



The role of business in development

SESSION 2 - THE DOUBLE BURDEN OF MALNUTRITION

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

That brings me to the name of our session, which is on the Double Burden of Malnutrition. And to lead us through this, we have a really magnificent panel. I'll start over here and go along; Ann Veneman, who is the former Executive Director of UNICEF; Srinath Reddy, Professor Reddy is the President of the Public Health Foundation of India.

We have Nandu Nandkishore who is the Executive Vice President of Zone Asia-Oceania-Africa of Nestle, which I say is two-thirds of the world's population, and Venkatesh Mannar who is President of Micronutrient Initiative.

I want to very much thank you all for your questions and as those of who did not have a chance to put in your questions at the last session, please, to be the first to raise you hand so that you can ask questions here or in any of our other sessions coming up. As you know, we'll have this in the form of a discussion but I do urge you, please, to jump in and comment on each other's contributions as we go along.

I'd like to start off in a different way. Ann Veneman has an interesting little story about how she first got introduced -- I'll put it this way, to the double version -- the double burden rather, of malnutrition.

So perhaps you could tell us what that story is. How did you get introduced to this subject?

Ann M. Veneman - former Executive Director - UNICEF

Well, as we were talking about getting ready for this panel today, I was telling that story to Maria, because it did involve India. And I came in to UNICEF initially in the spring of 2005, having been the Secretary of Agriculture of in US or the minister equivalent in this country. And that's relevant to this story because about the second week in, I was asked to meet with the Minister of Health from India.

And so, my UNICEF people prepared me for this and we sat down together over at the UN building in New York. And the minister didn't want to talk to me about UNICEF. He wanted to talk to me about the role that the US Department of Agriculture had in really looking at the dietary guidelines, the food guide pyramids because he said that we have such an increasing problem of overweight and obesity in children in this country.

And so, that was kind of how I got introduced to children and nutrition in India. About 2 months later, I was preparing for a press conference to release one of the many UNICEF reports, and this one was on nutrition and a progress for children on nutrition. And I was looking through the statistics preparing for this press conference, and here I see India with the highest rate -- the highest rate of what they call under [5s] underweight in the world at then 47%. It's now 43%. 47% of under 5s underweight. This was the highest rate in the entire world.

And I said to my staff, how can this possibly be? I just met with the minister a month and a half ago and he told me they have this problem of [underweight]. And so, they tried to explain to me the many issues that come together in India around these issues of undernutrition, and it's everything from social issues and the fact that early marriage in this country is so prevalent. And as a result, you also have so many women who are anemic and undernourished when they get pregnant that

then creates underweight children to begin with and they continued to be underweight and undernourished into their young childhood.

There is also a huge problem as was alluded to in the last panel and by the speakers about clean water and sanitation in this country, which of course leads to nutritional problems particularly among children, exposure to lack of clean water. This is the only country in the world where over 50% of the country still practices open defecation, which is a huge problem with clean water and sanitation and creates nutritional problems in children.

And so, as we looked at these issues also, I think it's very critical that we focus on the first 1,000 days of life. That is pregnancy and the first 2 years of the child's life.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Just so we're clear, when we talk about the first 1,000 days, we're not talking about 1,000 days after birth. We're talking about the first 1,000 from conception.

Ann M. Veneman - former Executive Director - UNICEF

Right.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Does this have -- Ann, is there a concern on the first 1,000 days also because of the difficult some time situation of women in the world where there is a problem of undernutrition?

Ann M. Veneman - former Executive Director - UNICEF

Exactly. And that's why I bring up the issue of early marriage. It's undernutrition of the women, it's underweight women to begin with when they get pregnant. So it begins with the health of the mother is inextricably linked to the health of the child. And the reason this first 1,000 days is so important is because that impacts brain development of the child. And so it impacts the person's ability to learn in school as a child and earn as an adult later on.

And so, there's a vested interest in the country in the part of businesses to not have people that start out with that problem.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

That is almost an insurmountable obstacle afterwards. But one of the issues that you must have tackled and I certainly know that yourself, Professor Reddy, you have tackled is how to get in those first 1,000 days an access to the health and to the medicine to the nutrition that is needed.

And I know, Professor that you sure enough, if I may be so bold, have very much talked about how you need the public involved in this, the public authorities, private authorities, NGOs, institutions, in order -- it's a controversial area of getting access to health and to medicines and the role of business in that. Do you have some thoughts that you could share with us of how that could be done, how that is done, how you have promoted it?

Srinath Reddy - President - Public Health Foundation of India

As Ann has mentioned, the critical period is the period between conception and the first 2 years of life. Nevertheless, the beginnings of malnutrition occur from the time the mother is an adolescent girl. And if the mother is undernourished --

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

You mean, already as a girl?

Srinath Reddy - President - Public Health Foundation of India

As a girl. If the mother is undernourished as a girl, firstly, the pelvic size is small, which actually results in a small placental [size] which reduce blood flow to the child in the womb. And that actually sets the stage for undernutrition. So pregnancy is sometimes a little too late to start the connection. It is necessary -- it is necessary to do that, but then you have to start from the stage of the adolescent girl in order to ensure that both her health and the child or her offspring are better protected.

So I think, all our public health affairs will have to start from correcting undernutrition as well as anemia in the adolescent girl-child, ensuring that she grows to full size is actually able to bear healthy offspring with an appropriately timed marriage and appropriately timed pregnancy. And all of these requires a fair amount of social mobilization around the issues of women's health.

