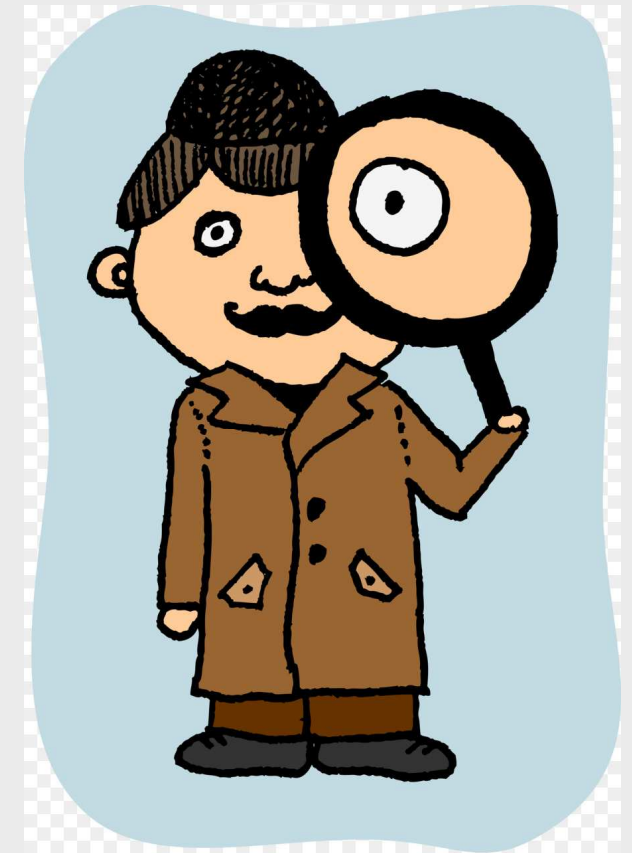What he is doing?

Why he is not speaking?

…..Bla bla bla>>>> Observing

Ok, maybe he is nervous!

Or something else!!!

# Research, Monitoring and Evaluation: Concepts, Methods and Application

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# Agendas

- **Concept:** Definition of the Key Concepts like Research, M&E, Planning, Learning, Log-frame etc.

- **Method:** How can you use R, M&E for program management?

- **Tools and Application:** Practical applications of research, monitoring and evaluation

**Session Objective**

- To increase participants understanding of the concepts used in designing R, M&E Frameworks and Plans

- To build participants competence in designing Program R, M&E Plans

# Key Concepts: Definition…Cont'd

**Monitoring** is the routine reporting of data on program implementation and performance

**Evaluation** is the periodic assessment of program impact at the population level

**Project Planning** defines how the project is executed, monitored, controlled and closed.

**Learning** is the acquisition of knowledge or skills through study, experience, or being taught.

# Key Concepts: Definition…Cont'd

**Log-frame** is a tool for improving the planning, implementation, management, monitoring and evaluation of projects.

**A Project** has a defined start and end point and specific objectives that, when attained, signify completion.

**A Program**, on the other hand, is defined as a group of related projects managed in a coordinated way to obtain benefits

**Indicator** is a standard that measure something and must be < SMART >

# Key Concepts: Definition

**Baseline Survey** serves as a benchmark for all future activities (like M&E)

**Mid/End Line Survey** is done mid/after completion of a project. It helps to measure the effectiveness and sustainability of the project

**An effect** is an intended or unintended change, directly or indirectly due to a project. **Effects = Outcomes + Impacts**

