Forum: Sustainable Development Sub-commission 2
Issue: Measures to maintain and improve dietary diversity
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Position: Deputy Chair

Introduction

Eloquent Statistics

“It is unacceptable that 162 million young children are still suffering from chronic undernutrition”.


As an estimated 805 million people continuing to go hungry according to FAO, with levels of hunger “extremely alarming” or “alarming” in 16 countries, and having failed to accomplish the Millennium Development Goals for 2015, the issue of world hunger is at its height, with more media scrutiny than ever before. Yet, as we often describe it as the banal “not having enough to eat”, it is a far more complicated issue than that. Indeed, one of the most forgotten aspects of the issue is that of dietary diversity, the “hidden hunger”, which affects millions, exacerbating illnesses, and hindering development.

Through the understanding of the issue, and the looking at what has already been done, possible solutions emerge as to what can be done in the future to resolve the issue.

Definition of Key Terms

Dietary diversity

Dietary diversity is defined by the FAO as “a qualitative measure of food consumption that reflects household access to a variety foods, and is also a proxy for nutrient adequacy of the diet of individuals”. This means that dietary diversity does not directly implicate the amount of food consumed by a household or individual, but rather the different kinds of food consumed.

Global Hunger Index (GHI)
The Global Health Index (GHI) is a measure, by nation and by region, of hunger based on a multitude of different aspects of hunger, including dietary diversity. Each year, it is accompanied by an essay on a related aspect of hunger, such as malnutrition or the role of industry.

**Hunger**

Hunger is defined as a food shortage, often attributed to the quantitative amount of food one receives. It is the umbrella term which includes the issues of calorie intake as well as malnutrition and a number of other issues.

**Malnutrition**

Malnutrition is defined as a diet that either provides too much, or not enough of certain nutrients or calories. Though both over and undernutrition exist, in the context of world hunger, only the latter is taken into consideration, which corresponds to a lack of nutrients in one’s diet.

**Hidden Hunger**

Hidden hunger is undernutrition specifically linked to nutrition deficiency, and thus is often forgotten face to the traditional face of hunger, which is that of a low calorie intake, despite the fact that it can have an even worse impact on one’s health.

**Fortification**

Fortification is the process of adding nutrients to food, and can be done both by organizations or by governments in the end goal of reducing deficiencies.

**Background Information**

The issue of dietary diversity is an issue integral to the fight against world hunger, one of the MDGs and of the SDGs goals, and, like the issue of world hunger itself, divides is an unequal struggle in LEDCs and MEDCs.

**How the issue affects different parts of the world**

**In LEDCs**

When people think of world hunger, they often first think about the developing regions of the world, often highlighted during NGO actions such UNICEF’s. Indeed, out of 815 million people undernourished, only 11 million come from developed nations. Indeed, the two regions most affected by malnutrition are Sub-Saharan Africa and South Asia. In sub-Saharan Africa, while the percentage of the
population has decreased from an estimated 33% in 1990 to roughly 25% in 2016, the actual number of people currently faced with malnutrition has increased, and presents an eminent health hazard for local populations. Statistically speaking however, it is South Asian nations that have progressed the least in the struggle against malnutrition, with a percentage increase of 2% in the same time period. That being said, East and South East Asian nations have made major progress in the struggle against malnutrition. In these regions however, one of the major problems is that of massive inequalities within the nation, with certain regions, due to higher wealth or access to resources, having a major advantage over the other regions of the nation.

Another problem that arises, notably in African nations, is the inability for them to control their food supply. Indeed, one of the facets of the issue is the fact that most of these nations are either infertile, do not possess the facilities to process their produce, or, due to economic ties to other nations, are unable to provide the necessary food at a price point that is affordable for their populations. This often means that, in such nations, while populations might have the necessary calorie intake, this is often due to low quality, cheap starchy, industrial foods, hiding an underlying lack of key nutrients, making them more prone to diseases. Finally, undernutrition is up to three times more likely in conflict-afflicted regions of the world, explaining the widespread prevalence of malnutrition in these regions.

In MEDCs

While MEDCs do not suffer from malnutrition in the same way as LEDCs, with the overwhelming minority (11 million) being affected, they are however implicated in the issue. First of all, developed nations often possess a very strong agriculture strength, whether it be in the production or the processing of food. Due to the larger scale of this food processing, they are the ones currently capable of producing the food necessary for addressing the problem. Furthermore, as these nations are the ones that have the economic power, resources, and technology, the fact remains they still share a responsibility in addressing the issue.

