Review paper on Stunting: clarifications on the indicator and its use

Terms of Reference

Background and rationale

In its 2006-2010 Action Plan, the Standing Committee on Nutrition (SCN) clearly stated that "one of the main tasks of the Task Force [Task Force on Assessment, Monitoring and Evaluation (TF-AME)] should be to establish stunting as the principal evaluative indicator for poverty reduction". Indeed, in spite of the critical need for programmes/strategies that aim at reducing chronic undernutrition to demonstrate their impact, the stunting indicator is not systematically included in AME efforts. This is particularly true and relevant for the monitoring of progress towards MDGs. Conscious of this need, the TF-AME in its work planning meeting in January 2008 decided to take up this task and to support further research/review on stunting so as to make it easier to use this indicator to monitor chronic poverty.

One of the first activities of the TF-AME was that of developing a brief statement for the SCN on the importance of using the stunting indicator to measure chronic poverty. Substantial evidence collected across continents shows indeed that stunting (low height-for-age) in children below the age of five is a stronger indicator of hunger and of one of its determinants, poverty, than other anthropometric indicators or estimates of per capita income. This is because stunting indicates the *chronic* restriction of a child's potential growth, reflecting the cumulative effects of inadequate food intake and poor health conditions that result from endemic poverty.

Although the review focuses on the stunting indicator, arguments will be related where relevant to the relationship between changes in this indicator and changes in levels of poverty in addition to changes in other nutritional status indicators.

The main audience of the report would be technical staff in agencies/bi-laterals/NGOs that carry out anthropometric surveys, and their evaluation officers concerned with monitoring poverty as well as physical welfare.

Objective

Given the above, the objective of the review paper would be that of providing a firmer basis for the statement made by the SCN by carrying out further research on the relevance and use of the indicator for monitoring progress on food security and poverty, and on key technical issues that need to be clarified.

Specifically, the review will address:

1) Issues pertinent to policy decisions and progress monitoring:

- How can a change in linear growth retardation among children be judged as "biologically significant"? What could be considered as a "good" level of reduction of stunting in countries?
- What are the roles played by the regular monitoring of anthropometric indicators, including stunting, in health services, schools, and other contexts in the evaluation of trends in poverty as well as physical welfare? What value can there be in occasional surveys focussed on levels of stunting?

- What could be considered as a "good" level of reduction of stunting in countries?
- What is the optimal age group for evaluation purposes?
- How can emergency operations use the stunting indicator, relate it to chronic poverty and destitution, and contribute to its use in monitoring long-term development?

2) Issues pertinent to the relevance and validity of using stunting as an indicator of food security and poverty:
- How can a change in linear growth retardation among children be judged as "biologically significant"?
- Are there any improved techniques to estimate a child's age?
- What are the advantages/disadvantages of using stunting rates estimated from means rather than observed rates?
- How does seasonality in linear growth affect the interpretation of results in follow-up surveys?
- How to design impact surveys, including:
    - What is the appropriate time interval between impact evaluations, or the periodicity of evaluations to observe significant changes in stunting, and therefore meaningful reflections of changes in poverty levels?
    - How can the significance of the changes be judged?
    - Which sampling universe should be used? Is there a need for a control group?

<u>Activities and output</u>

Under the overall supervision of the co-chairs of the SCN TF-AME and in close collaboration with the TF members the consultant will write a 30 page report (excluding annexes) that would answer the questions outlined below:

Policy-making and poverty progress monitoring:
- What could be considered as a "good" level of reduction of stunting in countries?
- What are the roles played by the regular monitoring of anthropometric indicators, including stunting, in health services, schools, and other contexts in the evaluation of trends in poverty as well as physical welfare?
- What value can there be in occasional surveys focused on levels of stunting?

- What is the optimal age group for evaluation purposes (children under 5? younger age groups? school-children at entrance age? height in women of child bearing age)?
- How useful is it to include more than one anthropometric outcome (i.e. include stunting) in order to fully understand the context and therefore guide appropriate decision making?
- How can the monitoring of chronic poverty use stunting data collected during emergency operations? For example, should stunting rates above 40% be included as an outcome in the severity food security classification at country level for the Phase of Acute Food and Livelihood Crisis?

Technical issues for the use of stunting as an indicator of food security and poverty:
- How can a change in linear growth retardation among children be judged as "biologically significant"? Should this rely on comparisons between stunting rates and/or between mean height-for-age Z-scores? For both cases, are there recommended thresholds in the scientific literature? Should these thresholds be defined as "raw" changes or "relative" changes?

- Age estimation: the challenge in accessing good quality age data necessary to report on stunting is a concern. Are there any improved techniques to estimate a child's age? Summarise progress made in FAO/AGNA's work on this.
- What are the advantages/disadvantages of using stunting rates estimated from HAZ means rather than observed rates (see WHO technical Report Series n°854 "Physical status: the use and interpretation of anthropometry, pages 222-223)? Is this only a matter of sample size? Is this feasible when z-scores and prevalence rates are calculated using the 'new' WHO – MGRS 2006 anthropometric reference data?
- How does seasonality in linear growth affect the interpretation of results in follow-up surveys?
- How to design impact surveys, including:
    - What is the appropriate time interval between impact evaluations, or the periodicity of evaluations, that could be recommended to observe significant changes in stunting, and therefore meaningful reflections of changes in poverty levels?
    - How can the significance of the changes be judged? This relates to the statistical significance/interpretation of changes: in this respect, should the usually required minimal sample size of 900 subjects ("30 clusters of 30 children") be revised?
    - Sampling methodologies for impact surveys - which universe should be used? For example, is it always necessary to retain the same sampling universe for the baseline to mid-term review to project completion? Or, is it possible to re-focus the sampling universe on villages that were involved in project activities by mid-term (and leave out villages that were not involved?)? Is there a need for a control group?

In analysing the above issues, the consultant will consider regional specificities insofar as stunting may be interpreted differently according to the context in which it is measured.

The above work will be carried out by a consultant (public health specialist / nutritionist / statistician) through an academic institution with expertise in anthropometric surveys and biostatistics.

Methodology

The consultant will:
- undertake a search of publications (using Internet search tools as well as e-mails and personal contacts) in order to collect and critically review documents relevant to the collection, interpretation and use of stunting for policy-making and/or for the design, monitoring and evaluation of programmes in emergency and non-emergency contexts;
- obtain secondary data from agencies that carry out anthropometric measures. This will be done through the NICS nutrition survey results database, CE-DAT (the complex emergency database), as well as directly from agencies carrying out anthropometric surveys, and re-analyse some of it to contribute to finding answers to the technical questions listed above.
- determine the necessity of primary data collection to complete or complement this desk review, on the basis of the analysis undertaken. In the case that it is deemed appropriate the consultant will draft a follow-up project proposal for the consideration of the SCN TF-AME.

Timeframe

52 days, subdivided in the following way:

- 3 weeks for a preliminary desk review of relevant publications and processing of secondary data. This will also include consultation with other experts.
- Circulate outline of main issues and provisional conclusions in week 4 to TF-AME members
- 2 weeks for comments and further data collection/interviews
- 10 days for final write-up.