**Research** is the systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions

# Research and Stage of Life
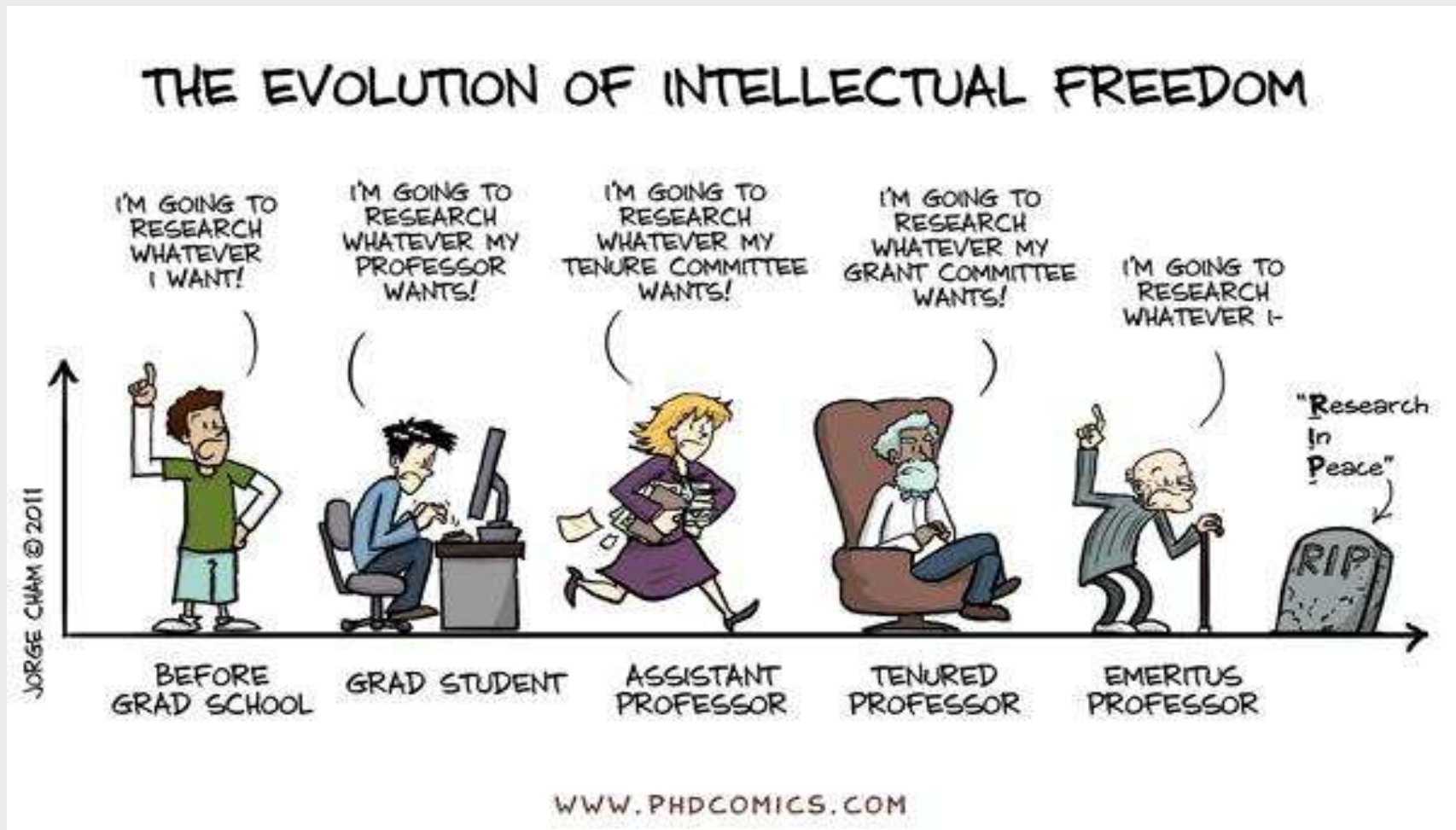
# i. Quantitative Research

- Emphasize measurements

- Statistical, mathematical, or numerical analysis of data

- Data in the form of **numbers**…

- Data collected through polls, questionnaires, and surveys

- **Statistical Interpretation**

# a) The Research Process

**Nine (9) Step process-**

1) Problem or need recognition

2) Objectives and information needs

3) Research design and data sources

4) Data collection procedure

5) Sample design

6) Data collection

7) Data processing

8) Data analysis

9) Presentation of the results


www.phdcomics.com
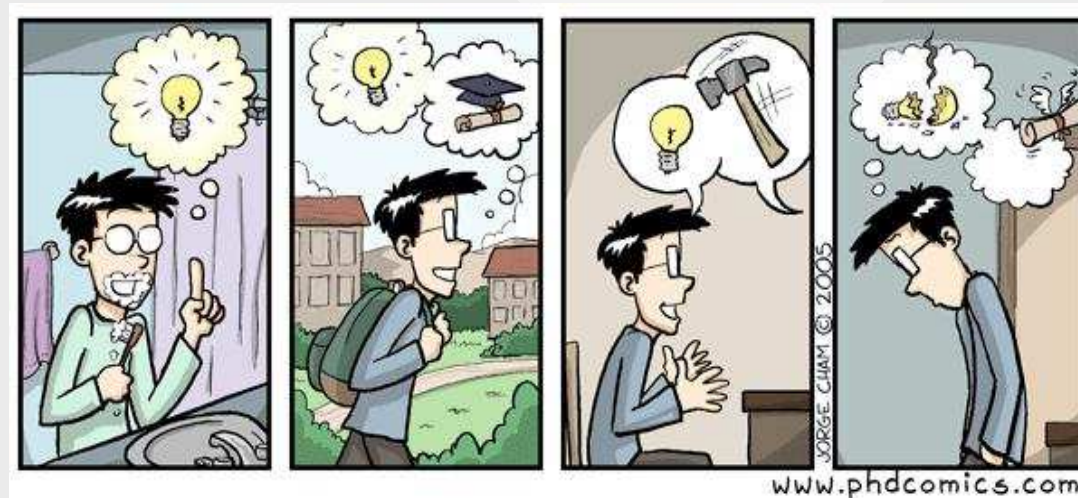
# Research Question and Hypothesis

**Research question (RQ)**

- **General question** regarding specific components of the research problem.
- Example: **What kinds of networks exist in the traditional food sector?**
- **Mainly Known**

**Hypothesis (H)**

- **Specific statement** about a specific phenomenon, relationship (direction of effects)
- Example: **Subjective knowledge is better correlated with behavior than objective knowledge.**
- **Mainly Unknown**

# b) Research Design

**Types of research**

- **Exploratory research-** Mostly Qualitative
- **Conclusive research** (descriptive/causal)- Mostly Quantitative
- **Performance-monitoring** research (effectiveness)- Market Research

# c) Measurement...Cont'd

**Measurement level**

- **Non-metric**

  - ✓ **Nominal (Yes/No)**
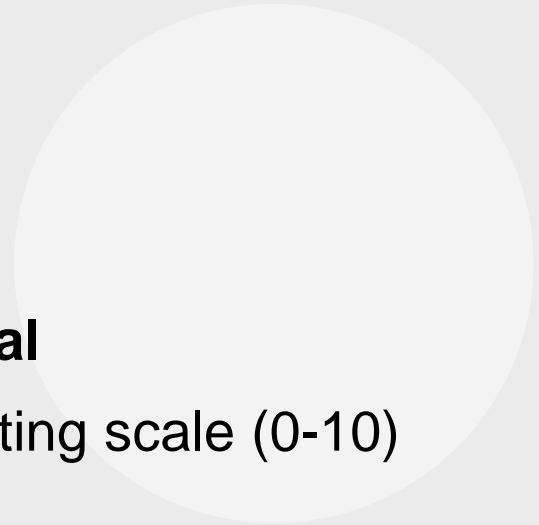    - Yes/ No

  - ✓ **Ordinal / Rank**
    - $1^{st}$, $2^{nd}$ & $3^{rd}$
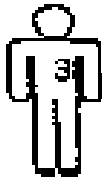
- **Metric**
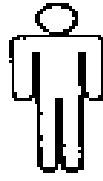
  - ✓ **Interval**
    - Rating scale (0-10)

  - ✓ **Ratio**
    - Age

# c) Measurement…Cont'd

| Nominal | Numbers Assigned to Runners | 7 | 11 | 3 | Finish |
|---|---|---|---|---|---|
| Ordinal | Rank Order of Winners | Third Place | Second Place | First Place | Finish |
| Interval | Performance Rating on a 0 to 10 Scale | 8 | 9 | 9 | |
| Ratio | Time to Finish, in Seconds | 15.2 | 14.1 | 13.4 | |

# c) Measurement

| Provides: | Nominal | Ordinal | Interval | Ratio |
|---|---|---|---|---|
| The "order" of values is known | | ✔ | ✔ | ✔ |
| "Counts," aka "Frequency of Distribution" | ✔ | ✔ | ✔ | ✔ |
| Mode | ✔ | ✔ | ✔ | ✔ |
| Median | | ✔ | ✔ | ✔ |
| Mean | | | ✔ | ✔ |
| Can quantify the difference between each value | | | ✔ | ✔ |
| Can add or subtract values | | | ✔ | ✔ |
| Can multiple and divide values | | | | ✔ |
| Has "true zero" | | | | ✔ |

