

# Food Insecurity and Hunger



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- Photo from Joachim F. van't Hul



## Editorial

# Food security for all human beings: We have to learn to think in a new way



**PD. Dr. Phil. Stephen Albrecht** was the Chairman of the Federation of German Scientists (VDW) from 2003 to 2009 and established the Centre for Technology Assessment on Modern Biotechnology at the University of Hamburg, Germany. He is a member of the Editorial Board of the Future of Food: Journal on Food, Agriculture and Society.

### Bleak prospects

During the last decade, many parts of the world have seen different turmoil, catastrophes, crises, and disasters. More than 800 m. human beings suffer from malnutrition, hunger, and poverty. Millennium Development Goal (MDG) No. 1: "Eradicate extreme poverty and hunger"<sup>1</sup> may be accomplished until 2015 on average concerning goal 1.A. But all in all MDG 1 will not be reached. The human right to food, since 2009 part of the Universal Declaration of Human Rights as part of the charter of the UN, is jeopardized by wars and violent conflicts, natural disasters, and other human made disasters like dumping, unjust world trade, and the destruction of many ecosystems. Powerful drivers contribute to a continuation of a divided world with few extremely rich and

many poor people. Worldwide realization of the human right to food and therewith of food security can only be afforded by sustainable productivity increases in agriculture, a higher social and political regard of rural areas and communities, fair trade on the global as well as regional and local level, and international outlawing of arms production, trade and use along with increased endeavours to lasting resolutions of violent conflicts. But what we can see today is more or less far away from such conditions:

- The main-stream of industrial and technological progress – also in newly industrialized countries like Brazil or PR of China – includes growth of energy and material intensive industries, a permanent rationalization of industrial processes and hence



dismissal of working people, and the rapid industrial consumption of scarce minerals and metals.

- Arms production, proliferation and arms races are threatening many regions and countries and yielding millions of refugees every year.
- The world food system is undergoing since roughly two decades a fundamental change. Globalized, vertical integrated agro-food corporations exert increasingly control over the whole production and value chain from peasants and farmers to end-users.
- Lifestyles and nutrition customs, which imply high sugar, fat and meat consumption and intense energy-use migrate from OECD countries to many other countries. Such also impacts like overweight, obesity, and associated diseases.
- All over the world urbanization is proceeding fast. But sprawl of urban areas destroys in many cases valuable arable and productive land, which is bitterly needed for food production and security. Age long praising of cities and urban areas as the future of mankind is fuelling migration from rural to urban areas in many parts of the world, even in countries with considerable food insecurity.
- Vice versa, rural areas have been neglected politically, economically and socially for decades. In fact rural areas have been and are centres for the reduction of hunger, malnutrition, and poverty.
- Not industrialized and poor countries face the most severe impacts of climate change, such as droughts, floods, failing harvests, hurricanes, and other heavy storms. Though they often haven't capacities and budgets for effective mitigation and adaptation measures.

### Signs of hope and options for sustainable development

Feeding a growing world population is a global task, which can't be tackled without peace, strong political cooperation between all stakeholders involved and all levels of societies and political institutions, from the local to the global. Important political declarations have been adopted at various summits and new money for investments in agriculture has been announced (L'Aquila or London G 20 summits, e.g.) – yet seldom delivered. No coherent and integrated approach has been reached in consensus how to reduce hunger and poverty, improve livelihoods and human health in rural areas, and reach an equitable socially, economically and ecologically sustainable development. Instead many authorities are dealing within national governments as well as within international organisations with the same topics, often parallel and with competing competences.

So, to organize a bright and secured future of food in the real world isn't like a walk on the beach. That task looks more like to hold a wolf by the ears, as a phrase says. But there are signs of hope and options for people, institutions, politics, businesses, and civil society.

In 2008, after four years of hard work, the final plenary of scientists, civil society representatives and political decision makers adopted the reports from the International Agricultural Assessment on Knowledge, Science and Technology for Development (IAASTD). A Synthesis Report, a Global Report and five Regional Reports<sup>2</sup>, covering the globe, had been researched, written, debated, reviewed and re-written. With IAASTD, following other global assessments like the reports from IPCC on climate change, the Millennium Ecosystem Assessment (MA), the Comprehensive Water Assessment (CAWMA), e.g., we know better than ever before what has been achieved and what has gone wrong in the past fifty years and what can be done to build and shape a world without permanent hunger, poverty, and diseases for so many of its inhabitants.

IAASTD can be seen as a role model for processes of cooperation between civil society, scientists, business people and political decision makers. In this perspective science is no longer just producing truth but an institution designated to generate and teach knowledge which is inevitably embedded in contemporary societies. Knowledge is unequal scientific knowledge. Sciences have developed several modes of producing evidence and results. But ages before modern science appeared societies have produced and transferred from generation to generation knowledge. So it is very important to respect, regard and integrate traditional, local and scientific knowledge. This can't be done without participation of the people who are custodians of traditional and local knowledge.

Agriculture as it is today practised in most OECD countries shows high usage of energy, machinery and agro-chemicals and lesser and lesser work for people. *Peak Oil* tells us that this form of agriculture is neither sustainable nor feasible in the future. In many parts of the world high productivity increases have been achieved in small-scale farms with relatively simple technical and agro-ecological means. Using the cycles and connections in agro-ecosystems yields high return such as food, fibres, fuel, and feed.

Just and transparent rules of tenure and ownership of land as well as their enforcement is a cornerstone for sustainable developments in agriculture. Big purchases of land in Africa, Asia and Latin America in the last years



by states or private investors often threaten local people with unsecure land rights. The "Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security" represent a first international consensus, which could be utilized to protect local people from land grabbing.

Last, not least, the deadlock in which the Doha-round on world trade issues is imprisoned since many years nevertheless may open up a chance for a radical revised set of multilateral negotiated rules for world trade. The recently reached Bali compromise most of all is a sign of life for multilateral cooperation and buys additional time for negotiations. Founding principles of rules made for a sustainable future must be to help realize human rights such as the right to food, a healthy living and work for all people. The old WTO-rules with their imbalanced emphasis on free trade have eventually come to an end.

The failures of global conferences like Rio +20 last year and the Warsaw Climate Change Conference in November 2013 remind us how long and burdensome the way will be to reach international agreements how to proceed with sustainable politics and sustainability in all sectors and all societies.

A very important sign of hope is the education and work of young scientists from all continents and countries of the world. These young women and men will become senior scientists, managers, and politicians. The more young people are enabled and committed to think in

terms and categories of sustainability science the merrier they may be able to make their career pursuing the main ideas of sustainable development as a means to realize the right to food for all human beings.

We are pleased to publish our 2nd issue of the Volume 1 "Future of Food: Journal on Food, Agriculture and Society", on the theme of "Food Insecurity and Hunger". This issue comprises sophisticated and interesting contributions by young scientists from all around the world. Topics include social, agricultural and environmental as well as economic problems and trends.

We hope the 2nd issue of Volume 1 "Future of Food: Journal on Food, Agriculture and Society", will attract many readers, young and older.

1. MDG No. 1 includes three targets: Target 1. A: Halve, between 1990 and 2015, the proportion of people whose income is less than 1 \$ per day. Target 1. B: Achieve full employment and decent work for all, including young people and women. Target 1. C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger.

2. The five regional reports comprise: Central and Western Asia and North Africa (CWANA), East and South Asia and the Pacific (ESAP), Latin America and the Caribbean (LAC), North America and Europe (NAE) and Sub-Saharan Africa (SSA). The IAASTD reports have been published by Island Press. A German edition is published by Hamburg University Press.



# Agricultural production and yield estimation: Two distinctive aspects of Brazilian agriculture and a perspective on world food problems

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## Abstract

Brazil has been increasing its importance in agricultural markets. The reasons are well known to be the relative abundance of land, the increasing technology used in crops, and the development of the agribusiness sector which allow for a fast response to price stimuli. The elasticity of acreage response to increases in expected return is estimated for Soybeans in a dynamic (long term) error correction model. Regarding yield patterns, a large variation in the yearly rates of growth in yield is observed, climate being probably the main source of this variation which result in 'good' and 'bad' years. In South America, special attention should be given to the El Niño and La Niña phenomena, both said to have important effects on rainfalls patterns and consequently in yield. The influence on El Niño and La Niña in historical data is examined and some ways of estimating the impact of climate on yield of Soybean and Corn markets are proposed. Possible implications of climate change may apply.

## Introduction

In the 1960's Brazil was a country that could poorly produce food to supply its own people. After a wave of reforms, the foundation of the Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA) and the mechanisation financed by the state, the country started building its path towards auto sufficiency and to become one of the greatest food exporters of the world (Williams, 1984). According to Companhia Nacional de Abastecimento (Conab, 2012) in the last five years planted area for grains has increased by more than 3.4 million hectares, now at 50.8 million. The growth has been followed by an increased participation in export markets, in which Brazil should surpass the U.S as leading Soybean exporter in the next few years (USDA, 2012).

commercial crops: soybeans, corn, cotton and sugar. It is safe to say that the export market is commanding expansion in the main areas of production of corn and soybeans (in Mato Grosso, the leading state in these two crops, 60% of production goes to export markets) (SECEX, 2012).

Soybeans and corn are the main ingredients of animal feed, and both prices are connected to the increase in meat and oil consumption due to the economic development of Asia. The conversion of crops into biofuels is also an issue that changes the structure of agricultural markets increasing the pegging of the price of agricultural commodities to oil prices.

The expansion of land cultivation is connected to a few

The recent spike in international commodity prices in

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the last decade put Brazil and South America on a central position regarding food production. In this paper the recent Brazilian soybean expansion is investigated by looking at two phenomena: acreage responses to price, and the relations between yield and the El Niño and El Niña climatic events. By looking at the first, it should be interesting to establish if elasticities are relatively high compared to the U.S, and compared with the recent similar estimates. By looking at the second, the aim is to investigate which dynamics can better describe the alternations between growth and decrease in yield.

## Two Distinctive Characteristics of Brazilian Agriculture

### a) Acreage response to Prices

Land availability is huge in Brazil. According to the last Agricultural Census in 2006, just looking at pasture land that could easily be converted into commercial crops, without considering forests and other protected areas, the availability amounts to at least 100 million hectares (IBGE, 2006). The Issue of land abundance and land concentration is deeply rooted in historical factors. Firstly, in the Brazilian 'expansion' to the West (the occupation of states of the Midwestern regions and the South), there was not any similar institutional framework which allowed for an equal distribution of lands and the formation of a land market (Dias and Amaral, 1990). As a consequence the agricultural frontier was first occupied by squatters that later lost or sold their lands to bigger owners. Those had their property rights recognised later by exercising their political influence. These structural factors explain several things of the Brazilian Agricultural sector, from the existing land conflicts to the highly concentrated and efficient agribusiness sector of today.

The abundance of land and the existence of highly mechanised, capitalised agricultural enterprises may allow for a fast response of output to changes to prices. For that reason one should expect the response to be greater than other countries with large soybean and corn production like the U.S, with smaller stock of land to be occupied.

Elasticities of planted area with respect to expected returns evaluate how much farmers (and the agribusiness sector) respond to increases in expected returns, (i.e. if the elasticity is 0.1 it means that a 1% increase in expected returns would lead to a 0,1% increase in planted area). The tradition to establish land response as fundamental piece of the supply function starts with Nerlove (1956), which led to a variety of static and dynamic models, with different treatment of expectations. The fact that returns

are 'expected' requires important methodological choices that would impact in the estimated values (Nerlove & Bessler, 2001).

Babcock et al (2011) construct an expected return function based on the model below to estimate supply response. They use future harvest time prices on commodities multiplied by expected yield, minus expected costs (in which they use actual costs). Babcock et al (2011) calculate discrete elasticity, by a period of 2 years (1997-1999 to 2001-2003, 2004 to 2006 and 2006 to 2009).

$$\text{Exp. Return} = \text{Exp. Revenues} - \text{Exp. Costs}$$

$$\text{Exp Revenue} = \text{harvest prices} * \text{Exp.yield} + \text{Expected Loan Payments}$$

Most of the past literature does not construct an explicit expected return function but simply estimate a multiple regression of acreage on a vector of prices and costs (Askari & Cummings, 1977). This allows for a less restricted model, although it may be interesting to synthesise into one variable, constructing an expected returns function. For developing countries where the number of observations is limited, this may be particularly of interest.

Acreage response (for several products) to expected returns in Brazil and in the U.S are calculated by Babcock et al (2011). They remain around 0.19 for Brazil and 0.03 in the U.S, which confirms the initial expectation, because it shows the difference in acreage response between the two countries. Some objections may arise however in the methodology of the study.

The first is related to this way of constructing the expected returns function. Once yield depends on the level of technology employed, there may be a correlation with price levels and expected costs (i.e. a farmer may want to intensify production when prices are high in order to obtain higher yield). This leaves room for endogeneity, therefore the calculated elasticities are inconsistent.

The second objection is that in Babcock et al (2011) there is no dynamics, so no distinction between short-run and long-run response is made. The economic theory would suggest that short-run responses are lower since there is no factor mobility while long-run responses of acreage are greater, since there factors can be increased, especially land. Short and long-run responses appear mixed in the calculated values and so there is an over estimation of the elasticities for the considered periods (2004-2006, 2006-2009). The dynamic components of the Brazilian soybean expansion cannot be overlooked, even in a simple analysis, since they are a major component of



the explanation of this very expansion.

## Methodology

A more effective way of obtaining the elasticity of acreage for soybeans and corn shall be proposed. For the time being the expected returns function shall be defined more conveniently to avoid endogeneity problems. The setback is that future prices are not used, however that should be a minor problem as there is little empirical evidence that future prices give any additional information in the case of storable commodities (Nerlove, 2001). The expected returns function in domestic currency should be as follows:

$$\begin{aligned} \text{Exp Revenue} &= \text{Expected Prices} * \text{Expected Sales} \\ \text{Exp. Return} &= (\text{Exp revenues} / \text{Exp Cost}) * \text{Exrate} \end{aligned}$$

The econometric model to be estimated has an error correction representation, which can be seen as a reparameterization of the partial adjustment model proposed by Nerlove (1956) in order to distinguish long and short-run response:

$$dA_t = \alpha + \beta dER_t + \gamma ER_{t-1} + \delta A_{t-1}$$

Where  $A$  is the acreage of soybeans, and  $ER$  the expected return, and  $d$  means 'first differences' ( $\text{Area} - \text{Area}_{t-1}$ ) and so on). When the model is estimated in logarithmic form, the estimated coefficients are the elasticities (as represented in Appendix 1). To calculate the elasticities for discrete periods (2006-2009 and so on), the model is estimated on levels, and then calculate acreage response based on average values for the period.

This framework is particularly useful to overcome the problem of spurious regression when variables are non-stationary. A long-run relation (also called 'cointegrating' relationship) between non stationary variables is admissible when by running a regression on just contemporaneous variables (say acreage on expected returns this case), one main obtain white residuals. As both variables were non-stationary and suggested a cointegrating relationship as in Engle and Granger (1987), the error-correction specification could be carried out. An extended methodological discussion on the concept of error-correction, cointegration and Long-Run Relationships and endogeneity can be found in Engle & Granger (1986), Stock and Watson (1993), Hendry and Engle (1980, 1983), Alogoskoufis & Smith (1993).

## Data Set

The expected prices are taken from annual pre-planting

average (T-1) of domestic prices from Centro de Estudos Avançados em Economia Aplicada CEPEA (from 1997-2012), which is the price in R\$ per bag (60kg) of soybeans and corn, sold in Paranaguá (a port city, which holds has the biggest volume of business in the grain sector). The expected sales are taken to be the share in world demand for of Brazilian soybeans. This choice is reasonable because it is a measure of the market penetration in the international grain market. The assumption is that an increase in demand for Brazilian beans in the previous year will stimulate farmers to increase area.

