

**Summary Report of the
National Consultation on Developing
Tools for Early Identification of Acute
Hunger for Effective Administrative
Action**

**13th May, 2010
Jawaharlal Nehru University
New Delhi**

**Centre of Social Medicine & Community Health - JNU,
Office of the Commissioners to the Supreme Court
South Asian Dialogues on Ecological Democracy - CSDS
Centre for Equity Studies**

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Acknowledgements

The research and support team included Archana Diwate, Dipak Abnave, G. Dilip Diwakar, Lakshmi Kutty, M. Kumaran, and Shaweta Anand from CSMCH, Navjyoti from the Office of the Commissioners to the Supreme Court, Babita Bharati and Birodh Bohra from SADED. Thanks are also due to Rama Baru, Rajib Dasgupta, Vijay Pratap, Biraj Patnaik, Dipa Sinha, Malobika Bhattacharya, S. Sirsikar and Anil Gupta.

Financial contribution by all collaborating organisations with no external source of funding. Logistical support provided by CSMCH, and audio-visual recording of the proceedings by SADED.

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Background

The problem of chronic malnutrition is a curse, which at least 40% of Indian households live with, 30-40% of adults and 50-60% of children below 6 years being undernourished. Methods for identifying the chronically malnourished through anthropometric indices using reference standards are fairly well worked out and in use. However, the methods for identifying acute hunger and malnutrition are less developed or used. While 'wasting', i.e., loss of weight against height, is the marker of a sudden or acute dip in food intake, it has several limitations, and there is little by way of a working consensus among nutritionists, public health persons and administrators on how to identify this in individuals, population groups and communities, especially for the Indian/South Asian context. Since these are relevant for emergency situations of acute food shortage and life-saving provisioning of foodgrain, there is a need to develop them on an urgent basis.

The Centre of Social Medicine & Community Health-JNU, the Office of the Commissioners to the Supreme Court on the petition of the Peoples Union for Civil Liberties (PUCL) Vs. Union of India (UoI) & Others (Writ Petition [Civil] No. 196 of 2001)¹, Centre for the Study of

¹ In April 2001, the People's Union for Civil Liberties (PUCL, Rajasthan) submitted a writ petition to the Supreme Court of India seeking enforcement of the *right to food*. The basic argument is that the right to food is an implication of the fundamental "right to life" enshrined in Article 21 of the Indian Constitution. This public interest litigation (PIL) is known as "PUCL vs Union of India & Others, Writ Petition (Civil) 196 of 2001". In an interim order dated 8 May 2002, the Supreme Court appointed "Commissioners" for the purpose of monitoring the implementation of the Court's orders. The Commissioners are empowered to enquire about any violations of these orders and to demand redressal, with the full authority of the Supreme Court. They also report to the Court from time to time, and may seek interventions going beyond existing orders if required. In an order dated 29 October 2002, the Court clarified that "the scope of the work of the Commissioners appointed by this Court is to include the monitoring of the implementation of this Court's orders as well as the monitoring and reporting to this Court of the implementation by the respondents of the various welfare measures and schemes." The two Commissioners initially appointed were Dr. N.C. Saxena and Mr. S.R. Sankaran. Subsequent to Mr. Sankaran resigning from the position, Mr. Harsh Mander has been assisting the Commissioner as a Special Commissioner. The Office of the Commissioners is based in New Delhi. It is supported by funds provided by the Government of India at the request of the Supreme Court. Apart from the secretariat, the work of the Commissioners is supported by state-level 'Advisers'. (<http://www.sccommissioners.org/aboutus>)

The "Right to Food Campaign" is an informal network of organisations and individuals committed to the realisation of the right to food in India. The campaign began with a writ petition submitted to the Supreme Court in April 2001 by People's Union for Civil Liberties, Rajasthan. Briefly, the petition demands that the country's gigantic food stocks should be used without delay to protect people from hunger and starvation. This petition led to a prolonged; public interest litigation (PUCL vs Union of India and Others, Writ Petition [Civil] 196 of 2001). Supreme Court hearings have been held at regular intervals, and significant "interim orders" have been issued from time to time. However, it soon became clear that the legal process would not go very far on its own. This motivated the effort to build a larger public campaign for the right to food. The campaign has already taken up a wide range of aspects of the right to

Developing Societies-South Asian Dialogues on Ecological Democracy (CSDS-SADED) and Centre for Equity Studies (CES) collaboratively organised a technical workshop to discuss the optional tools and methods for identification of starvation deaths and early signs of food shortage in a community, such that it enables the civil administration to act effectively in response. The one-day **National Consultation on Developing Socio-medical Tools for Defining Early Identification of Acute Hunger and Starvation for Effective Administrative Action**, was held on 13th May, 2010 at Jawaharlal Nehru University, School of Social Sciences-I Committee Room, New Delhi.

The primary objective of the identification under consideration was to develop working criteria that can be used at a mass level for initiating action by the administrative machinery. They could also be used to support advocacy for administrative action. The third purpose of this surveillance would be the mobilization of civil society and community level action on the issue of acute hunger.

Distinguished public health scientists, nutritionists, policy analysts, economists, administrators and social activists, with years of experience of working on the relevant issues, participated.