# d) Designing Data Collection Forms

**Selection criteria:**

- **Type and amount** of collected information

- **Representativeness** of sample

- **Supervision** of field work

- **Response rate**

- **Time** and **cost**
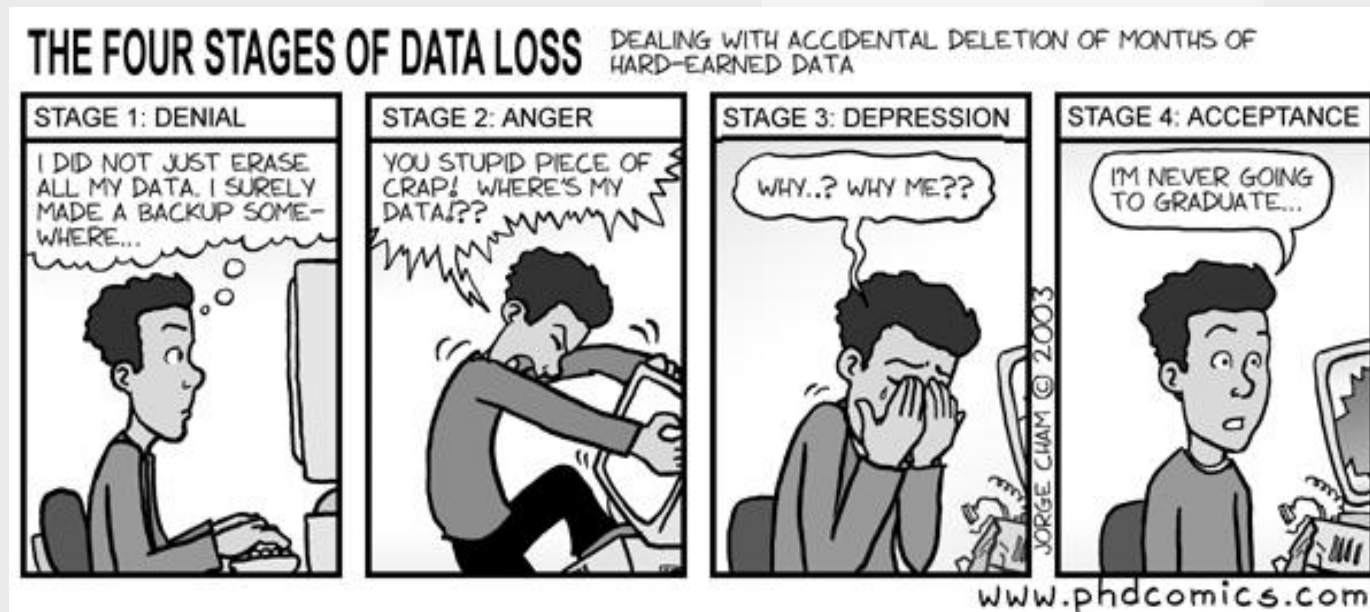
# Question Sequence Recommendations

- **Simple** and **interesting** opening question

- **General questions** first

- **More specific questions** later

- **Logical** order

- *PRETEST and REFINE before fieldwork*

- Longer questionnaire = **lower response rate**

- Short and meaningful title

- Adequate space for respondents to make comments

- Avoid ranking of more than 5 items

- Adapt survey to the **cultural context**

# e) Sampling…Cont'd

- **Population:**
  - ✓ **Aggregate** of all elements

- **Sampling unit:**
  - ✓ **Element** (or **group of elements**)
  - ✓ e.g. person, companies, schools, supermarkets etc.

- **Sampling frame:**
  - ✓ **List** of all the sampling units
  - ✓ e.g. company database, a map, mailing list, Facebook

- **Unit of Analysis:**
  - ✓ **Elements** that are compared in analysis

# Sampling Steps

**Five (5) Step process-**

1) **Define** population

2) **Identify** sampling frame

3) **Determine** sample size

4) **Select** sampling procedure (Probability vs Non-probability)

5) **Select** the sample
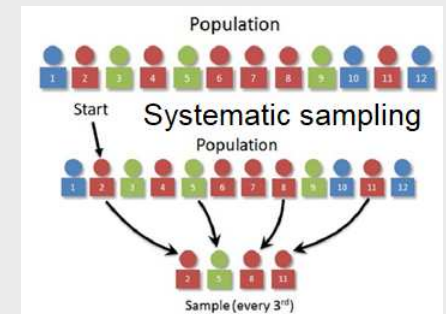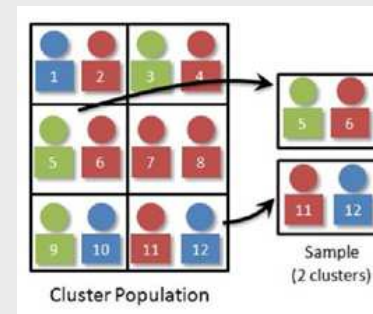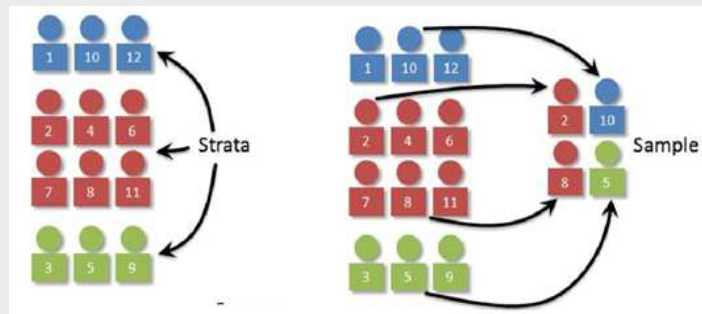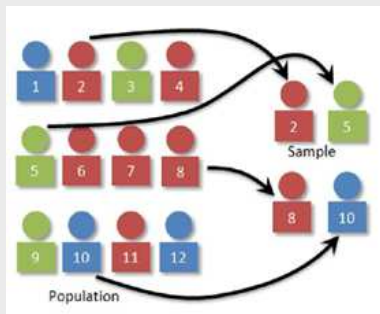
# Types of Sampling Techniques
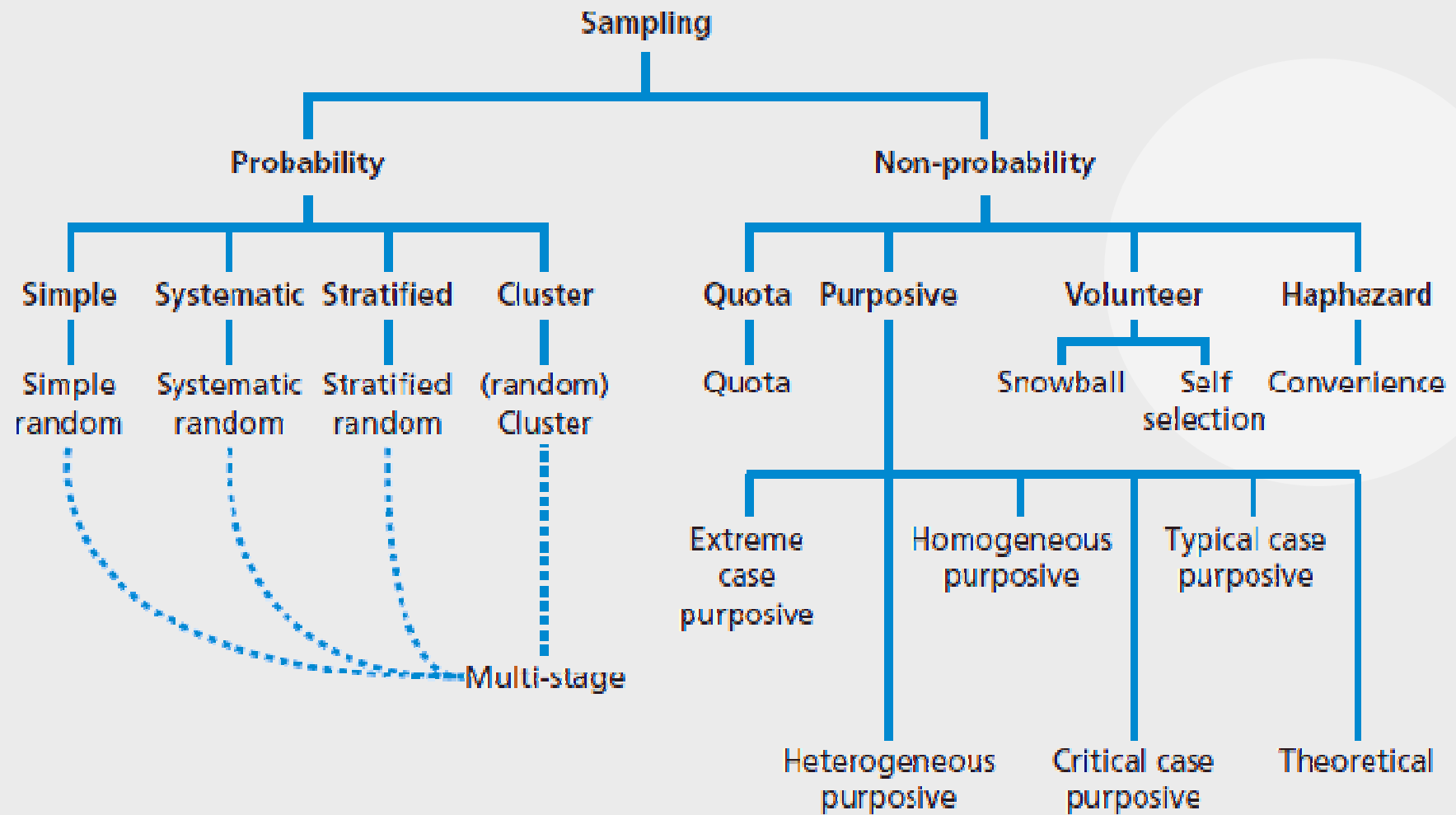
# Determining Sample Size
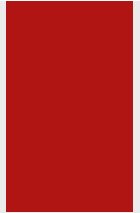
Optimal sample size requires- **a population size**, **a specific margin of error**, and **a desired confidence level**