And therefore, public health will have to engage multiple stakeholders in this process by increasing community awareness, changing some of the cultural practices that have promoted early marriage and early birth, and ensure that even the health services match accordingly with provision of adequate supplementation of iron, folic acid and other micronutrients from the adolescent girl stage to the pregnancy stage and ensure the child nutrition is also protected appropriately at different stages of child growth.

Now, we cannot stop at 2 years though, because it has been shown very clearly that children who are born malnourished and small for size are much more likely to develop adult diabetes and cardiovascular disease and even some cancers if they receive inappropriate nutrition between the ages of 2 and 12.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Oh, all the way up to 12 will have an impact.

Srinath Reddy - President - Public Health Foundation of India

Between 2 and 12 if you have an appropriate nutrition, their bodies which have been conditioned for survival while in the womb to be born small, but have a metabolic or physiological programming to deal with low nutritional resources. If there is a mismatch in later life, they're much more likely to grow stunted but also become bad particularly in early adult life. And therefore, it's been shown that the so-called rebound adiposity is most likely to occur between 2 to 12 years of age.

So we must actually ensure health across their lifespan by protecting the mother from being a girl-child who is adequately nourished, to the pregnant mother, to early childhood nutrition, but also ensure that the child that's growing up between the ages of 2 and 12 has appropriate nutrition and adequate physical activity so that they do not become vulnerable adults early on in adult life for diabetes and cardiovascular disease.

And here is where, I think multiple stakeholders will have to come into play to both ensure that family practices of nutrition are improved, but also the societal environment which provides adequate nutrition, appropriate nutrition at affordable cost is possible through both agricultural practices, which are appropriately aligned to national nutritional goals. But also, the whole food industry and food processing industry also addresses this double jeopardy of early life malnutrition, as well as a latter life malnutrition.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

I'd like to come back exactly on that and ask you a little bit further on adapting the agenda of sustainable development, sustainable health and so on. But before we do, Ann, you were very often talked about that we should stop talking about just calories here. It's not just not enough food, but it's actually the quality of the nutrition that counts. We should speak nutrition, not calories. I know you've said this very often, but just so that we're clear on this, not just underweight per se?

Ann Veneman; This is, I think, a very important issue. It's not just about the calorie intake and often look at calorie intake and agriculture and calories and getting enough calories to the people, and how do we feed the 9 billion people. But we have to look at nutrients because it is about -- I mean, you could have -- this double burden is about malnourishment both with undernourished and over-nourished children. And it is about nutrients and that's why micronutrients are so important, fortification of food and I think I need a real focus in them.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

And let me ask you both before I turn to other panelists, how is it that both exist at the same time, undernutrition and obesity, very often I am told, even in the same areas and the same families this can -- isn't because of what you said a minute ago that undernutrition and malnutrition already before birth predisposes the body to search for, as they become, more economically developed, they keep going.? Or, is there something else at work? What makes that happen?

Srinath Reddy - President - Public Health Foundation of India

Firstly, if the child is undernourished in the womb, there is a greater preference for diverting the scarce resources for brain and neurological development. The other organ suffers as a result, including a lower muscle mass. And as the child grows, if you actually add calories, even what are considered normal calories, these calories can actually result in increased body fat content, and may actually have a stunted child.

But equally, importantly, it is important to realize that in India, at any given level of body mass index, the percentage of body fat is much higher compared to a Caucasian. And it is for several reasons; it's not purely genetic, it's conditioned by multiple factors including what happens during pregnancy.

Therefore, you don't have to look overtly obese or overweight to be actually metabolically overweight because of higher percentage body fat. So you're already at a high risk. And if you actually start putting on overweight and obesity, and many of children have no currently heading that way in urban environments with the latest national estimates that 18% of adolescents are overweight and are obese.

So, there is an issue of concern here. So you can have -- actually, the so-called over-nutrition is a misnomer even that is the face of malnutrition because there are also short of micronutrients. They take less fruit and vegetables. They have less fiber in their diet. And therefore, you're seeing two faces of malnutrition, one of the truly wasted or stunted child.

And second, the child who has much larger amount of body fat than needed, much lower amount of muscle mass than needed, and can actually be overweight or obese and still in a sense undernourished.

Therefore, it's not surprising that we have both of these but there is a connection between the two. But even otherwise, a child who might have been born with normal weight, when subjected to societal environment, which actually encourages over caloric consumption or inappropriate consumption of unhealthy foods in preference to health foods can acquire over weight and obesity as well.

Therefore, we need to tackle the problem of nutrition across the board and our nutritional policies at the national level, as well as the policies of the various stakeholders engaging in the provision of nutrients to people through water or food items are available in the market should address all of these problems through the proper lens.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Thank you very, Srinath. I'd like to pick up on the issue of nutrients themselves because this is -- there are lot of developments in the micronutrient world, Venkatesh. And you know very well, from what we have just been discussing that

it's not the caloric intake that we're interested in here, it's the nutrients. And one very, very special part of that is the micronutrient picture.

There's been some advances in this respect and some work that you have been doing. Could you perhaps tell us some of the new areas that of particular relevant perhaps in India?