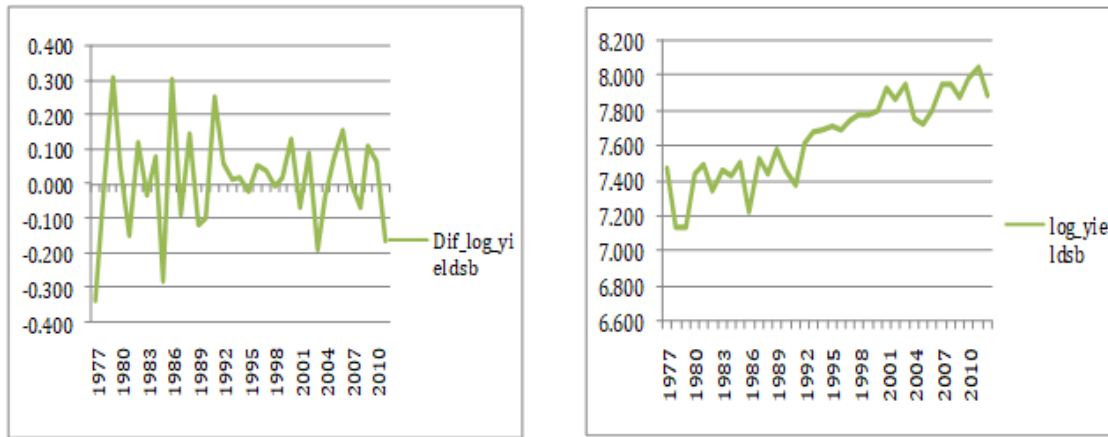
For expected cost the current year cost is not considered, as Babcock et al (2011), but an average of fertiliser price in dollars from USDA in April, before planting, when farmers tend to begin purchasing inputs. As Brazil imports more than half of its fertilisers (ANANDA, 2012) and they are an important component of cost, (for it constitutes 25% of total cost), it seems to be a good measure of operational cost.

## Results

The elasticity found for the period (2006-2009), that is around 0.11, is lower than the aggregate elasticity of 0.19 found by Babcock et al (2011), but still higher than the elasticity in the U.S, which does not contradict the main conclusion about the differences between Brazil and in the U.S. Because soybeans are the biggest commercial grain crop in Brazil with the biggest role in the export markets, this measure is especially relevant to establish the response of other crops relative to soybeans. The long-run response is estimated in 0.66, which is coherent with the previous expectations of economic theory. Adjustment coefficients are negative and around 0,2 which indicate a reasonable adjustment path to equilibrium in the market (Nerlove, 1956).

By this brief analysis of Brazilian empirical data on area it can be observed that Brazil has not only been an ever important player in agricultural markets, but will tend to increase its market share in the next years especially in a scenario of rising prices. Its planted area can respond to price relatively fast even in the short term, and with technological advances in the next few years can become the biggest producer of food supply. A similar response may only be obtained from African countries, once their agricultural production is better organised.

This is also a reason for concern for the future of food production. Firstly this great abundance of land and its fast paced utilisation, in order to supply food consumption in Asia has important environmental consequences. Led by increased demand, price increases of the major crops are also linked to deforestation as they increase



**Figure 1:** Rate of Growth of yield and Yield (in kg/ha) (1976-2011)

Source: Companhia Nacional de Abastecimento (Conab). Crop estimates, 2012

land use for pastures.

The mechanism may work as follows: as crop land is expanded by the conversion of low productivity pastures (due to high prices of animal feed and ethanol), prices of livestock and meat increases, which add to the rate return of cattle farming and the conversion of forests into pastures. This indirect mechanism combined with poor environmental control can seriously damage the protected areas, although they are not necessarily needed for further expansion of output. This is an interesting topic for future research.

The second reason for concern is if this huge increase in animal-feed production is the most efficient way of feeding the world. To produce one kilo of pork meat, about five kilos of animal feed is needed, while to produce one kilo of poultry, about three. The change in consumer habits (as average income increases, per capita consumption of meat tends also to increase) may add an important bottleneck for the availability of food (Baker, 1977).

### a) Technology and the yield trend in Brazil

The second distinctive aspect of Brazilian Agriculture lies in its connection to two important phenomena of the Pacific Ocean, called El Niño and La Niña.

By a graphic inspection at the general yield trend in soybeans (and also the same would apply for the corn crop), it seems that generally yield has increased through the years, however not at a constant rate of growth. Generally there is an alternation between positive growth and negative growth, a history made of 'good' years and 'bad'

years. This is actually not new to agriculture. Since the most ancient times people speak of 'fat cows' and 'thin cows' and try to predict them by interpreting dreams of the Pharaoh, using traditional or scientific knowledge.

A great deal of this variation of the rate of growth is probably related not only to climate but to input utilisation (like fertilisers), which partially depend on grain and input prices in the international markets (Brazil imports more than half of its fertilizers – 19 million tons, with a consumption of 24 million tons in 2011) (ANDA, 2012). The rate of growth of fertiliser use is also variable, as so it is the use of machines for example. But what is the impact of the climate in this variability?

It is largely noticed by climatologists and by the agricultural markets as well, that the El Niño and La Niña phenomena have an important role in the agricultural output of South America. In 2011, for example, La Niña was blamed for provoking losses all over the Southern Brazil and Argentinian crops, strongly affected by a disastrous drought (Financial Times, 2012). Several articles in the Financial Times and Reuters have reinforced these expectations which have been followed by dramatic increase in international prices given the tight stocks in the U.S.

According to the National Oceanic and Atmospheric Administration (NOAA) the El Niño is defined by the event of *unusually* warm temperatures in the equatorial Pacific Ocean while the La Niña by *unusually* cold temperatures on the same sites. However, as any other climatic event, climatologists cannot exactly predict whether there will be one, or even their intensity.

Ocean temperatures affect precipitation regularities, fish



reproduction cycles in various parts of the world producing ambiguous effects depending on the region. In Brazil, La Niña is connected to drought in the South and El Niño is connected with good rainfalls in the South and Midwest. The interest of this part of the research is to investigate to what extent these phenomena explain the variability of yield.

## Methodology

There are several ways to model agricultural yield. Theoretically to avoid problems of consistency of estimators (because climate expectations affect prices, which affect degree input utilization) one could think of yield as depending of the technology (which could be seen as just a drift in a trend-stationary series as treated here) and climate. Climate could then be seen simply as stochastic term, which in average is zero. In that case:

$$y_t - y_{t-1} = \alpha + \varepsilon_t$$

Another way is to use an auto regressive – moving average (ARMA) representation. By the Box and Jenkins (1970) approach, the information criteria can be used to choose the best possible representation. The Box and Jenkins methodology yielded an ARMA (4,2) for this case.

This however may not be the accurate way of representing the process for forecasting. More importantly, it is non-theoretical analysis, in other words, it offers no economic explanation whatsoever to the phenomena (Johnston & Dinardo, 1999). Two alternative methods of estimation are here suggested which to explore the interactions between climate technology and yield.

Yearly values for each month of ocean temperature are set as independent variables. The log of the first differences of soybean and corn yields are set as dependent variables. As harvest of the summer crop starts in Feb/March, the ocean temperatures from the previous year are used, as they are likely to affect crops during the growing period as in the model below (Sept-Mar):

$$y_t - y_{t-1} = BX + \varepsilon$$

In the above equation, X is the vector of regressors, and B the vector of its respective coefficients (yearly average temperatures in January, March, until March of the year of harvest or the three month average i.e. Jan-Feb-Mar, Feb-Mar-May and so on). As the influence of fertiliser consumption on yield may be important, that variable

was also included, in a two-stage least square estimation (2SLS) and Generalised Method of Moments (GMM). Climate anomalies are then used as instruments to estimate fertiliser consumption.

## Data Set

The data set is constituted by monthly oceanic temperatures and anomalies (measures of how many degrees 'hotter' or 'colder' than the historical time series average) in the coast of Peru (known as Nino 12 region) produced by (NOAA, 2013). There are a variety of indexes and temperature measures for the oscillations in oceanic temperature. A few of them were also tried, which lead to similar results. The three month moving average of these temperatures was included as regressors, after trying month by month and a two month moving average, which yielded a poorer fit to the statistical model. For yield data, the data set from Conab is utilized. For fertiliser sales data was obtained by the Instituto Brasileiro de Geografia Estatística (IBGE). The number of observations was 36 for each variable (1976-2012), but only 18 for fertiliser sales.

## Results

After dropping the months which were non-significant at 10% value a model in which yield is explained by movements in January, March, May, June, October anomalies was obtained. These are months before the planting period, which, by the way, may be interesting to the expectation formation processes. Some of the more interesting tables with estimated values can be found in Table 4.

Taking the moving average of a three month period similar results are obtained (in terms of sign and magnitude): Jan-Feb-Mar, Feb-Mar-Apr, Apr-May-Jun, Jun-Jul-Aug, Jul-Aug-Sep, all presented very low p-values (<0.003) and <0.04 in the case of Jan-Feb-Mar. For corn yields the months with significant coefficients were different. This result was expected since because both crops have different 'critical' periods for yield, where soil moisture is more relevant, added to the fact that there is also a winter crop of corn grown in May to July in some states. For the corn yield the months with significant coefficients were Mar-Apr-May, May-Jun-Jul, Jun-Jul-Aug and Jul-Aug-Sep.

These results are not completely satisfactory once they are just slightly better than the ARMA models (both in information criteria and forecasting power). Still one can





derive important insights about this possible influence on the development of crops. Firstly, the sign of the coefficients is ambiguous: some of them are positive and others are negative, which at least initially was surprising as it was expected that a consistent increase in anomalies would lead to an El Niño, and consistently negative anomalies to a La Niña, influencing positively or negatively the growing of crops.

One explanation is that in order to have a positive influence on the rate of growth, it's needed that total predicted effect of the anomalies be positive (or that the months positively correlated with yields be higher than the negative ones). In fact, this is what observed in strong El Niño years, such as 1982-1983 or 1997-1998 and strong La Niña years like 1999-2001, as defined by NOAA (2013). The total effect of the anomalies seems to point out in an increase/decrease in yields. In fact, 1983 and 1998 were 'good' years (positive rates of growth of 11.8% and 3.6%), and 2002 was a 'bad year' (rates of growth of -6.5%, with a negative accumulated effect). La Niña was also classified as 'strong' in 1988-1989 but there was not a reduction in yields. On the contrary in 1989 where there was surprisingly an increase of 14% in soybean yields. The explanation may rely in fact that the total predicted effect was positive for all models for this year. That might explain why just estimating dummies for strong El Niño and La Niña years, as they are classified by NOAA give such a bad outcome ( $p$ -values are above 0.8).

Similarly, in 2001 a negative yield growth was expected as it were supposedly a year of La Niña, but by constructing a forecast dominant positive effect is found. In fact, there was an increase of 13.06% in yield in 2001. However, the reason may rely also in the influence of input utilisation. In the year before the harvest fertiliser sales increased by 16% (or 2.7 million tons) while in 2002, the increase was modest of only 4% (or 600 thousand tons). The idea that "Every El Niño year is good for South American grain production while every La Niña year is bad" therefore should be partially refuted. One can easily see that by estimating correctly the impacts of ocean temperatures and anomalies on yield.

It is a surprise though that for forecasting purposes, although standard errors were too high to produce a credible out of sample yield forecast, this model could predict for more than 70% of the years if the season was going to be 'good' (positive rate of growth) or 'bad' (negative rate of growth), regardless of the existence of an El Niño or La Niña, and just using totally exogenous climate data.

The final implication of our model is that there is a significant room for adjustment given by the level input utilisation, and definitely this is an interesting topic of future research. It is very likely looking at our data that farmers may respond with a larger utilisation of inputs when climate variables indicate a 'bad' year ahead. This is not only interesting from the point of view of the rationality of agents (and the possibility of convergent expectation formation), but for analysis in price formation mechanisms and planting decisions, in which the level of technology applied is endogenous to the system.

## Conclusion

There is no other country today that is more capable of expanding its agricultural output than Brazil. Although the possible bottlenecks may exist in infrastructure and logistics, the scarcity of land and technology certainly is not an issue for the time being. This was shown by estimating the values of elasticity of acreage with respect to expected returns for Brazil. Elasticities are however just a component of the supply functions, and it was necessary to turn to the problem of yield and climate, characterising the second distinctive aspect of Brazilian agriculture.

To understand the future role of South America in food production one may study better its connection to the El Niño and La Niña phenomena, and although there is plenty of research on this topic among climatologists, there hasn't been much in economics. Some possibilities of estimation were outlined.

Some issues regarding the possible influence that climate may have on farmers' decision regarding costs of production and in the calculus of expected return were raised. Preliminary investigations, relating the anomalies on temperature of the coastal Peru and fertiliser sales point out in this direction.

Although the model does not produce a sufficiently small confidence interval for forecast, it was possible to correctly predict the 'good' and 'bad' years on soybean and corn production in more than 70% of cases. It was also demonstrated that the common sense belief that El Niño is necessarily good and La Niña indicates bad years may be mistaken. An improvement of a model that includes the level of input utilisation and a better investigation of the use of technology in agriculture may improve dramatically its forecasting power. That is also a good topic for future research.

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### Conflict of Interests

The author hereby declares that there are no conflicts of interest.

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## Appendix

**Table 1:** Error Correction Model on Expected Returns (log-model)  
Source: Author 2013

Method: Least Squares. Date: 10/09/13 Time: 13:28. Sample (adjusted): 1998 2012. Sample: 15 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2675.494	0.975	2.743	0.019
D_lreturn	0.141	0.045	3.255	0.007
Lreturn(-1)	0.131	0.044	2.962	0.013
larea(-1)	-0.199	0.081	-2.464	0.032
R-squared	0.599	Mean dependent var		0.049
Adjusted R-squared	0.490	S.D. dependent var		0.067
S.E. of regression	0.048	Akaike info criterion		-3.009.047
Sum squared resid	0.025	Schwarz criterion		-2.820.233
Log likelihood	2.656.785	F-statistic		5.485.225
Durbin-Watson stat	2.161.362	Prob(F-statistic)		0.015

**Table 2:** Elasticity Measures  
Source: Author 2013

Elasticities	2004-2006	2006-2009	1997-2012
Babcock et al (2011)	0,162	0,19	-
Short Run Elasticity	0,140***	0,110***	0,139***
Long Run	-	-	0,660**

\*\*\*p-value<0,01, \*\*p-value<0,05



**Table 3:** Forecasting Results and Probabilities  
Source: estimation by the author 2013

Year	Forecast. Prob Growth Soy- beans	Positive Growth=1; Neg Growth=0	True; False; 50% Threshold	Forecast. Prob Growth Corn	Positive Growth=1; Neg Growth=0	True; False; 50% Threshold
1978	0.288	0	T	0.466066	0	T
1979	0.620	1	T	0.831598	1	T
1980	0.972	1	T	0.850902	1	T
1981	0.722	1	T	0.677438	1	T
1982	0.381702	0	T	0.798896	0	F
1983	0.989402	1	T	0.904215	0	F
1984	0.120801	0	T	0.30364	1	F
1985	0.875909	1	T	0.684576	1	T
1986	0.345797	0	T	0.357527	0	T
1987	0.783126	1	T	0.683802	1	T
1988	0.923059	0	F	0.911173	1	T
1989	0.53135	1	T	0.561417	1	T
1990	0.104555	0	T	0.083088	0	T
1991	0.323791	0	T	0.534032	0	F
1992	0.612147	1	T	0.787685	1	T
1993	0.935146	1	T	0.942358	1	T
1994	0.424694	1	F	0.580131	0	F
1995	0.883118	1	T	0.897977	1	T
1996	0.704432	0	F	0.622632	0	F
1997	0.587052	1	T	0.698397	1	T
1998	0.936513	1	T	0.929125	1	T
1999	0.574641	0	F	0.467927	0	T
2000	0.218012	1	F	0.4005	0	T
2001	0.928164	1	T	0.966958	1	T
2002	0.013095	0	T	0.175495	0	T
2003	0.838354	1	T	0.811299	1	T
2004	0.170716	0	T	0.047797	0	T
2005	0.614531	0	F	0.354253	0	T
2006	0.93904	1	T	0.869785	1	T
2007	0.863346	1	T	0.77459	1	T
2008	0.368536	0	T	0.395935	1	F
2009	0.173348	0	T	0.440373	0	T
2010	0.821529	1	T	0.752886	1	T
2011	0.205117	1	F	0.684494	0	F
2012	0.154301	0	F	0.406552	1	F
	Percentage TRUE	77.14%		Percentage TRUE	71.43%	





**Table 4:** Regression Output Coefficients

log (ycorn)-log(ycorn(-1)) 35 Obs (1977-2012) Akaike=-1.562152				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0,029797	0,0177	1,6849	0.1024
MAM(-1)	-0,046932	0,018	-2,601	0.0143
MJJ(-1)	0,188615	0,0504	3,7423	0.0008
JJA(-1)	-0,260263	0,0719	-3,619	0.0011
JAS(-1)	0,117876	0,0379	3,1109	0.0041
log(ysoy)-log(ysoy(-1)) 35 Obs (1977-2012) Akaike= -1.21479				
JFM(-1)	0,077643	0,036	2,1557	0.0393
FMA(-1)	-0,143951	0,0523	-2,7502	0.0100
AMJ(-1)	0,127668	0,0382	3,3447	0.0022
JJA(-1)	-0,200269	0,0611	-3,2753	0.0027
JAS(-1)	0,146533	0,0445	3,2955	0.0025
GMM - log(ysoy)-log(ysoy(-1)) 18 Obs				
LOG(FERT(-1))- LOG(FERT(-2))	0.725011	0.218964	3.311.098	0.0041
Instrument list: LOG(JUN(-1)) JUL(-1)) SEP(-1))				
ARMA(4,2) Akaike = -1.1749				
AR(4)	1.009.910	0,0046	220	0
MA(2)	0,535463	0,1419	3,773276	0,00007



# Right to food, food security and food aid under International Law, or the limits of a right-based approach

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## Abstract

The right to food has become a pillar of international humanitarian and human rights law. The increasing number of food-related emergencies and the evolution of the international order brought the more precise notion of food security and made a potential right to receive food aid emerge. Despite this apparent centrality, recent statistics show that a life free from hunger is for many people all over the world still a utopian idea. The paper will explore nature and content of the right to food, food security and food aid under international law in order to understand the reasons behind the substantial failure of this right-centred approach, emphasising the lack of legal effects of many food-related provisions because of excessive moral connotations of the right to be free from hunger. Bearing in mind the three-dimensional nature of food security, the paper will also suggest that all attention has been focused on the availability of food, while real difficulties arise in terms of accessibility and adequacy. Emergency situations provide an excellent example of this unbalance, as the emerging right to receive food aid focus itself on the availability of food, without improving local production and adequacy. Looking at other evolving sectors of international law, such as the protection of the environment, and particularly the safeguard of biological diversity, alternative solutions will be envisaged in order to “feed” the right to food..

