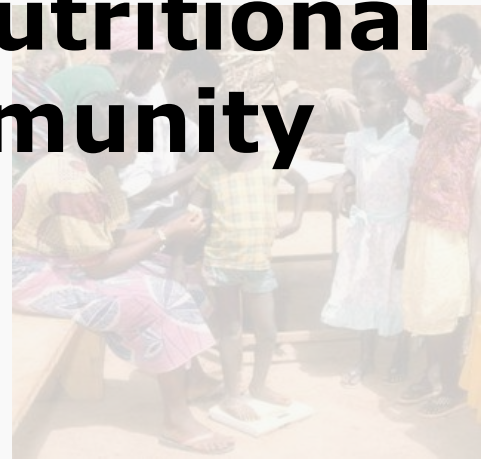# Assessment of the Nutritional Status of the Community

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Introduction

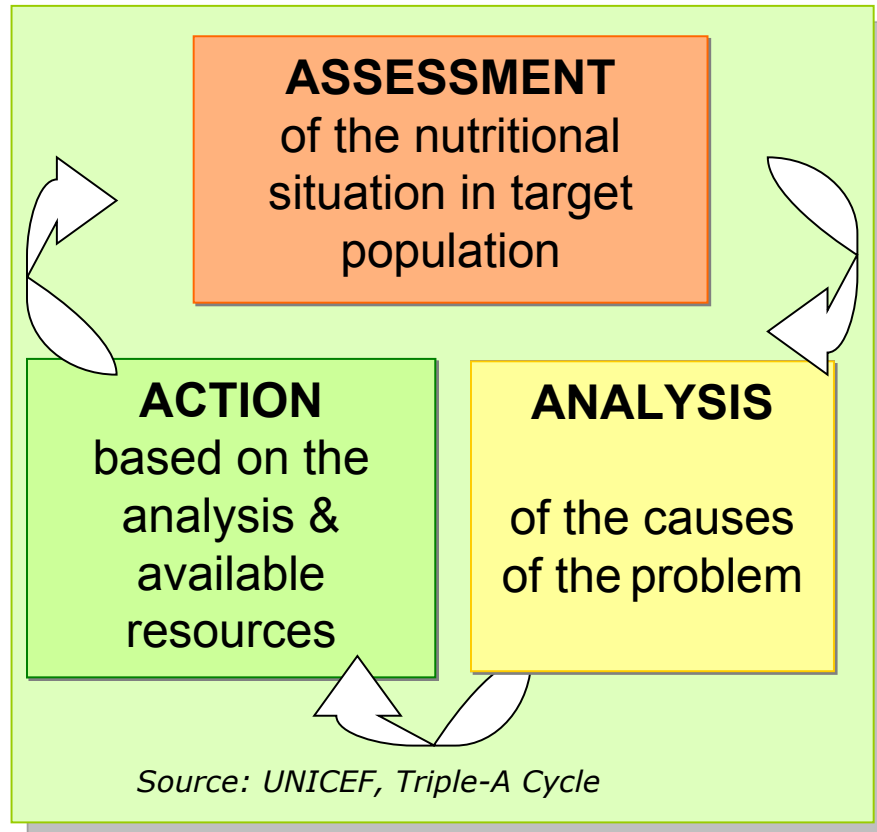Identifying nutritional problems of a population in a clear and measurable way will help to:

Define needs, opportunities and constraints, and prioritize solutions.

Evaluate programme impact and improve efficiency.

Influence decision making in strategic planning, policy formulation and resource allocation.

Raise community awareness and participation to maximize long-term impact.

Introduction

ASSESSMENT of the nutritional situation in target population

ACTION based on the analysis & available resources

ANALYSIS of the causes of the problem

Source: UNICEF, Triple-A Cycle

To define the nutritional problem of the targeted population, it is necessary to **measure** its **nutritional status.**

Nutritional status assessments enable to determine whether the individual is well-nourished or undernourished.