- Census

- Sample size tables *(Easy and No Technical Knowledge Needed)*

- Download link: https://www.research-advisors.com/documents/SampleSize-web.xls

**Key terms:**

- ✓ **Confidence Level /Power:** Tells you how sure you can be about the result. 90, 95 or 99%

- ✓ **Confidence Interval/ Margin of Error:** Is the plus-or-minus or % figure used in research results. 5, 10 or 15

# ii. Qualitative Research

- **Exploring and understanding** a phenomenon

- Collecting **detailed views** of involved persons

- Data in the form of **words, images**,…

- Analyzing for **description**; e.g. to identify interesting topics

- **Interpretation** of the meaning of the information

# Sampling

- **Common procedures**
  - ✓ Theoretical sampling (case by case)
  - ✓ Convenience sampling
  - ✓ Snowball sampling (participants identify cases)

- **Small sample size**

- **When to stop? Theoretical saturation**

# Qualitative Research Procedures

- Focus groups

- Depth interviews

- Brain storm sessions

- Ethnography

- Case Study

- Grounded Theory

- Autobiography

- Participatory Action Research

- Phenomenology

**Each methods grounded in a specific discipline and philosophical assumptions**

# Monitoring and Evaluation

# Purpose of Carrying Out M&E?

- **Improve** program implementation
  - ✓ Data on program progress and implementation
  - ✓ Improve program management and decision making

- **Inform** future program

- **Inform stakeholders**
  - ✓ Accountability (donors, beneficiaries)
  - ✓ Advocacy
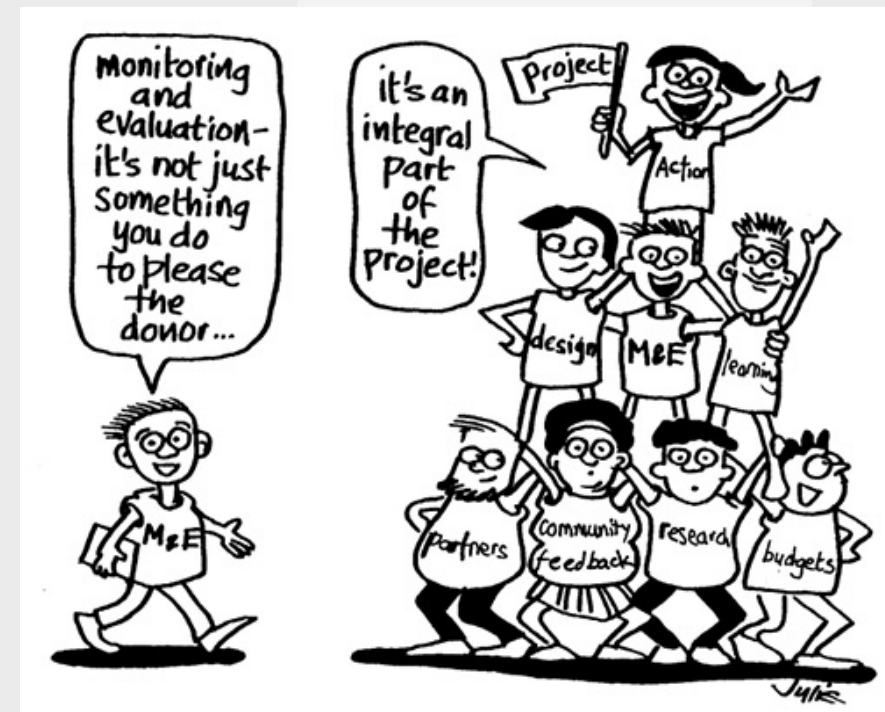
# Why Monitoring?

- Has the program been implemented **according to the plan?**

- Are there **any changes in program** resources or service utilization?

- Are there **any weaknesses** in the implementation of the program?

- Where are the **opportunities** to improve program performance?

# Types of Monitoring

1. **Input Monitoring:** The inputs of the program are monitored.
   Example: Man, money, infrastructure & furniture etc.

2. **Process Monitoring:** The process of any project activities are monitored.
   Example: Meeting, training etc.

3. **Output Monitoring:** The output resulted from the activities are monitored.
   Example: Whether the employment is generated or not?

**Same types applies to "types of Indicator" plus Impact Indicator**

# Why Evaluation?

- Are there **any changes in behavior or outcomes** in the target population?

- To **what extent are observed changes** in the target population related to program efforts?

- To measure the program/project's **relevance, effectiveness, efficiency, impact and sustainability**



The Purpose of...

assessment is to **INCREASE** quality.

evaluation is to **JUDGE** quality.