## Introduction

Commenting the results of the State of World Food Insecurity 2013 report, José Graziano da Silva, Kanayo F. Nwanze and Ertharin Cousin - leaders of the Food and Agriculture Organisation, the International Food for Agricultural Development and the World Food Programme - made an “appeal to the international community to make extra efforts to assist the poorest in realising their basic human right to adequate food. The world has the knowledge and the means to eliminate all forms of food insecurity and malnutrition” (FAO-IFAD-WFP, 2013). This prima facie innocent statement is an excellent introduction to present the aim of the paper that is to emphasise the weaknesses of international efforts aimed at stemming malnutrition. Is it acceptable that after more than 60 years from the consecration of the right to food at the international level, attention is still focused on “extra” ef-

forts?

Before embarking in its critical part, the paper will outline a clear definition of the nature and content of the right to food and a projection of the evolution of the legal concept from right to food to food security. A first, partial conclusion will emphasise how the legal implications of the right to be free from hunger are still overwhelmed by moral – if not openly moralistic – considerations. The focus will shift, then, on the right to food in emergency situations and on the existence of a possible right to receive food aid in case of inability or unwillingness of the state to directly grant the right to food to its population. Even in this case, the right-centered ap-

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proach is not sufficient, since the accent is put on the dimension of availability, without taking measures aimed at granting accessibility and adequacy. In that sense, the paper will suggest as a partial solution to overcome the right-based approach in order to embrace a greater complexity in which international environmental law, and in particular the protection of biological diversity, could play a pivotal role in the achievement of the aim of a world free from hunger.

### The Universal Declaration of Human Rights

The conventional biography of the right to food has a traditional act of birth in the famous "Four Freedom Speech", delivered by the U.S. President Franklyn D. Roosevelt to the Congress on January 6, 1941. In this speech, he announced the fundamental freedoms all human beings ought to enjoy: freedom of speech and expression, freedom of worship and believe, freedom from fear and freedom from want (Crowell, 1955:266). It is, however, only after World War II that the march of the right to food towards an international legal recognition began. At first, the right to food made its entry in the international legal framework through the rather vague notions of freedom from want and right to an adequate standard of living, incorporated in the preamble and in Article 25 of the 1948 Universal Declaration of Human Rights, respectively.

Initially deprived of any legal effect (Sohn, 1967), as it was intended to be a "common standard of achievement for all people of all nations" (Whiteman, 1965:243), a part of this document has been interpreted as customary international law by many scholars (D'Amato, 1986; Kamminga, 1992) following a series of judgements delivered by the International Court of Justice (ICJ) between 1970 and 1986. In the Barcelona Traction case, the International Court of Justice stated that the principles and rules concerning the basic rights of the human person "have entered into the body of general international law" (ICJ, 1970). In the following years, two judgements explicitly mentioned the UDHR: in the Hostages case the ICJ affirmed that some principles of the UDHR are a proof of the existence of universal human rights (ICJ, 1979), while in the Nicaragua case the judges deemed the UDHR, together with other important resolutions of the UN General Assembly, valuable to contribute to the formation of a solid *opinio iuris* in the creation of customary law in the field of human rights (ICJ, 1986). Those judgements, however, can not be simplistically interpreted as a "customisation" of the UDHR *tout court*, as being merely quoted in the Declaration is not sufficient for a right to be recognised as part of general interna-

tional law (Hannum, 1998:). As far as the right to food is concerned, it is possible to suggest that Article 25 of the UDHR has put the basis for the existence of an *opinio iuris* which allows everybody to enjoy a minimum entitlement to food, as well as to clothing and housing (Alfredsson - Eide, 1999:523). Nevertheless, the absence of a uniform and constant practice by states makes the existence of a customary rule of international law related to the right to food difficult to be proven.

### The International Covenant on Economic, Social and Cultural Rights

A legally binding provision for the right to food has however been reached at the level of treaty law after the approval of the International Covenant on Economic, Social and Cultural Rights (ICESCR) (UN, 1966). In particular, Article 11 of the ICESCR gives the right to an adequate standard of living a food-oriented interpretation, as the second paragraph literally states that "*the State Parties to the present Covenant, recognizing the fundamental right of everyone to be free from hunger, shall take individually and through international cooperation, the measures including specific programs*" which are needed to improve methods of production, conservation and distribution of food by making use of technical and scientific knowledge. (UN, 1966)

The content of this obligation was further clarified by General Comment (GC) n.12 of the Committee on Economic, Social and Cultural Rights (CESCR): the right to food is realised when "*every man, woman and child, alone and in community with others, has physical and economic access at all times to adequate food or means for its procurement*" (CESCR, 1999). Furthermore, the GC n. 12 identified three main dimensions of the right to food: availability in production and selling of alimentary goods; accessibility, which requires the guarantee of economic and physical access in a way that food is affordable and reachable for every category of people in every place, even if remote; adequacy to the dietary needs and living conditions (CESCR, 1999). The realisation of the right to food thus requires on the one hand the availability of food in a sufficient quantity and quality, and on the other the accessibility to adequate food in economic and physical terms. Further indications come from a study on the interrelation between malnutrition and health diseases by the Advisory Committee of the Human Rights Council. In particular, right to food was further specified as

"the right to have regular, permanent and unrestricted access, either directly or by means of financial purchases, to quantitatively and qual-



itatively adequate and sufficient food corresponding to the cultural traditions of the people to which the consumer belongs, and which ensures a physical and mental, individual and collective, fulfilling and dignified life free of fear" (Ziegler, 2011).

As for state obligations, the right to food as announced in this universal instrument which entails three specific types of provision at the domestic level: the obligation to prevent, which requires governments exercising their domestic sovereignty not to take measures which can end up with arbitrarily deprive people of their right to food; the obligation to protect, which requires governments in the exercise of both domestic and external sovereignty to hinder third parties (states, individuals, corporations) from violating the right to food to others; the obligation to fulfil, which requires governments to provide pro-active measures aimed at strengthen people's access to resources and facilitate their utilisation in order to eradicate hunger and malnutrition (Ziegler, 2012).

Those three obligations are, in a certain sense, an exception to what the ICESCR States at Article 2, which announces the principle of progressive development (CESCR, 1999). Together with the prohibition of discrimination in the exercise and enjoyment of all rights recognised under the Covenant (Article 2, paragraphs 2 and 3), the obligation to pursue the realisation of the scopes of the Covenant to the maximum of their available resources and by all the appropriate means and the prohibition of retrogressive measures which would end up in deteriorating the level of fulfilment of the right to food, the obligations to respect, protect and fulfil are of immediate effects. However, the existence of the immediate obligations to respect, protect and fulfil does not make of the right to food an automatic right to be fed and not even an utopian right to meet individual preferences (FAO, 2010).

### **Evolution of a concept: from right to food to food security**

The approval of the ICESCR, far from being the starting point of a progressive realisation of the right to be free from hunger, became the origin of a stasis. In that way, the right to food – as a part of the broader concept of freedom from want – disappeared from the agenda of priorities of the international community to finally reappear at the end of the Cold War, following the constantly growing number of emergencies related to food scarcity (FAO, 1998). The World Food Summit (1996) and later on the Millennium Assembly (2000) saw a renewed commitment by States in order to eradicate hunger and mal-

nutrition.

In particular, during the 1996 World Food Summit, the notion of right to food underwent a further specification, as the new notion of "food security" was introduced. The expression came to indicate the situation in which "all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life" (FAO, 1996). Three pillars are called to sustain food security (WHO, 2013): availability, accessibility and use. The first refers to the supply of food through production, distribution and exchange (Gregory – Ingram – Brklaich, 2005). The second comes to mean economic affordability and allocation of food in response to the preferences of individuals and households (Gregory – Ingram – Brklaich, 2005). The third refers to the quantity and quality of food, which must be safe and enough to meet physiological requirements of each individual (Ecker – Breisinger, 2012). To those pillars, the FAO added a fourth pillar that is the stability of availability, accessibility and use over time (FAO, 2006).

Together with those notions, the summit produced two documents: the Rome Declaration on Food Security, which called member states of the United Nations to work to halve the number of chronically undernourished people by 2015, and the Plan of Action, which sets a number of targets for government and NGOs in order to achieve food security and overcome the serious challenges to achieving food security (such as water scarcity, failed agriculture market regulation, pike of commodity prices, population growth, climate change, loss of agricultural land). This plurality of factors made it clear the necessity of a multidimensional approach (De Schutter, 2010).

One of the main tools of this multidimensional approach is the identification of eight UN Millennium Development Goals (MDG), elaborated by the Millennium Assembly at the UN headquarters (UN, 2000): through the first MDG, states committed themselves to the eradication of extreme poverty and hunger, with as a first aim to halve by 2015 the number of people suffering from hunger.

### **Food security and Millennium Development Goals; numbers and reasons of a failure**

Looking at recent statistics, however, the number of countries in which the ambitious target set by the Millennium Development Goal n. 1 will not be achieved is dramatically high: many nations in sub-Saharan Africa and in South-East Asia present no progress and, in some cases, the situation even deteriorated (FAOSTAT,





2010). A recent report issued by the Food and Agriculture Organisation, the International Fund for Agricultural Development and the World Food Programme reveals that one in eight people in the world is suffering from chronic undernourishment (FAO-IFAD-WFP, 2013). This means 867 million human beings, among which 1 out of 9 is a child under five years. This statistic hides an even more dramatic reality: after almost two decades of slow yet progressive decline, in which the global percentage of hungry people dropped from 18.6 to 12.5 (FAO-IFAD-WFP, 2013), the number of undernourished people is stagnating because of the global economic recession. By the way, the phenomenon is not confined to developing countries: 16 million people are suffering from hunger in the developed world. (FAO-IFAD-WFP, 2013). This means that since the global economic crisis broke out, the progress in reducing hunger has leveled off, while the Millennium Development Goal target of 11.6 percent of undernourished people by 2015 is far from being achieved. In this context of actual stagnation, it is surprising that FAO, IFAD, and WFP, crucial players in the fight against world hunger, are satisfied with getting closer than what expected to the target (FAO, 2012). Talking about statistics, in fact, the 0.9 percent gap in the achievement of the MDG will leave 63 million people suffering from malnutrition even after 2015.

The reasons of those substantial failures rest mainly in the lack of binding effects of those agreements reached at the international level. As in a negative replica of the internal system of "checks-and-balances", the ambitiousness and firmness of those statements made by states is counterbalanced by the almost total lack of legal value: the declaration issued from the World Food Summit, as an example, reaffirms the right to have access to safe and nutritious food (FAO, 1996), while at the same time pledging political will and commitment to achieving food security for all through a Plan of Action, which is unfortunately non binding. Equally deprived of legal obligation are the Millennium Development Goals, which are a striking example of soft law: even if it would seem relatively easy to assume that the obligation to achieve those aims could have become a part of customary international law because of a wide acceptance in practice (Alston, 2004:18), and following the reiterated commitment expressed by States in the context of the Millennium Assembly (2000), the Johannesburg World Summit on Sustainable Development (2002) and the Monterrey Consensus (2002), there is no substantial evidence of a solid opinion *iuris* that governments made those commitments with the requisite intent to be bound (Alston, 2004:21). Even worse, the potential mandatory legal nature is overwhelmed by moral considerations when approaching the issue of the right to have access to

food: it seems thus important to stress that the debate "is not about charity, but about ensuring that all people have the capacity to feed themselves in dignity" (Ziegler, 2012). In other words, until the right to have a safe access to food will be seen as a "courtesy" rather than a genuine obligation imposed on states, the protection and promotion of the possibility for all human beings to live in dignity and free from malnutrition will be put at stake.

### **Emergency situations and right to food: towards a right to receive food aid?**

The need for a paradigmatic change, in which the logic of dependency has to be abandoned in order to embrace a fully legal point of view is well exemplified by emergency situations, such as armed conflicts, natural catastrophes, and man-made disasters. Emergencies were defined by the Council of Europe as those situations which "*affect the whole population and constitute a threat to the organised life of the community of which the state is composed*" (Council of Europe, 2009).

Integrating the issue of the right to food in an emergency context implies an attempt to grant to an increasing number of people the tools to get the food they need even in situations in which that right is threatened. Since late 1970s to 1997 the share of global food aid dedicated to emergency situations (both natural and man-caused) rose from 10% to roughly 42%. In the same period of time, the total amount of World Food Programme's global resources devoted to supporting people in emergency situations rose from approximately 10-15% to nearly 70% (FAO, 2002). This increase in numbers reflects the dramatic change both in the nature and the dimensions of the emergencies related to the protection and promotion of food security international community witnesses since the end of the Second World War. Inter-state and, more recently, intra-state conflicts became the first source of hunger (FAO, 2002) while droughts and other natural disasters are amplified in their proportions by the consequences of climate change as the terrible typhoon Haiyan in the Philippines recently came to demonstrate. In those contexts, the obligations of states may be seen on a different level: while in normal situations states have the obligation to respect, promote and fulfil the right to food in relation to available resources, in emergencies the needs of the victims may exceed the capacity or, in some cases, the will of States to respond (FAO, 2002). In those cases, there is an obligation to accept assistance from other sources in order to protect the lives and fundamental rights of all affected people (FAO, 2002).

It is precisely in emergency situations that one of the main limits of the rights-based approach emerge, as



the accent is always put in the dimension of availability of food. On the contrary, the right to adequate food in emergency situations should not be solely identified as a “distributive” issue: in case of drought and other types of recurring or sudden natural disasters, the international community should support states not only by supplying emergency food aid, but also by helping them to strengthen their preparedness, prevention and management capacities (WHO, 1999) while state authorities should pay more attention to the elaboration of effective early warning systems, on the one hand, and ensure a “*peaceful, stable and enabling political, social and economic environment*” (UNHRC, 1998). When crises occur international organisations and national governments should co-ordinate their efforts in order to meet the needs of affected people in terms of assistance and protection in a way that facilitates recovery from crisis through access to land, market reactivations and other initiatives aimed at fostering integration and consolidating security (FAO, 2002).

