Indicator 3. Height-For-Age

While the main aim of this indicator is to gather data about stunting (low height-for-age), measurements for incidence of wasting (low height-for-weight) can also be easily taken. For this reason, the stunting team will record the heights, ages and weights of children in the selected villages. In addition, the mothers of the children measured can be asked some basic health questions. Together, this data will provide a broad-based picture about the health of the children in the watershed.

TEAM MEMBERS (NUMBER AND SKILLS)

1. Stunting Team Leader. This person will be in chargeof leading the stunting team, which will include four other members. Keeping in mind the amount of time required to execute this indicator, it is recommended that the PI should not taken on this responsibility. The stunting team leader need not be a medical professional. Any person with an eye for detail and who is fond of children can carry out this work. Since the stunting team leader will be working with village women, a woman is best suited to take on this responsibility.

2. Stunting Assistant #1. This person will work closely wiht the stunting team leader to carry out the hands-on work of the stunting study (taking body measurements and recording them). Again, this person does not need to be a medical professional. Like the stunting team leader, this person is part of the permanent evaluation team.

3. Stunting Assistant #2. Will help with handling the children. To be hired as required at the individual programme sites.

4. Stunting Assistant#3. Will handle crowd control. Will be hired at the individual programme sites.

5. Team Doctor. A doctor will accompany the stunting team in the field. This doctor will cater to the minor medical needs of the children and adults who attend the stunting session.

NECESSARY TOOLS AND/OR SUPPORT

1. Height/Length Board. These can be purchased locally or they can be ordered from UNICEF of Perspective Enterprises. The FAO and the American Center for Disease Control also distribute blueprints for those who want to construct their own.

2. Scale. Same as above.

3. Flat Board. To be used as a stand for the scale.

4. A level and several wedges. To ensure that the board, and hence the scale, is level.

5. Spreadsheet questionnaires (sample provided in a later section).

6. Permanent markers. To mark the skin of those children who have been measured.

7. Medications (to be determined by the Team Doctor).

8. Stunting Software. This is needed to turn the raw data into Z scores (using internationally accepted distributions of height-for-age). Epilnfro Version 6 is in the public domain and is currently available free of charge from the World Health Organization Information Services (WHOIS). It can be downloaded from the World Wide Web at www.cdcgov/epo/epi/epiinfo.html.

9. Statistical Software. Epilnfo also has statistical capacity, but it is very difficult to use and lacks options. It was much easier the re-enter the data into a commercial statistical package such as SPSS (Epilnfo has no export capabilities) and analyse it there.

10. A guide provided by the NGO and state department toact as liasion in the villages.

FREQUENCY OF USE

Data for this indicator will be gathered in periodic campaigns. Campaigns should be carried out no more frequently than every three years.

TOTAL TIME REQUIRED TO USE INDICATOR

The stunting team will be able to measure approximately seventy-two children per day, if the team takes five minutes per child, and if they can work six hours per day. Unless a village is particularly large, the team should be able to finish a village in one day. The number of villages to be surveyed depends upon other considerations.

SEQUENCE OF USE

This indicator should be executed towards the middle of the visit. It cannot be done right away because the team must first schedule the visits and then make preliminary visits to the villages. The indicator cannot be executed at the end of the visit, or the team will not be able to disucss the results at the participatory sesssions.

SAMPLING

There will be no sampling. The team will simply measure all children in the selected villages.

PROCEDURES AND METHODS

1. Organise the necessary equipment before going to the watersheds.
2. Train the permanent stunting team members.
3. Upon arrival in the watershed, inform the partner NGO and state department that anthropometric information will be collected from the selected villages. Ask them to arrange time for the study.
4. Ask the NGO or state department to help hire a local doctor and two assistants.
5. Conduct a mini-training session with the entire stunting team.
6. The stunting team leader should visit the selected villages at least once before the stunting study is to be conducted there. Such a visit can be made while collecting data for other indicators such as *Use* or *Outsiders.* This is both to select a site to conduct the measurements, as well as for becoming acquainted with the local people.
7. On the day scheduled for the study, arrive at the selected village at least an hour early. This is to confirm that the site is appropriate and to set up the equipment.
8. The stunting team leader will work with Assistant # 1 to measure the heights and weights of the children. Asssistant #1 can take the actual measurements while the team leader can record the information (matrix provided below).
9. Assistant #3 will assist with handling the child being measured.
10. While the measuring is taking place, the stunting team leader can ask the mother a series of questions (provided below). We dispensed with this step because it creatd confusion and because children were often too restless.
11. After the measurement process, the child's parents have the option of taking the child to visit the doctor.
12. During this whole process, Assistant #4 acts as gatekeeper. On several occasions we had difficulties with curious onlookers causing the chidren to become more anxious. Crowds and noise also made it difficult for the team members to communicate details of the measurements. It is best if everyone except the child being measured is kept at a distance. To satisfy people's curiosity, we took measures of all those interested after all the children had been measured.
13. As the gatekeeper, Assistant #4 was also placed in charge of handing out sweets to children who were on their way out. This was a gesture of goodwill, as well as an incentive to stop those yet be measured from becoming too anxious.

DATA MATRIXED AND QUESTIONNAIRE

SAMPLE DATA MATRIX

NAME	SEX	AGE*	WEIGHT (kg)	HEIGHT (cm)
Child 1 Child 2 Child n				

* This should be in months. In the event that birth records are not available, the team should be ready to ask this question in terms of local events. (See the "Calendar of Local Events" that follows.)

QUESTIONS FOR THE MOTHERS

1. Which immunisations have the child received? When?
2. How many siblings?
3. Have you lost any children since this child was born?
4. Before this child was born?

	SAMPLE CALENDAR OF LOCAL EVENTS			
		(For visit to Bihar)		
	1998	1997	1996	1995
January (Pongal)				
February (Shivratri)				
March (Holi)				
April				
May (Heat)			General	
			elections	
June (Monsoon)				Big flood
July (Sowing)				
August		Death of village		
		headman		
September (Harvest)				
October (Diwali)				
November				Temple opened
December				

DATA ANALYSIS

1. Feed the data for height, weight, age and gender into Epilnfo.

2. Calculate stunting (height-for-age) and wasting (height-for-weight) Z-scores. These are standardised scores based on standard deviations from established norms for age and gender.

3. Calculate the percentage of stunting and wasting in the population. The percentage of the population which is stunted and/or wasted is itself an indication of poverty.

4. Calculate the variation between the means and stunting (wasting) rates of girls and boys. Inequalities between girls and boys are an indication of gender inequality.

5. Calculate the standard deviaton of the Z-scores. A large standard deviation indicates high social inequality.

6. If it is possible to analyse the data in the field, the results of the data should be discussed during the participatory sessions.

7. After the second time that stunting and wasting studies are done in the same village, the data can be compared for changes over time.

FINAL PRESENTATION AND ANALYSIS

1. Present the stunting data in a table similar to the following:

	Sample size	Mean z-score	Mean z-score girls/boys	Standard deviation of z-scores	Standard deviation girls/boys
Watershed A					
Watershed B					
Watershed C					
Aggregate					

2. The same should be done for the data on wasting

3. In addition, histograms of stunting and wasting z-scores should be presented (for aggregate figures, as well as by watershed and gender-wise figures). This will act as an indicator of social equality (or inequality). If the scatter plot has a normal distribution, there is social equality. A multi-peaked scatter plot indicates social inequality. Large standard deviations are also indicators of high social inequality.

4. The above data should then be disucssed qualitatively.