Brief Summary of Each Presentation

Harsh Mander – Challenges in Identification and Verification of Starvation Deaths & Acute Hunger

When speaking of challenges, there is a conscious attempt to not speak of the appropriate public policy response to starvation and acute malnutrition, but to speak about the challenges of *understanding what these phenomena are and how to define and identify them.*

food. Sustained demands include: (1) a national Employment Guarantee Act, (2) universal mid-day meals in primary schools, (3) universalization of the Integrated Child Development Services (ICDS) for children under the age of six, (4) effective implementation of all nutrition-related schemes, (5) revival and universalization of the public distribution system, (6) social security arrangements for those who are not able to work, (7) equitable land rights and forest rights. Subsequently, the Indian Parliament unanimously enacted a National Rural Employment Guarantee Act in August 2005, and cooked mid-day meals have been introduced in all primary schools following a Supreme Court order of April 2004. (<http://www.righttofoodindia.org/campaign/campaign.html>)

Starvation is a challenge to those who live with it. There are a number of ways in which 5-10% of our poorest people survive – first, they largely cut back on food intake; the second broad category of responses is consumption of ‘pseudo foods’ from the environment; the third broad category is making desperate choices, like putting your small children out to work, getting into bondage, migrating under difficult circumstances, and a desperate choice that destitute old people are forced to make is that even though their frail body makes it very difficult for them, they still have to work to stay alive.

Regarding the public policy challenge, there is a famine code still in use in many states and District Collectors are guided by it, but there is no starvation code. One of the things the Commissioners’ Office has tried to do is to develop a Starvation Code, to define the duties of public officials when there are people in destitution and hunger. However, for a starvation code to come into force, there has to be an agreement about what is meant by starvation. There are a few typical public policy responses to starvation. The first response is active subterfuge and lies, the second is hot angry denial, and linked to this is blaming of the victim, and the third response is of indifference. And there is poor knowledge, technical as well as administrative. The net outcome is that the public policy response leads to an enormous humiliation of that family.

A point the Commissioners’ Office has put into the starvation code is that when there is an allegation of death, instead of investigating the death there should be an investigation of the surviving family and others similarly placed as that individual – are there people *living in conditions of starvation*?

And the core of the debate is the challenges to the socio-medical fraternity. There are a series of questions here – what is hunger? How do we define starvation death and how do we define living with starvation? How many calories are required for an adult to keep physically alive at zero activity? Are we only speaking about calories? What about other nutrient requirements? Can we have a definition of destitution, taking into account socio-economic conditions? What is the difference between acute malnutrition, Severe Acute Malnutrition (SAM) and starvation? Does not death result from acute malnutrition layered on a foundation of chronic malnutrition? Is not starvation a combination of chronic and acute? Can we define this more precisely?

Starvation in children does exist, but also in old neglected people without care, in single women-headed households where the woman tends to starve to death, in disabled-people headed households, and sometimes where there are disabled children. Let us evolve definitions and tools for identification which apply to all of these.

Ritu Priya – Overview of Public Health Approach to Early Detection of Acute Hunger: The Challenges & Possibilities

The challenge is that among children in the 0-6 years age group, 50% suffer from moderate and severe malnutrition, and when mild, moderate and severe are seen together this figure increases to 75%. Among adults, 40% are chronically energy deficient and at the level of households, 40% deficient in calories. 65% child deaths have mild-mod-severe malnutrition as an underlying cause, and 15% child deaths have severe malnutrition as an underlying cause.

Classification of Biological Conditions of Food Deficit

- Starvation – severest deficit linked to hunger and destitution; tip of the iceberg.
- Chronic undernutrition – food intakes habitually lower than that necessary to meet genetic potential; this manifests as stunting in children.
- Acute undernutrition – sudden lowering of food intake or lowered utilisation of the food ingested due to illness. Acute malnutrition in the normally well-nourished tends to pass over and full recovery occurs; if the food deficit/disease persists for long, then chronic malnutrition could set in.
- Acute on chronic undernutrition – sudden lowering of food intake or lowered utilisation of the food ingested due to illness in those already subsisting on lower energy intakes than required.

This last point is the condition of concern for today's discussion.

Acute on Chronic Undernutrition

- Could be a sporadic case, as due to illness in the individual and a vicious cycle of undernutrition and disease setting in.

- *Or it could be an epidemic of acute undernutrition as a larger community level shortage of food occurs.*
- With 40% households and 50% children in chronic undernutrition, the danger of this latter situation happening in times of drought/flood, food price rise, sudden breakdown of livelihoods or food supplies, etc., becomes very high.

Types of Hunger

When talking of hunger, there are different types and usages of this term. Psychic/hedonistic hunger. Incomplete need. Hidden hunger. Starvation.

When we look at hunger and deficient food intake collectively, a classification of communities/populations by nutritional emergency status could be made:

- Whole village/community near destitution, hunger and starvation;
- Heterogeneity in most populations/villages/communities – with some better-off with surplus; others having adequate in normal times but needing coping strategies during drought, etc.;
- Varying proportions of these various economic classes require diverse strategies in times of nutritional crisis. No state or district in the country seems to be without substantial number of households with inadequate food intake, ranging from 10% to 80%.

Diverse approaches to dealing with hunger and starvation in this context

- Type 1 requires state action in provisioning.
- Type 2 approaches would have to vary depending on the proportion of households needing specific inputs. Varied proportions of varying needs at local levels means that the local community and community action is likely to affect implementation, e.g., in some instances the better-off could provide some support to the poor through community action.

Broad approaches to deal with malnutrition and acute malnutrition

- Macro level – Deal with the macro issues of employment and food availability/access. Universal PDS, agriculture, etc., are the solutions.

- Micro level – Individual/household level identification of the most vulnerable and addressing their situation urgently on an individual basis. Special focus on the most vulnerable such as destitute households, elderly, infants, single women, disabled, etc.
- Meso level – Identify communities with hunger through a system of nutritional surveillance that is able to give rapid rough results, so as to provide them emergency relief collectively.