Venkatesh Mannar - President - Micronutrient Initiative

Thank you. Ann and Srinath have actually framed the discussion very well. The fact that we're moving from just food security based on caloric intake, to a comprehensive food and nutrition security that actually measures outcomes of mental acuity, economic productivity and moves beyond just physical survival. And so in that process -- so we're talking of both the quantity and the quality of food. But as Ann rightly pointed out, it's more than that. It's the whole nexus of health and caring practices and the combination with the quantity and quality of food that assures adequate nutrition to an individual or a community.

And part of this -- and here's where the whole issue of micronutrients comes in. You can have large populations that even have adequate calorie of protein intake, but they could be deficient in one or more of these micronutrients. It could be iron, iodine, and all of these have -- they're [required] in micro quantities, but they have macro implications; iron deficiency anemia, huge implications for the mother and for the newborn in terms of cognitive development.

And in terms of economic productivity, we just completed a study in Darjeeling recently among women [typical]. Those are who are given iodine through a double fortified salt are showing much higher, better volume metabolism and productivity. So you can see the links there. Iodine through iodize salt has huge implications in terms of mental development, prevention of mental impairment in young children. So all to say that these nutrients, vitamin A, have huge implications for immunity and child survival.

In fact, young children -- some of the principal causes of young child mortality are deficiencies in some of these nutrients.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

And what is your proposals, if you wish, or how in the research world are you getting these micronutrients in various ways into the --?

Venkatesh Mannar - President - Micronutrient Initiative

Right. The good news is that we have excellent solutions that work. I mean, it's not that we need to go back to do more research. We have proven interventions that can provide these nutrients to large populations at a very low cost. So it's not a question of not having a solution. The challenge is, how do we make sure that every woman and every child gets his nutrients at appropriate times in that whole life cycle?

And, Srinath, like you said that you might focus on certain parts of the life cycle and (inaudible) 1,000 days. But we need to ensure that right through the life cycle, people and -- receiving these nutrients in the right quantities.

And that becomes the challenges of -- and that's where I think the whole issue of shared value comes in because we are asking society and -- both the government and other sectors -- the private sector to join to come up with a plan by which we can ensure that each member of society receives these nutrients, either through foods or through supplements.

There are a whole range of approaches. And we have solutions on hand. We have to take this to scale in countries where there are huge challenges -- poor governance, poor infrastructure, communications. But we have to work with those challenges and assure that it's possible.

And we have many examples in the past 10, 20 years where countries have made huge shifts in improving their status. Brazil, in 10 years, within 2010, more than halved their rates of undernutrition, anemia. You can do it in a short period.

Thailand, Vietnam, China -- you have many examples of countries that have really moved in the last 10 to 20 years and why can't the rest of the world do it?

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

I assume that there is a part to be played also with social changes particularly for young girls and bringing people's awareness to these things. But obviously, thank you very much, Venkatesh.

But let's move on perhaps to what you're actually, in this area, Nandu, what is actually happening. One of the -- you've often said that you have to base your strategy on the facts and the realities on the ground of what is actually available.

One of the big effects and challenges that I see also in India is this is a country unlike the rest of world which is not yet 50% urbanized. The rest of the world as a whole is way over 50%. India is getting there, but that's going to be another challenge. In the next few years, India will be 50% urbanized. That will probably present a whole another series of challenges. You need credible sources of food and so on.

How do you see yourselves and how do you bring these micronutrients and this nutritious, let's say, solutions which are available to populations that are both very rural and now becoming very urban?

Nandu Nandkishore - Executive Vice-President Zone Asia-Oceania-Africa - Nestlé S.A.

Well, firstly, thank you, Maria. I think the issue is being very well framed on a nutritional level by Ann, by Dr. Reddy and by Venkatesh. If you allow me to expand on that --

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Please do.

Nandu Nandkishore - Executive Vice-President Zone Asia-Oceania-Africa - Nestlé S.A.

-- and then come to the urbanizational question.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Yes, absolutely.

Nandu Nandkishore - Executive Vice-President Zone Asia-Oceania-Africa - Nestlé S.A.

The issue of under 5 stunting is something that is widespread in South Asia and in Sub-Saharan, Africa. And indeed, as Dr. Reddy said, it is often a flip side of the coin which the same society, often the same individuals then to be obesogenic later on in life. And this has indeed got some root causes in the first 1,000 days -- inappropriate nutrition in the first 1,000 days of life.

If you allow me to share a little example to illustrate Dr. Reddy's point, in fact. What we know is that one of the biggest predictors for adult diabetes in males is the waist hip ratio. For a hip waist of 1.1 to 1 because you have a slight paunch. In Caucasian populations, typically -

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Everyone pulls in.

Nandu Nandkishore - Executive Vice-President Zone Asia-Oceania-Africa - Nestlé S.A.

Males I said -- in Caucasian populations typically, 10% of the population are diabetic. In South Asia, that number jumps from 10% to 30%. Now of course, this is multi-factorial, but one of the root causes is probably in the metabolic response to malnutrition in the first 1,000 days, as for the mechanisms outlined Dr. Reddy.

Now in this context, going forward, as we see increased levels of urbanization -- and you are right, today for the first time in then history of humanity, more 50% of humanity lives in urban areas. And urbanization fundamentally is not possible, unless you have a robust food processing industry that is able to tap the hinterland and convert the agricultural products to a form where they can be preserved and available to society in urban areas.

Now, at the same time this is done that our two things that have to happen; one is in the education area and one is in the micronutrient fortification and the content of the food and security interventions and both of these areas are multisectoral. And a private sector like Nestle has it all (inaudible) nutritional signs, sold to government, sold to non-government organizations and opinion leaders.