People can have an <u>optimal nutritional status</u> or they can be <u>under-, over- and/or malnourished</u>.
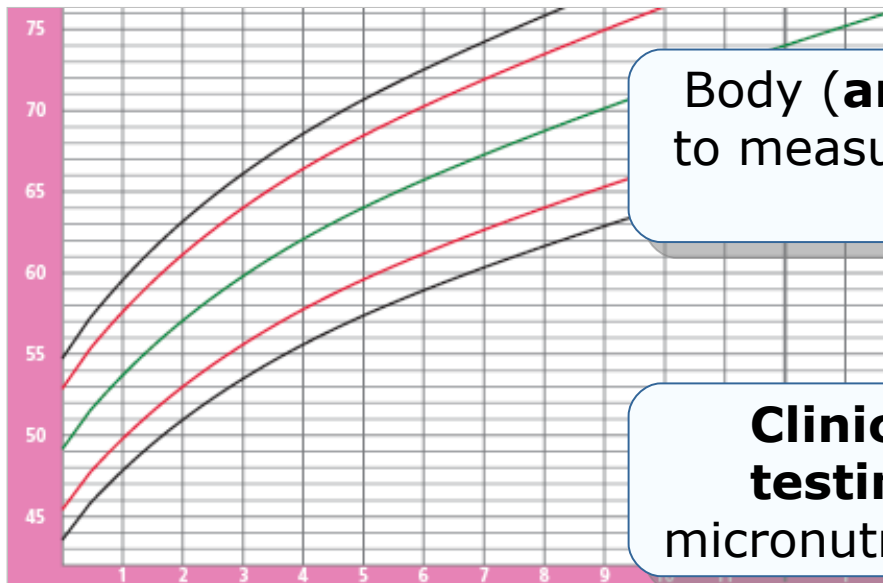

Morbid Obesity (Over-nourished)

Severe underweight (Under-nourished)

Healthy baby (Optimal nutritional status)

Assessing Nutritional Status

Nutritional status can be assessed through:

Body (**anthropometric**) measurements, used to measure growth in children and body weight changes in adults.

Clinical examination and **biochemical testing**, used to diagnose deficiencies of micronutrients (e.g. iodine, vitamin A and iron).

Anthropometry

> **Anthropometry** is the most frequently used method to assess nutritional status.

- It is precise and accurate;

- It uses standardized technique;

- It is suitable for large sample sizes, such as representative population samples;

- It does not require expensive equipment, and skills can be learnt quickly.
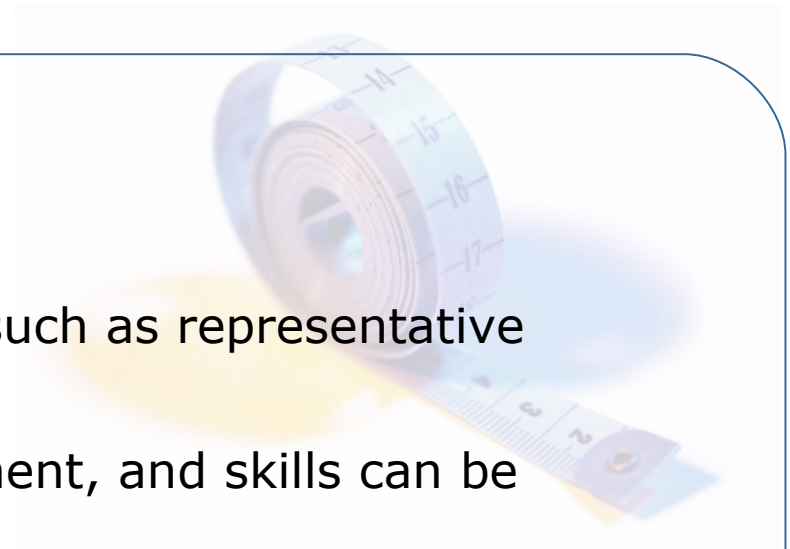
Other anthropometric Measurements

- Mid-arm circumference
- Skin fold thickness
- Head circumference
- Head/chest ratio
- Hip/waist ratio

Ratio = $\dfrac{Waist}{Hips}$

Measure hips at widest point
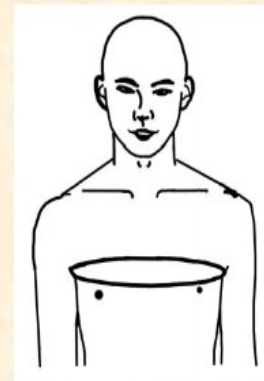
Nutritional Indices in Adults

- The international standard for assessing body size in adults is the body mass index (BMI).

- BMI is computed using the following formula: BMI = Weight (kg)/ Height (m²)

- Evidence shows that high BMI (obesity level) is associated with type 2 diabetes & high risk of cardiovascular morbidity & mortality

Interpretation of BMI for adults

For adults 20 years old and older, BMI is interpreted using standard weight status categories that are the same for all ages, and for both men and women.

