**SAMPLE SIZE CALCULATION**

**Step 1: Base Sample-size Calculation**

*Formula:*

|  |  |
| --- | --- |
| **n**= | **t²** x **p(1-p)** |
|   | **m²** |

*Description:*

**n**= required sample size
**t =**confidence level at 95% (standard value of 1.96)
**p =**estimated prevalence of variable of interest in the project area (8.8% in this case as obtained from prevalence study
**m =**margin of error at 4% (standard value of 0.04)

*Calculation:*

|  |  |
| --- | --- |
| **n**= | 1.96² x 8.8(100-8.8) |
|   |  4² |
| **n**= |  ~ **193** |

**Step 2: Design Effect**

The anthropometric survey is designed as a cluster sample (a representative selection of villages), not a simple random sample. To correct for the difference in design, the sample size is multiplied by the design effect (**D**).

The design effect is generally assumed to be **2** for surveys using cluster-sampling methodology.

**Calculation**

**n**x **D** = 193 x 2= 386

**Step 3: Contingency**

The sample is further increased by 5% to account for contingencies such as non-response or recording error.

**Calculation**

**n**+ 5% = 386 x 1.05 = 405.3˜ 405

Further, the sample size is doubled to reduce the standard error

N= 2 x n= 2 x 405= 810