The first is education. I think what we have to do is to educate society to change the nutritional status of women. Starting from adolescence, but particularly during the pre-pregnancy and pregnancy area. Often in our societies, we realize that women are the last to eat.

It's often the father-in-law, the mother-in-law, the other kids, the husband and only the leftovers of what the woman eats. And this is probably not something that's well designed as a social mechanism to ensure the kind of nutritional intervention that women require. And this is something that can be challenged, should be challenged but has to be multisectoral in its challenge.

And the second is indeed to make sure that the foods that are available are appropriately fortified with micronutrients to address the kind of deficiencies of iron, of iodine, vitamin A, zinc and so on. And so, in the Central and West Africa, for instance, we have fortified -- the bullion cubes that I use for cooking they are fortified with iron and we have 100 million iron-fortified cubes that are sold everyday.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Every day?

Nandu Nandkishore - Executive Vice-President Zone Asia-Oceania-Africa - Nestlé S.A.

Every day. And this then provides iron fortification and provides about 15% to 20% of the family's requirements of iron --

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

So it comes through the cube.

Nandu Nandkishore - Executive Vice-President Zone Asia-Oceania-Africa - Nestlé S.A.

-- just in the process of (inaudible) similar to iodized salt, for instance. So I think working together we have an enormous intervention, an enormous challenge but at the same time an enormous opportunity because if we get this right, within a space of a decade, as Venkatesh was saying, we can convert whole generations to being more productive, physically, socially and economically.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

But that's a little bit of what Srinath was saying when -- I took a note that he was saying that the industry itself will have to be part of the adaptation of this agenda. In other words, it goes right in through all the products and the preparations that go into the basic ingredients and you sort of almost go through the lowest common denominator of what is used in this respect.

Let me come back to you in a minute, but I promised that I would open up also the floor. And we have some people in our audience who are extremely knowledgeable on these issues. And I'm going to come down and call on them and ask the ladies with the microphones if they could come forward if they're in the room. Thank you very much.

We have here with us [Robert Black], where are you sitting? Over here. Here you are. And I want particularly to call on you because he's Chairman of the Department of International Health at Johns Hopkins University. And Bob, did you also -- doing a very interesting new series and land set on these issues. And I've read some of your articles and you have exactly you've been saying that economic growth is not reduced undernutrition among infants and young children. And economic growth has neither has also contributed steadily to overweight and obesity.

I'd be very interested to hear some of your thoughts on this.

QUESTION AND ANSWER

Robert Black - Chairman, Department of International Health - Johns Hopkins

Thank you, Maria. The panel has covered these issues very well, but I'll try to expand on just a couple and then perhaps pose a question.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Speak well into your microphone.

Robert Black - Chairman, Department of International Health - Johns Hopkins

The issues around underweight and micronutrient deficiencies are still very much present in the world. And although there is slight improvement, there is still a tremendous problem with both of these sets of conditions. And I think with economic growth, some will continue to improve but there are great inequities, great inequalities in these conditions.

So the economic growth, for example, in a country like India, which is growing economically, has not affected the poorer segments of society very well at this point. So we're seeing also now a polarization so the poorer parts of society continue to have very serious under-nutrition problems where the more wealthy parts of the society are having the growing obesity.

So, the society has this double burden as well as the issues that have been raised by Srinath about individuals having that particular risk by being undernourished in childhood and then having the problem as overweight comes in and the chronic diseases that occur. So I think we have to pay attention to both of these conditions at the same time within societies.

And I just wanted to go back to a question if I may, when we did the series on paternal and child nutrition -- undernutrition in The Lancet in 2008, we really focused on undernutrition. The new series that we're doing will be published 5 years after than initial series next year is going to take on the challenge in children, at least women and children of overernutrition and obesity.

And when we are thinking about this, we need to think about the solutions. And Srinath actually raised an age group. and so, we've talked a lot about the 1,000 days and in our previous series, really talked about that as the critical period. But I think now, as we think about overweight, we have a second critical period of the say 2 to 12 year age group because the rapid weight gain in that age group is really what sets up the overweight and obesity and chronic disease issues.

And so, my question for the panel is much of this would be in the school age group, preschool and school age, and what are the relevant roles for business in partnership with the school system, with governments who provide the education, and how can business actually contribute to reducing this risk of obesity and the subsequent chronic diseases?

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Excellent. Thank you very much, and we look forward to the new series which will be coming out this year or next year?

Robert Black - Chairman, Department of International Health - Johns Hopkins

Next year.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Next year. I'd like to move across here, and we have with us as well, Irwin Rosenberg who is Professor of Physiology at Tufts University. Irwin, where are you? Here you are. You have often addressed some of these issues also of young -- of education and young people and how it works. Would you like to perhaps answer even, address some of the questions that Mr. Black brought up or others?

Irwin Rosenberg - Tufts University - Professor of Physiology

I don't think that I can provide the answers to some of the challenges that Dr. Black presented. I would add an additional challenge about this very important problem of the double burden of malnutrition. To note that we probably need better ways, more precise ways of identifying these problems and especially of the interventions which are done to respond to the very prevalent problem of, let's say, stunting or wasting in the world, as well as the onset obesity.

