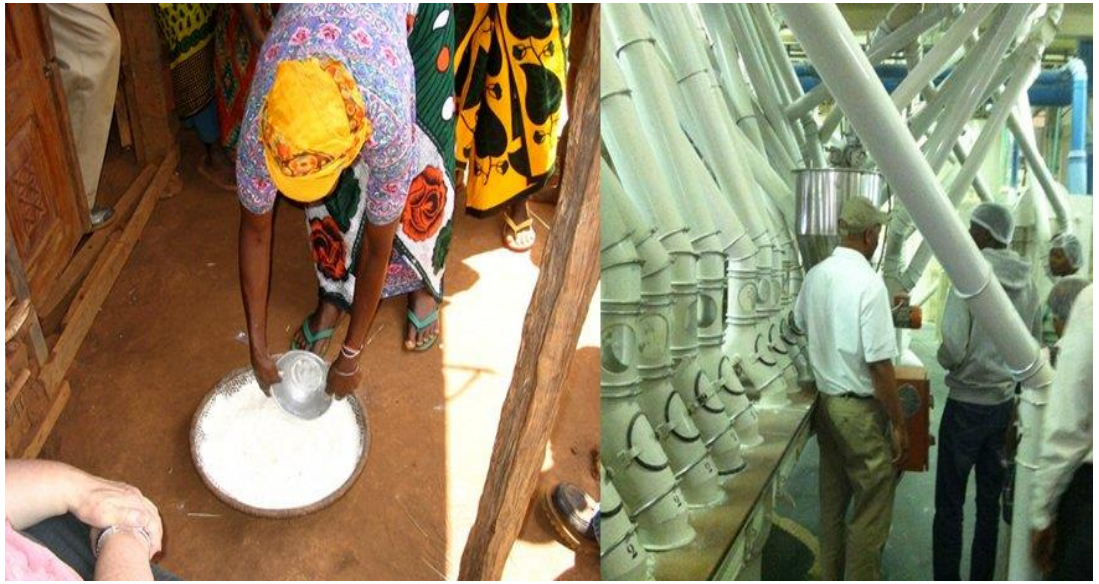
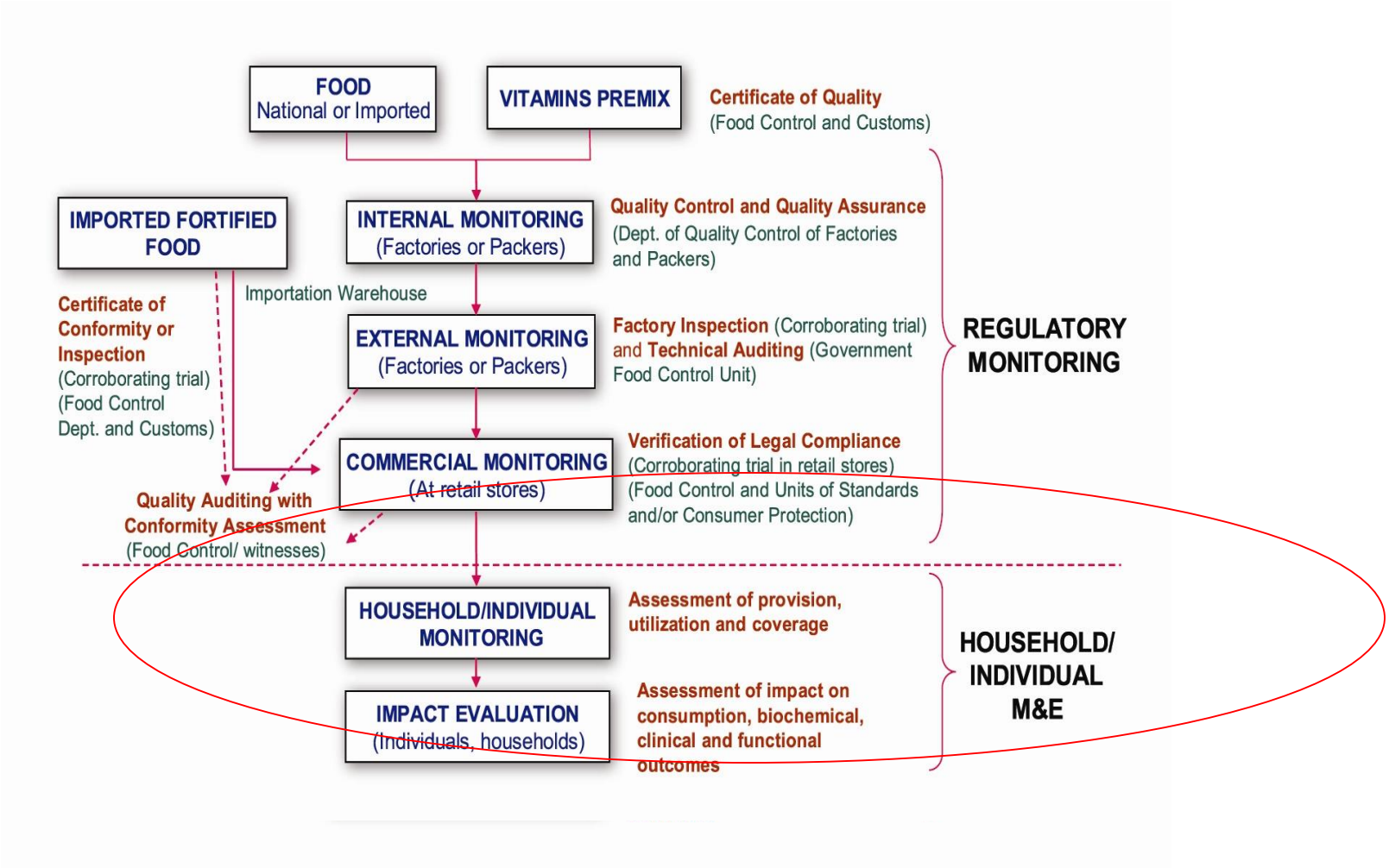
Monitoring, surveillance and evaluation of a food fortification program