Too short and not enough leaves. C-
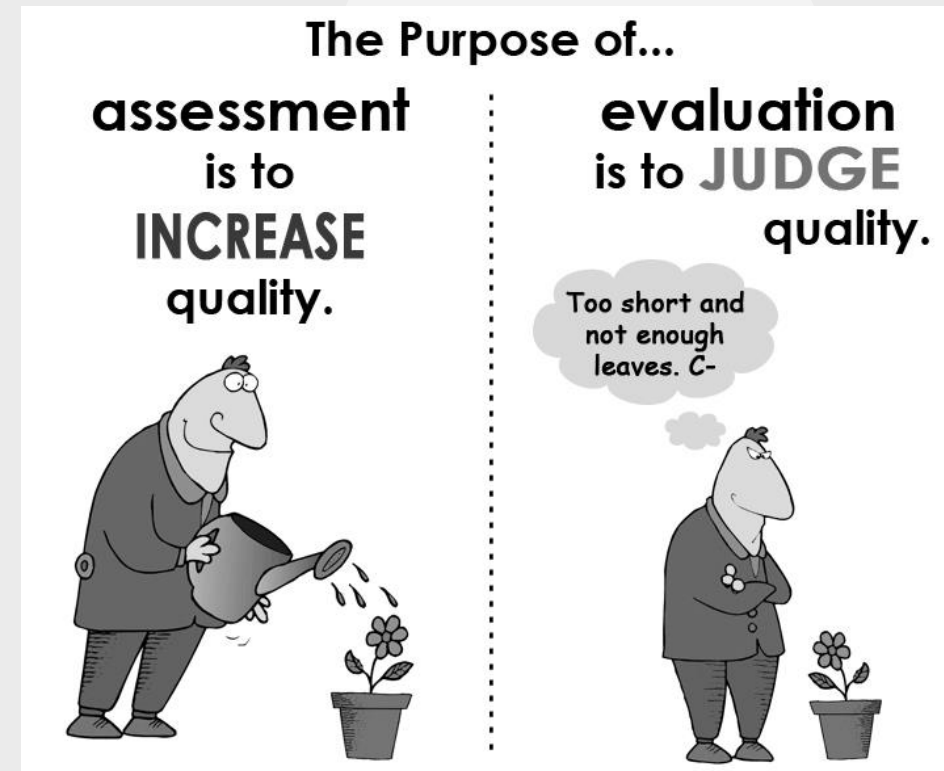
# Types of Evaluation

**1. Process Evaluation:** If specific **program strategies** were implemented as planned. E.g. Did your program meet its goals for recruitment of program participants

**2. Outcome Evaluation:** Focuses on the **changes in attitudes, behaviors, and practices** that result from programs activities. E.g. What are the short or long term results observed among (or reported by) participants?

**3. Impact Evaluation:** Focuses on **long term, sustained changes** as a result of the program activities, **both positive/negative and intended/unintended**. E.g. What changes in your program brought to participants' behaviors?

# Comparison Between M&E

| Item | Monitoring | Evaluation |
|---|---|---|
| **Frequency** | Regular, ongoing | Episodic |
| **Main action** | Keeping track/oversight | Assessment |
| **Basic purpose** | Improving efficiency Adjusting work plan | Improve effectiveness, impact, future programming |
| **Focus** | Inputs/outputs, process outcomes, work plans | Effectiveness, relevance, efficiency, impact, sustainability |
| **Information sources** | Routine systems, field visits, stakeholder meetings, output reports, rapid assessments | Same plus Surveys (pre-post project) Special studies |
| **Undertaken by** | Project/program managers Community workers Supervisors Community (beneficiaries) Funders Other Stakeholders | External evaluators Community (beneficiaries) Project/program managers Supervisors Funders |

# Methods: How to Carry Out M&E?

- Both monitoring and evaluation **must be planned at the program/ project level**

- **Develop program framework** and then analyze and systematically lay out program elements

- **Identify key elements** to monitor and evaluate

- **Determine and describe the measures** to be used for monitoring and evaluation

- **Develop M&E Framework and action plans**, including data collection and analysis, reporting and dissemination of findings
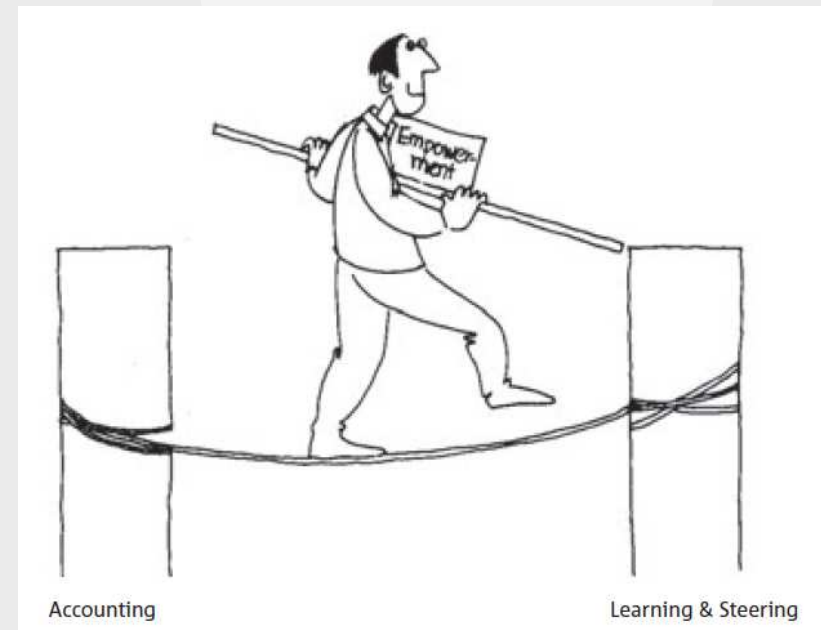
# Key Points to Remember

The main purpose of the monitoring system is to **"ensure the empowerment of all stakeholders"**

In order to **create awareness and avoid wasting resources**, monitoring needs to rest on **two pillars**:

- **"Accounting"** and even more importantly
- **"Learning** and **Steering"**.



Accounting                    Learning & Steering

# Stakeholders Engagement

- **Participatory monitoring**

- **Share their findings and reflection**

**Each stakeholder has his / her**

- ✓ own **background**,

- ✓ **reality** and

- ✓ **knowledge** (symbolized by the three circles in the drawing)

**Monitoring results will be richer and more accurate**

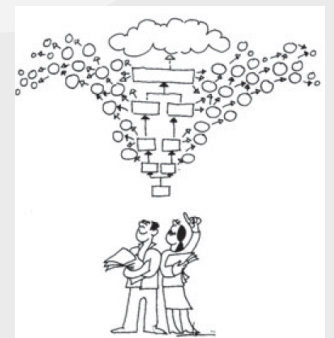# Areas to be Monitored

**Three (3) essential areas** can be selected, but based on objective:

- the **strategic interests** (From the Goals to the Activities)

- the **operational interests** (From the Activities to the Impacts)

- the **empowerment interests** (From Expectations and Concerns to the Impacts)- perceptions of people

    **Avoid monitoring too many objectives and indicators!**

# Indicators and Questions…Cont'd

**An indicator** is a verifiable sign to describe or measure a phenomenon that is not easy to verify.

- **Select indicators** for each domain (E.g. Goal)

- **Set quality criteria** for reporting and for analyzing data

- At least **one quantitative** indicator and **one qualitative indicator**

**Making sure that the indicator corresponds to one level of the results chain**

# Indicators and Questions…Cont'd

**Fixed elements of the indicator:**

| ... which *parameter?* | The percentage of women who have property registered under their name; |
|---|---|
| ... for which *subjects of change?* | ... all women that have participated in the savings and credit programme ... |
| ... in which *region?* | ... in the province of M. ... |

**Changing elements of the indicator:**

| ... *at what moment?* | ... *which value?* |
|---|---|
| December 2011 | 5 % (before the beginning of the project) |
| December 2012 | 7 % |
| December 2014 | 20 % (at the end of the project phase = objective of the phase) |