BMI	Weight Status
Below 18.5	Underweight
18.5 – 24.9	Normal
25.0 – 29.9	Overweight
30.0 and Above	Obese
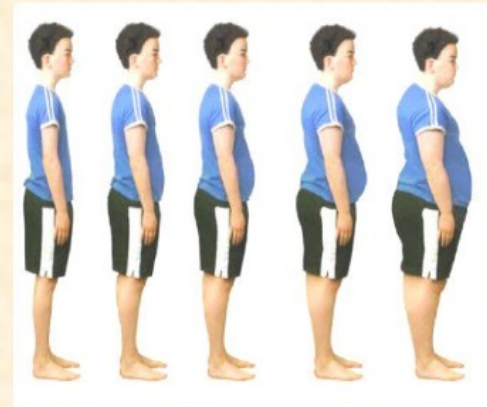
Anthropometry

Two major **sources of anthropometric information** are:

Demographic and Health Surveys (DHS)

Multiple Indicator Cluster Survey (MICS)

Four main **data collection methodologies**
that provide anthropometric information are :

Repeated Surveys

Growth Monitoring

Sentinel Site Surveillance

School Census Data
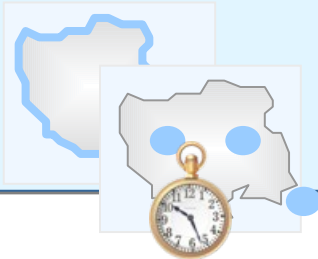
Assessing Nutritional Status

Anthropometry

REPEATED SURVEYS

Repeated surveys are **population-based** surveys.

They analyze a representative sample of the population, and assess:
- type,
- severity, and
- extent of malnutrition (and often its causes).

They include:
- **national surveys**, and
- **small-scale surveys**.

On page 5 and 6 of the Learner Notes you may find a table describing the features of repeated surveys, and a relevant case study.

Anthropometry

Growth monitoring is the continuous monitoring of growth in children.

It can be performed at the **individual** level, or at a **group** level. It can also be:

clinic-based growth monitoring
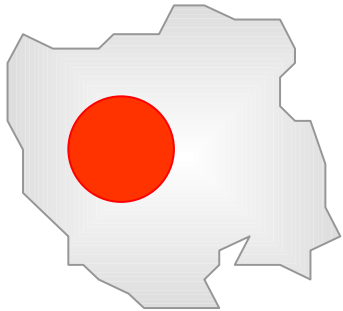(conducted by health professionals at Maternal and Child Health clinics), or

community-based growth monitoring
(conducted by trained members of the community in villages)

On page 7 and 8 of the Learner Notes you may find a table describing the features of growth monitoring, and two relevant case studies.

Anthropometry

Sentinel site surveillance involves surveillance in a limited number of sites, to detect trends in the overall well-being of the population.

The sites may be specific population groups or villages that cover **populations at risk**.
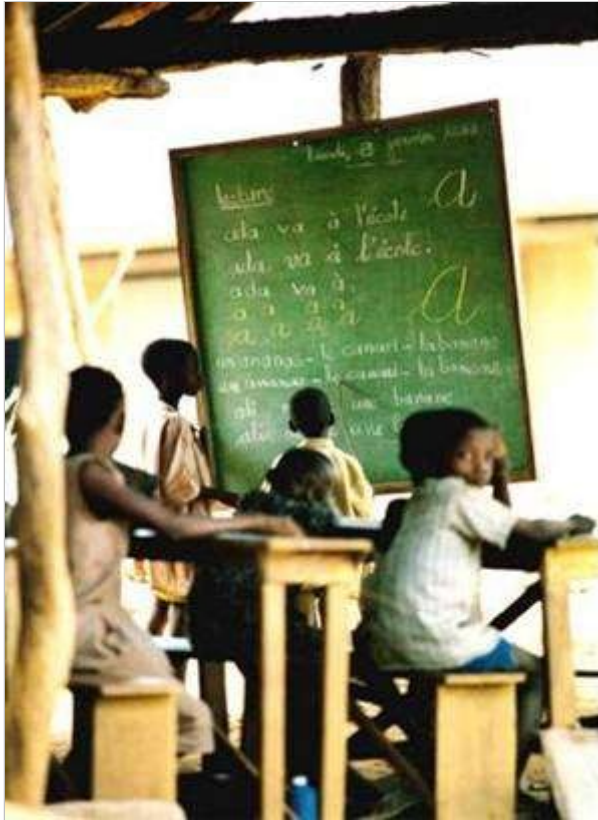
It can be:
- **centrally-based sentinel site surveillance**, or
- **community-based sentinel site surveillance**.