### **The emerging right to food aid: availability is not enough**

Those remarks risk, however, to remain a “wishful thinking” look at the evolution of the international legal framework: when states are unable or unwilling to ensure the enjoyment of the right to food to their own population because of natural disasters or conflicts, it is debated if a “more-than-moral” duty to provide food aid exists for the international community. At the moment, a binding obligation to provide international food aid has not yet been widely recognised by states (Clay, 1998). This emerging right has a number of already existing legal consequences, which have been analysed by an extensive literature in international law. States unable to directly fulfil their duty to provide people with an adequate access to food or, in case of emergency, to grant food aid to those who are affected by an armed conflict or a natural disaster, should request assistance to the international community: in its GC n. 12, the CESCR affirms that “*a state claiming that it is unable to carry out its obligation for reasons beyond its control [...] has the burden of proving that [...] it has unsuccessfully sought to obtain international support to ensure the availability and accessibility of the necessary food*” (CESCR, 1999:17). However, in the respect of state sovereignty as described in Article 2.1 of the UN Charter, external food assistance in case of emergency shall be subjected to a request by the affected State or, at least, to its consent. Furthermore, there are limits to the possibility of refusal, as the lack of acceptance cannot be due to “*arbitrary or capricious*” reasons (ICRC, 1989) given the high stakes in terms of survival of the population. Furthermore, a refusal could be a violation of human rights as the obligations stemming from Article 2 and 11 of the

ICESCR entail that the state cannot arbitrarily withhold its consent in case of inability or unwillingness to provide assistance without infringing its obligation to respect (CESCR, 1999). Following this same logic in cases in which it is impossible to determine which authority has the power to give a valid and legitimate consent, this consent is to be presumed in the view of the fact that assistance for the victims is of paramount importance (FAO, 2002). On the other side, the supply of certain amounts of food aid by the so-called “donor countries” is regulated by international legal instruments: as an example, the 1995 International Grains Agreement, composed by the Grains Trade Conventions and the Food Aid Convention has as its main objectives “*to contribute to world food security and to improve the ability of the international community to respond to emergency food situations and other food needs of developing countries*” (Food Aid Committee, 2010) through quantitative commitments for states to supply food to countries affected by emergencies.

Article 3 of this agreement obliges the parties (namely Argentina, Australia, Canada, the European Community and its Member States, Japan, Norway, Switzerland and the United States) to “*provide food aid [...] or the cash equivalent thereof*” to least-developed countries, low-income countries, lower-middle income countries and other countries included in the WTO List of the Net Food-Importing Developing Countries. This convention contains an extensive interpretation of what food aid is: grants of food, cash, sales of food for the non-transferable and non-convertible currencies, sales of food on concessional credit. In any case grants of food have to represent no less than 80% of the total food aid (Food Aid Committee, 1999).

Unfortunately, the analysis of those provisions confirms that attention is devoted mainly to the question of availability, and particularly under the conventional scheme of a “charitable donation” from rich to poor states. What is totally ignored is the dimension of access to food, while adequacy to dietary needs is completely out of reach. International community must embrace a new vision, in order to face global challenges and dramatic needs: most of the time, food is available. But the issue does not end with food production: measures must be taken in the field of the economic and physical accessibility. If for the latter question the solution could be an improvement in the infrastructural and transport network, the economic access to food represents the real challenge for the years to come.

### **Conclusion**

In order to overcome the emphasised weaknesses of the international right-based approach in relation to



the protection and promotion of the right to food, international community should refuse to continue to feed the paradigm of dependency and charity, of which the emerging right to food aid – focused on the dimension of distribution and availability – is just the last example. To do that, an all-encompassing legal framework should be put in place, as food accessibility cannot be efficiently reached only by means of humanitarian law. The possibility to provide safe and equitable access to food is indeed closely linked to other – and often ignored – branches of international law, such as trade and environmental law.

In GC n. 12, the CESCR considered sustainable access to food as a core element of such a right: this concept of sustainability has multiple dimensions, since it has to be intended in social, economic and environmental terms and has not to interfere with other fundamental human rights. From an environmental point of view, this means that production of food has not to endanger the protection of the environment. This limitation finds a sort of temperament in emergency situations, since in such delicate moments the right to life, of which the right to be free from hunger is part, is of primary importance. There are, however, a number of norms of international environmental law which could be relevant in the horizon of the right to food and of food aid. Some of them relate to the protection of plant and animal health from pesticides and other dangerous materials but the majority of these norms deals however with the issue of biodiversity, as distributing seeds of alien species in emergency-affected countries could produce a negative impact on local environment: in that sense, Article 6 of the 1992 Convention on Biological Diversity (CBD) contains a provision for sectorial and/or cross-sectorial plans, programmes and policies aimed at promoting biodiversity, while Article 8 prohibits the introduction of “*alien species which threaten ecosystems, habitats or species*”. As a matter of fact, biodiversity significantly contributes to food security, nutrition and well-being as it provides foods from both plant and animal sources while serving at the same time as a “natural warehouse” during crisis. CBD is an intergovernmental agreement and its provisions are not binding per se (if not by an ethical point of view) upon UN agencies in case of relief or food aid programmes and thus require an action by the recipient state which has to monitor the respect of biodiversity.

All those considerations help to draw a conclusion that echoes the outcome of the 2005 Brasilia consultations on the cross-cutting initiatives in the framework of the CBD, which underlined how

“Biodiversity is essential for food security and nutrition and offers key options for sustainable

livelihoods. Environmental integrity is critical for maintaining and building positive options for human well-being. Existing knowledge warrants immediate action to promote the sustainable use of biodiversity in food security and nutrition programmes, as a contribution to the achievement of the Millennium Development Goals”.

For this reason, the protection of biological diversity could become a key issue in the promotion of food accessibility and adequacy, as a variety of plant and animal sources is vital for human diet and nutrition while at the same time sustaining agricultural production and sustainability through the provision of genetically diverse seed which could better be adapted to existing conditions (ex. drought-resistant seed). Furthermore, wild harvested food species could prove to be particularly significant to poor and landless in times of famine or when food supply mechanisms are disrupted (CBD, 2013).

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### Conflict of Interests

The author hereby declares that there are no conflicts of interest.

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# Contradictions within the modern food system: Nutritional disbalance across the globe, its main drivers and possible ways out

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## Abstract

Contemporary food production, given the degree of technology being applied in it and the present state of scientific knowledge, should be able to feed the world. Corresponding statistics show that in fact the volumes of modern food production confirm this statement. Yet, the present nutritional situation across the globe leaves much to be desired: on the one hand the numbers of undernourished and malnourished people are still high and even growing in some regions, and on the other hand there is an increasing number of overweight and obese people who are experiencing (or are at risk of) adverse health impacts as consequences. The question arises how this situation is possible given the present state of food production and knowledge, and also in terms of nutrition basics when talking about the latter. When arguing about the main causes of the present situation with nutrition across the globe, it is the modern food system with its distortions that is often criticised with emphasis placed on inappropriate food distribution as one of the key problems. However it is not only food distribution that shapes inequalities in terms of food availability and accessibility – there is a number of other factors contributing to this situation including political influences. Each of the drivers of the present situation might affect more than one part and have outcomes in different dimensions. Therefore it makes sense to apply a holistic approach when viewing the modern food system, embracing all the elements and existing relationships between them for this will facilitate taking appropriate actions in order to target the desired outcome in the best possible way. Applying a systematic approach and linking various elements with corresponding interactions among them allows for picturing all the possible outcomes and hence finding the way for a better solution on global level – a solution to the present problem with nutritional disbalance across the globe.

## Introduction

These days the topic of food insecurity and world hunger attracts much attention, with fruitful discussions being held both on political levels, in the scientific field and also among common citizens.

Combating hunger in developing countries, given its first place among the Millennium Development Goals (MDG), namely MDG 1 to “eradicate extreme poverty and hunger”<sup>1</sup>, is highly prioritised with various actions

taken on the international scene promoted and initiated by the United Nations (UN), Food and Agricultural Organization (FAO) and World Health Organization (WHO). In fact, the paradox is that the modern food system is capable of feeding the world, yet about 1 billion people around the world are chronically undernourished and another 2 billion suffer from the so-called “hidden hunger” – shocking numbers considering the level of contemporary knowledge and technology (FAO, 2012).

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However, there have been some positive changes in terms of the reduced number of undernourished people worldwide, although most of them have been achieved before 2007-08 (FAO, WFP & IFAD, 2012). Nevertheless in order to halve the prevalence of undernourished people in developing countries – the goal that seems to be realistic given the progress that is already in place – there is a need for more actions, and the application of a systematic approach is required in order to have a thorough picture embracing all possible causes and interrelations. In fact, a systematic approach can be applied through various means of reaching the MDGs as well, since MDG 1 would actually go hand in hand with some other MDGs, namely MDG 3 (gender equality and women's empowerment), MDG 4 (reducing child mortality), MDG 5 (improving maternal health) and MDG 6 (combating HIV/AIDs, malaria, etc.) for basic nutrition to some extent would be a core for all these goals. More on applying a systematic approach with regard to the present situation in terms of global nutritional situation follows in the subsequent chapters. Therefore the purpose of this article is to discuss the main drivers of the present situation with nutritional disbalance across the globe and to try to apply a systematic approach aimed at linking the various drivers and determinants, and then, based on these interlinkages, to discuss possible ways out. The present paper is structured as follows: the next section, "Literature review", presents a theoretical overview of the topic discussing the present situation worldwide and drivers of existing disbalance in its separate intersections. The first intersection, "Food security and food insecurity", provides general information and respective definitions about food security and insecurity; the second intersection, "Nutritional situation in the developing world", speaks about undernourishment and hidden hunger existing in developing countries and some improvements in this regard that have been observed in some regions; the third intersection, "Nutrition transition and the double burden of malnutrition", discusses nutritional switches towards highly-processed food across the globe and a phenomenon known as "double burden" of malnutrition; the fourth intersection, "Feeding the world: modern food system and its capacities", gives a brief overview of the modern food system and changes that have occurred in it; the fifth, and last intersection, "Drivers of the present disbalance", provides insights to some of the main drivers of the present nutritional disbalance in the world. The last section of the paper "Conclusion" draws main conclusions on the topic.

## Literature review

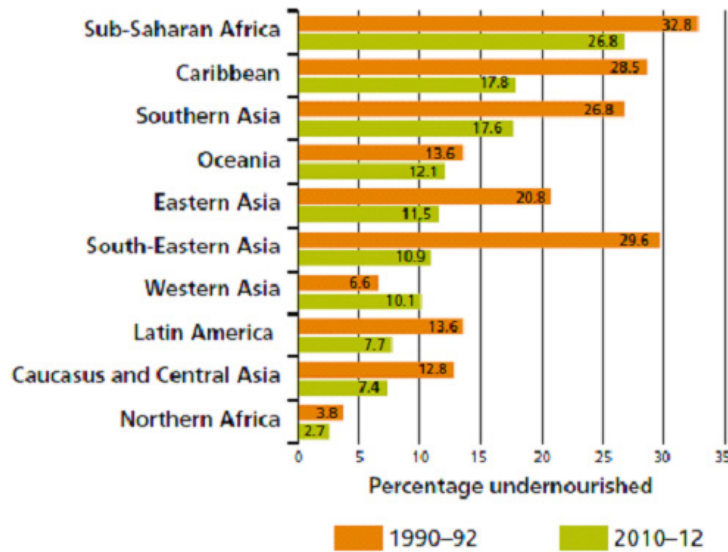
### Food security and food insecurity

Food security was most precisely defined at the World

Food Summit (1996) as a situation when "(...) all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (FAO, 1996; FAO, 2003: 28). Although there are some other definitions and interpretations of food security in place, the concept, regardless of which definition is applied, is multi-faceted as noted by FAO (2003) meaning that both the availability of adequate supplies at global and national level and also adequate nutrition and well-being are being embraced within the concept. Food security is comprised of three pillars, namely food availability, food access and food use<sup>2</sup>. While the first two as it implies deal with sufficient quantities of available food along with sufficient resources for obtaining adequate and nutritious food in place, the last one, food use, embraces aspects of basic knowledge on nutrition and care as well as adequate sanitation and water<sup>2</sup>. In order to provide enough food for all, food availability and affordability for all households should be reached (Gómez et al., 2009). Should this not be the case, one talks about food insecurity – the situation "(...) when people do not have adequate physical, social or economic access to food (...)" (FAO, 2003: 29). So, in the end, food insecurity will be about dietary intake of insufficient food "(...) to meet the needs of growth, activity and the maintenance of good health" (Sage, 2012: 210). The following section will cover the issues of food insecurity worldwide via presenting an overview of nutritional disbalance around the world.

### Nutritional situation in the developing world

According to estimations for the period 2010-12, around 870 million people worldwide are undernourished, which makes up 12.5% of global population and results in a shocking statement – one in eight people (FAO, WFP & IFAD, 2012). Sage (2012: 210) emphasised that undernourishment in children can be considered as particularly critical since even in a mild form it can result in delayed or permanently stunted growth. The number of children displaying low height-for-age worldwide is again shocking – 200 million, with almost half of South Asian children failing to reach the heights and weights that are considered indicators of healthy growth (FAO, 2006: 2008). Apart from undernourishment, there is another problem referred to as "hidden hunger" with another one to two billion people (depending on the source of information) around the world suffering from it (FAO, 2012; WWF, 2013). The majority of these people live in developing countries – 852 million (FAO, WFP & IFAD, 2012). However, the problem of food insecure people is not a concern of least developed countries solely – the developed world is also facing problems of under-



**Figure 1:** Progress towards meeting the MDG target across regions  
Source: FAO, WFP & IFAD 2012: 10.

nourishment and food insecurity, namely food poverty which represents lack of money for buying appropriate food, as described by Sage (2012: 215ff). Food poverty will result in micronutrient malnutrition with such adverse impacts on health as poor physical growth and development, impaired immune system, reduced productivity and mental capability, just to name a few (FAO, 2010). Finally, millions of people worldwide are affected by food insecurity on either a transitory or seasonal basis (Sage, 2012: 210).

However, the situation is not hopeless and the MDG target of halving the prevalence of undernourishment in the developing countries by 2015 is achievable when accompanied by appropriate actions from the national and local governments. During the last few decades there have been some positive changes in developing countries with regard to the situation of undernourishment, and these changes allow for implying that the aforementioned MDG target is actually within reach (FAO, WFP & IFAD, 2012). Here are the corresponding FAO statistics that confirm this statement, at least for the majority of developing countries given the existing differences in trends across regions and countries. For instance, the share of undernourished people has most rapidly declined in South-Eastern Asia (from 13.4 to 7.5%) and Eastern Asia (from 26.1 to 19.2%) followed by somewhat more modest achievements in Latin America (from 6.5 to 5.6%) (FAO, WFP & IFAD, 2012). On the other hand, the same statistics present completely different picture for Southern Asia, sub-Saharan Africa and Western Asia, and Northern Africa demonstrating the increase in share of undernourished people with percentages from 32.7 to 35.0%, from 17.0 to 27.0% and from 1.3 to 2.9%, respec-

tively. Furthermore, there has been a more rapid pace and more evident overall progress achieved in 1990-92 compared to 2010-12, again showing contradictions and, for some countries, bringing about some doubts regarding the likelihood of achieving the MDG target by 2015 in each of the developing countries (Figure 1).

### Nutrition transition and the double burden of malnutrition

Hawkes et al. (2009) have stressed that the process of globalisation results in changes in ways of living, including associated food demand leading to a nutrition transition. Indeed, the outcome of increasing incomes and rapid urbanisation is the situation when people living their busy lives gradually adopt lifestyles with reduced physical activity, having less time for any household work including cooking which, in turn, results in increased consumption away from home (including fast foods and street foods) as well as higher demand for convenience food (Friel & Lichacz, 2010; Hawkes, 2007). These features can be referred to as traits of the phenomenon that is known as "nutrition transition" – a shift towards the increased consumption of energy-dense foods, fats, sweeteners and in general highly processed foods compared to traditional diets accompanied by a reduced intake of complex carbohydrates (Hawkes, 2007; Popkin, 2004). The industrialised world has been undergoing the process of dietary transition towards diets high in fats, sweeteners and highly processed foods over time with an example of England, where in the course of the past two centuries the consumption of refined carbohydrates and fat per person has augmented five to tenfold and is





accompanied by a simultaneous decrease in consumption of fibre-rich foods (Friel & Lichacz, 2010). Unlike industrialised, high-income societies, the developing world adopts such changes at a much faster rate with a shift to a modern industrialised economy within a time span of 10-20 years compared to the many decades or even centuries of that of the developed world (Popkin, 2004).