by Anna Verster
with thanks to Ibrahim Parvanta



POPULATION LEVEL MONITORING, SURVEILLANCE & EVALUATION "below the dotted line"



Adapted from WHO/FAO. Guidelines on food fortification with micronutrients. Geneva, Switzerland 2006

Important pre-conditions before moving “below the dotted line”

Conditions for Successful Wheat Flour Fortification

1. Sufficient and regular per capita consumption of wheat flour products by target population.
2. Industrially produced "*fortifiable*" wheat flour is widely marketed (i.e. "accessible") nationally or sub-nationally.
3. Legislation on mandatory fortification of all "*fortifiable*" wheat flour (low & high extraction) adopted and enforced.

Conditions for Successful Wheat Flour Fortification (cont.)

4. Wheat flour mills implement QA processes, and food control agency has QC and regulatory monitoring system to ensure that quality fortified flour is produced and marketed.
5. For iron nutrition, only NaFeEDTA, ferrous sulfate, ferrous fumerate or electrolytic iron are used as fortificants – not atomized or hydrogen reduced iron.
6. Public health communication strategy is implemented to promote consumer acceptance of fortified wheat flour.

What is the difference between
Flour Fortification Program
- Monitoring
- Surveillance
- Evaluation

Flour Fortification Program *Monitoring*

- The ongoing and systematic collection and analysis of *data* and interpretation and use of the resulting *trend information* on *program inputs*, implemented *activities*, and *outputs* to assess how a flour fortification program is performing compared to predefined criteria.
  - QAQC or regulatory monitoring is an essential part of programme monitoring
  - tracking the quantity and sufficient population coverage of adequately fortified flour serves as *output* indicator