On page 9 of the Learner Notes you may find a table describing the features of sentinel site surveillance.

Anthropometry

School census data relates to nutritional assessment **occasionally undertaken in schools**.

The objective is to **identify high-risk children** with poor health, malnutrition and low socio-economic status.

On page 10 of the Learner Notes you may find a table describing the features of school census data.
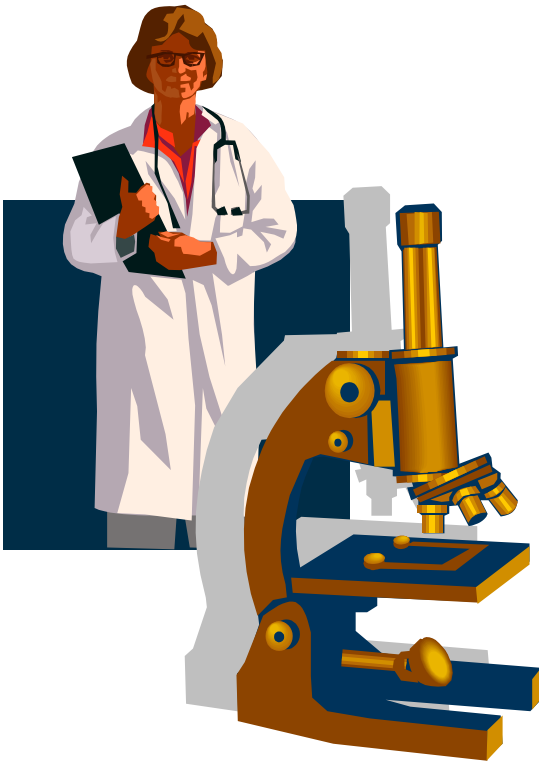
Clinical examination and biochemical testing

Biochemical testing and clinical examination can contribute to diagnosing **micronutrient deficiencies**.

The most common deficiencies are:
- Iodine,
- vitamin A, and
- iron

During emergencies:
- scurvy,
- beri-beri (vitamin B 1 deficiency), and
- pellagra (vitamin B 3 deficiency).

Selecting Nutrition Information Sources

Which type of information source should be used?

Primary objectives should largely determine the source.

Example:
If the primary objective is to support households in prevention and treatment of malnutrition, then the **appropriate source** may be **growth monitoring.**

In case of multiple objectives, prioritising them will help decide which kind of system is most appropriate.

Selecting Nutrition Information Sources

When deciding which type of information source should be used, one must match **costs with resource availability**.

Before undertaking any survey, consider:

- are there any existing data?
- national surveys are very expensive and time-consuming compared to community

   based systems: is it necessary to look for donor funding?
- is there a need to sustain a system over a period of time?

Selecting Nutrition Information Sources

Other key factors to consider are:

Response capacity at different levels (household, community, district, national and international).

Environmental factors, such as security, geographical terrain and infrastructure.

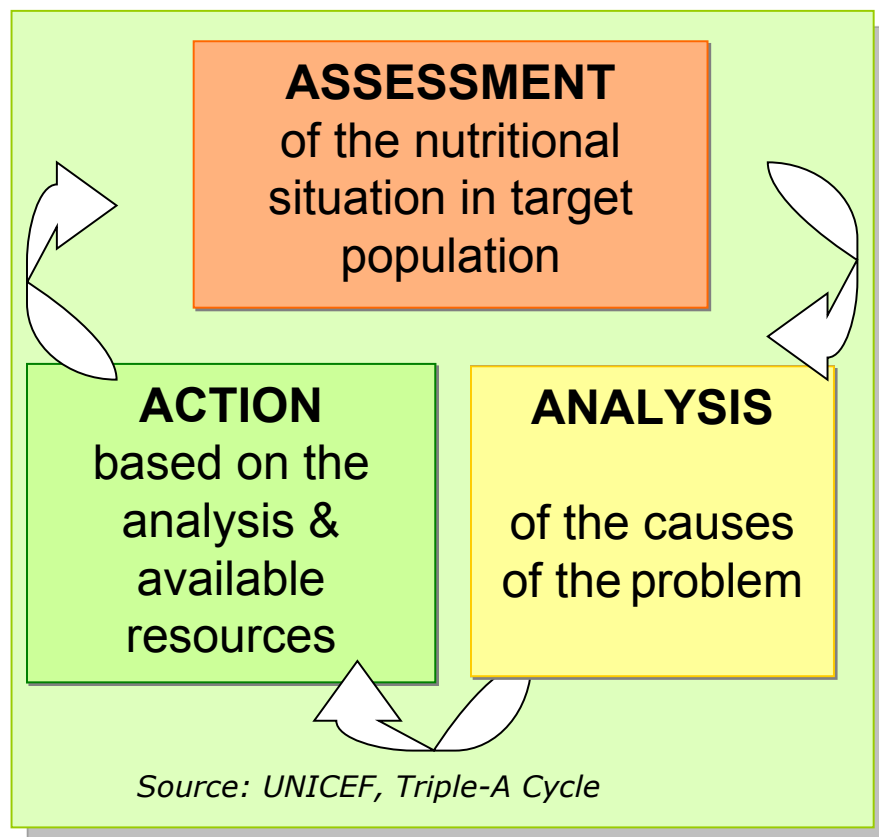**Seasonality** of malnutrition in most developing countries.

