NATIONAL FOOD CONTROL SYSTEMS
Opportunities and Constraints
Philip Randall
Framework for Monitoring of Flour Fortification Programs

FOOD
National or Imported

VITAMIN/MINERALS PREMIX

Certification Procedure
(Food Control and Customs)

IMPORTED FORTIFIED FOOD

Certificate of Conformity or Inspection
(Food Control Dept. and Customs)

Importation Warehouse

INTERNAL MONITORING
( Factories or Packers )

Quality Control and Quality Assurance
(Dept. of Quality Control of Factories and Packers)

EXTERNAL MONITORING
( Factories or Packers )

Factory Inspection (Corroborating trial)
and Technical Auditing (Government Food Control Unit)

COMMERCIAL MONITORING
( At retail stores )

Verification of Legal Compliance
(Corroborating trial in retail stores)
(Food Control and Units of Standards and/or Consumer Protection)

PROCESS M&E
Assessment of program inputs, activities, and outputs
(provision)

EFFECTIVENESS M&E
(Communities, households, individual)
Assessment of impact on behavior (consumption, awareness), biochemical, clinical and functional outcomes

FOOD CONTROL

PROGRAM M&E
Using South Africa as an example of constraints
Food laboratories

- Only 2 laboratories in country
- Equipment old
- Severe understaffing
- Chronic skills shortage
- Salaries not market related
- Poor turnaround time on analysis
Multiple regulatory authorities, multiple regulations
• Ministry of Agriculture – Grain, Livestock, Fish etc – “Unprocessed”
• Ministry of Health – any “processed” foods
• Water and Forestry – under Min of Agriculture
• Parastatals – SABS – canned fish; PPECB – exports
• Provincial, Metropolitan and District Authorities
• More than 16 different food regulations enacted under various Acts of Parliament
• Local By-laws still exist

• Antique laws permit “any sealed package” to be a sample and “the Government Chemist” is always right
Three Spheres of Government

- National – responsible for overall coordination and organising National Sampling Plans, Emergency Response to food borne illness etc
- Provincial – responsible within own province; some very active some very weak
- Municipal – as above

- National can not tell Provincial or Municipal Authorities to do anything – only “request”
Fortification Consequences

- Inspectors focus on “easy” targets i.e. Big mills so compliance amongst (smaller rural mills) those feeding the most vulnerable groups is viewed as low.
- Food Control not monitoring pre-mix
A Vision for the Future
• Coordinate analysis results and analyse centrally – any and every investigation, complaint or analysis to be copied to a central facility charged with data compilation, trend analysis and data mapping plus disseminating results.

• Same facility to “look over the horizon” i.e. Early warning of food borne threats in other countries
• Establish “elite unit” for rapid response, method development etc
• Look to ISO 17025 compliance using “technique” accreditation
Information Resources

- Sample size, storage and transportation requirements
- Analysis time, sample tracking and interpretation of results against legislation
- Possible reasons for non-compliance
- Media response
- FAQ section for consumers – especially during/after media blitz
Specific Plans in RSA

• Of 5 plans (Additives; Contaminants; MRL’s; Mycotoxins; Nutrition) only nutrition is not a safety issue

• Monitoring for public safety is vastly different – and easier – than monitoring for compliance
Specify Sampling Parameters

• Specific commodity i.e. Fruits, grains etc
• Specific point in food chain i.e. Farm, market, retailer

• For fortification only at the mill
• Do not let inspectors work on random basis
For Fortification

• Food Control, therefore, need to ensure major mills are not “over monitored” due to ease of access

• Question of “risk analysis” – not only to the public from non-compliance but to the fortification programme *per se* because larger millers perceive smaller millers are non-compliant and threaten to pull out in protest
Folic acid and Iron

- Spinach extract and iron filings will conform to specification – analysis will indicate both micronutrients are present and in sufficient quantity - but that is not “fit for purpose”

- Is specifying the iron type a TBT??
- Is specifying a maximum value necessary??
Work Smarter

- Check the pre-mix as “fit for purpose”
- Check pre-mix consumption
- Check production output

- Compliance established in hours not days/weeks

- Low cost, low technology, high level of confidence
Why is checking pre-mix is better?
AACC Ring Trail 2010 Reproducibility

![Graph showing Vitamin A Mean Level vs. CV %]
What sort of system audit?
Paper Trail

- All mills keep records
- Food Laws give mandate to check records
- Develop/adapt/adopt a Code of Practice agreed upon by all stakeholders regarding who does what, where and when
Methodology

- Register pre-mix suppliers
- Specify the nutrient compounds i.e. Thiamine mononitrate activity minimum 78%
- Pre-mix suppliers provide (at own cost) accredited laboratory data on own pre-mix twice annually
- Pre-mix suppliers externally audited twice annually (GMP ----- analysis!!!!!!) at own cost
Sampling?
Sampling

• Sensitive issue – especially in the area of international trade.

• Cannot treat imports stricter than local production (need to discuss implications with local WTO contact point)

• Fortified flour is heterogenous for micronutrients compared to being homogeneous for moisture
• Mill producing 10Mt/hour of flour will take 0.09 seconds to produce sample

• Taking a sample over 4 hours against checking the paper work in approximately 15 minutes

• Paper trail does not prevent Regulator from conducting finished product sampling