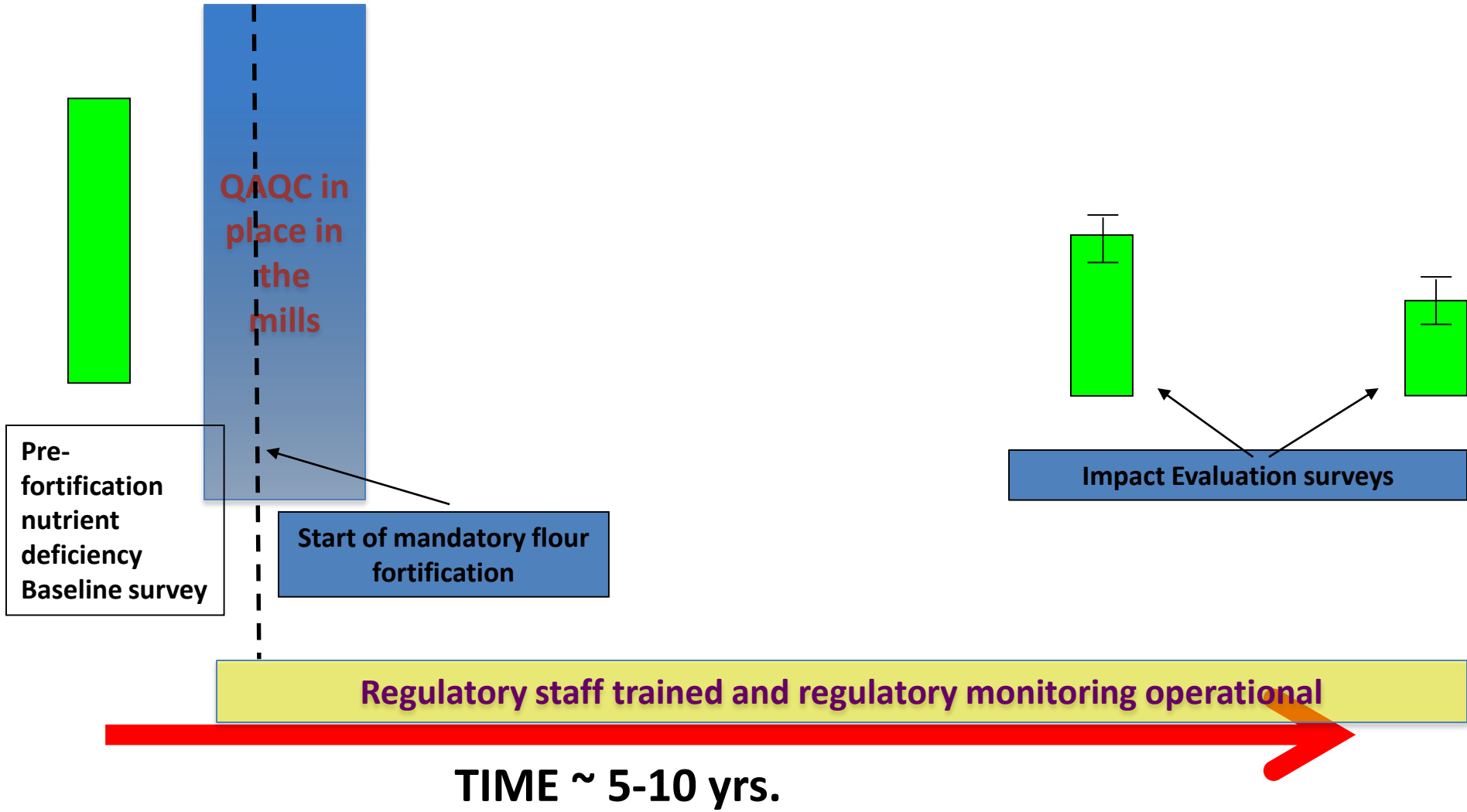
Flour Fortification *Surveillance*

- The ongoing and systematic collection, analysis, and interpretation of *data* and dissemination of the *trend information* on micronutrient and health status of a population with regular access to fortified flour, to help strengthen and sustain a flour fortification program as *impact* indicators.
  - iron and folate nutrition and NTD incidence are *impact* indicators.