Emergency versus non-emergency contexts.

Organizational mandate and implementation capacity.

Analysing Underlying Causes

ASSESSMENT
of the nutritional situation in target population

ACTION
based on the analysis & available resources

ANALYSIS

of the causes of the problem

*Source: UNICEF, Triple-A Cycle*

If you need to:
- identify effective responses to reduce malnutrition,
- interpret malnutrition and understand what are the underlying causes, then

Nutritional status data alone are of limited use.

Additional information about **access to food, health and care practices** is needed.

Analysing Underlying Causes

The conceptual framework developed by FAO's Food Insecurity and Vulnerability Information and Mapping Systems (FIVIMS):
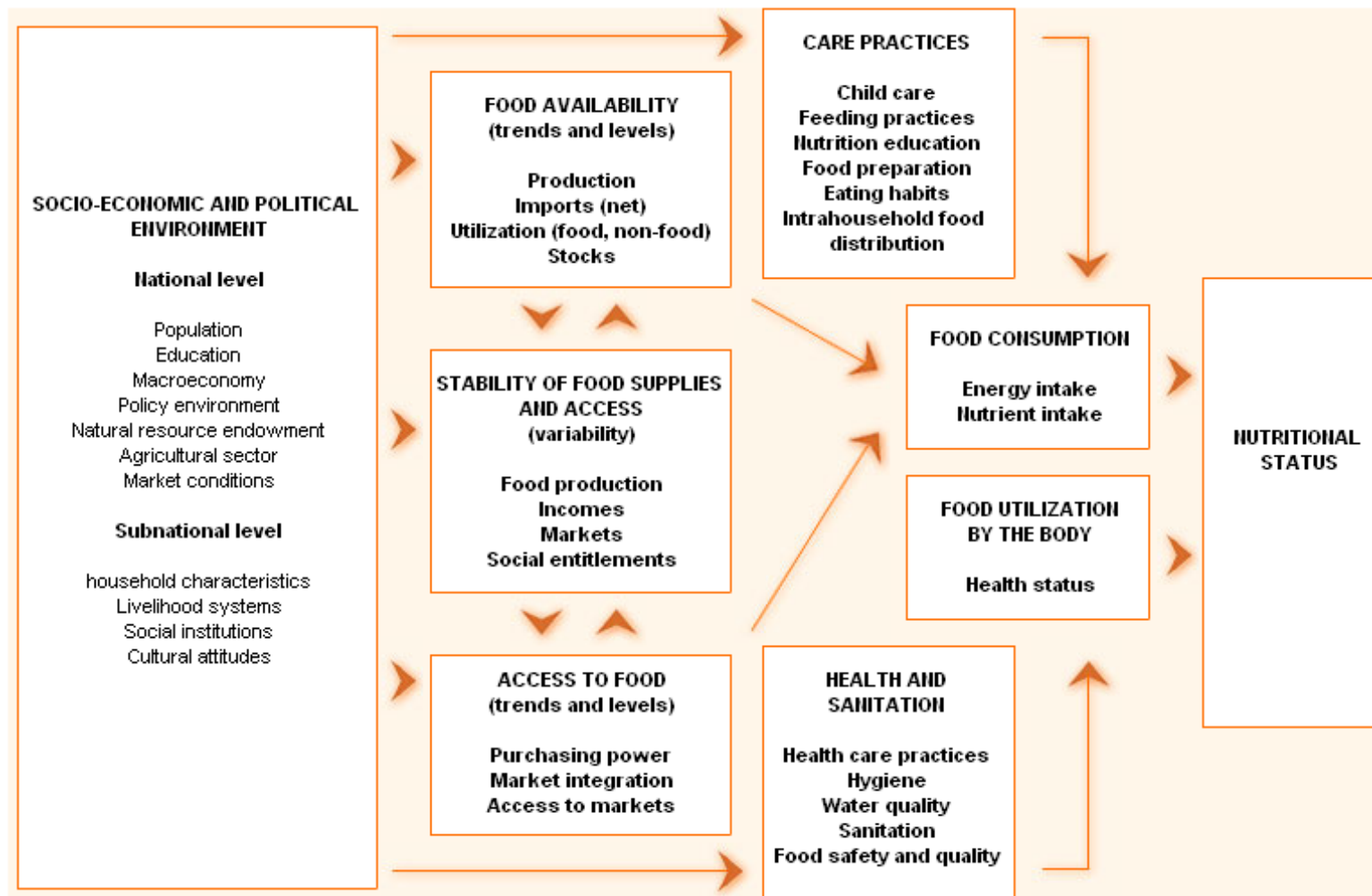
Analysing Underlying Causes