The effects of lack of dietary diversity

The effects of a lack of dietary diversity are twofold, the imminent health risks, and the underlying economic effects that these have on a nation.

Health risks

Needless to say, hidden hunger poses a severe health risk to populations. Furthermore, this is most obvious when one looks at the most at risk part of the population, children. An estimated 162 million children are malnourished, representing over a fifth of all populations reached by the effects of
hunger. Beyond the obvious risk of higher child mortality, this also has a wider impact on the child’s overall health. Notably, there is a direct correlation between a child’s nutrient intake and stunted growth, that is to say a slowing of the normal growth milestones, notable in height. Children with a lack of nutrients are unusually small due to lack of nutrients, and are often very fragile. To follow up on this, fever and diarrhoea are more prevalent among people suffering from undernutrition. This is true even before the child is born, as the mother’s nutrition affects both her and the child, setting them off for the worst possible start in life. Beyond this, undernutrition also puts populations at risk of a panoply of diseases, from the banal to the life threatening. Lowering the age expectancy, other illnesses in developing regions, such as malaria, also serve to heighten malnutrition, creating a spiral of disease.

Economy effects

There are also a number of economic factors impacted by hidden hunger. It can lead to lowered productivity throughout. Yet again, it is the children that bear the brunt of this, as poor educational performance in childhood has inescapable knock on effects throughout their lives. Once in the world of work, those that suffer from malnutrition are often less productive, more likely to fall, and generally a hindrance to the economy, resulting to an economic slump throughout the economy.

Major Organizations Involved

**FAO (Food and Agriculture Organization of the United Nations)**

The Food and Agriculture Organization of the United Nations (FAO) is a specialized agency responsible for leading the fight against world hunger, and as such is the major organization to consider when tackling then issue. It has existed since the start of the UN, and has been responsible for conferences, research, and treaties since 1945. Notably, it is responsible for aiding the creation of the WFP, international standardisations, and is also responsible for reducing hunger in Latin America. It can also provide direct emergency aid to nations if needed, in collaboration with the WFP.

**WHO (World Health Organization)**

The World Health Organization (WHO) is the specialized UN organisation responsible for health care, and therefore serves a major role in tackling malnourishment due to the many medical ramifications that it has. Furthermore, it can aid in tackling and diagnosing the symptoms of malnutrition, allowing better treatments, earlier, and more efficient interventions.
UNICEF (United Nations International Children’s Fund)

The United Nations International Children’s Fund is a specialized UN agency charged with all the issues concerning children. As children are one of the most fragile portions of the population when it comes to health, UNICEF is one the major organizations to intervene, as their aid is often more specialized and appropriate, and alongside other UN agencies, plays a primordial role in tackling world hunger as a whole.

WFP (World Food Program)

The WFP (World Food Program) is a humanitarian agency charged with providing food assistance to communities needing the most, distributing over 15 billion food rations every year. What’s more, the WFP prides itself on fast response in emergency situations, as well as partnerships with various other UN and non UN organisations, making it an invaluable ally for tackling hidden hunger.

Timeline of Events

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<tr>
<th>Date</th>
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<tr>
<td>1945</td>
<td>Creation of the FAO</td>
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<td>1946</td>
<td>First World Food Survey</td>
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<td>1952</td>
<td>Second World Food Survey</td>
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<td>1963</td>
<td>WFP is born</td>
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<td>1963</td>
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<td>1996</td>
<td>World Food Summit</td>
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<td>2000</td>
<td>MDGs.</td>
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Relevant UN Treaties and Events

In the UN’s history, any of the actions or conferences taking into account the FAO are directly or indirectly linked to the issue of dietary diversity, however the most important of these, setting worldwide targets are the World Food Summit, the Millenium Development Goals (MDGs) and their successors the Sustainable Development Goals (SDGs). All three of these set, often too ambitious, world wide targets on the issue of hunger, with the latest of these three having set the target of having eradicated hunger by
2030. Following on this, the creation of the WFP in 1963 marked a turning point with a specialized organization responsible for distributing food aid, allowing for more direct and widespread intervention.