I think Dr. Reddy pointed out that some of this has to do with more precise measurements than simply weight or weight for age or height for age, but actually body composition measurements. I think need better biomarkers of those measurements as well as some advances in the biomarkers of micronutrient deficiency.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

So that has to go into the public health systems to do that.

Irwin Rosenberg - Tufts University - Professor of Physiology

And so, I think we do need to have even a stronger system of measurement, not only of the extent the problem, but the way in which our interventions are responding.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Thank you very much. Dr. Sesikeran, where are you, sir? There you are, sir, right at the end. I'd like to get your views on this.

Dr. B. Sesikeran - Former Director - National Institute of Nutrition

So actually, if you look at the kind of data we have in our country --

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Oh, by the way, Dr. Sesikeran, sorry, you were the former Director of the National Institute of Nutrition. Please, go ahead.

Dr. B. Sesikeran - Former Director - National Institute of Nutrition

So we actually have in these children, quite a lot of stunting and underweight is primarily because their energy intakes are not adequate. And the reason why the energy intakes are not adequate is that they are getting predominantly cereal based diets and the cereals cannot meet that energy.

And that is an age group in which we should not be hesitant about increasing the fat intakes. We increase the fat intake, they are going to meet the energy gap, and that energy is required for growth.

The second major important thing is the protein. The protein is primarily cereal pulp based protein which have quite a bit of limiting amino acids, and therefore, they don't translate into adequate amount of muscle and bone growth. So, we need to have better quality protein, either coming from better quality legumes or through milk-based sources.

And, of course, the third one is called micronutrient. Even if you meet the energy adequacy, even if you get good protein, if you still -- micronutrients are inadequate, you will not see the benefit. We have seen quite often when you supplement iron to children, it doesn't always translate into hemoglobin because there is still a protein gap and there's a micronutrient gap.

So unless, these are done in a comprehensive manner, I think we will not be able to solve this problem in our country at the moment.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Dr. Sesikeran, that is exactly the point that I know that (inaudible) who is here from Thailand has said many time, in Thailand, you overcame a bit this problem by looking at it in a way that Dr. Sesikeran suggests, which is not just one intervention, one kind of micronutrient, but more of a more comprehensive view.

Unidentified Audience Member

Thank you, Maria. I think that's correct because nutrition is a link between food and health. So it requires not only quantity but also quality in term of adequate supply of protein, energy, micronutrient. And at the same time, it also requires clean drinking water supply and basic hygienic environment.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Because you had a very big problem in Thailand [on this] but --

Unidentified Audience Member

Yes. In addition to that, it require also basic services, and prenatal care, infant [injection] feeding. Another one, using the life cycle approach. And by doing that it also requires participation from private sector, business sector, NGO, government, civil society, particularly at community level, how to have adequate food supply to the community and family.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

And the community -- right.

Unidentified Audience Member

Yes.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Thank you. And it worked.

Unidentified Audience Member

It worked very well, particularly -- I just would like to mention anemia. Anemia, people just try to sew it back by giving iron and folate. It won't work unless you provide food and other micronutrient, particularly for pregnant women.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Yes. You have to add -- or put all together.

Unidentified Audience Member

We each have the same view.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Single intervention is not the answer to this, but a more comprehensive view. I'll take some questions from the floor. Several hands, a gentleman here. Why don't we take this side and hen we'll take from the other side? Please introduce yourself, sir.

QUESTION AND ANSWER

Unidentified Audience Member

Yes. (Inaudible) I'm formerly UNICEF -- [now] Chairperson of [Water Life]. Two comments, one is -- I mean, both are connected with this behavioral lesions. The obesity is also coming because in urban India at least, the physical exercise which is needed for the children going down, they're getting more hooked up with the TV and the computer and iPod.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Join the rest of crowd --

Unidentified Audience Member

-- and their physical exercise is extremely less. So I think we're used to the comprehensive approach. It includes the behavior of change, it's a very important --

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

It's the lifestyle -- the healthy lifestyle.

Unidentified Audience Member

-- lifestyle. The second part is that although it feels because when my previous speakers mentioned about need of drinking water. I think we underestimate today drinking water or sanitation is just supply side looked into it, including the sanitation of the toilet. Emphasis on hygiene is very important and hygiene is mostly lacking.

We have done a number of studies previously with UNICEF, WHO and (inaudible). The calorific intake remaining the same, those who are not [have] indexes of the hygiene and sanitation and water in this sequence.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Yes. Are affected anyway.

Unidentified Audience Member

Absolutely, you lose -- all your calories there in the 3 times or 4 times [diary] in a month.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Absolutely. I can imagine. Let's take a question here and lady over there and then I'll go to the side. We'll pass through the middle and go to the other side. Give the lady here. Yes, please?

Deepti Gulati - Senior Associate - Global Alliance for Improved Nutrition

Hi. I'm Deepti Gulati. I'm a Senior Associate with Global Alliance for Improved Nutrition. I feel when we are talking about double burden of malnutrition, we also need to look at that in India we have even 25% of men being anemic. So if that would be the case, it's not just the public funded programs for children below 6 years like ICDS or MDM but we'll also need to look at in reaching the staple foods through food fortification that go through the PDS system. That's one point.

And secondly, for the ICDS Program, I think it's high time that we go a good advocacy with this government to enrich the food with micronutrients so that we can overcome this burden. Thank you.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Thank you very much. And we had over here in the center, yes.