We need to mediate between these three, it is not either-or, all of these need to be done. And the meso level is something we have not addressed at all.

Possible Methods for Identifying Community Level Acute Food Deficits

Existing Methods in Official Use:

1. Starvation death as marker of household hunger and destitution
2. Identification of drought affected areas – based on rainfall and farm productivity
3. Surveys for self-reported hunger [period of ‘not having two square meals a day’], e.g., by the NSSO’s annual survey rounds

Proposed Additional Methods:

4. Market off-take – from Public Distribution System (PDS) + market – declines relative to previous years in a year of normal or low production.
5. Anthropometric indicators. The Integrated Child Development Services (ICDS) system is there with all its weaknesses but it is meant to be giving us data on the weight of children. Can we develop that into a collective indicator for saying that the community is getting into hunger?

Anthropometric indicators at individual level

- Adult/Children
- Weight for height/Height for age/Weight for age/Body Mass Index (BMI)
- Gomez classification, National Centre for Health Statistics (NCHS) standards/Z-scores/WHO standards.

Anthropometric indicators at a collective level

- Sentinel surveillance for declines in anthropometry, e.g., using the ICDS monthly data

6. Village level listing of vulnerable population – individuals/households/communities – for special attention by village level functionaries in communication with the community and Panchayats.
7. Rapid assessment of changes in food intake patterns – through group discussions in the community.

There exist diverse scientific and administrative paradigms, which function either with *holistic* or *reductionist approaches*, and this reflects how they look at public policies and deal with it.

The holistic approach – plurality of approaches; recognising contextual diversity; macro to micro levels of data and action; triangulation for multi-dimensionality of context; uncertainty and subjectivity is recognised; decentralised information and database as well as community level action; complementarity of action segments – administration, academic, civil society organisations, community.

The reductionist and partial approach – singular solutions; universalist, one size fits all; only one level of data and action – macro or micro; decontextualised data crunching; singular objectivity, certitude of evidence; centralised databases with centralised management; supremacy of one's own role/discipline emphasized – little dialogue.

We have to set out the criteria that we will go by. There must be a plurality of approaches, context-specific approaches rather than universal answers, have to include the whole continuum. Therefore, action will have to be at multiple levels, contextualised rather than nationwide rigid programmes.

Vandana Prasad – Guidelines by the Jan Swasthya Abhiyan Hunger Watch Group on Verification of Starvation Deaths & Detection of Hunger in the Community

The Jan Swasthya Abhiyan (JSA) Hunger Watch Group believes that this issue is fundamentally an issue of politics and not really a medical or technical issue. There was a context in which we created this tool for the diagnosis of starvation deaths. In 2003, when the country was experiencing drought, crop failure and suicides, not a single death in the country had been defined and acknowledged as a starvation death by the processes that exist to define causality of

death. Working in public health, it was evident to us why there is absolutely no causality data for death – the nature of the death certification process by the medical fraternity, the current medico-legal system, diktats within government, and a lack of understanding between these various systems. Also, the practice of defining starvation death through doing autopsy whereby it would be stated that there was food present in the intestine and, therefore, it was not starvation death, did not enable any death to be certified as caused by starvation.

There was close interaction between the Right to Food Campaign (RTF) and JSA for this exercise, and several other scholars and activists were also part of it. We were very conscious of the fact that not only is this political, but if we are going to approach it from a socio-medical perspective, then it must possess a scientific/academic weight and rigour. People from forensics, social scientists, and many of us medical-social activists were involved in this exercise. The objective of the tool was to systematically investigate and document starvation deaths. We were also thinking tactically, and the reason why starvation deaths was used as a concept was because that was what caught the eye of the public.

In the Hunger Watch group we insisted that we would focus on a community diagnosis, of a starving population, and not just relief for one person or one particular family. It is important to note that it is easier to do all this for adults than it is for children; children provide a very complex challenge, medically as well as socially. We used the Pyramid, or the Iceberg, approach continuously.

What we did at the level of the community:

- Documented death rates. Using an epidemiological method, pointed out if the death rates within a particular village or district at this moment in time are much higher than a representative similar district or village nearby suffering from similar conditions.
- Used anthropometric indicators, to show that they are much below the state average.
- Used the fact that there has been no mass disaster or accidents.
- Noted the fact of reduced food offtake from PDS.
- Noted other indicators of reduced food security, like eating unusual foods, increasing indebtedness, large-scale outmigration for work, etc.

- Used dietary histories. Calculated 850 Kcals for adults as being the limit for starvation, which means that this is the minimum you need to just be alive without activity.
- Used verbal autopsies.

Thus we used a combination of statistical, anthropometric and social tools, as well as verbal autopsies as a very specific and telling kind of tool.

The schema for children was somewhat similar. We looked at:

- Increase in death rates among under-five children, compared to the state under-five mortality rate.
- Siblings of the child that died; one can use as a proxy the situation of the siblings of that child – are siblings malnourished?
- Data of the child that has died from the anganwadi/ ICDS register.
- Physical descriptions of the child – did the child have a pot-belly, child's hair colour, etc. This could be done in the verbal autopsy too.
- Also, looked at the very important issue of infection. Because when you say 'cause of death' the government invariably says the child has died from an infection. We decided to compare known mortality from diseases in well-to-do children and see this mortality alongside it – it is usually ten to twenty times higher, and obviously this cannot be the mortality from the disease process alone.

We used the Indian Association of Pediatrics (IAP) classification because the ICDS was using this at the time. When ICDS shifts to WHO standards and uses a Z-score, we should update this IAP and weight-for-age depending on what is currently being used within the system. We also need to add perhaps Mid-Upper Arm Circumference (MUAC) to this, because SAM is a concept and a tool that has entered the discourse now.