Apart from nutrition transition observed in both the developed and developing world, developing countries are challenged by a phenomenon referred to as “double burden” of malnutrition which typically accompanies the process of rapid urbanisation in these countries (FAO, 2012). The term “double burden” of malnutrition is used to describe the situation in developing countries when on the one hand the percentage of chronically undernourished people is critically high, but on the other hand the contrasting prevalence of overweight, obesity and accompanying diet related non-communicable diseases occurs, often at increasing pace (Hawkes et al., 2009; FAO, 2012).

### Feeding the world: modern food system and its capacities

The question arises: is our modern food system, given its advanced technologies and knowledge, not capable of feeding the world? And what is this modern food system all about if the problem with hunger is still in place? While answering these questions it makes sense to first have a look at modern food production itself. In fact, the last several decades of the last century have seen a growth in global food production that has surpassed population growth and resulted in overall improved per capita food consumption, though differing across the regions and countries (Shapouri & Rosen, 2009). According to FAO data (2006), during the last four decades, growth rates of world agriculture (both food and non-food commodities) reached 2.1-2.3% p.a., most of this growth being observed in the developing countries (3.4-3.8% p.a.). And yet, further growth in global food production is projected during 2030-2050, albeit with a rate lower than that of the previous decades (Shapouri & Rosen, 2009). Most of the occurred gains were due to growth in yields – the tendency that will still continue in the future (FAO, 2006). This growth is the result of scientific methods applied in contemporary food production coupled by industrial technologies which allowed for surpluses in production due to altering the scale and productivity of farming and processing (Sage 2012: 1f). Of course there is a need for high productivity in order to be able to deliver a supply that could keep up with global demand of a growing population with diets transitioning towards higher energy density and increased percentage of ani-

mal based sources of protein in nutrition – the situation described in more details in the preceding intersection. The world population is projected to grow further with a possibility of reaching 8.9 billion by the year 2050 (FAO, 2006). Therefore the question arises whether the supply offered by the contemporary global food system will be able to keep pace with such demand and at prices that are currently high and are expected to remain at similar level (OECD & FAO, 2013). And how does it happen that the afore described contradictions, in terms of the nutritional situation across the globe, become possible given all the gains of modern food production and its capacities? Where are the weaknesses of the contemporary food system which fails to deliver “enough food for all”?

In answering these questions, one needs to examine the modern food system, trying to picture it in a holistic way and embracing all its elements with interrelations between them as was presented by Gómez et al. (2009). As discussed by the authors, the food system, given its complexity (with many actors and activities involved in multiple locations) and dynamism (food system as subject to constant evolution via decisions made on different levels), should be viewed using a systematic approach allowing to see and predict relationships between its elements as follows: different actors involved in the food system, activities performed along with operating environment and information flows. Indeed, all the actors starting from producer going through to the processor and all the way to the final consumer play their role in shaping the food system. And in the end, as argued by Gómez et al. (2009) food availability as well as affordability could be viewed as a result of complex interactions between the food supply chain and the demand for food, the latter being driven by various factors such as urbanisation, level of income, policies and others. As further explained by the authors, each actor does respond to a variety of factors (e.g. prices, incomes, etc.) providing some function or service to be compensated, and these are the outcomes of the actors’ decisions that link the actors. Hence any interventions intended to affect one actor will have an impact throughout the system.

On the other hand, Hawkes (2007) presented the conceptual framework demonstrating that interactions between resources and main causes have a crucial influence on food supply thereby affecting nutritional status as the final outcome. According to this framework, the availability of basic potential resources (people, food, environment and technology) to society is influenced by globalisation which acts as a political, economic and cultural force affecting society as well. Globalisation processes and corresponding policies influence a two-sided transition of these basic resources: firstly to the food



supply (including accessibility and availability, costs and desirability) and secondly to financial resources linked to people's ability to nourish themselves (through employment and income). The immediate causes such as overall dietary intake and corresponding diet-related diseases will be the effects of financial resources and the food supply shaping nutritional status as a final outcome.

Based on the concepts presented above, it becomes apparent that having in mind a systematic approach to the global food system and considering all existing relations and interactions both within the system and between the actors and elements of the system, the key solution for solving the nutritional problems and food insecurity issue on the global scale could be cooperation on all levels, with each of the actors playing his/her role. This will allow for changing the whole picture. The particular problems of the modern food system causing nutritional disbalance across the globe are discussed in the following intersection.

### Drivers of the present disbalance

When it comes to the present situation with hunger and undernourishment, inappropriate food distribution is always named as a cause. However, contemporary global nutritional disbalance is caused by a number of reasons on different levels of the chain, distribution being only one of them. For example, Friel and Lichacz (2010) negotiating about the present situation with the nutrition transition emphasised several determinants as the main drivers, namely international food trade, foreign direct investment and food distribution systems. In regard to the first driver, the authors named profound changes within international trade and food policy with increasing trade liberalisation which has changed the availability and composition of food supplies and allowed for highly processed and nutrient-poor food to be readily available in developing countries. A good example here is India, which shifted away from its commitment to self-reliance toward greater international trade liberalisation and liberalisation of foreign direct investments – the process began in the late 1980s and is resulting in the convergence of Indian dietary habits with those of the West (increased demand for refined sugars and saturated fat), depression of domestic prices caused by cheaper imports and reduced state subsidies for supporting domestic produce (Hawkes et al., 2010). Going hand in hand with the first driver, the second one has to do with multinational food corporations operating nowadays successfully in developing countries and shaping dietary shift towards more processed and less healthy food in these countries. A flood of highly processed foods in Thailand illustrates this driver in the following:

the volume of highly-processed foods such as potato chips and snack foods has increased by more than 20,000 tonnes between 1999 and 2004, with the bulk of this food coming from US-based transnational food corporations such as food distributor Frito-Lay (division of PepsiCo) (Friel & Lichacz, 2010). And finally, within the third driver, food distribution systems, on the one hand there are again the aforementioned transnational food companies organising food production, marketing and distribution on a global scale, and on the other – the overall situation at the modern marketplace with an increasingly dominating role of the retail sector including supermarkets and food service chains which is especially true for middle- and high-income societies, yet is taking over to shape the food marketplace of the developing countries as well. A good illustration of the third driver is the Mexican food retail sector, where drastic changes occurred after the North American Free Trade Agreement was signed in 1994, namely an increase in the number of supermarkets, convenience stores and discounters (from less than 700 in 1993 to 5,729 in 2004), the establishment of the US-based Wal-Mart supermarket chain and, as a result, rapid expansion of sales of processed foods at a rate 5-10 % per year between 1993 and 2003 (Hawkes et al., 2009). Furthermore, the global food situation and inequalities in terms of nutrition status worldwide are shaped by multiple factors. For instance, of particular attention is the escalating biofuels sector and its interrelations with food prices, as argued by Gómez et al. (2009). Indeed, global agricultural trade and production of food exacerbate falling food stocks (that are already in place) via production of crops for fuel which displaces crop production for human consumption (FAO, 2008). This has further implications for the situation with food prices causing price hikes (OECD & FAO, 2007). However, it is obvious that world food prices are pushed up not by fuel production solely – the causes are of a more diverse character. As stated by OECD and FAO (2007), existing import and export subsidies and tariffs lead to uneven distribution of food stocks coupled by growing population and increased demand for certain food commodities (e.g. meat and dairy) which results in impacts on both international and domestic food stocks – the ultimate factor for price hikes. Furthermore, Gómez et al. (2009) stressed that the aforementioned multinational food companies, in this case retailers, also significantly impact food prices, but not only that – also the degree of affordability for populations which is of crucial importance in developing countries. The authors further argued that since such multinational food retailers are operating on large scale and due to their sophisticated supply chains, the procurement system becomes centralised which leads to a situation in which intermediaries and smaller centres are being replaced by large distributing centres which



in turn has further implications for the local population. Finally, the presence of large multinational food retailers, apart from having some apparent advantages in terms of opening up more market opportunities, brings along shortcomings for the trade itself since encouraging food manufacturers to expand in order to access global retail leads to the situation in which more local food processing from domestic raw materials occurs, which in turn puts local food supply chains at risk (Gómez et al., 2009).

## Conclusion

The global food system is a dynamic and complex system comprised of multiple elements with interactions between them. All its dimensions – physical, economic and informational – have their part in determining overall outcomes through existing relationships and interactions between the various actors. Hence, each and every element and actor has its role to play and has an effect on the whole system. When talking about improving the nutritional situation worldwide and food security, it is of crucial importance to have a systematic view of the food system and embrace all the determinants and stakeholders. The ultimate goal, namely improved food security and nutrition status across the globe could be reached when corresponding measures are taken at all levels within the system since each and every level has its implications for the whole. Taking an action is not, and will never be, solely a matter of appropriate governmental policy or strategic company's decision – it is a task for all since the food system is not only about top-down, but also bottom-up approach. Each and every individual plays his role in shaping food system, for these are consumers who will make the ultimate decision on where and whether to purchase certain food commodities, how to consume them and so on. Combined together, such decisions shape the demand thus providing a bottom-up stream of information flow within the food system – the stream that counts more than it is believed to. Notwithstanding is of course the role of policies and stakeholders within these food supply chains – their impact is more apparent and perceivable by a regular consumer. Yet on these levels there is a need for more cooperation and reviewing of the ultimate goals with actions to be taken for embracing all the elements and considering all the interventions and possible outcomes. These should be joint efforts directed towards one final goal – food security and better nutrition status across the globe. In order to be able to bring about such drastic but necessary shift for improving the present situation, there is a need for reshaping the contemporary food system which is possible only if each actor takes an action and cooperates. Only by doing so it is possible to achieve

better living for all and contribute to a better future for the generations to come.

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<http://www.who.int/trade/glossary/story028/en/> (last access: 25.10.2013).
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1. Here and in the following regarding MDG: <http://www.un.org/millenniumgoals>
  2. <http://www.who.int/trade/glossary/story028/en/>





# The Brazilian Zero Hunger social programme implications in achieving sustainable development

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## Abstract

This article aims to analyse the progress taken by Brazil towards the accomplishment of a sustainable development, mainly highlighting the success of the Zero Hunger social programme in achieving the elimination of starvation. As one of the essential pillars to the sustainable development, the State's social performance demands actions directed to the elimination of extreme poverty and hunger, establishing a basis for equitable growth. It is necessary to clarify the juridical and constitutional framework of Brazil, aiming to emphasise the Zero Hunger importance in achieving the Brazilian Republic's goals and reaching an international pattern on sustainable development. Also, it will be stressed that the international order influences Brazilian domestic law and is one of the main aspects for the Zero Hunger program development.

## Introduction

The debate on food security and nutrition emerged worldwide in the early 90s of the last century, mainly boosted by the World Food Summit in 1996. Brazil's complex social crisis by that time, especially in the sectors regarding the matter of hunger, reflected even more the imperative necessity to the implementation of policies capable to provide effectively the improvement of the social standards in the country.

In this sense, the Zero Hunger Program (ZHP) emerged in 2001 as a key policy of President Lula's government plan, put as a major priority among the social sector. The program appealed initially by studies developed by many technical and academic scholars, as well as by political operators, aiming to reach three main objectives, namely: a) assess the status of programmes to fight hunger in Brazil before the commitments made by the country in World Food Summit 1996; b) resume society mobilisation around the issue of food security and; c) engage the government on federal, state and municipal levels, as well as the NGOs and the civil society in a feasible pro-

posal to combat hunger (Belik & Del Grossi, 2003: 09).

According to the Presidency of the Republic of Brazil (2012), the Zero Hunger Program is:

a strategy driven by the federal government to ensure the human right to adequate nourishment to people with limited access to food. This strategy is part of the promotion of food and nutritional security, seeking for social inclusion and for the achievement of the population's most vulnerable to hunger citizenship. (para. 01)

In addition, the programme is guided by the fulfilment of the fundamental right to food. This right, bounded by both Universal Declaration of Human Rights and Brazilian's Constitution of 1988, also treated the ZHP as a universal matter once it ought to encompass structuring actions that triggers the development and also provide self-sustainability of the local economies (Belik & Del

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Grossi, 2003: 10). According to IBGE (*Brazilian Institute of Geography and Statistics*), the Program intends to affect around 10 million families, which means an amount between 44 to 53 million people under starvation. The Government also appraises that the investments would comprise a total of 1,8 billion Reais, around 1.5 dollars, per year (Ministério Público do Estado da Bahia: 2, 8).

### **The Brazilian Constitution and the Zero Hunger Program**

Initially, to understand the implications of the Brazilian Constitution and the promotion of the Zero Hunger Program, it is important to internationally highlight the establishment of the sustainable development model, analysing its effects on Brazil's domestic law.

In the 20th century, the intensification of industrial capitalism and the unlimited exploitation of the working class brought forth new concepts of development. The economic doctrine began to consider, then, that mass consumption should be linked to social policies, understanding that the economy was favoured by the existence of social rights. This view was prominently advocated by John Maynard Keynes (2006: 99-100) and was fundamental for the development of the Welfare State in the 20th century (Organisation Internationale de la Francophonie [OIF], 2012: 23).

The inclusion of social aspects in the concept of development was an essential step towards the present understanding of sustainable development. Nevertheless, the law has also evolved to embrace this new trend, guaranteeing the so-called social rights, expressing the need of state intervention to implement various spheres of human life such as health, education, food, dignity and others (Dimoulis & Martins, 2008: 32-34).

From 1970s onwards, mankind acknowledges another key aspect to the development: nature. The huge industrial growth and environmental degradation led human beings to reflect on their role in the balance of the planet. It was understood that natural resources are finite and that its unrestrained use threatens the perpetuation of the human species on the planet, because it exhausts and degrades the environment, essential means to our survival.

It has to be highlighted that nowadays the question of sustainable development is considered based on three pillars: economic, environmental and social. These three aspects are considered by governments and global society as a guarantee for structuring a development that takes into account the limitations of human beings and our responsibility to future generations (Organisation In-

ternationale de la Francophonie [OIF], 2012: 24).

The concept of sustainable development was outlined in the United Nations Conference on Environment and Development (UNCED). The conference had as its main results the Agenda 21 and the Rio Declaration on Environment and Development (International Atomic Energy Agency [IAEA], 2006: 02). The Rio Declaration lists a number of requirements for the achievement of sustainable development, including poverty eradication (Principle 5), the elimination of unsustainable patterns of consumption and production (Principle 8) and the application of the precautionary principle (Principle 15) (United Nations General Assembly [UNGA], 1992).

As a result of the international mobilisation for the sustainable development implementation, the Brazilian government established a series of internal programmes and legislation to implement the social, economic and environmental aspects of the concept. One of the main aspects to be considered concerning the domestic legal system of Brazil is the adoption of a new Constitution in 1988. Outlined as the "Citizen Constitution", the new text brought the country to a new era of democracy and respect to the fundamental rights. It settled the basis for a sustainable development model and inspired the Zero Hunger Programme.

It is important to highlight that the Brazilian Constitution is defined as analytical or comprehensive, since it contains norms which go beyond the traditional core of constitutions, that is the state's structure and organisation (Mirkin-Guetzévitch, 1951: 17). The Brazilian Fundamental Law deals with many social aspects and also establishes the economic national framework and environmental protection measures, for example. The Constitution has one specific title for the economic order (Title VII – The Economic and Financial Order), where are stated the main principles and objectives of the economic activity. The next title (Title VIII – The Social Order) deals with the social aspects, such as health, social security, education, culture, sports, science and technology, family and others. Inserted in this last title, the Constitution establishes the right to an ecologically balanced environment (Article 225), considered as a fundamental human right.

When it comes to the right to food, the fundamental aspect of the Zero Hunger Programme, it is interesting to acknowledge that only in 2010 the Brazilian Congress approved a Constitutional Amendment (CA n.64) to change the Article 6 of the Constitution, to read as follows:

Article 6. Education, health, food, work, hous-



ing, leisure, security, social security, protection of motherhood and childhood, and assistance to the destitute are social rights, as set forth by this Constitution.

The inclusion of the food as a social right endorses the state's commitment to implement the minimum conditions for human beings to develop themselves, mainly through public policies. The right to food has a *status positivus*, since it demands a positive intervention from the state on the individual's sphere, achieving the consolidation of the constitutional norm (Dimoulis & Martins, 2008: 67). In this sense, the state has the duty, according to the Brazilian law, to promote policies aiming the proper access to food, as a fundamental right (*positive faktische Handlungen*) (Alexy, 1996: 179-181).