Niho Sangby - USAID

Hi. This is [Niho Sangby] with USAID. We hear about corporate like Nestle and other corporate here in India as well doing wonderful work by providing supplements through mid-day meal programs, et cetera, to supplement micronutrients. Britannia is doing something, Tata Chemicals is doing something, Nestle is doing something. How do we get corporate to work together to really achieve development goals rather than continuing to work in individual silos?

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

That's a very good question. All right. The gentleman here and then I'm going to move over here.

Unidentified Audience Member

Dr. (inaudible). I'm a consultant, development pediatrician. I worked in India's first Child Development Center in corporate health care [set-up]. So understanding business and profession in both ways. I have trained from UK, London, being there for over 13 years, involved in 2 feeding clinics. So involvement with nutrition and behavior was intense.

What I am going to say might sound impossible but there are less comprehensive solution that is actually available, doable, and I'm actually practicing a program of care which I think a lot of people need to look at because it incorporates a huge number of all these challenges. Because pediatricians play a big role in India in terms of what nutrition the child gets and what belief system --

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

So you're arguing for a very comprehensive program that brings --

Unidentified Audience Member

There is a model. There is a model -- reduces burden of child abuse as well.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Okay. Thank you very much. Let's move over to other side and then I'll come back to the panel. We'll get some questions here. We have a question in the back. And also, yes -- you [stand] over there. Thank you very much.

Raga Prishnan

Thank you. Thank you very much. My name is [Raga Prishnan]. I worked with nutrition and development programs in the government of India earlier and also in some companies. Now the government in its own wisdom, in fact, they are implementing integrated child development programs as the lady on the side said. And also the mid-day meal programs. All these are to some extent aimed at meeting the malnutrition problems.

But my basic component is that the corporate sector in their role of business and development, and also their [CCSR] responsibilities, they should also chip in and then make fortified foods at reasonable costs which can meet the needs of the poorer sections of the population.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

We just heard from Nandu. What did you tell us? 1 million little cubes a day -- I'm sorry, 100 million little cooking cubes are used a day in parts of Africa.

Nandu Nandkishore - Executive Vice-President Zone Asia-Oceania-Africa - Nestlé S.A.

In Central-West Africa.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

In Central-West Africa alone. So that is a way to -- one way.

Raga Prishnan

A similar approach must be there in India also.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Please. You heard. Sell 100 million a day.

Yes?

Unidentified Audience Member

Well, I'm Dr. [Gosain]. I'm representing the National Daily Research Institute Karnal. Much has been talked around -- about iron deficiency and how to go in for it. (Inaudible) what has been said by Dr. Nandkishore and one expert has also addressed, our institute, the National Daily Research Institute located at Karnal has recently done some work on fortification of iron in milk. So it's a recent work. We are going in for the clinical trials if it succeeds it will go a big way and can solve the anemic problem through the globe. Okay. Thank you.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Thank you very much. And we'll take one last one all the way on the other side. This lady right here. Thank you.

Rekha Sinha - *Indian and South Asian Office of International Life Sciences Institute*

Thank you. I'm Rekha Sinha. I'm with the Indian and South Asian Office of International Life Sciences Institute. I have listened to the really interesting comments made by the panelists, as well as some of the participants over here on the deficiency and also obesity because we are facing the double burden of disease. Now what I feel is that the problems are well known and the intervention strategies which are to be followed, they are also like being discussed in various (inaudible).

But one of the points that I would like the panelists perhaps to deliberate upon is that education is also key to or a part of the solution for the problem. Because we have to look -- if we look at India as a whole, then we have to look at the poorer section, the middle classes, as well as the upper income groups. Because they are also suffering from both the problems, malnutrition, as well as obesity.

So what we feel is that education will be a very important tool for reaching out to people. Even you, Maria, had raised a problem that as people move from rural to urban areas, how do we tackle the problem. Because all of a sudden, there is a change in the lifestyle and everything associated with it. And they are the ones who are really facing a lot of problems in terms of nutrition.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Thank you very much.

Rekha Sinha - *Indian and South Asian Office of International Life Sciences Institute*

So maybe you can look at it.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

We certainly will. We also have -- receiving; I think you see it's on your screens too. We're receiving from outside a lot of very interesting questions on government focusing on it, on Nestle's perspective in this. Look, we will go now on a round of all of you panelists. And you don't have to answer all the questions, but I think we have some ones that are very interesting for each of you.

Education, which was brought up. The role, again -- twice -- the role also in early school, both the business and of education. Better ways of measuring and identifying the problems. Getting the corporate world, not in silos or individually but is there a way in which we can encourage across the corporate world, getting together to look to handle and in their products perhaps to enhance.

There is also trying to get the fortified ingredients into various kinds of products and perhaps into various kinds of awareness in schools and in early education. So I leave all of these and the many other comments that had been raised and ask you perhaps if you would have a word on it certainly, on the micronutrient area.

Venkatesh?

Venkatesh Mannar - President - Micronutrient Initiative

No. I just wanted to comment specifically because I just want to link a few of the questions around how can companies or corporate sector beyond their own individual efforts and contributions work collectively. And I think this is a really important issue. Given the high priority that something like nutrition needs, I would first of all, ask for a very high level of engagement with the government. And I would say that in many countries you've seen where engagement at the level of the prime minister or the president and championing the issue of undernutrition has really been key.

And what would it take, in a country like India, for the private sector leaders already working in different aspects of nutrition through their own corporate work, to engage with the government saying that this is something we have raised at a kind of a mission level. And all of us need to work together in terms of common advocacy. And somebody spoke about nutrition and education for children in schools and so many other areas.