The functionalities of how to make this happen:

- Initial contact with the community
- Learning about villages affected
- Getting total reports of starvation deaths
- Selection of the village/villages or hamlets to be taken up for study
- Assessment of the death rates in these communities during specific recent periods

- Anthropometric measurements of a sample of adults and children
- Dietary surveys to assess adequacy of food intake in sample families – which could perhaps be done in the same families where the anthropometric survey has been done
- Assessment of any deterioration in food security schemes
- Assessing ICDS records
- Verbal autopsies

The lack of using the ‘underlying cause of death’ space within death certification constantly created situations where not a single death was registered as caused by malnutrition.

The structure of the report was planned to be –

- an introduction
- the under-five mortality rate
- the death rate
- the estimation of malnourished children
- details of starvation deaths among adults
- community situation of food security
- the hunger pyramid
- recommendations as to what to do

The hunger pyramid – at the top are starvation deaths and description of the deaths that have occurred, underlying that is the starving population, i.e., adults having 850 Kcals or below. And before the concept of SAM came, the way we dealt with children in the original report was to say that a child in any family where an adult had minus 850 Kcals. And below that comes all malnourished. The point about those falling under ‘mild’ malnutrition is extremely important and critical, so here ‘mild’ had been included in the ‘malnourished’.

Soon after this, we did a training with about 50 activists from different parts of the country. The Hunger Watch Group itself did not meet again, but many of the groups that came to the training adapted this tool; not completely, but many used it in some way. Generally, they used anthropometry, studied offtakes from food-related schemes, and dietary intakes, etc. Such a process eventually led to the demystification of anthropometry.

Some thoughts as to why the group did not go ahead. It required too much time, money and effort to follow up with surveys. We felt that through trainings at least we could do something. Though many members in the RtF campaign did continue to use this tool on their own, there was no coordinated activity. Also, perhaps, it was too technical; it definitely needed the intervention of doctors at some point.

The Commissioners' Office having taken this tool on and having put it into the Supreme Court petition, is hugely valuable. And thanks to the invitation to present this work at this consultation, we feel we should get together again and update this tool.

Main Discussion Points

1. Starvation is an outcome of the concentration of acute denial of nutrition on a foundation of prolonged food denial and also other nutritional parameters. It is not an isolated sudden episode; it is an acute episode imposed on a chronic nutritional deprivation and unavailability. If we have to identify what is prolonged food deprivation, then starvation cut-off must be placed at a point where anyone who consumes less than the Basal Metabolic Rate (BMR) for their present weight. (Ideally, it should be BMR for their ideal weight, but our population never reached its ideal weight.) There is no surveillance for adults. One has to actually propose a whole institutional mechanism and then base it on BMIs, using the BMR as the cut-off for identifying starvation. The definition of starvation death has to be calculated according to the BMR of 1200 calories.
2. Focus simultaneously on micro, meso, macro levels. Identify indicators at each of these levels. Need to articulate a meso level analysis of class, caste and social categories like landless, single women, disabled, street children.
3. Must note the issues of hunger and infection, and that infection kills appetite.
4. The question of governance. Systematic failure of state institutions, PDS, ICDS and NREGA (National Rural Employment Guarantee Act). Need to increase accountability of government functionaries at all levels, including panchayat and anganwadi workers.

5. One of our existing machineries for monitoring undernutrition in pre-school children is ICDS. Must argue for strengthening the ICDS system, and monitoring, because that system is already available. This should continue to be one of the entry points for whatever strategies we build.
6. Need to involve the community, and listen to their experience/expression. Also, the methodologies need to be operationalisable by communities, especially when there are acute situations.
7. While discussing methodologies, also need to discuss institutional mechanisms – who is going to carry out these various levels of operational tasks? How will these things translate on the ground?
8. Anthropometry can be very misleading for adults; trying to put in place a whole machinery centred on anthropometry must be weighed carefully, and put into perspective.
9. Try to do a quick a mapping exercise/survey, as we already have so much data, and this will help us to expeditiously identify which are the more vulnerable districts with a larger proportion of vulnerable populations. The District Level Household and Facility Survey (DLHS) data shows that about 50% of the malnourished children are living in 20% of the districts. Hence these 20% districts could be the area where we first focus.
10. The technical versus political approach – along with the technical discussion must also treat this as an issue of political economy.
 - Must ensure that there is no cognitive rupture with questions of governance, of political economy, and of the social transformation agenda.
 - Need to know technical information, because government uses its technical card.
 - Need to make intelligent use of what information exists.
 - Must work towards tearing at the veil of having evidence insufficiency on your side; on the side that is the pro-poor side. This work is towards shifting the policy level debate and creating a feeling of *more needs to be done, because there is now a groundswell that understands this issue.*