Flour Fortification Programme *Evaluation*

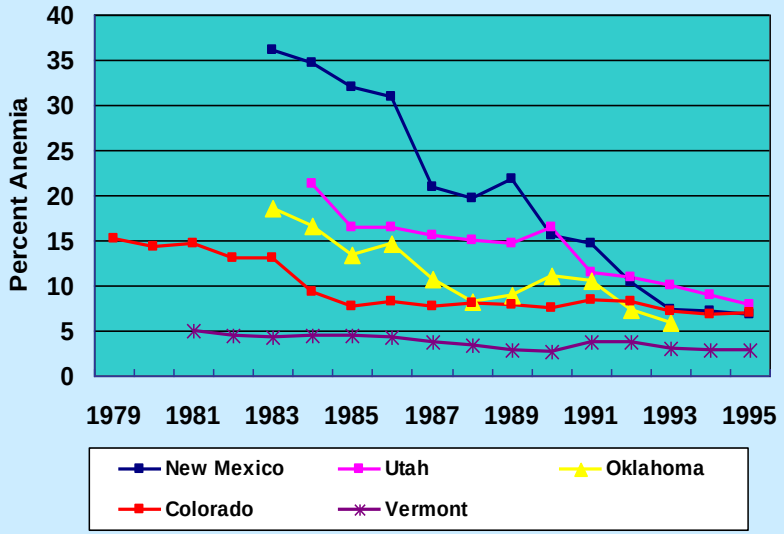
- Is the systematic collection and analysis of data and information about the activities, characteristics, and impact of the flour fortification program to assess (and improve) its effectiveness and inform decisions about its continuation or expansion.
  - *Surveillance* data and information informs program evaluation.
  - Additional data (quantitative and/or qualitative) may need to be collected; e.g. a population-based statistical survey.
  - Programme evaluations may be conducted every 5 – 10 years.

Often used M&E model for a Flour Fortification Programme



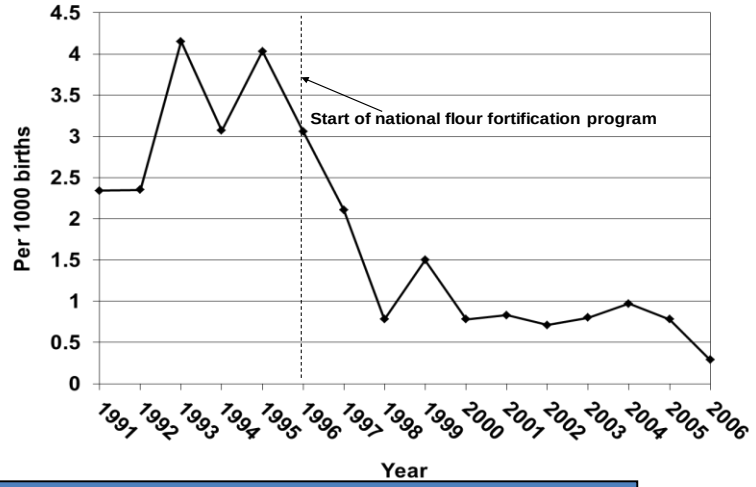
Flour fortification must be continued indefinitely to achieve maximum sustained impact on the nutritional and health status of the population

Declining trends in anemia prevalence in low-income children <5 years old in five states in the United States.