**Previous Attempts to solve the Issue**

With the various summits organized by the UN setting guidelines to eradicate hunger, many nations have attempted to tackle the issue, with varying degrees of success, and while for now there has been little specifically aimed at dietary diversity, models of how to tackle it can be made from the previous attempts. Under the umbrella of USAID, the United States of America’s foreign aid fund, the FANTA (Food and Nutrition Technical Assistance) project was put in place. It included state, NGO, and international actors, with the main goals being “locally driven solutions”, having provided solutions in a number of developing nations by favoring the development of local producers and actors. For developing nations, the model of Latin American nations is interesting due to the fact, despite being considered in developing nations, the amount of people suffering from malnutrition is relatively low (5%). However, the most striking example for developing nations is that of South East Asian nations, such as Myanmar and China, which have both efficiently managed to reduce their share of undernutrition within the guidelines stipulated by the MDGs. Beyond that, the obvious distribution of food is assured by organizations such as the WFP, notably in conflict affected regions of the world.

**Possible Solutions**

Solutions to solve the problem of dietary diversity can be grouped into multiple categories, notably food based solutions, behavioural changes, government initiatives, and wider development goals, all of which can contribute to solving the issue.

**Food Based Solutions**

These solutions are those that aim to directly aim to alter the food consumed, and thus improving dietary diversity directly.

A possible solution is that of emergency food distribution, however, on the long term, this is a non-starter, as it is not sustainable. One of the other obvious approaches to tackling this problem is that of fortifying foods, changing their nutritional properties from the root. There are two aspects of food fortification, food fortification by increasing their content in nutrients once processed and bio-fortification, which aims to create crops with an initially higher level of nutrients. Traditional food fortification has existed since before
the Second World War, and is today already put in place by a number of MEDCs, and include supplementation in iodised salt, folic acid, niacin, and vitamin D, amongst others. These all have been shown to have a positive impact on health for a number of conditions, with correct dosing, including neural tube defects, spine defects, anencephaly, pellagra, mental retardation and many others. However, this solution has inherent limits. Among these is the fact that while they might bring supplements, their use tends to be indiscriminate, leading to populations receiving far too important doses of these supplements. One example of this is food which is fortified with iron, as it while it often has a positive impact for women, it can also have a negative impact on men, who will have an excess of iron. Perhaps more disturbing though is the potential risk to children, who represent the most fragile population when it comes to health. This policy must also be strictly regulated, as certain companies indiscriminately enrich their foods for marketing purposes, leading to health risks, with Denmark recently banning a number of breakfast cereals because of this policy. Furthermore, due to their processed nature, certain foods have micronutrients added that cannot be assimilated, as in the case of skim milk, reducing their efficiency. Also, as these require more work to achieve the end product, the question of availability, especially to the lowest income earners, starts to arise. Furthermore, if mandatory government supplements are put in place, the question of individual freedom arises.

One other proposed solution for food fortification is that of bio-fortification. Much in the same way that we can breed crops and livestock to be more productive, we can also do the same for them to have greater nutritional yields, by supplementing their growth conditions, selective breeding, or, more recently, through genetic engineering. Ethical constraints, however, are then raised. In a world where we want to reduce our impact on the environment, and move towards less and less industrialized food production, should we be promoting the modification of our crops and livestock's conditions? Selective breeding has existed for decades, however is limited by the simple fact that the required changes could potentially require generations to go by before seeing the results of selective breeding. The newest option for bio-fortification is that of genetic engineering foods to be more productive. During the short period of time where we have used this technology, we have not seen any direct environmental or health downsides, however, as this technology is very recent, more research into the long term effects is needed.

Beyond all this, the actual problem of processing the food needs to be addressed. In reality, the processing of food can be one of the main sources of a lack of dietary diversity. Hence, the notion of “industrial” food can be a great concern, as through the processing of food the nutrients might disappear. This industrial food is less nutritive, and also due to the fact that it is easier to manufacture, drives out smaller, local agents who might be able to aid in the issue. Thus, these require monitoring and regulation on an international point of view to balance out both their nutritional values, as well as their influence on
the market. Also to keep in mind when dealing with this is the economic consequences this might have, especially on countries whose main exports or imports are agricultural.

One simple solution to this is that of promoting gardening. While this may seem like a derisory solution, home gardens have been found to act as an indicator of dietary diversity. This is also especially true in at risk rural, isolated communities, as a general low standard of living limits their access to food supplies, and even more so high quality food. In doing so, populations have direct access to the necessary nutrients, despite not necessarily being able to afford them, or being too isolated to have purchase them.

Another simple solution to the issue is that of food supplements. These can be distributed to the communities most at risk, however also require co-operation between the political class, NGOs and private corporations. Furthermore, this a short term solution to the problem, and is not therefore necessarily sustainable.

**Behavioural Changes**

These solutions are ones that rely on tackling public perception of the issue, so as to facilitate long term actions.