Participatory appraisal of nutrition will allow an analysis to be carried out from a **livelihoods perspective**.

This means to understand the specific causes of malnutrition in a particular livelihood.

Analysing Underlying Causes

Participatory appraisals serve to:

- understand the food and nutrition situation and raise awareness in the community;

- promote the participation of different community groups (e.g. women, poor people, young people);

- identify the problems, constraints and opportunities to adequate nutrition and the population groups most affected;

- prioritize food and nutrition problems;

- jointly plan food and nutrition activities to remedy the problems; and

- contribute to community empowerment.

Analysing Underlying Causes

In carrying out the participatory appraisal, the following points deserve particular attention:

A) Traditional **food habits and production systems** (and also health and care practices)

B) **Desired food patterns**, or what people prefer to eat and why.

C) The ways households **cope with seasonal or unexpected food and nutrition problems**

Analysing Underlying Causes

The steps in the participatory appraisal of community food and nutrition are:

1. Analyse the food and nutrition situation

2. Identify nutrition-related problems and major constraints to adequate nutrition

3. Identify vulnerable households in relation to each problem and determine those most affected

4. Prioritize food and nutrition problems

5. Summarize and agree on the outcomes of the appraisal

Assessing Nutritional Status
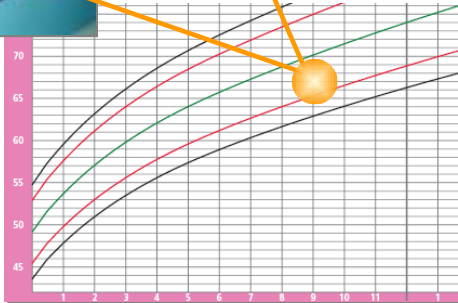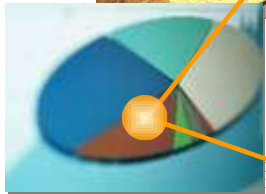
Analysing Underlying Causes