And also [take] some of the common framework of what are the key priorities in terms of what each of us can do, and how can we collectively make an impact?

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

We get that together.

Venkatesh Mannar - President - Micronutrient Initiative

And I would think that there's a huge role for the corporate sector to work together and jointly with government in a very strong and really high level advocacy more to really get the message across.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

When you hear this and I'd listen to what both of you have said, this is not a side problem. We're talking about the mental possibility of entire swathes of populations. This is fundamental because even when they do go to school, they will not be able to manage the education. The education has to start from the prior generation in all of this.

So this is not a -- I say, an easily -- not easy solution to these kinds of things. So I would very much appreciate Ann and Srinath -- who would like to start? I will choose Ann then. Go ahead, Ann, on how you've been working with inter-governmental organizations of how are we going to get this broadly -- and you're shaking your head.

Ann M. Veneman - former Executive Director - UNICEF

I think one of the things I think we hear from the conversation and from the questions and comments that are raised from the audience is just how complex this situation is. I mean, we're talking about undernutrition. We're talking about the first 1,000 days and the importance of that brain development. We're talking about whether or not you're going to have an impact from undernutrition on obesity later in life but that's not the only cause of obesity.

We have huge levels of obesity around the world today that I think we have to be really focused on today because I just was reading an article that said 65% of the world's population now lives in countries where obesity-related diseases kill more people than undernutrition.

So now have 1.5 billion people in the world who are overweight, 500 million people in the world -- 500 million of those are obese, which is causing diabetes and all of this cancer, all the [belated] non-communicable diseases which now the UN is beginning to focus on. They've always just focused on undernutrition.

But I think also the complexity of looking at some of the practices we talked about. And then the water and sanitation issues and how that comes in. The second biggest killer of children is diarrhea. That's because of clean water and sanitation issues, that then saps the body of nutrients, creating more malnutrition. So these are interconnected issues.

I mean, education as has been pointed out as absolutely key. What can you do -- if you can teach children in school about nutrition, they often take those messages back home to their parents, to their mothers, who then can have an impact on what's being served in the homes to make sure there's fresh fruits and vegetables -- highly nutritious foods.

And I think you can integrate the nutrition with science, school gardens; all kinds of ways of educating children that can be developed into curriculum. But all of these -- it's very complex, it's interrelated, and I think we have to look at it as a very complex issue that deserves the attention of the corporates, the private sector and --

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

And, of course, the government as well. I'll give you the last word on this, Professor Reddy. But I do want to ask, Nandu, a lot of questions are addressed to the corporate sector. And we have some coming across the screen also from Greenpeace India.

How do we get -- can we get -- is it possible to get a corporate sector which is not only in the food industry but across into the education part, into the knowledge of a country into the social [area]? How is this done? How could we do it and what can Nestle do?

Nandu Nandkishore - Executive Vice-President Zone Asia-Oceania-Africa - Nestlé S.A.

Thanks. Thanks, Maria. I'll respond to the Greenpeace question [to] your question and --

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

We have a Greenpeace question on our screen here.

Nandu Nandkishore - Executive Vice-President Zone Asia-Oceania-Africa - Nestlé S.A.

-- and also to the questions that the audience have asked. Basically, there are three legs of responses that seem to be emerging, and all three legs are multi-sectoral with government, with corporate sector and with NGOs. The first leg of the intervention is in the area of education; educating opinion leaders, educating society to change starting with the nutrition status of women.

On the education front, what are we doing in Nestle? We're focusing on the first 1,000 days with our Start Healthy, Stay Healthy Program which educates people on the importance of proper nutrition to start off, to help build a healthier generation.

We have -- later on in life, in the school age, growing population, we have a Nestle healthy kids program, where we go into to schools without any brand promotion that is associated with -- just to take education to teachers and to students so they can take the knowledge home, as Ann mentioned earlier.

We have similar education initiatives underway and again, with corporate as under the auspices of the consumer goods forum and with the world economic forum which we have initiatives which are being driven across corporate which are involved with food as well as non-food. We also have governments who have understood the importance of education, and I quote one example from Indonesia, which talks also to the issue of cereal-based protein not being sufficient.

In Indonesia, for a long time, the government have gone out and they have spoken about -- the slogan is (Speaking in foreign language). (Speaking in foreign language) means you need four basic building blocks for health living. But the (Speaking in foreign language) what they try to build is milk. And they say milk helps rounds off by providing animal protein to supplement the other sources of nutrients that you get.

And indeed, we find in societies around the world, one of the causes of later childhood deficiencies is a reproduction in consumption of milk beyond the age of 5. And just addressing that and keeping milk consumption at a steady level through the age of 12 already helps address a lot of the issues of malnutrition. So that's the first leg, education.

The second leg is micronutrient fortification. What can we do, what can governments do? From Nestle's point of view, we already -- we sell on average -- about 1 billion consumer units are purchased everyday across the world somewhere, and a quarter of these are fortified with micronutrients in some way that reach the poor people and --

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

A question that we have on this.

Nandu Nandkishore - Executive Vice-President Zone Asia-Oceania-Africa - Nestlé S.A.