The right to food was formally recognised by the General Assembly of the UN in 2010, but before that it is important to notice that the aspect of food was inserted in the consideration of other fundamental rights recognised by the Constitution, besides other international conventions and treaties that Brazil is a part of. In this aspect, it should be noticed that the Article 1 of the Constitution determines that the Brazilian state is founded on the respect to the dignity of the human person, which includes many essential aspects to the individuals' development, such as the proper access to food, for instance.

In this sense, we can notice that although the Brazilian Constitution imposed the state obligation to act in a way to guarantee proper access to food, essential aspect of the human dignity, only after the Zero Hunger Programme (2003) the government directed its concerns to this question. Moreover, the Brazilian Congress approved the right to food amendment in 2010, a fact that shows the importance of the systematic analysis of the legal text, more than a literal interpretation.

Furthermore, as it will be showed, the international order played an important role regarding the establishment of the programme, mainly through the inclusion of sustainable development as one of the objectives to be accomplished by the new international actors, the developing countries.

### **The Zero Hunger Programme and the international order**

In a deeper analysis, we reach the conclusion that the implementation of the Zero Hunger Programme is a consequence not solely from the Brazilian Federal Constitution. Indeed, the current Brazilian position in the international scenario reflects some of the international

agreements concerning social and humanitarian development signed by the country. Nevertheless, Brazilian efforts towards a contemporary pattern of sustainable development are undeniable, as its leading role in the bloc of the developing countries continues to increase.

The Universal Declaration of Human Rights, for instance, has implied in solid reflections in the Brazilian constitutional order. Some of the principles fostered in the Federal Constitution are clear consequences of the Declaration. As a classic exemplification, the principle of the due process of law (in the Brazilian constitution, enshrined in article 5, LIV), was already previously stated in the Universal Declaration of Human Rights (article XVII, 2). Likewise, the sustainable governance sought by the country is also irrefutable, as it has solid implications in Brazil's legal framework.

Moreover, a sustainable pattern of food access continues to be highlighted by new international tools. One of the most recent examples is the "The Future We Want" document, adopted in consensus at the United Nations Conference on Sustainable Development (Rio+20). Among its provisions, it emphasises the necessity to provide universal access to safe, nutritious and sufficient food (Article 108), and the relevance of the implementation of a global pattern of sustainable agriculture (Article 110). The document is only an example of the broader reception of the sustainable development patterns sought by contemporary legal tools, and the implementation of the Zero Hunger Programme is a solid exemplification of the Brazilian inclination towards the achievement of these standards.

As a matter of fact, the Zero Hunger Programme grew beyond its own initial boundaries, when first established by the Extraordinary Ministry of Food Security and Fight against Hunger, which later led the body to become the National Secretariat for Food Security and Nutrition, tied to the Ministry of Social Development and Fight Against Hunger (MSD), created in 2004. One of its main initiatives, the Family Grant Programme (Programa Bolsa Família, in Portuguese) reached and supported 12 million families considered as poor or extremely poor (families with monthly income below 82 US\$) by 2009, which means around 48 million people. Those prospects enabled the initiative later to reach the status of Zero Hunger Strategy. Being so, its perspectives are gradually by the aforementioned Ministry and initiatives carried by the FAO (Conselho Nacional de Segurança Alimentar e Nutricional, 2009: 29-30).



## The Millennium Development Goals and the Zero Hunger Programme

Remarkably, the creation of the Zero Hunger Programme was also an effort to reach several international standards sought by Brazil and expressed through international conventions towards the eradication of starvation. One of the most notable of these patterns is the Millennium Development Goals (MDGs), which were agreed upon in the Millennium General Assembly of the United Nations in 2000, by all member states to be accomplished until 2015. Since the establishment of these perspectives, Brazil has reached notable advancements in some of the aimed goals. Regarding the Zero Hunger Programme, the fundamental MDG is goal 1, which concerns the eradication of extreme poverty and hunger. Indeed, the social programme was one of the main initiatives that turned possible for several Brazilians to quit the poverty line through a sensitive income distribution.

Collaterally, goals 4 (reduction of child mortality rates), 5 (improvement of maternal health) and 6 (the fighting of diseases such as HIV/AIDS and malaria) have seen a considerable progress on the perspectives of the Zero Hunger, as the income redistribution turned possible broader investments in these sections of basic human needs.

### The influence of international parameters and programmes in the implementation of the Zero Hunger Program

The main sustainable pillar fostered by the Zero Hunger Programme is the establishment of a pattern of food security. Being so, the United Nations Food and Agriculture Organization (FAO) casts the 1996 World Food Summit (WFS) definition as one of the most careful concepts attributed to food security.

In the conception adopted by the FAO (2003, para. 3), a main element concerns the food availability, crossing questions such as famine and food crisis. Moreover, the concept itself integrates the even more complex concept of human security, previously introduced by the Resolution 11274 of the United Nations General Assembly. Throughout this resolution, the UN recognised human security as an effort to identify the contemporary challenges to the survival and dignity of all the peoples.

Fostering a broader conception of human security, a pioneering initiative in Latin America was the Mexican programme Oportunidades (Opportunities), also known as PROGRESA, from 1997. The social purposes of the PROGRESA were directed to three major areas, namely health care assistance, education and food assessment

(Belik & Del Grossi, 2003: 12).

Notwithstanding, one of the main challenges of implementation of previous social programmes in Mexico was the problem of corruption in the country. Even though this question has not being fully overcome yet, the PROGRESA is seen as a successful initiative, as it reached the mark of 4.2 million households only in its first six years of implementation, having an evident emphasis on development of rural territories in order to minimise social disparities (Belik & Del Grossi, 2003: 12).

Bearing this viewpoint in mind, it is actually the Brazilian Zero Hunger Programme that earned the most positive perception of the international community. The main reason of the success of the programme could be attributed to the direct and indirect perspectives it used to tackle hunger and social disparities. Notwithstanding, the Programme was responsible for the creation of the so-called "popular restaurants", food and nutrition units aiming the distribution of high nutritional value meals by accessible prices; the support to the development of small farmers and, even more directly, the financial aid distributed to poor households by initiatives such as the Family Grant Programme – which promoted sensitive impacts in the development of the Brazilian domestic economy and sensitively helped to reduce the imbalance in the income distribution rates of the country.

### Conclusion

As demonstrated, the Zero Hunger Programme is indeed an undeniable path to achieve the sustainable development and the equitable growth. Therefore, its efforts on eradicating hunger and, consequently, on developing the social sector together with the other two pillars – environmental and economic, have been not only successful, but also a great example for the international community.

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# World hunger, malnutrition and brain development of children

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Brain development

## Abstract

Hunger is still a major problem faced by people in the world especially in some areas in developing countries, and this condition is a cause of undernutrition. Insufficient nutrition during the early stages of life may adversely influence brain development. It was observed from my own research conducted in Bogor, Indonesia, that children with severe acute malnutrition (SAM, body mass index or BMI for age z score  $< -3$ ) (N=54) had significantly ( $p < 0.05$ ) lower memory ability score ( $46.22 \pm 1.38$ ) compared to normal children (BMI for age z score  $-2 \leq z \leq 1$ ) (N=91) ( $51.56 \pm 1.24$ ). Further, children with Moderate Acute Malnutrition (MAM, BMI for age z score  $-3 \leq z < -2$ ) tended to ( $p < 0.1$ ) have lower memory ability ( $50.08 \pm 1.58$ ) than the normal children. On the other hand, overnutrition among children also might impair the brain function. The study revealed that children who are overweight (BMI for age z score  $1 < z \leq 2$ ) (N=8) significantly ( $p < 0.05$ ) had lower memory ability score ( $46.13 \pm 4.50$ ) compared to the normal children. This study also revealed that obese children (BMI for age z score  $> 2$ ) (N=6) tended to ( $p < 0.1$ ) have lower memory ability score ( $50.33 \pm 5.64$ ) than the normal children. It is therefore very important to maintain children at a normal BMI, not being undernourished (SAM and MAM categories) on one side and not being overnourished (overweight and obesity categories) on the other side in order to optimise their brain development. This could be achieved through providing children with an adequate and balanced nutrient supply via food.

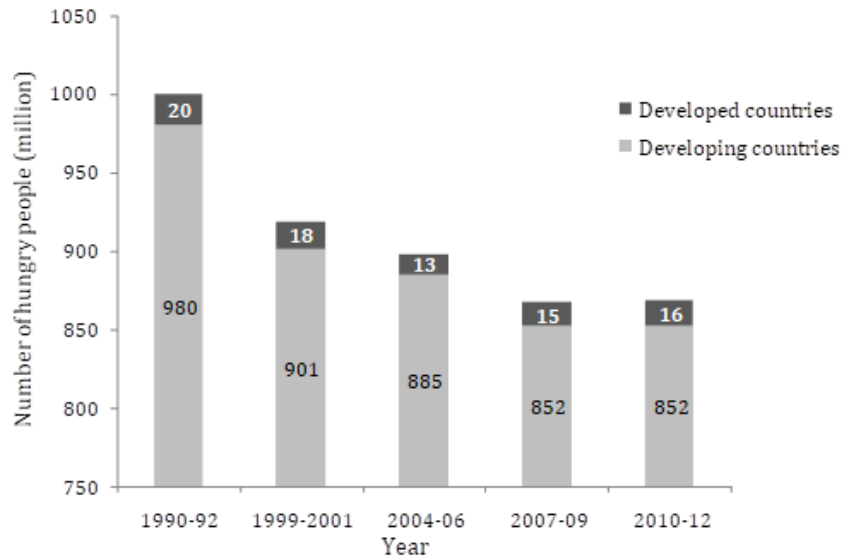
## Introduction

World hunger is a condition in which the substantial world population undergoes undernutrition as a result of food scarcity (Halford et al., 2005: 1015). FAO (2012: 8) have estimated that there are about 870 million hungry people worldwide in 2012, which means that one in eight people is undernourished. Hunger has been the top world problem for many decades. World hunger has reduced from 18.6% in 1990-92 to 12.5% in 2010-2012. However, the progress has slowed down since 2009 due to the economic crisis (FAO, 2012: 8). Most of the people suffering from hunger are from developing countries; that are about 850 million people which account to almost 15% of the population (FAO, 2012: 8; Figure 1).

People who suffer from hunger, either chronically or acutely malnourished, are mainly located in Sub-Saharan Africa and some areas in Asia. A number of reasons have been the driving forces of world hunger, i.e. limited access to sufficient quantity and quality of food, starvation due to famines, war and natural disasters, low agricultural productivity, poverty and unemployment, and some micronutrient deficiencies (Sanchez and Swaminathan, 2005: 357). More specifically concerning the hungry, approximately half of them are small-holder farmers. About 20% of the hungry are the landless rural and 10% are

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**Figure 1:** Number of world hunger from 1990 to 2012.  
Source: Adapted from FAO (2012: 9).

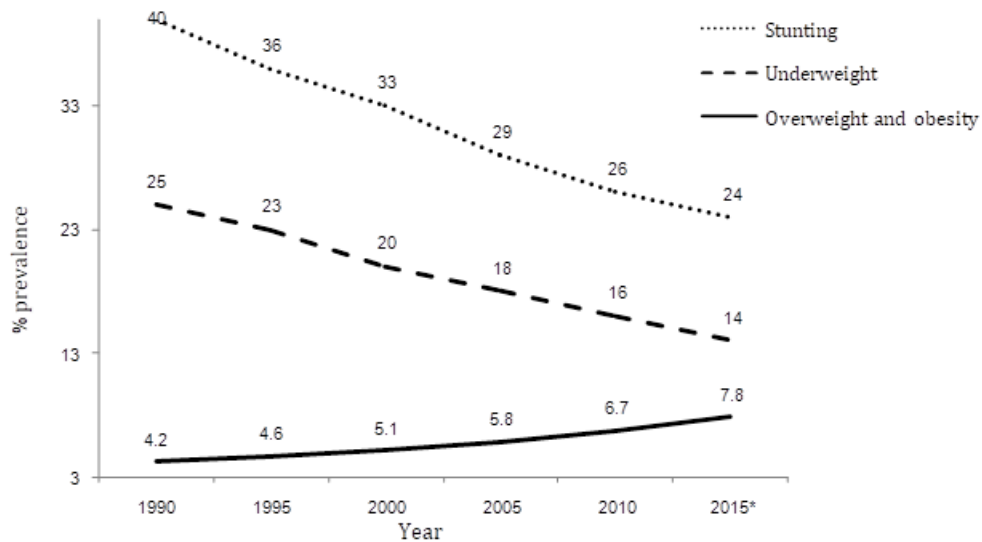
pastoralists, fishers and forest dwellers. The rest of the figure is made up by the urban hungry (Sanchez and Swaminathan, 2005: 357). The respective problem, i.e. hunger is associated with undernutrition (a type of malnutrition; the other one is overnutrition) in which people do not get sufficient nutrients for supporting normal life. In the case of children, hunger may impair their brain development which then may threaten its normal function. Multidisciplinary, integrated and systemic approaches are needed in order to combat world hunger. Therefore, many discussions and researches on this topic will become precious and be demanded in order to gather valuable findings and solutions for a better quality of life for the next generation. Accordingly, this article attempts to discuss the relationship between hunger, malnutrition and brain development of children based on literatures and current research results.

### The fact of world child hunger

Children are the actors who suffer most from the world hunger. Sanchez and Swaminathan (2005: 357) have identified children, in particular underweight children less than 5 years of age as a substantial hunger hot spot. Further, more than 2.5 million children, equivalent to 1 in every 22 children, die every year due to world hunger (FAO, 2012: 4; UNICEF, 2007: 11). And it has left many generations with irreversible physical and mental disabilities (Black et al., 2008: 1). However, nowadays feeding

more than 7 billion people in the world adequately is getting more challenging due to population growth and climate change (Black et al., 2008: 6; Stoddart, 2013: 33). Food supply is getting scarce due to a number of natural phenomena, i.e. drought, flood, deforestation, crop failure, and water supply (WHES, 2013; Black et al., 2008: 6). In turn, insufficient nutrient supply due to world hunger problem may negatively influence the brain development of children which may further threaten their future.

Mainly, there are three indicators of child hunger. Those are stunting (height below normal), underweight (weight below normal) and wasting (ratio weight to height below normal). UNICEF (2012) reported that on the global scale, as many as 165 million children under five, or 26%, were stunted (height for age below -2 SD from normal standard) in 2011. Most of them live in Africa (36% in 2011) and Asia (27% in 2011). Trend shows a reduction pattern, that is 35% decrease from 253 million in 1990. However, stunting is still a major public health problem in Africa and Asia, even it often occurs as a hidden malnutrition. Most African and Asian are stunting (UNICEF, 2012: 1). As many as 101 million children under five, or 16%, were underweight in 2011 (weight for age below -2 SD). The trend of being underweight was also reduced 35% from 159 million in 1990. However many children are living under wasting risk (UNICEF, 2012: 1). And in 2011, as many as 52 million children under five, or 8%, were



**Figure 2:** Prevalence of stunting, underweight, and overweight and obesity among children under five years old on the global scale, 1990-2015.  
Source: Adapted from UNICEF, 2012: 11; de Onis et al., 2010: 1260. Note:\*Estimation number.

wasting (weight for height below -2 SD). This was a 11% reduction since 1990 (UNICEF, 2012: 1). Most of them (70%) coming from Asia who live under the risk of severe acute malnutrition (SAM) and death.