11. The government knows that the people are starving; it is not for lack of any tools. But after independence, a whole way of development was being put into place where memories of famine/hunger were sought to be erased. Nutrition is not taught as a subject in any discipline and state administrators' lack of knowledge about this issue has to be seen in this perspective. The government may not know how to do it. One of the aspects is also managerial; it is not able to expend that money well, it is not able to ensure that delivery reaches the people.
12. There is a need to clarify the definitional issues regarding the terms used – hunger, starvation, acute malnutrition, etc. A physiological condition of deprivation which manifests clinically as weight loss or stunting, as symptoms of vitamin deficiency, etc. There's a physiological level, a clinical level, an epidemiological level. And one cannot forget the subjective expression of starvation, which is hunger.
13. Need to focus attention more on the immediate surviving family and the community, rather than on the starvation death.
14. Starvation is a strong word. Can it be used for all situations of 'not adequate food'?
15. Indicators [each bullet point signifies a different viewpoint on setting/identifying indicators]
 - When any community or population is either borrowing food from their neighbours or is begging for food; acute or continuous unemployment in any community; unusual out-migration; regular instances of borrowing money, not repaying the principal amount or the interest on time, and the moneylenders fed-up and complaining; those having prolonged poor health or illness; quality of grain in PDS so poor that it is not suitable for consumption.
 - Inflation of main staple diets of an area, and the sudden rise of prices, as an early indicator.
 - Firstly, any community audit that says that a particular person or a particular family has suffered hunger and has died from hunger, has to be taken extremely seriously. Secondly, Grade III and Grade IV severe malnutrition in children is not something the community will pick up because it is chronic, but we as technical experts say that this is also starvation. Severe Acute Malnutrition (SAM), as the name suggests, would be more akin to starvation. It is very easy to say that all

SAM is starvation, but one is adding to the situation and saying that all 'severe', even if that is '*chronic* severe', is still starvation. Thirdly, the data on epidemiological diagnosis of death rates and mortalities, because the community is highly important but this triangulation of sources is very important and technically sound.

- In a situation of already chronic malnutrition when something more acute happens, how do we identify it? One could go to what's coming from the ground... till we have a perfectly well working anganwadi system where every month you can actually monitor how many are falling into Grade III, Grade IV, or are coming out of it.

- See this as four groups of indicators:

One is the environment, the physical environment in terms of broad and exhaustive things. This would be the case for an acute situation, and there would also be some chronic districts.

Second would be poor programme delivery set of determinants, this includes food supplementation, ICDS, mid-day meal scheme, PDS, NREGA or lack of employment opportunities. These would be chronic.

Third one is more at a medical or individual level, where one is looking at starvation deaths or rates of malnutrition, which are higher than average, and we can define what that 'high' is. And this could be already existing high levels or sudden increase in level from Infant Mortality Rates.

And finally, the set of indicators which are distress signals coming from community, in terms of begging, borrowing, migration, and selling of cattle.

These 4 sets of indicators together should give a fairly good idea of how to identify communities or individuals facing starvation.

16. Must differentiate between mapping of chronic vulnerability and acute; how is each going to be examined, mapped? The indicators that would be used for the two would have to be somewhat different. Have to also take time-frame into account; definitions for malnutrition, hunger and acute poverty feasible in the short-term may not continue for the long term.

17. Need to distinguish between types of tools. One is the mapping tool, where there is an inherent problem because of the data lag, and the vulnerability mapping that one would do would be delayed by 1-2 years because it is representing the past situation. But for identification and intervention purposes in acute hunger, we need to discuss tools of different kinds, e.g., community level tools.
18. Must also think about the administrative conflicts at the centre-state level with regard to provisioning.
19. In a situation where the state is not willing to accept the figures/data. There exists district level data, DLHS-3, etc., and on the grounds of what exists we should be able to say that these are the districts which are above the national average and have to be spoken of as nutritionally vulnerable, and these are the steps that need to be followed. We begin working on what data is accessible broadly to everyone and maybe a smaller group could identify what more data refinement is needed.
20. We should push in the direction of long-term data collection systems that the state should put in place, and have critical information coming in at the panchayat level.

Summary of Conclusions

The overall consensus has been that the tool, to begin with, should be developed such that it can be used by local organisations to highlight situations of distress for particularly vulnerable groups that they are working with. Something that they can use to advocate with the local administration for immediate relief for certain households or populations or sets of communities, based on their already existing work with these communities or populations.

The consensus was that there should be an identification of vulnerable populations on the criteria of consistently reported starvation deaths, the fact that they are Scheduled Castes/Scheduled Tribes or Primitive Tribal Groups, and essentially using a lot of existing data. And the understanding is that the local organisations will be working with the vulnerable populations and watching for signs of distress. And these signs of distress could be classified, those that are agreed upon, in terms of those at the community level and those at the household level.

What could be seen at the community level includes – prevalence above the national or current state average of SAM and severe undernutrition for 0-6 year-olds; increased distress migration in the population; decrease in market offtake of food, which includes PDS and open market. One of the things that was consistently discussed and decided was that anthropometric measures for adults would be misleading, because given the current levels of BMI, which are already existing in large sections of the population, we do not expect any sudden drop in weight. Therefore, anthropometric measures should not be used, but more of social parameters.

What could be seen at the household level – distress sale of assets; begging for food; consumption of pseudo foods; distress borrowing from moneylenders, or as someone said refusal by moneylenders to lend any more money, but we have to think of how that can be captured; and distress migration.

How this adds to the existing work is that currently, organisations are already working with groups and they would have a good sense of the fact that certain groups are in distress and something needs to be done. The advantage of the tool is that it will help them to present their case. Specifically, if it is approved at the national level as a sensible method to do this, and if they follow this method, it will bring system and rigour to that work. Therefore, this can be used, at least in the beginning, to advocate for relief for these groups.

Future Collaborative Work Proposed

It was agreed that the building of these parameters would be undertaken by a group of the participants who are interested to follow up on this discussion in a voluntary capacity. The tools would be tried out and widely disseminated for further inputs and use. The offices of the Supreme Court Commissioners, the CSMCH and other bodies with the technical capability would be involved and give the outcome its legitimacy. It can be used by civil society organizations to advocate for relief measures, bringing rigour and credibility into the whole exercise. It could also provide the basis for setting up a local to national level nutritional surveillance system capable of early identification of food deficits and rapid responses.