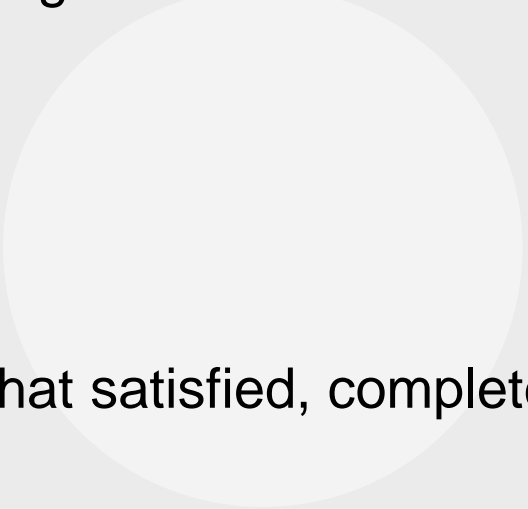# Indicators and Questions…Cont'd

| Quantitative indicators measure | Qualitative indicators measure |
|---|---|
| Concrete or tangible objects | Judgments or perceptions |
| • Number of… | • Quality of… |
| • Frequency of… | • Level of… |
| • Ratio (%) of… | • Satisfaction with… |

**All indicators that describe changes for individuals should differentiate the "subjects of change" by gender**

# Indicators and Questions

There are four (4) ways / forms of measuring or describing values of indicators.

1. **Counting:** number of participants

2. **Classification:** exam passed? Yes or no

3. **Rating:** degree of satisfaction: not satisfied, somewhat satisfied, completely satisfied

4. **Qualitative Description:** a short story how participants are helping each other to learn

# Information and Data Analysis…Cont'd

**Key considerations:**

- How to **collect** data and by whom. How often?

- How to **check** the quality?

- How to **document** the monitoring information?

- How to **analyze** the monitoring information?

# Information and Data Analysis…Cont'd

Methods of data collection

| | |
|---|---|
| Primary Stakeholders | • Direct observation<br>• Group discussions<br>• PRA tools such as social mapping, seasonal calendar, time line<br>• NGO-IDEAs methods and tools such as SAGE and PAG<br>• … |
| NGOs | • Participatory observation<br>• Surveys<br>• Focus group discussions<br>• Semi-structured interviews<br>• PRA tools: e.g. social mapping, Venn diagram, seasonal calendar, time line, transects, participatory wellbeing ranking<br>• MAPP Analysis with life line, trend analysis, activity list, influence matrix<br>• Further "Tiny Tools"<br>• Collection of secondary data<br>• External evaluations<br>• … |

Data collection is a tremendous effort. It requires observation and listening skills and may take a lot of time.

# Information and Data Analysis…Cont'd

## Documenting information

| Primary Stakeholders | NGOs |
|---|---|
| • Diaries | • Reporting forms |
| • Minutes of Discussions or Meetings | • Case Studies |
| • Posters | • Registers/files |
| • Tables | • Photos/videos |
| • Pictures | • Posters |
| • … | • EXCEL Tables |
| | • Databases |
| | • … |

## Quality Check: Data triangulation



beginning — mid-term — women — men — end of a project — children

## Findings visualization

# Information and Data Analysis

- Now, we have all the monitoring data (aggregated and disaggregated) in hand. **Then what?**

- They do not make much sense unless we have a reference to compare them with. **But with what?**

- ✓ **Before and After Comparison Method** (If Baseline data available), otherwise "**Treatment vs Control**" **Method**

| Goals/Indicators | 2010 (baseline) | 2011 (actual) | Difference |
|---|---|---|---|
| We have sufficient income to provide healthy food to all household members. | 0 | 50 | 50 |
| We have a small kitchen garden close to the house. | 0 | 20 | 20 |
| We send all the children (boys and girls) in school age to school. | 30 | 80 | 50 |
| We avoid violence, also in the domestic area. | 5 | 30 | 25 |
| We actively participate in the community activities. | 30 | 40 | 10 |

# Reporting

Reporting has to go in at **least three (3) directions**:

- within the **organization**

- to the **primary stakeholders** and
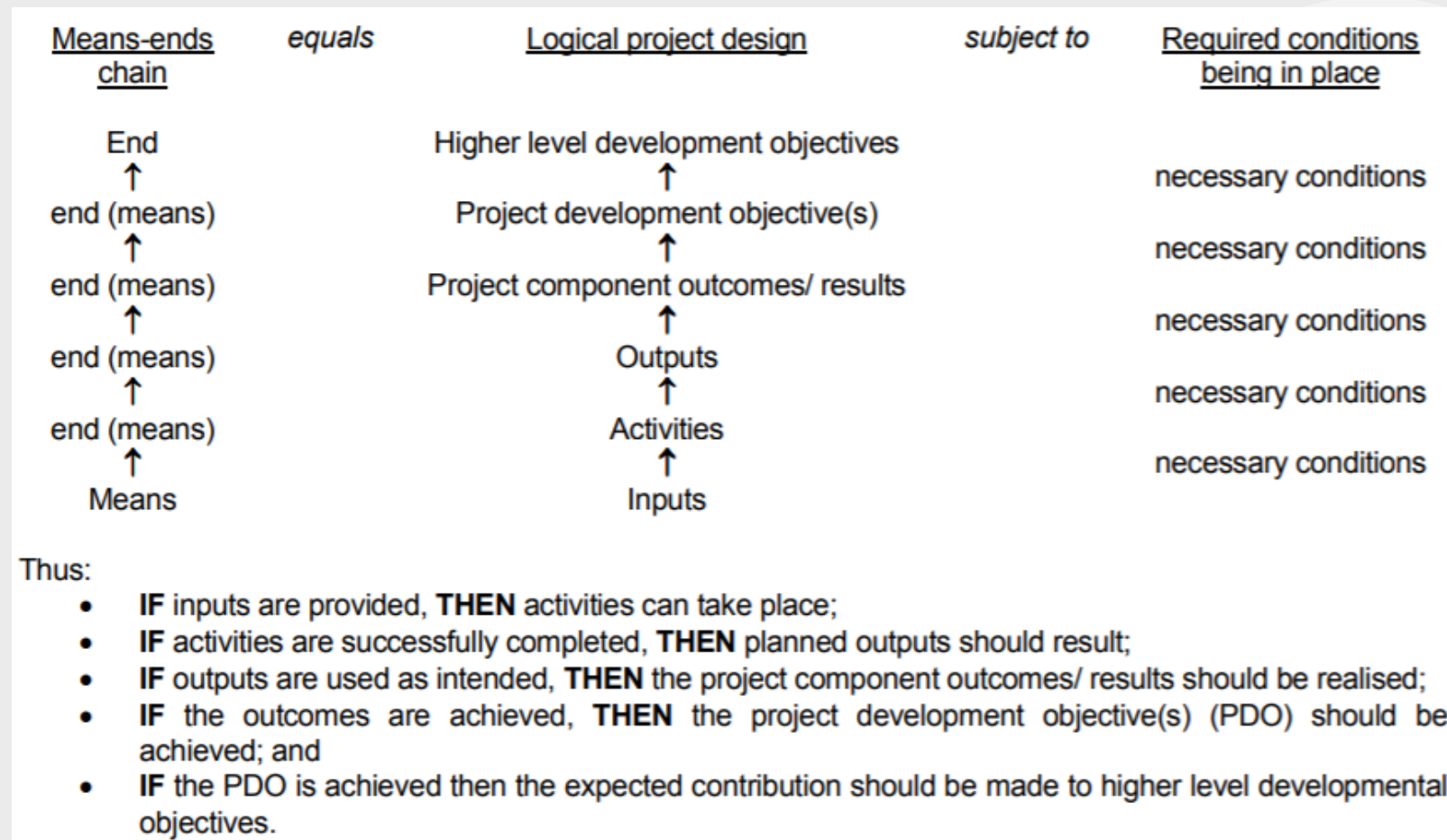
- to the **funding agency**

