0 | 0 |
| | Ngoumou | 2 | 0 | 1 | 0 | 1 |
| | Okola | 11 | 0 | 5 | 0 | 5 |
| | Soa | 17 | 0 | 12 | 0 | 13 |
| | Total | 92 | 0 | 48 | 0 | 46 |
| | Prevalence | - | 0.0% | 52.2% | 0 | 50.0% |
| East | Abong Mbang | 8 | 0 | 7 | 0 | 6 |
| | Batouri | 1 | 0 | 1 | 0 | 1 |
| | Bertoua | 8 | 0 | 6 | 0 | 6 |
| | Betare Oya | 3 | 0 | 2 | 0 | 2 |
| | Doume | 7 | 0 | 5 | 0 | 6 |
| | Garoua Boulaye | 1 | 0 | 0 | 0 | 0 |
| | Kete | 2 | 0 | 1 | 0 | 1 |
| | Lomie | 5 | 0 | 3 | 0 | 3 |
| | Mbang | 8 | 0 | 7 | 0 | 7 |
| | Moloundou | 7 | 0 | 5 | 0 | 5 |
| | Ndelele | 7 | 0 | 4 | 0 | 3 |
| | Nguelemendouka | 2 | 0 | 1 | 0 | 1 |

| | | | | | | |
|--------------------|-------------------|--------------|-------------|--------------|----------|--------------|
| | Yokadouma | 5 | 0 | 2 | 0 | 2 |
| | Total | 64 | 0 | 44 | 0 | 43 |
| | Prevalence | - | 0.0% | 68.8% | 0 | 67.2% |
| Littoral | Dibombari | 2 | 0 | 0 | 0 | 0 |
| | Edea | 1 | 0 | 0 | 0 | 0 |
| | Total | 3 | 0 | 0 | 0 | 0 |
| | Prevalence | - | 0.0% | 0.0% | 0 | 0.0% |
| South | Ebolowa | 11 | 0 | 4 | 0 | 7 |
| | Kribi | 1 | 0 | 0 | 0 | 0 |
| | Lolodorf | 6 | 0 | 5 | 0 | 5 |
| | Mvangan | 5 | 0 | 3 | 0 | 2 |
| | Total | 23 | 0 | 12 | 0 | 14 |
| | Prevalence | - | 0.0% | 52.2% | 0 | 60.9% |
| | p. value | | | | | |
| Grand Total | N | 182 | 0 | 104 | 0 | 103 |
| | Prevalence | - | 0.0% | 57.1% | 0 | 56.6% |
| | p. value | 0.999 | | | | |