Source of data: Sherry, B. et al. Pediatrics 107:677, 2001

Trends in the incidence of spina bifida and other birth defects in Oman

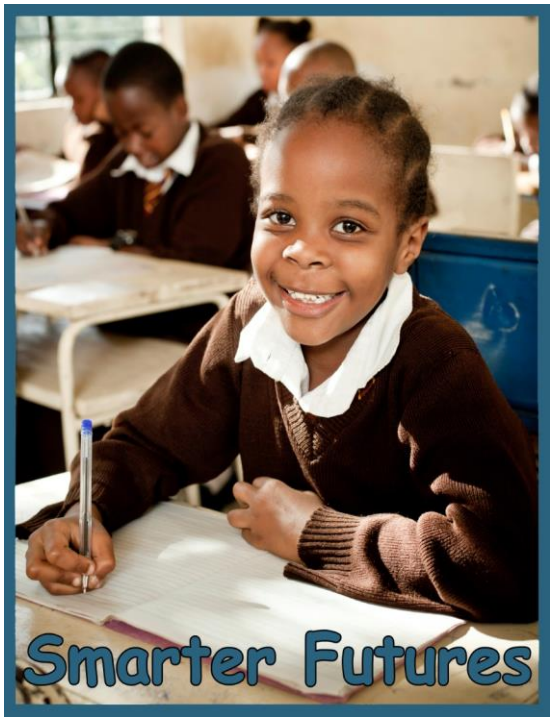


Source: Personal communication; Ms. Deena Alasfoor, Oman Director of Nutrition

Introducing FORTIMAS, a monitoring and surveillance tool

- A tool to help you to track *trends* in the effectiveness of a flour fortification programme *over time* in populations **documented to regularly consume fortified flour**

- Not a tool to provide statistically representative estimates of the prevalence or incidence of micronutrient deficiencies in the population at *a point in time*.



Why use FORTIMAS?

- FORTIMAS helps you answer the BIG QUESTION:
