

Regional Training Course on  
Agricultural Cost of  
Production Statistics  
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## Session 3.5: Survey Design Considerations: Other Sampling

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## Random Sampling Designs

### Simple Random Sampling (SRS)

- \* Observations selected independently; each unit in the sampling frame has the same probability of selection.
- \* One must use an external source of randomness (a computer) to obtain samples.

# Random Sampling Designs

Systematic sampling:

- \* For a sample size of  $n$ , then  $k \cong \frac{N}{n}$
- \* Where  $N$  represents the total number in the sampling frame.
- \* From a random start among the first  $k$  people, take every  $k^{\text{th}}$  person in the sampling frame.



## Systematic Samples

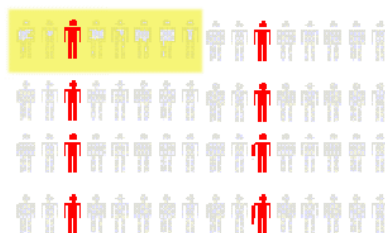
- \* Decide on sample size:  $n$
- \* Divide population of  $N$  individuals into groups of  $k$  individuals:  $k = N/n$ .
- \* Randomly select one individual from the 1st group.
- \* Select every  $k^{\text{th}}$  individual thereafter.

$$N = 64$$

$$n = 8$$

$$k = 8$$

First Group



## Random Sampling Designs

- \* Systematic sampling is a practical method when you cannot use a computer to select a SRS.
- \* Sample can usually be considered a SRS.

## Random Sampling Designs

### Unequal probability sampling:

- \* Each unit is assigned a probability of selection.
- \* One method for assigning probability of selection is size of unit.

## References

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