**Traffic light model**
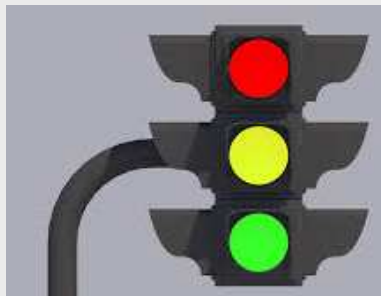


**Red:** The values are clearly outside of the expected margins

**Amber:** The values are slightly outside of the expected margins
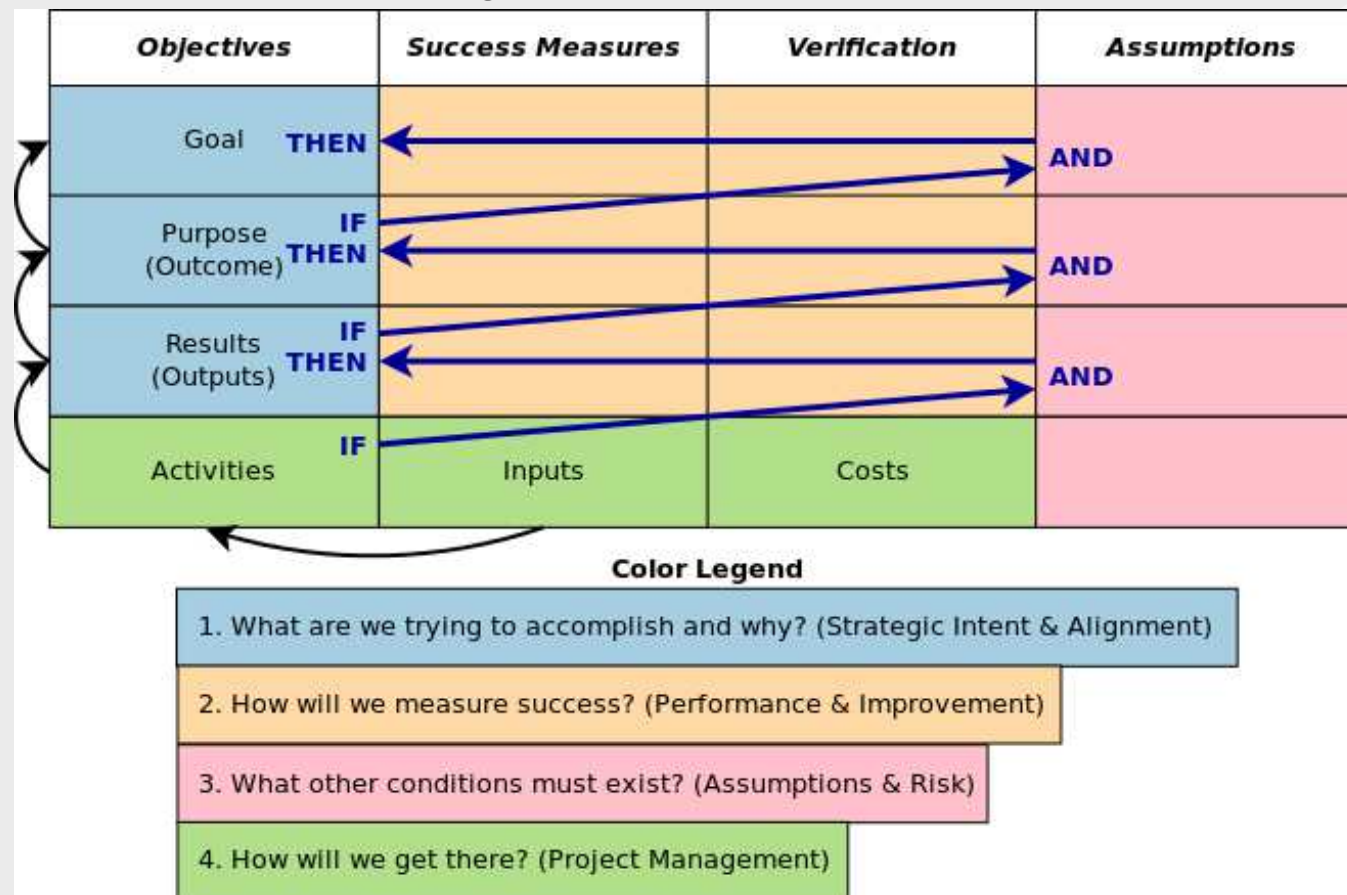
**Green:** The values are within the expected margins
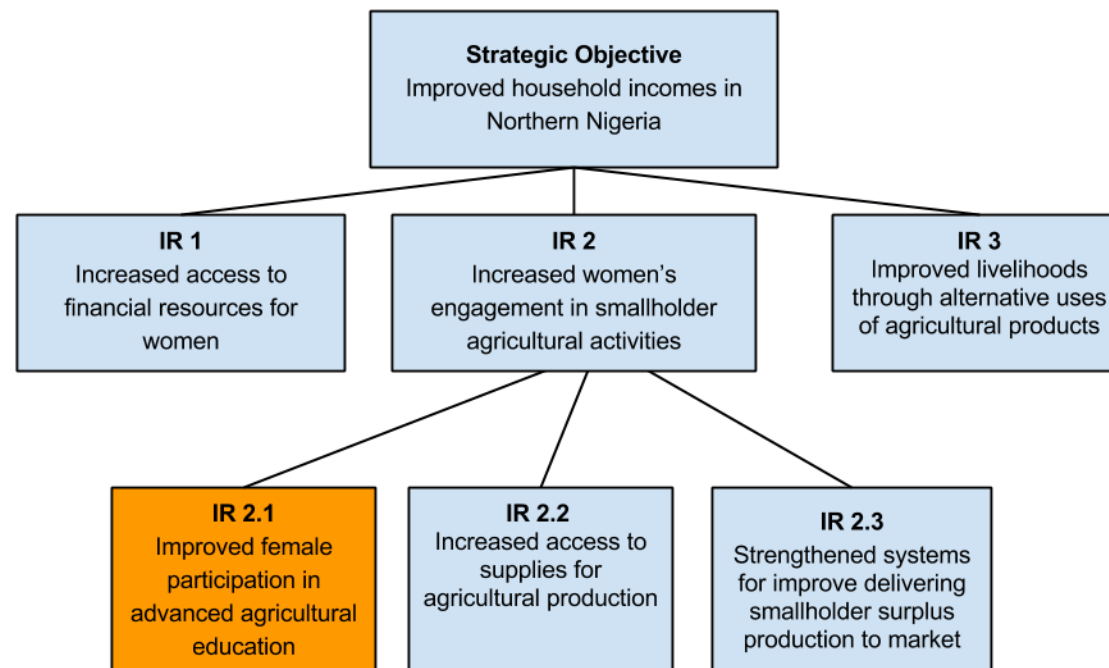
# Tools and Application