  "Is the micronutrient status of those who regularly consume sufficient quality fortified flour improving?"
- It helps you ascertain if the programme performs as expected, or if it needs some modifications.
- It offers flow charts to help you see what stage the program is at and what steps you still need to take.
- It protects you against looking for impact before there can be any, or where there cannot be any.
- It helps you to track trends in the prevalence of micronutrient deficiencies over a number of years until maximum impact is achieved in a less costly manner than on-going national surveys.

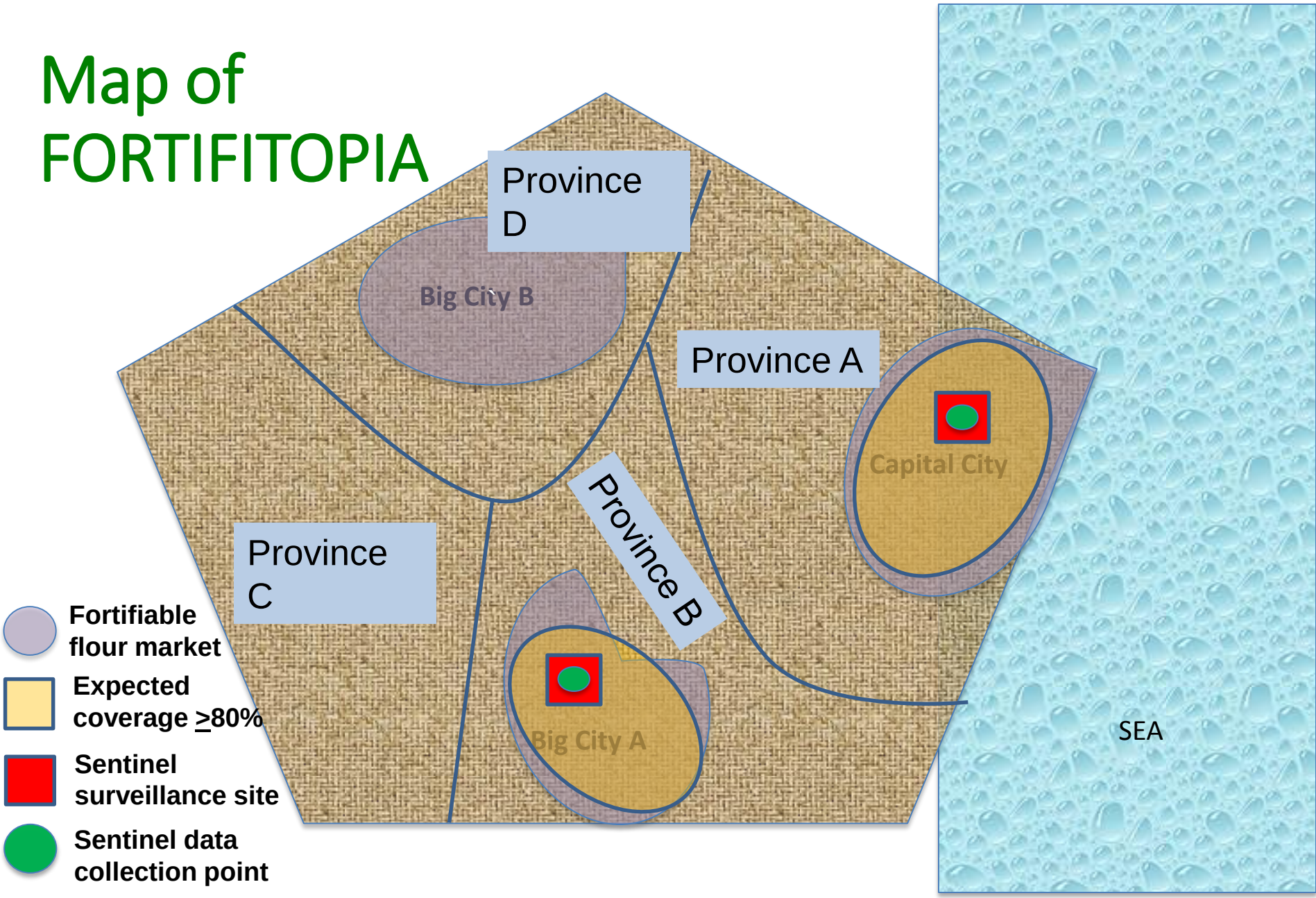
FORTIMAS uses Sentinel Data Collection and Purposive and Convenience Sampling Approaches