Annexures

Annexure 1 – Invitation Letter, Concept Note and Programme Schedule

**CENTRE OF SOCIAL MEDICINE & COMMUNITY HEALTH
SCHOOL OF SOCIAL SCIENCES
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6th May, 2010

Dear

The Centre of Social Medicine & Community Health-JNU, the Office of the Commissioner to the Supreme Court on the Petition of the PUCL vs UoI & others, Centre for the Study of Developing Societies--South Asian Dialogues on Ecological Democracy (CSDS-SADED) and Centre for Equity Studies (CES) are collaboratively organising a technical workshop to discuss the optional tools and methods for identification of starvation deaths and early signs of food shortage in a community such that it enables the civil administration to act effectively in response. The one-day **National Consultation on Developing Socio-medical Tools for Early Identification of Acute Hunger and Starvation for Effective Administrative Action** is to be held on the **13th May, 2010** at Jawaharlal Nehru University, School of Social Sciences-I Committee Room.

The problem of chronic malnutrition is a curse at least 40% of Indian households live with, 30-40% of adults and 50-60% of children below 6 years being undernourished. Methods for identifying the chronically malnourished through anthropometric indices using reference standards are fairly well worked out and in use. However, the methods for identifying *acute* hunger and malnutrition are less developed or used. While 'wasting', i.e. loss of weight against height, is the marker of a sudden or acute dip in food intake, it has several limitations, and there is little by way of a working consensus among nutritionists, public health persons and

administrators on how to identify this in individuals, population groups and communities, especially for the Indian/South Asian context. Since these are relevant for emergency situations of acute food shortage and life-saving provisioning of foodgrain, there is a need to develop them on an urgent basis.

The primary objective of the identification under consideration is to develop working criteria that can be used at a mass level for initiating action by the administrative machinery. They could also be used to support advocacy for administrative action. A third purpose of this surveillance would be the mobilization of civil society and community level action on the issue of acute hunger.

Given your experience and expertise in relation to the subject, we would value your participation in a technical deliberation. Please do find the time to be with us and contribute in developing meaningful tools that can be operationalised for minimizing the hunger and starvation. Travel by 2nd AC train or air will be reimbursed and local hospitality provided. Our apologies for the short notice.

With best wishes and regards,

Ritu Priya
(Professor, Centre of Social Medicine &
Community Health, JNU)



Harsh Mander
(Special Commissioner, Supreme Court &
Director, Centre for Equity Studies)

Enclosed: (1) Concept Note, (2) Programme Schedule

National Consultation on Developing Tools for Early Identification of Acute Hunger for Effective Administrative Action

The Centre of Social Medicine & Community Health, JNU, the Office of the Commissioner to the Supreme Court on the Petition of the PUCL vs GOI, CSDS-SADED and Centre for Equity Studies are organising a technical workshop to discuss the optional tools and methods for identification of starvation deaths and early signs of food shortage in a community such that it enables the civil administration to act effectively in response.

The Problem

The problem of chronic malnutrition is a curse at least 40% of Indian households live with, 30-40% of adults and 50-60% of children below 6 years being undernourished. Methods for identifying the chronically malnourished through anthropometric indices using reference standards are fairly well worked out and in use. Of course, the uncertainty and probabilistic nature of any such assessment constantly leads to contentions and further refining of the methods, from the Gomez classification to the z-score based cut-offs, to the reference curves and to the most recent WHO standards for child growth of 2006. The ICDS is meant to regularly measure weight of each child registered with the anganwadi and plot it against a graph that marks the expected healthy increase of weight by age.

However, the methods for identifying *acute* hunger and malnutrition are less worked out. There is little by way of a working consensus among nutritionists, public health persons and administrators on how to identify this in individuals, population groups and communities, especially for the Indian/South Asian situation. Since these are relevant for emergency situations of acute food shortage and life-saving provisioning of foodgrain, there is a need to develop them on an urgent basis.

Given the high levels of chronic undernutrition, a high proportion of our people live at bare subsistence consumption of food. Any further lowering of food intake leads to loss of survival. While 'wasting', ie. loss of weight against height, is the marker of a sudden or acute dip in food

intake, it has several limitations. One is the operational barrier of heights being difficult to measure with reasonable accuracy in field conditions by community level workers. Weights are easier to measure and are more inclusive for assessment of malnutrition. The second is that acute malnutrition is often accompanied by communicable disease and this can be viewed as the primary problem and argued that the loss of weight has been secondary to it. If the child dies, the disease is often contended to be the cause of death rather than the deficiency of food. Given this perception, the response then is to provide medical care and not food relief. Systems of nutritional surveillance need to be set up that can detect acute declines in access to food and nutritional status early enough so that public action can minimise the hunger and starvation.

The primary objective of the identification under consideration is to inform the definition of criteria that can be for used at a mass level for initiating action by the administrative machinery. They could also be used to support advocacy for administrative action. A third purpose of this surveillance would be the mobilization of civil society and community level action on the issue of acute hunger.

Identification for Administrative Action

Currently there are two ways in which the administration recognizes acute hunger and responds with pre-emptive action.

1. One is by acting in favour of a household where a starvation death has occurred to provide relief to its surviving members. Starvation, i.e., death due to severe deficiency of food intake, which is below the energy requirement of basic physiological functioning, has been conventionally identified by the civil administration by an autopsy that shows presence of no food in the stomach. Then the household of the person who died of starvation, gets emergency relief (10 kgs. food grain, work for food, etc.). As per the colonial Famine Code, even 2 grains of rice found in the stomach is 'proof' against starvation as cause of death. This definition often makes it difficult for the civil administration to accept the 'proof' of a starvation death despite all circumstantial evidence to support the contention.