Logical Project Design

| Means-ends chain | equals | Logical project design | subject to | Required conditions being in place |
|---|---|---|---|---|
| End | | Higher level development objectives | | |
| ↑ | | ↑ | | necessary conditions |
| end (means) | | Project development objective(s) | | |
| ↑ | | ↑ | | necessary conditions |
| end (means) | | Project component outcomes/ results | | |
| ↑ | | ↑ | | necessary conditions |
| end (means) | | Outputs | | |
| ↑ | | ↑ | | necessary conditions |
| end (means) | | Activities | | |
| ↑ | | ↑ | | necessary conditions |
| Means | | Inputs | | |

Thus:

- **IF** inputs are provided, **THEN** activities can take place;
- **IF** activities are successfully completed, **THEN** planned outputs should result;
- **IF** outputs are used as intended, **THEN** the project component outcomes/ results should be realised;
- **IF** the outcomes are achieved, **THEN** the project development objective(s) (PDO) should be achieved; and
- **IF** the PDO is achieved then the expected contribution should be made to higher level developmental objectives.

# Tools and Application

Logical Framework/ Log Frame

# Tools and Application

Result Based Framework

# Tools and Application

Monitoring Work Plan Matrix

| Indicator | Means of Verification | | | | Use of Information | | |
|---|---|---|---|---|---|---|---|
| | Data Source | Frequency of collec-tion | Collection Method | Kind of documen-tation | Kind of analysis | Reporting how/when/ to whom | Respon-sible Person |
| | | | | | | | |

# Tools and Application

Performance Measurement Framework

| Goals | Indicators | Target | Data Collection Method | Frequency | Responsibility |
|-------|-----------|--------|------------------------|-----------|----------------|
| Goal 1 | Indicator 1.1 | | | | |
| | Indicator 1.2 | | | | |
| | Indicator 1.3 | | | | |
| Goal 2 | Indicator 2.1 | | | | |
| | Indicator 2.2 | | | | |
| | Indicator 2.3 | | | | |
| | Indicator 2.4 | | | | |
| | Indicator 2.5 | | | | |

# Tools and Application

Result Chain Approach
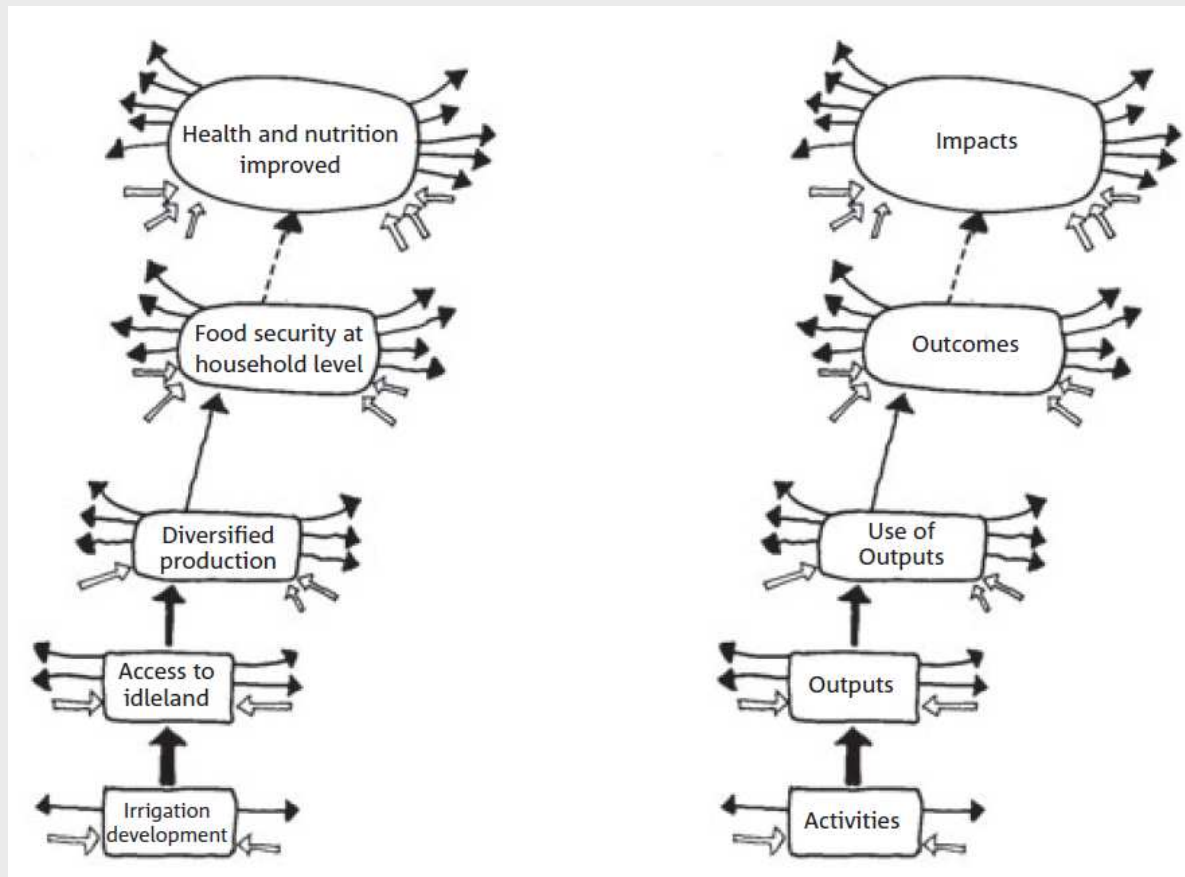
# Data Analysis Software Packages

You can **download the software** from the link below:

- IBM SPSS: www.ibm.com/products/spss-statistics

- STATA: www.stata.com

- R Studio: www.rstudio.com

**For Quantitative Analysis**

- Nvivo and Xsight: www.qsrinternational.com

- Atlas ti: www.atlasti.com

- C-I-Said: www.code-a-text.co.uk

**For Qualitative Analysis**

# Keywords Research for References

**Google It!!**

- ✓ Monitoring and Evaluation
- ✓ Practical Guide of M&E
- ✓ Project Management
- ✓ Research Methodology
- ✓ Field M&E Guideline
- ✓ ABC of M&E
- ✓ M&E Bibliography
- ✓ M&E Tools, Plan, Applications



Listen    Learn    Adapt

**Key to Success!!**

**Thank You All**