"Sentinel" refers to "watching over"

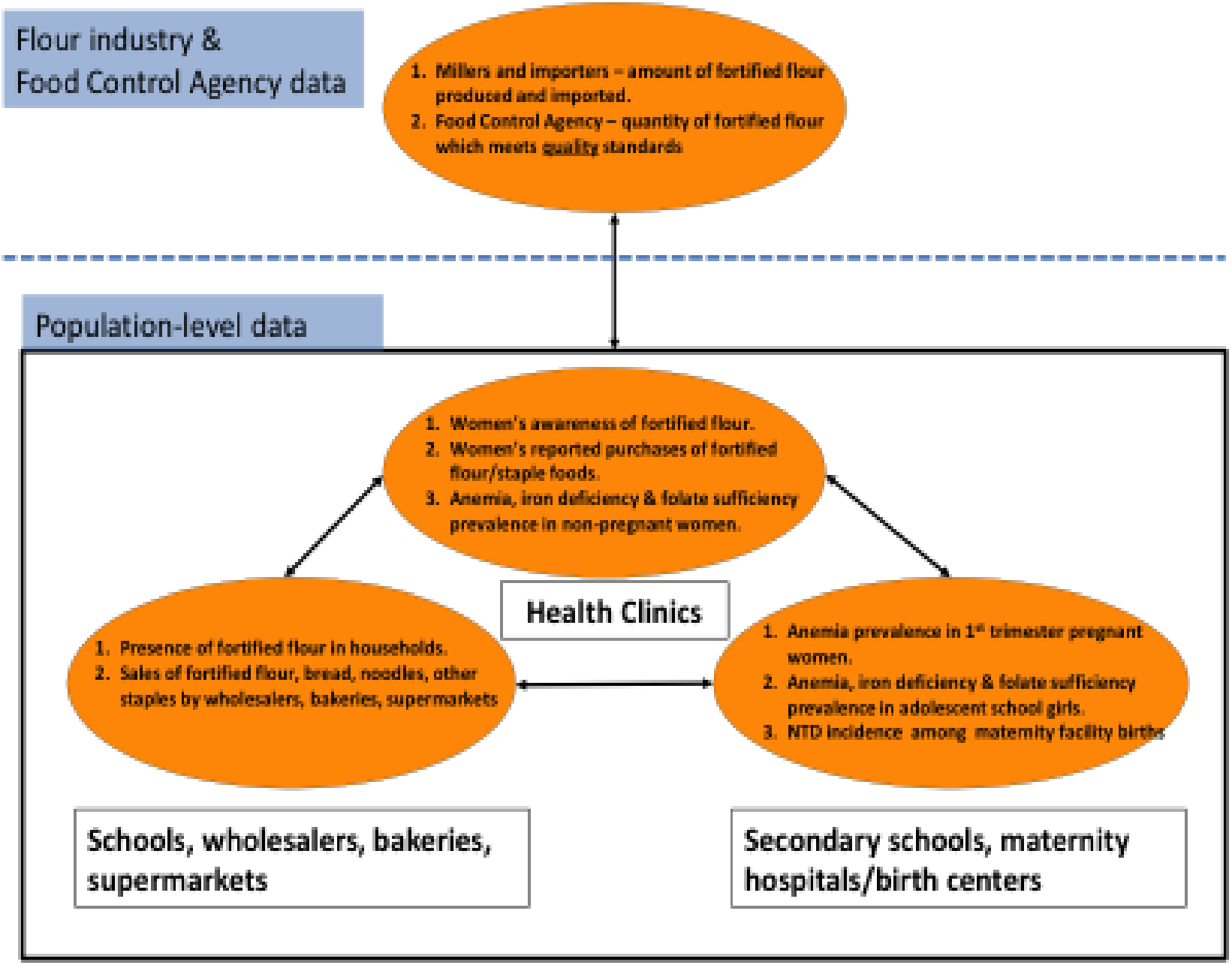
- Sentinel data collection involves purposively selecting a few communities with in a larger geographic area (expected to have high population coverage) as *sentinel data collection sites*
- Existing health clinics, schools, worksites, houses of worship, etc. within each sentinel site could serve as data collection points.