A JSA group had worked on this problem some years ago and has developed a methodology for identifying starvation deaths for initiation of administrative action and advocacy for the same.

The office of the Commissioner of the Supreme Court in the case of PUCL vs GOI has also worked out a methodology for identifying deaths that require urgent relief for the household of the dead person. It addresses many of the challenges faced in investigating any reported cases of starvation deaths in a meaningful way for the people suffering such levels of destitution. We would like to discuss these and any others, so that all of us can be better informed on them as well as create a consensus on what is the technically appropriate method for the stated objectives.

2. Other than starvation deaths that draw attention to the plight of individual households, there is the provision for declaring districts as 'drought affected', so that then relief works and other measures for application at population level can be initiated. This is an extremely important measure and its implementation requires to be strengthened.

However, this measure has its limitations. For instance it will not apply to a situation of food shortage which is due to rise in food prices or a situation of sudden unemployment such as closure of factories. Also it will not be able to identify specific pockets of hunger and the most vulnerable are often left out as beneficiaries of the relief works. Some community level means of identification have to be developed for local action. The method(s) will need to have a ready data source that allows constant monitoring or surveillance of nutritional status and a system for quick recognition of declines in it.

At one level, the local situation can be monitored by economic data such as trends in the sale of foodgrains in the area. The second method possible is by data on consumption of food items, and the third is by anthropometry. It is considered worthwhile to develop multiple ways of surveillance and a system that is able to use them all together. The surveillance should also be closely linked to a response mechanism that immediately acts on the information about declines in nutritional status. One suggestion, as in the attached note, is about using the ICDS growth monitoring system for not only the individual level identification of child malnutrition but also for surveillance of the collective situation in the community.

There is need to discuss all the possible options and form a working consensus on what would be the best tools and methodology for early identification of acute food shortage and hunger *before*

it results in starvation deaths, given the present knowledge and possible sources of data as well as the requirements for the civil administration to act. This may be useful for responding to the immediate crisis at hand. However, for building systems in the longer term, we would not like to restrict ourselves to the present constraints of data sources and would like a detailed discussion on what could the wish list of tools be for the most effective and rational methodology .

Thus, we hope to have one session at the brainstorming for presentation of the methods for identifying starvation deaths, with initial presentation of the various methodologies. The post-lunch session would deal with other tools for early identification of acute hunger at a collective level. The focus is explicitly on developing tools that enable the administration to institute emergency responses through a multiplicity of pathways.

Programme Schedule

Venue: Committee Room, School of Social Sciences-I

Jawaharlal Nehru University, N.D-110067

Date: 13th May, 2010

9.00am: Registration & Tea

9.30am: Welcome: Rama Baru, Chairperson CSMCH

Introduction to the Workshop

Introduction of Participants

10am-1pm: Technical Session I

Chair—N.C. Saxena

1. Challenges in Identification and Verification of Starvation Deaths & Acute Hunger -- Harsh Mander
2. Overview of Public Health Approach to Early Detection of Acute Hunger : the Challenges & Possibilities—Ritu Priya
3. Guidelines by the Jan Swasthya Abhiyan Hunger Watch Group on Verification of Starvation Deaths & Detection of Hunger in the Community —Vandana Prasad

11-11.15am TEA

4. Experiences of the Investigations into Starvation Deaths—State Advisors to the Commissioner's Office
5. Round Table Discussion on Criteria for Defining and Verifying Starvation

1-2pm: LUNCH

2-5pm: Technical Session II

Round Table Discussion on Methods for Early Detection of Acute Food Deficits in the Community

Chair—Imrana Qadeer

1. Tools and methods for early detection of large scale acute hunger
2. Use of the tools for community monitoring

3.30-3.45 TEA

Future Collaborative Work

5.15-5.30 TEA & Snacks

Annexure 2 – Bibliography and Resource Material

1. Bakshi, Aparajita and Jun-ichi Okabe (2008) ‘Panchayat Level Data Bases: A West Bengal Case Study’ Presented at *Studying Village Economies in India: A Colloquium on Methodology*, December 21 to 24
http://www.agrarianstudies.org/UserFiles/File/S8_Bakshi_and_Okabe_Panchayat_Level_Data%20Bases.pdf
2. Baru, Rama ‘Epidemics as Markers of Socio-Economic Inequalities’ Forthcoming *History and Sociology of South Asia*
3. Bhalani, K.D. and P.V. Kotecha (2002) ‘Nutritional Status and Gender Differences in the Children of less than 5 Years of age Attending ICDS Anganwadis in Vadodara City’ *Indian Journal of Community Medicine* V 27, N 3.
<http://www.indmedica.com/journals.php?journalid=7&issueid=41&articleid=520&action=article>
4. Chakravarty, Lalita (2001) ‘Biological Stress and History From Below: The Millet Zone of India 1970-92’ in Qadeer, I., K. Sen and K.R. Nayar *Public Health and the Poverty of Reforms: The South Asian Predicament* New Delhi: Sage.
5. Child Deaths Evaluation Committee, Government of Maharashtra (2004) *Diagnosis: The True Magnitude of Child Mortality and Malnutrition* First Report
6. Child Deaths Evaluation Committee, Government of Maharashtra (2005) *Recommended Measures on Child Mortality and Malnutrition* Executive Summary of Second and Final Report
7. Collins, Steve et al (2006) ‘Management of severe acute malnutrition in children’ *Lancet* V 368, December 2, pp 1992–2000.
8. Deaton, Angus and Jean Dreze (2008) ‘Nutrition in India: Facts and Interpretations’
http://weblamp.princeton.edu/chw/papers/deaton_dreze_india_nutrition.pdf
9. Dietary Intakes and Nutritional Status
<http://www.nutritionfoundationofindia.res.in/pdfs/FAO%20final%20report%20%20a%20crobat%20version%20fao2007/6%20Dietary%20and%20nutritional%20status/6.2%20Dietary%20intake.pdf>