To the question that was asked they are indeed fortified. And governments can also play a role in this, in helping fortify salt, to make iodize salt for instance or iron fortification of basic products. And that brings me to the third leg which is regulation

and the regulatory response. We do see increasingly some regulatory moves in the area of, as I said, in fortification of salt with iodine, limiting the use of trans-fatty acids.

And here again, from Nestle's point of view, we have proactively moved to eliminate trans-fatty acids from many of our products, to progressively over the last 10 years, reduce the amount of sugar that we use and reduce significantly the amount of salt that we consume and use in our products.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

So it's combination of -- once again, as Ann was saying, there's no simple straightforward answer to this. And it's compounded of course by societal changes both from urban areas as well as country side areas and women and young girls. It's quite a big agenda here that you have to accomplish.

I leave the last word of the session to you Professor Reddy.

Srinath Reddy - President - Public Health Foundation of India

Thank you. Let me start, first [to] Bob Black's question, in fact, which combined two questions. Firstly, the whole issue of inequities and the role business. I believe, as far as the role of business is concerned, firstly, it must clearly define its perspective on economic growth and development. That is has to be inclusive growth and it has to be geared towards reducing inequities which promote all kinds of malnutrition and other health disorders. Once the business takes up that position, it becomes very clear. That's what the policy makers also with the follow-up.

Secondly, with particular respect to the broader issues of social engineering for promoting health and nutrition, the various aspects of health promotion have been clearly defined. And health promotion will require both education as well as an enabling environment. Education to improve knowledge, motivation and skills but an enabling environment which makes it easier for individuals and families to make and maintain health choices across their lifespan.

So business can actually help both in disseminating knowledge as well as in providing healthier products. So the brings us to the whole issue of the products which are conducive to health or supportive of health and do not erode health.

Then, I would actually say, in terms of products, the first would be to ensure that you are not causing any harm. That is the first dictum of medicine premium (inaudible) do not cause harm. So at least, step down on products which are likely to be harmful for health.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

But how do you do the opposite?

Srinath Reddy - President - Public Health Foundation of India

You can reengineer your products to promote health. That brings me to Dr. Sesikeran's question. We are talking about not only calorically adequate but nutritionally appropriate diets, best obtain through food and supplemented as needed by fortified products.

So food, of course, is going to be critically dependent on agriculture as well as food processing to some extent. But if you are talking about healthier fats, they're not just fats. We're talking about healthier fats like which will give you much more of (inaudible) saturated fats like Omega-3, et cetera, then you have to choose the right kind of oils when you're processing your food.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

But this is also part of an education --

Srinath Reddy - President - Public Health Foundation of India

This is part of education, part of agriculture, part of food processing.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

The whole thing.

Srinath Reddy - President - Public Health Foundation of India

What are the kind of edible oils you are giving you to the population at affordable cost and what are you putting into your food processing manufacturing process. Similarly, carbohydrates. Are you choosing unrefined, fiber-rich carbohydrates in preference to refined carbohydrates and simple sugars? That's a choice to be made. Proteins -- again, better quality proteins.

So the industry can actually create better products and market them much more effectively. Of course, there will be some issue of whether the industry is sincere in doing this. When I said that the industry has to address two gaps; first is the credibility gap and the edibility gap.

The credibility gap exists with the public health community which wonders whether you're really sincere, I think you can address that by promoting healthy products. The edibility gap is with your consumers who must find your products tasty as well. And I'm sure your creativity will bring you to that.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

That's one of the biggest problems is also making it palatable to the consumer to make sure that they actually use these products.

Srinath Reddy - President - Public Health Foundation of India

I trust the creative and the innovative process of the industry to address that adequately. When sufficiently challenged, I'm sure they can rise to the occasion. Then comes the question of bringing about -- and of course, the action on water sanitation and other societal support systems for adequate nutrition are absolutely important. I mean, you can't promote health nutrition without addressing water and sanitation.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

Of course. Of course.

Srinath Reddy - President - Public Health Foundation of India

Frequently, I'm asked why India has more cell phones than toilets and the only flippant answer I can give is that soon we may have dial-a-toilet. But that's not the answer. We do require better attention to nutrition, water sanitation and the twelfth five-year plan actually provide some of that.

Coming to schools, we certainly need to promote education and position nutrition and health behaviors in the school environment. But recognizing that education will take some time over a number of years, we must fast track health literacy. Health literacy must be fast track and address all sections of society, children as well as adults and as Ann said and as others have said, children can be change agents but we must not ignore other sections of society as well.

And finally, as Dr. (inaudible) said, we must not ignore physical activity as an integral part of nutrition. When we think of nutrition, we think only of food but food and physical activity go together. We must promote adequate physical activity and create the environment of support systems for that.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

That goes back to your --

Srinath Reddy - President - Public Health Foundation of India

Unfortunately, taking both the Beijing and London Olympics put together, the only gold medal that India got was in shooting. A sport in which there's great virtue in standing still. We ought to make sure that Indians have much better physical activity.

Maria Livanos Cattai - Former Secretary General, ICC and Former Managing Director, WEF

On that wonderful, we will end. I want to thank very, very much this really stimulating and absolutely fascinating panel. There are so many things that go into this. And one of the things that goes into this of course is food per se. And so you're going to have lunch now. And you know all the good choices you're going to make at your lunch now. And it's going to be back out on the lawn and I would like you, please, to take note that we will begin at 1.30 and ask you to be back here once again at 1.30. I thank our online audience as well for their questions and don't forget the YouTube outside. I'll see you in an hour.