Once FORTIMAS documents the desired trends in population and impact, more detailed assessment and evaluation of the flour fortification program could be performed.

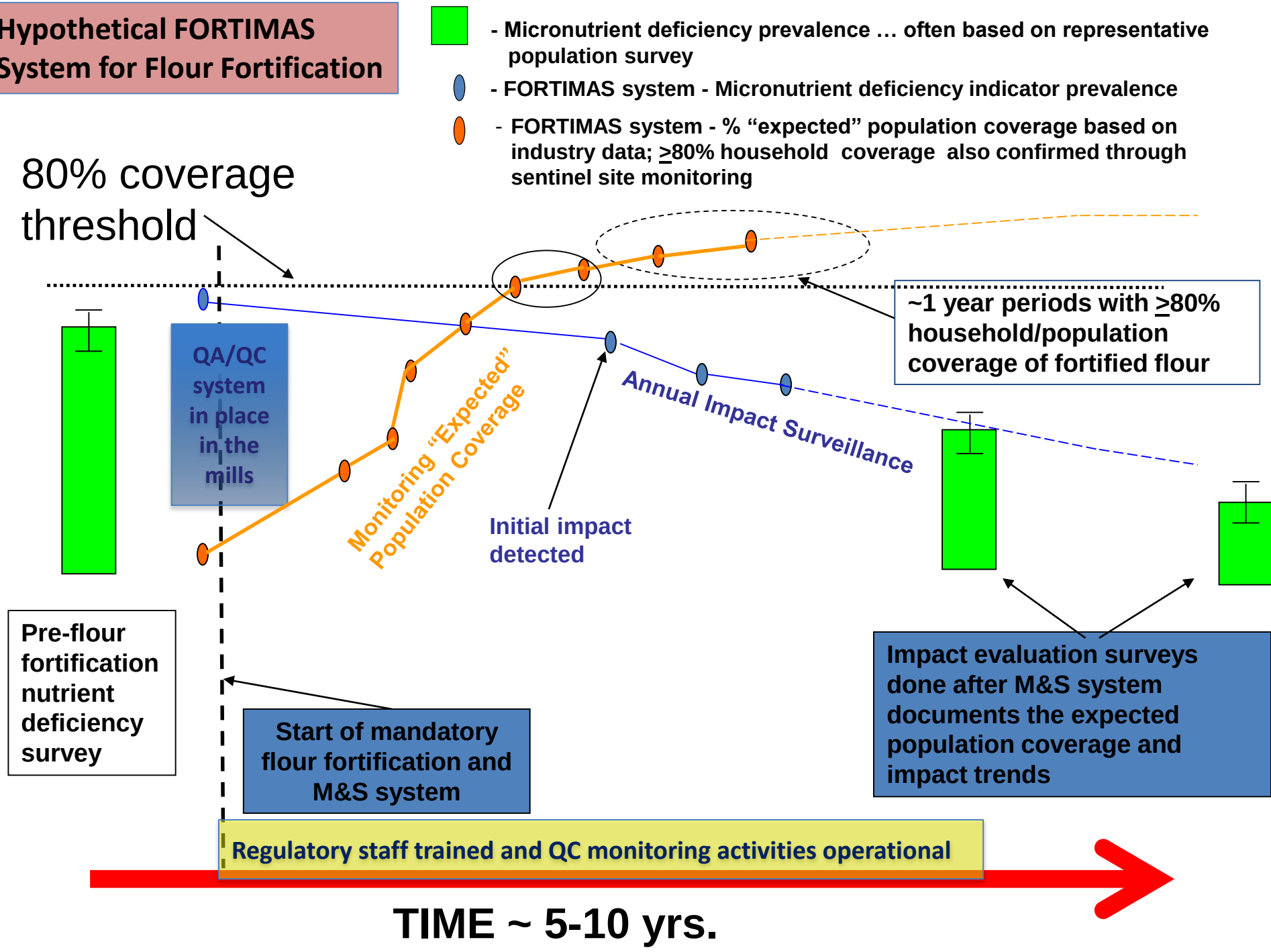
Map of FORTIFITOPIA



FORTIMAS uses different data sources to *triangulate* the info from each to create a more complete picture


Flour industry &
Food Control Agency data
1. Millers and importers – amount of fortified flour produced and imported.
2. Food Control Agency – quantity of fortified flour which meets quality standards
Population-level data
1. Women's awareness of fortified flour.
2. Women's reported purchases of fortified flour/staple foods.
3. Anemia, iron deficiency & folate sufficiency prevalence in non-pregnant women.
Health Clinics
1. Presence of fortified flour in households.
2. Sales of fortified flour, bread, noodles, other staples by wholesalers, bakeries, supermarkets
1. Anemia prevalence in 1st trimester pregnant women.
2. Anemia, iron deficiency & folate sufficiency prevalence in adolescent school girls.
3. NTD incidence among maternity facility births
Schools, wholesalers, bakeries, supermarkets
Secondary schools, maternity hospitals/birth centers

Hypothetical FORTIMAS System for Flour Fortification



- You can access FORTIMAS on-line at www.smarterfutures.net/FORTIMAS
- The webpage gives guidance on how to use FORTIMAS
- You can download the entire document or download specific chapters
- You can download and use the interactive data sheets
- You can link to the WHO/CDC/ICBD tool for NCD surveillance
- Feel free to print copies!
- For more information: info@smarterfutures.net

http://www.smarterfutures.net/FORTIMAS

search

FORTIMAS

FORTIMAS: An Approach for Tracking the Population Coverage and Impact of a Flour Fortification Program

How to use FORTIMAS?

The primary aim of the guide is to propose a population-level data collection approach to help answer the question, "**is the micronutrient status of those who regularly consume sufficient quality fortified flour improving**?". During the planning stages of FORTIMAS, it may be useful to "work backwards" from the ultimate aim and review the issues that need to be addressed to achieve it. Flow Diagram 1 (see below) illustrates this approach. Also, keep in mind that Box 1 (see below) lists the essential preconditions for an effective flour fortification program that must be met before embarking on collecting primary data or using existing data to track the population coverage and impact of the intervention.