10. Diwakar, G. Dilip (2010) 'Nutritional Trend of 0-6 years Children in Kancheepuram District, Tamil Nadu'
11. Jan Swasthya Abhiyan Hunger Watch Group *Guidelines for Investigating Suspected Starvation Deaths* http://www.righttofoodindia.org/research/HungerWatch_guidelines.doc
12. Kerac, Marko and Andrew Seal (2006) 'Letter on WHO 2006 Growth Standards' *Field Exchange* Issue 28, July. <http://fex.enonline.net/28/letters.aspx>
13. Kerac, Marko, Rebecca Egan, Sam Mayer, Anne Walsh, Andrew Seal (2009) 'New WHO growth standards: roll-out needs more resources' *Lancet* V 374, July 11, pp 100-102.
14. Kumaran, M. (2010) 'A note on indicators used by current early warning systems for assessing acute food insecurity in India and their increasing irrelevance'
15. Kumaran, M. (2010) 'Self reported hunger and surveillance for measuring acute hunger through community surveys: A note on potential use and limitations'
16. Mander, Harsh (2007) 'Towards a Food Rights Code: The State, Food Denials and Food Rights' Discussion Draft, Centre for Equity Studies.
17. National Family Health Survey (NFHS-3), 2005-06 'Adult Nutrition' <http://www.nfhsindia.org/NFHS-3%20Data/Afterdiss/PPT/NFHS-3%20Nutritional%20Status%20of%20Adults.ppt>
18. Nutrition Fact Sheet
19. Prasad, Vandana, (2010) 'Jan Swasthya Abhiyan's Hunger Watch Protocol' Presented at *National Consultation on Developing Tools for Early Identification of Acute Hunger for Effective Administrative Action*, 13 May, Jawaharlal Nehru University, New Delhi.
20. Priya, Ritu (1997) 'Health and Nutrition: People, Policies and Politics' *Lokayan Bulletin* Vol. 14, No 1, pp 63-83.
21. Priya, Ritu (2010) 'Public Health Approach to Early Detection of Acute Hunger: the Challenges & Possibilities' Presented at *National Consultation on Developing Tools for Early Identification of Acute Hunger for Effective Administrative Action*, 13 May, Jawaharlal Nehru University, New Delhi.
22. Priya, Ritu 'Preventing Chronic Hunger, Acute Malnutrition and Starvation: Action 2010'

23. Qadeer, Imrana, Anju P. Priyadarshi (2005) 'Nutrition Policy: Shifts and Logical Fallacies' *Economic and Political Weekly* January 25, V 40 N 5, pp 358-364.
24. Reinhard, Ines and K.B.S. Wijayarathne (2000) 'The Use of Stunting and Wasting as Indicators for Food Insecurity and Poverty' Working Paper 27, PIMU Open Forum, Integrated Food Security Programme, Trincomalee.
<http://www.sas.upenn.edu/~dludden/stunting-wasting.pdf>
25. Report of High Level Expert Committee on Basic Statistics for Local Level Development, Ministry of Statistics and Programme Implementation, Government of India (2006)http://mospi.nic.in/llreport_ssd.pdf
26. Report of the Balangir Starvation Death Case (2009)
http://www.righttofoodindia.org/data/report_of_the_balangir_starvation_death_case.pdf
27. Rezaul, Karim et al (2002) 'Challenges to the Monitoring and Evaluation of Large Nutrition Programs in Developing Countries: Examples from Bangladesh' The Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy, Food Policy and Applied Nutrition Program, Discussion Paper No. 1
http://nutrition.tufts.edu/docs/pdf/fpan/wp01-mep_bangladesh.pdf
28. Rupesh, Advisor to Commissioner of the Supreme Court in the case PUCL Vs UOI and Others. Writ Petition (Civil) No. 196 of 2001 (2009).
29. Samaj Chetna Adhikar Manch, MPLSSM and Right to Food Campaign Madhya Pradesh Support Group (2010) *Feudal Politics of Starvation and Malnutrition*
30. Saxena, N. C. (2009) 'Hunger, Under-nutrition and Food Security in India'
<http://www.sccommissioners.org/documents/download/131>
31. Saxena, N. C. and Harsh Mander (2007) *A Protocol for Preventing Starvation*
32. Sinha, Dipa (2006) 'Rethinking ICDS: A Rights Based Perspective' *Economic and Political Weekly* August 26, V 41 N 34, pp 3689-94.
33. *Starvation: Impact and Response – A Tracking Survey Instrument*
34. *State Response on Starvation Protocol*
35. Sundararaman, T. (2006) 'Universalisation of ICDS and Community Health Worker Programmes: Lessons from Chhattisgarh' *Economic and Political Weekly* August 26, V 41 N 34, pp 3674-79.

36. Working Group on Children Under Six (2007) 'Strategies for Children under Six'
Economic and Political Weekly December 29, V 42 N 52, pp 87-101.
37. Zurbrigg, Sheila (1994): 'The Hungry Rarely Write History and Historians are Rarely Hungry: Reclaiming Hunger in the History of Health', Paper presented at the Centre for Health Studies, York University, Canada.

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