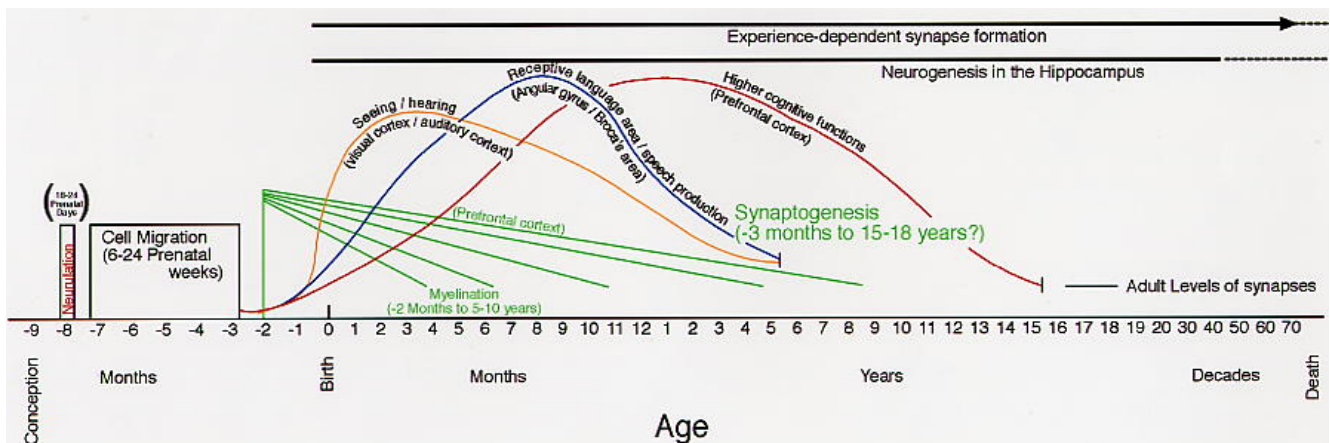
At the same time, there has been the emergence of other types of malnutrition, i.e. overweight and obesity (weight above normal) as a result of long term overnutrition. The prevalence of obesity among children and children being overweight is rising. It was estimated that 43 million children under five, or 7%, were overweight and obesity (weight for height above +2SD from normal standard) in 2011 (UNICEF, 2012: 1). The trend is increasing sharply, about 54% from 28 million in 1990. Surprisingly, this phenomenon occurred not only in developed countries, but also in many developing countries. Obesity is found almost all over the world (UNICEF, 2012: 1). The prevalence in 2011 was 7% in Africa (12 million) and 5% in Asia (17 million) (UNICEF, 2012: 1).

The above fact presents the respective double burden of malnutrition, i.e. undernutrition and overnutrition has become the current phenomenon. More than 25% of the world children live undernutrition, in which they grow up with many risk of impairment, discapabilities and morbidities which then will reduce the quality of the next generation. It will leave many generations less productive than they would have been. Even though its pattern is

decreasing, its prevalence still remains high and remains a world problem. With the undernutrition problem remaining unsolved, the over nutrition problem emerged, not only among child but also mothers and adults. Figure 2 illustrates the decreasing pattern of the prevalence of stunting and underweight among children under five. It also shows the increasing pattern of prevalence of overweight and obesity among children under five.

It was estimated that 1000 million people were suffering from overweight and obesity, and 300 million people suffering from obesity (Steinfeld et al., 2006: 271). Surveys in 2008 showed that prevalence of obesity in Europe is 22% (Perez-Cueto et al., 2010: 156). In Australia in 2003, 60% of adults were overweight or obese, which the rate in 2008 was 2.5 times higher than in 1980 (Dunn et al., 2008: 331). A study in USA in 2000 reported that 2 of 3 US adults are overweight or obese (Glanz et al., 1998: 1118). The increasing trend alarms the world. Overnutrition might cause many chronic diseases, like cardio-vascular disease, diabetes, and certain types of cancer (Steinfeld et al., 2006: 269; McAfee et al., 2010: 1). However, childhood obesity is very important to be monitored. This type of childhood malnutrition is associated with serious health problems and the risk of premature illness and death later in life (de Onis et al., 2010: 1257). The respective double burden of malnutrition, both under- and over-





**Figure 3:** Human brain development along the human life. Source: Thompson and Nelson (2001: 8).

nutrition, is the current world problem and needs to be solved.

### Malnutrition and child brain development

Adequate nutrition intake is crucial for human health and development. Better nutrition is correlated to the better life, both physically and mentally (WHO 2011). Along the period of life, childhood is the most sensitive period toward the nutrition intake quality. Childhood is the period in which the human is growing and developing. Studies reported that inadequate nutrient intake during the first five years of life may influence the brain development which is not possible to be paid-off on the next period of life (Thompson and Nelson, 2001: 8; Besty and Georgieff, 2006: 158; Strain et al., 2008: 776; Wainwright, 1992: 193). The following paragraphs present the process of human brain development in normal children and the research findings of the impact of undernutrition and overnutrition on brain development.

A normal growth child – in the terms of a child with adequate nutrient intake – will achieve 80% of his adult brain weight in their first 2 years, and achieve 90% in their first 5 years (Dekaban and Sadowsky, 1978: 355; Lenroot and Giedd, 2006: 720). Similar to the rest of the body, the brain is constructed from protein, fat, carbohydrate, vitamins and minerals which are essentially supplied by the diet. Since brain develops faster than the rest of the body, a dietary deficiency (due to hunger or undernutrition) during a critical stage of development may result

in lasting changes in brain structure and function (Benton, 2010: 457). Therefore, undernutrition especially for under five children threatens the quality of the next life, not only for their own life, but also the quality of the next generation as a cumulative society (WHO 2011; Dekaban and Sadowsky, 1978: 355).

Thompson and Nelson (2001: 8) gave a best illustration regarding the developmental of human brain along human life (Figure 3). Brain development starts one month after conception, when the brain and spinal cord were formed within the embryo, this process is called neurulation (Thompson and Nelson, 2001: 8; Thompson, 2001: 28; Ulmer et al., 2013: 615). Then the cell continues to migration. Almost all neurons were formed at the sixth gestation month. During this stage as many as 250 thousand neurons were generated per minute which then quickly migrate to the brain region where they will function (Thompson, 2001: 28).

The neurons then differentiate to place a specialised roles and form synapses to connect with the other neurons for communication and store information. This process is called as synaptogenesis which starts 3 months before birth and continues throughout childhood. Georgieff (2007: 6146) mentioned that this gestation period is very vulnerable to nutritional insults due to the rapid trajectory of synapse formation and myelination. By the moment of birth, the major neurons were appropriately located within immature brain and it has begun to function like mature brain (Thompson and Nelson, 2001:8; Thompson, 2001: 28).



**Table 1:** Mean value of memory ability by nutritional status (SAM, MAM, normal, overweight and obesity)

Nutritional status	BMI-for-age z score	Number	Percent	Memory ability	
				Mean	± SD
SAM	< -3	54	24.43	46.22	± 10.12a
MAM	-3 ≤ z < -2	62	28.05	50.08	± 12.48ab
Normal	-2 ≤ z ≤ 1	91	41.18	51.56	± 11.85b
Overweight	1 < z ≤ 2	8	3.62	46.13	± 12.74a
Obesity	> 2	6	2.71	50.33	± 13.84ab

Note: BMI: body mass index; calculated as kg/m<sup>2</sup>, SAM: Severe Acute Malnutrition, MAM: Moderate Acute Malnutrition. Source: Palupi et al., 2013

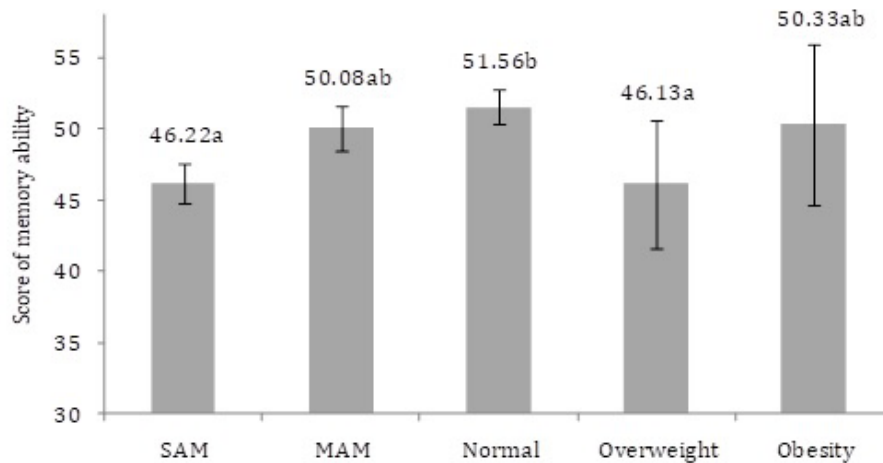
A significant changes and development of brain would be expected after birth. Synaptogenesis occurs particularly in the visual system and hippocampus (Georgieff and Innis, 2005: 99R). The formation and induction of synapses, which makes neurons, communicate with other neurons, and continuously develops during this stage. This proliferation makes the brain more functioning and “connected” (Thompson, 2001: 28). On the young brain these connection was made the brain to much crowded. Therefore along the stimulation and learning process, some of connection is reduced to make the system more efficient. This process is similar to the motto “use it or loose it”<sup>1</sup>. Connections which are not activated are then progressively reduced . Along the human life, the neurogenesis formation and synapses formation might occur, depending on the human experiece (Thompson, 2001: 29).

However the brain formation and neuron formation and initiation only occur during the early life development. During this formation, the brain needs adequately good quality nutrition as a raw material (Thompson, 2001: 29). Nutrients are required in specific metabolic pathways and structural components (Georgieff, 2007: 6146). Therefore, insufficient nutrition and stimulation during this stage might impair the brain development process which could not be paid off on the later life. Georgieff (2007: 6145) mentioned that there are certain nutrients

that have greater effects on brain development than others have. Those nutrients are protein, energy, certain fats, iron, zinc, copper, iodine, selenium, vitamin A, choline and folate.

Insufficient nutrition during the early stage of life might influence the brain development. A child's early life period is very susceptible to nutrient deficiencies (Georgieff and Innis, 2005: 99R). Georgieff (2007: 6145) briefly explained how nutrient deficiency can influence brain development on early life. Protein-energy, iron, and zinc malnutrition all affect the development of hippocampus and cortex (Georgieff, 2007: 6146). Hippocampus together with amigdala and prefrontal cortex is essential for memory processes and emotions (Shin et al., 2006: 70). Hipocampus is one of the earliest areas to show cortical-cortical connectivity and functionality (Georgieff, 2007: 6146). Nutrient deficiency in the early stages can affect differentiation in this area which influences the cells numbers and complexity, which then affect the functionality (Georgieff, 2007: 6146).

De Souza et al. (2011: 135) mentioned that brain development status is possibly to be assessed according to some cognitive performance indicators. Those indicators are memory, learning, and attention ability. A cross sectional study conducted in Bogor-Indonesia (Palupi et al., 2013) revealed that children



**Figure 4:** Score of memory ability by BMI for age z score of children with category Severe Acute Malnutrition (SAM), Moderate Acute Malnutrition (MAM), normal, overweight and obesity. Source: Palupi et al., 2013.

with Severe Acute Malnutrition had significantly ( $p < 0.05$ ) lower memory ability score ( $46.22 \pm 1.38$ ) compared to normal children ( $51.56 \pm 1.24$ ). Children with Moderate Acute Malnutrition tended to ( $p < 0.1$ ) have lower memory ability ( $50.08 \pm 1.58$ ) than the normal children (Table 1; Figure 4; Palupi et al., 2013). This result obviously presents that undernutrition during early life affects their cognitive ability. In this study, undernutrition (SAM and MAM groups) occurred due to lower protein intake from total food, but not from energy, carbohydrate and fat intake.

On the other hand, overnutrition among children also might impair the brain function. The study conducted in Bogor-Indonesia revealed that children who are overweight significantly ( $p < 0.05$ ) had lower memory ability score ( $46.13 \pm 4.50$ ) compared to normal children ( $51.56 \pm 1.24$ ). This cross sectional study also revealed that obese children tended to ( $p < 0.1$ ) have lower memory ability score ( $50.33 \pm 5.64$ ) (Table 1; Figure 4; Palupi et al., 2013). Such overweight and obesity in this study were partially due to higher consumption of the respective groups on formula milk, but not the breast milk. Further, higher energy, protein, carbohydrate and fat intake on these groups were observed as compared to those of normal BMI group. The less lower memory ability score of obese children compared to overweight children needs to be confirmed with further larger sample size survey.

A narrative review conducted by Burkhalter and Hillman (2011: 203S) confirms that finding, i.e. the inverse relationship between obesity and cognitive performance. The authors explained that overnutrition, in particular an overnutrition of energy is maladaptive to brain health and function; obese children had a lower intelligence score as compared to the normal children. Further, such lower academic performance may persist when the obese children are getting mature into their teens. The reason on why obese children possess lower cognitive performance is considered due to changes in brain structure. Accordingly, BMI higher than 30 was associated with atrophy in the frontal lobes, the anterior cingulate gyrus, hippocampus, an thalamus relative to individuals with normal BMI (between 18.5 to 25). Obesity is associated with a decrease in brain volume which leads to lower attention, memory, control of cognition and scholastic performance (Burkhalter and Hillman, 2011: 203S). It is therefore very important to maintain children at a normal BMI, not being undernutrition (SAM and MAM categories) on one side, nor being overnutrition (overweight and obesity categories) on the other side.

## Conclusion

When hunger occurs to either pregnant women and/or the children, it is a cause of undernutrition and such condition leads to impairment of brain development. On the other hand, overnutrition is the other opposite that also lowers cognitive per-



formance of children. Providing children with an adequate and balanced nutrient supply via food is therefore essential in order to optimise their brain development, especially during its critical stage. In the global context, the causes of under- and over-nutrition has to be opposed through integrated and systemic approaches for a better quality of the next generation of human beings.

## Acknowledgement

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## Conflict of Interests

The authors hereby declare that there are no conflicts of interest.

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1. "Use it or lose it" is a slogan by Slow Food® to protect endangered products by promoting people to consume them so that might save biodiversity from on going lose.



# Is Māori food sovereignty affected by adherence, or lack thereof, to Te Tiriti O Waitangi?

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Food Sovereignty;  
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## Abstract

Māori food sovereignty was and continues to be severely affected by British colonisation and influence. This situation and its causes, both past and present, will be examined in the context of Māori culture, especially Te Tiriti, a founding document of New Zealand. The general concept of food sovereignty is introduced, and its key principle: having power over one's own food system. A brief history of Māori food systems is necessary as context—their adaptation from Polynesia to New Zealand and later, to European settlement. Te Tiriti and the Treaty of Waitangi are explained: how they were created and why Te Tiriti is authoritative. Then, different aspects of Te Tiriti are linked to various parts of Māori food sovereignty and traditional Māori concepts. Through breaching *tuku whenua* in Te Tiriti, land issues have arisen: the methods used to confiscate Māori land and the effects this had on traditional food, health and urbanisation are discussed. Culture as *taonga* is examined: the ways in which losing a food system leads to losing traditions, and how this breaches Te Tiriti. Then the (mostly negative) effects of this shift in food systems on the environment is examined, and how this relates back to *taonga* as well as the traditional duty of *kaitiakitanga* and, again, the breaching of Te Tiriti. Lastly, the underlying issue of power is examined in relation to *rangatiratanga* and overall sovereignty—this is also linked to Te Tiriti.

## Introduction

This research paper will examine the past and present situations of Māori food sovereignty. This discussion will be situated within the context of Te Tiriti O Waitangi, a founding document of New Zealand and one of the key rallying points in Māori efforts for sovereignty and self-determination in New Zealand (Mutu, 2011).

Māori people have been extremely active in pursuing many areas of self-determination, including land, education and language (Mutu, 2011). However, Māori food sovereignty is not amongst these—possibly because hunger is not one of the most pressing current issues for Māori. Nevertheless, food sovereignty is severely lacking for Māori today, as this research paper will illustrate.

This research paper will look at a brief history of Māori food systems and interactions with the British, then go on to examine issues of land, culture, environment and power in the context of Te Tiriti. The information incorporated into this research paper has been obtained through a review of literature published over the last forty years.

In order to limit its scope, this research paper will refer primarily to land-, rather than water-, based food systems: however, there are many parallels between the two. Traditionally, primary food sources for Māori actually came from water, not land. Indeed, Māori were heavily affected by the 1992 Sealord deal, which greatly reduced their non-commercial fishing rights and com-

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pletely removed their commercial fishing rights, as well as the 2004 Foreshore and Seabed Act which attempted to confiscate all Māori ownership of New Zealand's foreshore and seabed and vest that ownership in the Crown instead (Mutu, 2011). It should also be noted that the Wai 262 Report examined Māori intellectual property rights, but in New Zealand they are more related to medicinal uses than food, and therefore will not be discussed here (Waitangi Tribunal, 2006).

### Theoretical framework: food sovereignty

Food sovereignty is a global concept that incorporates the more basic elements of "the right to food" into complex notions of empowerment and sustainability. It originally arose as a response to the negative effects neoliberalism has had on food systems, formulating instead a theory focused on local agriculture that feeds its own people. It also emphasizes the value of traditional knowledge (Nyéléni, 2003). According to the Nyéléni Forum for Food Sovereignty in 2007, food sovereignty means "healthy and culturally appropriate food produced through ecologically sound and sustainable methods". This definition also includes the right of people to define their own food and agriculture system.