While not the most obvious or easy to implement, one of the potential solutions is simply to manage a general behavioural shift when it comes public health, and more specifically hidden hunger, in developing and in developed nations. Without creating awareness of the issue, the issue cannot be resolved, especially as it goes beyond the traditional issue of calorie intake that is associated with hunger. Furthermore, awareness of other issues that surround malnourishment can serve a complementary role, especially as the common goal is achieving the SDGs and, more broadly speaking, a better future.

The most important aspect here is that of education. Furthermore, due to the fact that most developing communities are such that women are the ones to take care of the family, and thus of the food, they are the most important people to target. Furthermore the role of breastfeeding in an infant’s nutrition being fundamental, this evermore important. Education also need to take place in schools within those developing countries, allowing the issue to be tackled by the next generation, as it might be difficult for the previous one to fully take awareness of the issue. Finally, it is also important to note that developing nations have an indirect, yet still significant impact on world food, as they are often the producers and researchers behind the issue.
The problem that then emerges is how to undergo all of this. In LEDCs, one of the fundamental aspects of the issue is that of engaging local producers back into the system. Put aside due to cheap, international competition, these local actors are going to be the ones that will have the deciding role in the success of any education plans, as well as potentially being the source of the dietary diversity when and if empowered. However, on their own, they are not nearly enough. National and international organizations must come together to tackle the issue, providing the expertise to tackle the problem and the local know how to implement them, often including UN based organizations. Finally, this might also pass through regulations on marketing for food companies, forcing both them and the end consumer to confront themselves with the issue. Furthermore, all of these will allow any eventual action to be all the more effective, as it will be better integrated by the local populations and garner more support internationally.

Governments need to be seen as leading the charge

These solutions are ones that implicate government accountability vis-a-vis of the issue of hidden hunger.

One of the fundamental aspects of the issue is making governments responsible and committed to the problem of malnutrition. High placed government officials need to be seen as leading the campaign to end malnutrition, and put it at the top of their priorities. Furthermore, public health interventions need to take place, highlighting the issue as per the previous section, making any potential action more effective. This is also needs to run in parallel with collaboration with international organizations, and the private sector.

Thus, one possible action to envisage is the setting of various agendas, on a local, regional, and national level. Governments need to set targets to reach so as to better achieve the end of hidden hunger, and the end of hunger more generally. These targets need to be tailored to the individual needs of nations, based on their level of development, access to resources, and need. There is also the need to differentiate the needs of individual regions within a country, as they will often be different. For example, some regions may be more isolated, or have less access to agriculture. The same goes for individual communities, with the required action in a small village for example will not be the same as in a large town. On the one hand this can be interventions such as emergency food distribution with aid form international actors, and this can also lead on to reforms, legislation, long term projects and strategies.
This furthermore requires governments to take on a number of actions. First and foremost, governments need to comply to any treaties and international legislation concerning food and agriculture use. Following on this, governments also need to standardize data collection and monitoring, to be able to put in place the necessary measures to best address the issue. This data collection and monitoring can be done in association with the relevant UN organizations, eventually going towards a wider research pool. Through this, better solutions might come to fruition, which are impossible to discover without the deep rooted government co-operation. This also infers transnational cooperation between nations, with summits to address the issue a possibility. As such, though the problem is concentrated on developing nations, developed nations play a crucial role in tackling dietary diversity.

**Development is needed to end cycle of undernutrition**

These solutions are ones that aim to address wider contextual issues, which might serve as long term solutions to the issue.

First among these solutions is the role of improving education and the health service. The former will allow people to little by little escape the cycle of poverty, be aware of the issue, and generally acquire a better lifestyle. The latter is primordial. Often, the problem of nutrient deficiency can go unnoticed, and is less obvious than traditional hunger. A better medical system will inevitably allow nations to address the issue before symptoms become too important. This can pass by the construction of infrastructure such as hospitals, but can also pass through local interventions by NGOs. Furthermore, as certain diseases such as malaria, can inhibit nutrient reception, this healthcare struggle is all the more important. Governments should highlight training programs for medical staff, as this is one of the central problems to be addressed.

One final aspect of the issue is that of access to land and produce. Oftentimes, local populations have no real control over the resources produced. Indeed, local produce is often drowned out by international imports, or unable to be processed locally and thus exported abroad. Sometimes, this consumption of foreign processed imports can seem forced upon nations because of trade agreements. This leads to the problem of populations having access only to cheap, low quality starchy food. Thus, local producers must be empowered, and local populations given the opportunity to consume local produce.

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