To help explain and make associations with quantitative findings (levels of malnutrition) you can use **Qualitative findings.**
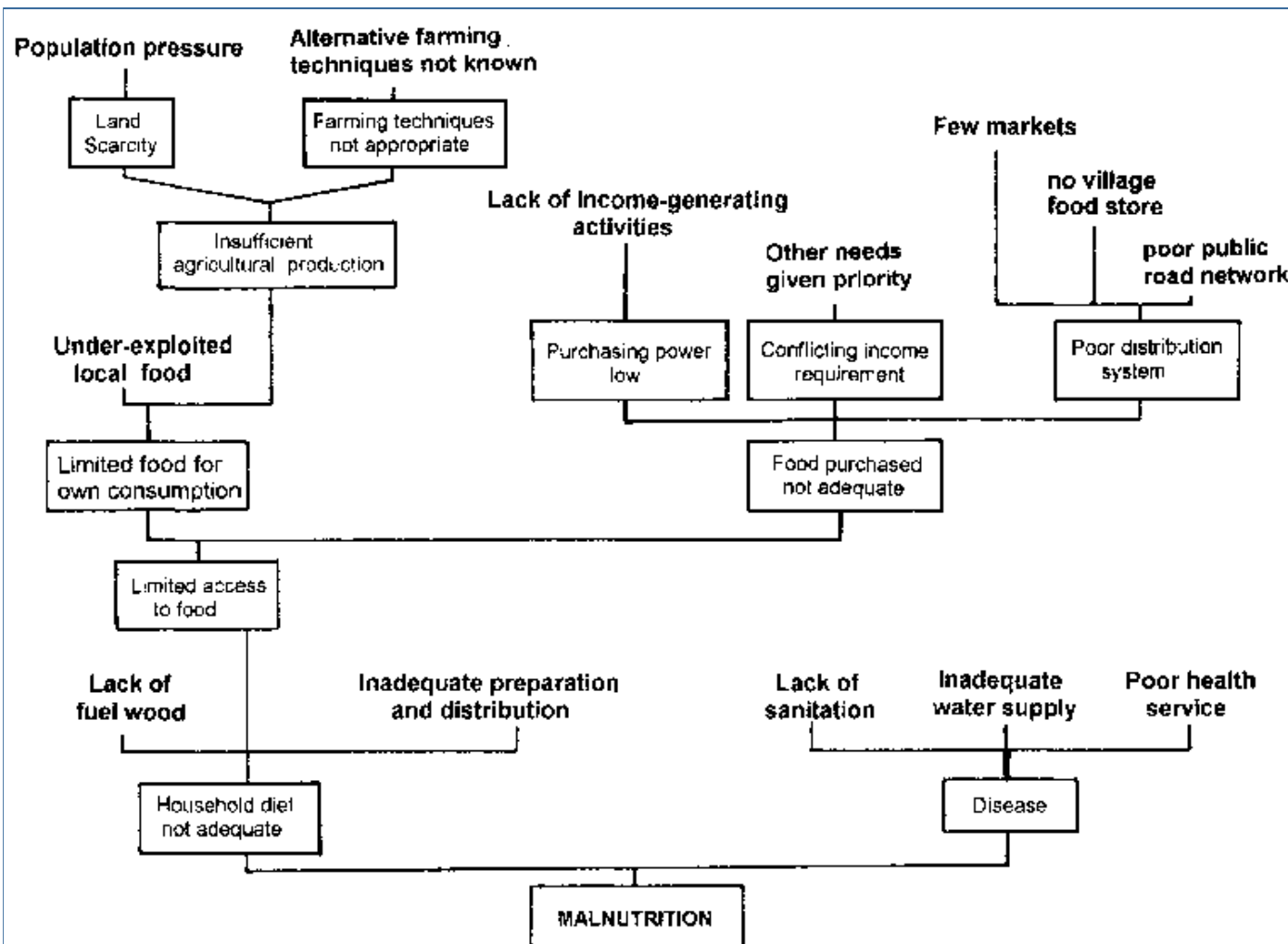
An impact diagram, or a **problem tree** can be used as a visual summary of the information.

It can point out the origins of problems, and show the causes of malnutrition.

Analysing Underlying Causes

The final challenge in analysing malnutrition is to **combine quantitative** and **qualitative findings**.

It is also useful to carry out a SWOT analysis:

• what has helped people in achieving good nutrition (strengths and opportunities)?
• what has hindered them (weaknesses and threats)?

From Analysis to Action

Case Study - Darfur in 2000

A nutritional survey was conducted in Darfur at the same time as a household economy assessment (HEA), which determines the food gap of households.

The HEA predicted that there would be a food deficit in the future, based on:
- poor cereal production,
- high grain prices, and
- low groundnut prices.

The nutritional survey showed:
- a current high rate of global acute malnutrition (GAM),
- signs of vitamin A deficiency, and
- a recent measles epidemic.

What does this information suggest?

◄ ►

From Analysis to Action
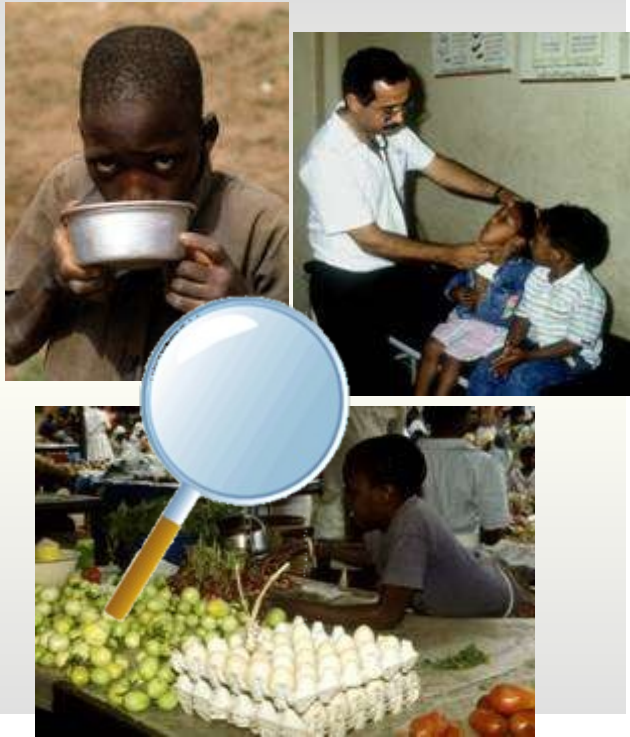
It is important to carry out an **integrated analysis** that combines nutrition data with other kinds of information.

Relying simply on measurements of nutritional status can be misleading, and may lead to inappropriate responses.

From Analysis to Action

Two examples of analyses that integrate multi-sectoral information into assessment are:

Nutrition Country Profiles - NCPs
They provide:
- a thorough analysis of the food and nutrition situation in countries,
- background statistics on food-related factors such as agricultural production, as well as
- selected health, demographic, education and economic indicators.

Nutrition Information in Crisis Situations (NICS) reports

The NICS classification defines **five levels** of nutritional risk.
(e.g. Populations in category I are critical; populations in category IV are not at an elevated nutritional risk).

The prevalence/risk is indirectly affected by both:
- underlying causes of malnutrition, relating to food, health and care,and
- the constraints limiting humanitarian response.

From Analysis to Action

ASSESSMENT
of the nutritional
situation in target
population

ACTION
based on the
analysis &
available
resources

ANALYSIS

of the causes
of the problem

Source: UNICEF, Triple-A Cycle

If there are measured or
assessed problems in terms of:

- disease patterns/outbreaks,
- poor water and sanitation conditions, or
- inappropriate caring practices,

then this would argue for:

multi-sectoral intervention
(e.g. school gardening)

From Analysis to Action

Example: Nutritional profile of an Ethiopian highland community

• In the rural highlands of Ethiopia, subsistence farmers have less than a half-hectare of land on which to grow crops. In a good year, teff production (the local staple) will last an average family for five months. After that families are forced to sell small livestock, with men migrating for seasonal work.

• Water sources have been gradually diminishing due to a combination of poor rainfall years and population and livestock pressures, so that women are spending an increasing number of hours each day collecting water.

• The number of cases of underweight children seen at Mother and Child Health (MCH) centres has two peaks:
one is before the main Belg harvest, and the other coincides with the rainy season as levels of malaria and diarrhoea increase.

• Nutritional survey work has shown that levels of malnutrition are highest amongst the 12- to 24- month age group and that infant feeding practices (early introduction of solid foods) are contributing to their high levels of malnutrition.

What kind of intervention is needed?

From Analysis to Action

Case Study - Afghan refugees in Pakistan 1985-6

Levels of malnutrition in a number of refugee camps were alarmingly high, despite large amounts of food aid going into the camps.
Because of over-registration by refugees, too much food was being allocated in the camps.
High levels of malnutrition were therefore being attributed to faulty food distribution systems.

A nutritional assessment by UNHCR also collected information on water quality, levels of diarrhoea and use of breast milk substitutes.
The findings were that:
- levels of diarrhoea were of 60 percent,
- breast milk substitutes were being over-used, and
- the products were being used with contaminated water supplies.

These findings confirmed that the nutritional problems were mainly related to infant feeding practices, hygiene and sanitation and that food rations were not the issue.

What conclusions can be drawn from this case study?

Summary

• Nutritional status assessments enables to determine whether a population group is well-nourished or undernourished by using anthropometric measurements, biochemical testing or by identifying physiological signs.

• The main data collection methodologies that provide anthropometric information are: poplulation-based surveys, growth monitoring, and sentinel site and school census data.

• Additional information on factors such as food security, livelihoods, and health and care practices is usually necessary to interpret nutritional status data and determine the likely causes of malnutrition.

• Information on nutritional status, combined with the analysis of underlying causes, will provide the understanding needed to select the appropriate intervention.

• Experience shows that multi-sectoral interventions have a better chance of improving the nutritional status of the population.