### History of Māori food sovereignty

The history of Māori food systems can be traced to Polynesia, where the peoples that were to become the Māori migrated from. Because the Polynesian climate naturally produced a lot of food, the people living there did not need to cultivate much (Best, 1976). However, upon arriving in New Zealand in the thirteenth century AD, they had to spend more time cultivating crops (many of which they had brought from Polynesia) as well as hunting and gathering. The shift towards cultivation became especially pronounced after the demise of big game, such as the moa bird (King, 2003). Māori were self-sufficient and food sovereign: however, this would gradually change after the arrival of the Europeans in the 1640s.

By the 1790s, there was active trading with Europeans. Māori found they could profit greatly from selling them European food products, especially pigs and potatoes (O'Malley, 2012).

### History of Te Tiriti o Waitangi

In 1840, Te Tiriti o Waitangi and the Treaty of Waitangi were signed. These were two separate treaties—one in English and one in Māori—that were supposed to be exact translations of each other. However, while Te Tiriti was a document of peace and friendship between two

sovereign nations, the English version (which the Māori also signed) essentially ceded Māori sovereignty. This subsequently provided the justification for the colonisation of New Zealand by the British. The Māori version is recognised as authoritative in international law under *contra proferentum* (Mutu, 2010). The doctrine of *contra proferentum* provides that, when ambiguous, the preferred meaning of an agreement will work against the interests of the party who provided the wording—in this case, the British, as they were the ones who were familiar with both languages at the time.

This research paper will therefore discuss Māori food sovereignty with regards to Te Tiriti, in recognition that it is the authoritative text.

### Tuku whenua and land

One of the mistranslations between Te Tiriti and the Treaty regards land sales. Land was initially lent to European settlers in the tradition of *tuku whenua*: a temporary, mutually beneficial land allocation. (Mutu, 2011). In Te Tiriti, *tuku whenua* is recognised—but in the Treaty, it is translated as land sale: something much more permanent than the Māori had no concept of because they did not see land as owned, but rather as temporarily in use. With the Treaty's mistranslation, Europeans were able to insist that the transactions were permanent, and keep the land. Land was also confiscated from Māori by both forced purchasing and outright land wars (Bennion, 2004). With this lack of land, there was a subsequent lack of agency: Māori were no longer the most powerful presence in New Zealand society, as they had been before (Mutu, 2010). Being food sovereign means having control over your food system. For people who have a land-based food system, if they lose their land, that means food production drastically decreases.

In the case of Māori, many could not produce sufficient food for commercial purposes, and sometimes not even for themselves (Waitangi Tribunal, 2004). The land the Māori ended up with was either of substandard quality or there was too little of it (Mutu, 2011). As a result of little land and European influence, the Māori diet changed: traditional food had been intensive to procure, but other foods like flour, pork and potatoes were easier to cultivate. This innutritious diet increased their susceptibility to disease, which often led to death—indeed, there was a clear link between land dispossession and health-related death rates in this period (Durie, 1998). Both the lack of food (to be 'healthy', it must be sufficient) and the lack of culturally appropriate food highlight a decrease in Māori food sovereignty (Nyéléni, 2007).



Many Māori moved to cities as a result of being dispossessed. Māori urbanisation was encouraged by the New Zealand government since it served two valuable purposes: providing labour for jobs such as factory workers in World War Two, and assimilating Māori into a European context instead of remaining in their traditional societies, which therefore became weakened (Mutu, 2011). This was exacerbated by the proliferation of European methods of intensive farming, which also reduced employment opportunities (Waitangi Tribunal, 2004). New urban lifestyles meant the Māori diet had to change. There was—and is—very little access to, and therefore consumption of, traditional foods. This coincided with a new reliance on fast food chains and supermarkets, creating even more problems for Māori health. More than malnutrition, which was the problem in rural areas, there was the problem of overeating. Issues of being underweight were quickly replaced with issues of obesity (Durie, 2007).

Again, the lack of culturally appropriate food highlights the lack of Māori food sovereignty, particularly as it is an issue of access and therefore of power (Nyéléni, 2007). This is in contrast to the previous example of diminished food sovereignty, where Māori theoretically would have had the option to change from growing Western food back to more traditional crops.

#### a) Taonga and culture

Inherent in a food system is culture, language and identity. Different forms of work in traditional Māori food systems were timed according to certain portents, or otherwise determined by the *tohunga* (Best, 1976). In this context, *tohunga* are spiritual leaders chosen by the gods, although they can also be a person with a particular skill (Marsden, 2003). Crops that were growing were *tapu*, a concept that implies untouchability as a result of sacredness and dedication to a deity (Matiu and Mutu, 2003). Interestingly, the *tapu* rules that applied to *kumara*—a Polynesian variety of sweet potato brought to New Zealand—did not apply to the potato, which was one of the reasons it became so widespread: it was easier to grow (O'Malley, 2012). By losing their food system, Māori lost beliefs and rituals too.

This loss of culture breaches another aspect of *Te Tiriti*: the first section of article two, which describes the right of the Māori to have power and authority over their *taonga*. The term *taonga* describes something 'greatly treasured or respected' (Matiu and Mutu, 2003). *Taonga* can be tangible—the genetic resources of indigenous plants—or intangible—cultural heritage, such as certain

foods or agricultural traditions (Waitangi Tribunal, 2006). The 2007 Nyéléni declaration explains that food sovereignty should "conserve, developed and manage localised food production . . . systems". Hence, Māori food sovereignty would have been negatively affected because of the loss of traditional knowledge through agricultural custom.

#### b) *Kaitiakitanga* and environment

*Taonga* also refers to the natural elements, which Māori have an obligation to protect because of *kaitiakitanga*. (The traditional Māori worldview is an immanent one whereupon people are descended from the gods, the gods are manifest in the physical world as parts of nature, and thus, Māori perceive natural elements as being directly related to themselves (Marsden, 2003).) *Kaitiakitanga* is the duty of *tangata whenua*, that is, the people who hold *mana* (authority and power delegated from the gods) over a certain area of land. These *tangata whenua* have a duty to act as *kaitiaki*—guardians. The natural elements of their land have *mauri* (loosely translatable as 'life force') which *kaitiaki* must maintain healthy and strong (Matiu and Mutu, 2003). If Māori do not have power over their land and food, they are unable to act as *kaitiakitanga* and guard the natural elements—which is worrying when the current New Zealand food system is examined.

This is because there is the issue of how the people who do have the land are using it: the environment the Māori food system operated within was also colonised. European settlers damaged the existing environment and introduced their own species as well. One example of this would be the introduction of rabbits, whose massive populations caused serious soil erosion (Brooking, 2006). Environmental degradation continues to this day, especially through New Zealand's widespread industrial farming model. Dairy farms heavily pollute waterways (Collins, 2004), apply exceptionally large amounts of harmful chemical fertilisers (Statistics New Zealand, 2006) and use foreign grasses that affect the plants and microbes in the under-story ecosystem (Brooking, 2006).

Hence, Māori food sovereignty is also threatened, because this manner of farming changes the environment. Even if Māori were able to get their land back and practice their own form of agriculture, their ability to "work with Nature" (Nyéléni, 2007) would be compromised because the environment has been changed, and their traditional methods of food production would potentially not be possible. (However, it should also be noted that currently, most Māori-owned agricultural land is used





for commercial livestock production (Statistics New Zealand, 2012).)

### c) *Rangatiratanga* and power

Moreover, the core concept of food sovereignty is being able to define your own food system (Nyéléni, 2007): that is to say, having agency. This strongly ties in to one of the key points of Te Tiriti: *rangatiratanga*, which is roughly equatable with sovereignty. *Rangatiratanga* means that Māori should have the right to govern their own people and be in charge of what concerns them. It is the exercise of leadership with “spiritually sanctioned authority” that transcends man-made laws, and holds its people together (Matiu and Mutu, 2003).

While there have been many breaches of different aspects of food sovereignty since the European arrival in New Zealand, they all ultimately link back to the key point that the Māori do not have power over the own food system—which is the most acute breach of food sovereignty. Because *rangatiratanga* is a conceptualisation of sovereignty, the total lack of Māori food sovereignty that has been demonstrated thus far constitutes a breach of Te Tiriti in itself.

### Conclusion

Māori land-based food sovereignty was highly diminished by the breaching of *Te Tiriti's tuku whenua*, which in turn breached other aspects of Te Tiriti, notably *taonga* and *rangatiratanga*, which led to conflicts with other cultural concepts like *kaitiakitanga*. This was primarily caused by European settlement and actions in New Zealand.

European settlers and the British Crown were the first to commit these breaches. The government they subsequently established continues to maintain them, as do everyday New Zealanders, directly or not. The disempowerment of Māori through their food system ties into a wider trend of Māori, and indeed indigenous people globally, being deliberately targeted and disadvantaged through various aspects of their lives.

When *Te Tiriti* was signed, the Māori were a sovereign and strong group of peoples. As the European presence expanded, particularly in regard to land rights, Te Tiriti became less and less representative of the actual reality. These changes were brought about by a number of factors connected to British colonisation—amongst these was Māori food sovereignty and the eventual loss of it.

*Te Tiriti O Waitangi* and the concept of food sovereign-

ty are intimately linked, because they both represent a form of sovereignty. Similarly, the breaches of Te Tiriti and food sovereignty overlap greatly in terms of health, culture, environment and self-determination. Together, they demonstrate not only a pessimal current situation, but more importantly a significant departure from a much better state of life, as a result of British colonisation of, and continued presence in, New Zealand.

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### Conflict of Interests

The author hereby declares that there are no conflicts of interest.

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# Employment and Income of Workers on Indonesian Oil Palm Plantations: Food Crisis at the Micro Level

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## Abstract

The importance of oil palm sector for Indonesia is inevitable as the country currently serves as the world's largest producer of crude palm oil. This paper focuses on the situation of workers on Indonesian oil palm plantations. It attempts to investigate whether the remarkable development of the sector is followed by employment opportunities and income generation for workers. This question is posed within the theoretical framework on the link between trade liberalisation and labour rights, particularly in a labour-intensive and low-skilled sector. Based on extensive field research in Riau, this paper confirms that despite the rapid development of the oil palm plantation sector in Indonesia, the situations of workers in the sector remain deplorable, particularly their employment status and income. This also attests that trade liberalisation in the sector adversely affects labour rights. The poor working conditions also have ramifications for food security at the micro level.

## Introduction

Since 2007, Indonesia has been the world's largest producer of crude palm oil (CPO), overtaking Malaysia (Richter 2009: 3). This is seen as a significant achievement particularly after the country decided to pursue trade liberalisation and target the export markets. For Indonesia, the oil palm sector is not only an important source for foreign reserves, but is also a main instrument for poverty alleviation and rural economic development (Rist et al. 2010; Susila 2004a). This impressive picture of the Indonesian palm oil sector is, however, blemished by environmental degradation, so-called land grabbing (Casson 1999; Surambo 2010; Colchester et al. 2006), and a decent work deficit. Many studies have been done on different aspects of the sector, including the working conditions. This paper seeks to contribute to the discussions on this issue, by focusing on the situation of workers on the oil palm plantations, particularly their employment status and income. The paper attempts to

investigate whether the remarkable development of the sector is followed by employment opportunities and income generation for workers.

In this regard, the paper also goes further to explore the structure of employment and income of the workers. This research question is posed within the theoretical framework on the link between trade liberalisation and labour rights, particularly in a labour-intensive and low-skilled sector. It is based on extensive field research in Riau, Indonesia, a province with the largest oil palm plantations in the country. Unlike most of the studies on the working conditions that rely on quantitative method, this study employs qualitative method. I interviewed workers, independent smallholders, estate representatives, representatives from trade unions and representatives of NGOs in the year 2012.

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This paper confirms that despite the rapid development of the oil palm plantation sector in Indonesia, the situations of workers in the sector remain deplorable, particularly their employment status and income. This also attests that trade liberalisation in the sector adversely affects labour rights. The poor working conditions also have ramifications for food security. The monoculture of the plantations makes it difficult for local people to grow food crops. As such, the local people, including workers on the plantations, cannot rely on subsistence farming anymore, forcing them to buy their food from the market. For the local people, this change clearly causes increasing household costs for foods, which can also be considered as a food crisis at the micro level. As for workers on plantations, their low income hinders access to food from the market even more.

This paper is organised into several parts. The first part sketches the theoretical discussions on the link between trade liberalisation and labour rights. The second part lays out the historical background of the oil palm plantations sector in Indonesia. This description also explains main actors and the performance of the oil palm plantation sector in Indonesia. The third part describes the situation of workers in the Indonesian oil palm plantation sector, particularly the issues of employment status and income, followed by some conclusions.

### Trade Liberalisation and Labour Rights

The discussions concerning a country's competitiveness in the face of liberalised foreign investment as well as liberalised trade involve two contending camps. The first camp holds the idea of "conventional wisdom". The engagement of governments with race to the bottom practices is due to the desire to create jobs and, in a more general way, to support economic development, while on the other hand governments are aware of the mobility of multinational companies. A comparative study (Berik and Rodgers 2008), which examined Bangladesh and Cambodia, showed that these two countries experience strong pressures to cut labour costs and improve the price competitiveness of their textile and garment exports. Mosley and Uno (2007) showed that there is a negative relationship between trade openness with labour rights, but a positive relationship between foreign direct investment (FDI) and labour rights.

Meanwhile, the second camp claims that there is an inconclusive negative link between labour standards and investment as well as trade liberalisation. This camp even proposes that securing labour standards will increase a country's competitiveness. Studies conducted by the ILO

(2007), which particularly looked at certain international labour standards, show that compliance to labour standards positively contributes to a country's competitiveness and good economic performance. Kucera (2002) found no solid evidence upholding the conventional wisdom. Other studies (Jansen and Lee 2007; Maskus 1997; Brown et al. 2003) are at one with Kucera. In a micro level, a study of the most unionised airline (O' Reilly and Pfeffer 2000, as cited in Rogovsky and Sims 2002: 68) argued that the success of the airline is due to its healthy industrial relations climate.

These studies primarily focus on national level or cross-countries comparisons. Studies that put emphasis on cross-sector comparisons remain lacking. One among the few, which will also be relevant in the comparison between capital- and labour-intensive sectors, is the study by Blanton and Blanton (2009). They examined whether human rights serve as a decisive factor for locating FDI across different types of sectors. In this context, Blanton and Blanton (2009: 473-474) argued that the link between human rights and FDI location can be found through skill levels and social license. The results generally showed that, "...countries where physical integrity rights are respected are more respectful in attracting FDI in sectors that seek higher skill levels and greater levels of integration within the host society" (Blanton and Blanton 2009: 483).

Other relevant studies compare the different impact of trade liberalisation on low- and high-skill sectors. While Heckscher-Ohlin-Stolper-Samuelson theorems predict that trade between the North and the South will reduce wage inequality in the South, some scholars do not confirm this prediction through their empirical studies. Arbache et al. (2004) found that the impact of trade openness on wages in developing countries was insignificant for workers in the top two education groups, while the openness negatively affected those in the lower level education groups. The authors asserted that technological transfer might serve as an alternative explanation for this situation. Trade liberalisation may be accompanied by increasing imported technology, which in turn, leads to the increasing demand for highly skilled labour. Other scholars (Beyer et al. 1999; Robbins 1994, 1996; Cragg and Eperlbaum 1996; Desjonqueres et al. 1999; Hanson and Harrison 1999; Munshi 2008; Ing 2009) argued similarly. Meanwhile, Feenstra and Hanson (1997) claimed that increasing wage inequality in Mexico is associated with foreign capital flow. Wood (1997, as cited in Morone 2003: 4) argued that the experience of the Four Tigers (Hong Kong, South Korea, Singapore and Taiwan) confirms the prediction of Heckscher-Ohlin-Stolper-Samuelson theorems. Morone (2003: 5) contrasts this with the





experience of Latin American countries that saw rising wage inequality after trade openness since the mid-1980s.

From the above descriptions, it can be inferred that labour-intensive and low-skill sectors seem to bear the brunt of trade liberalisation. As such, it is interesting to analyse whether such a negative link occurs in the Indonesian oil palm plantation sector, which is also considered as a labour intensive-sector and employs low-skilled labour.

### The Indonesian Oil Palm Plantation Sector

It takes three to four years for an oil palm tree to mature. When the tree is mature, large bunches of palm fruits grow in the armpits of palm leaves each year, which are called fresh fruit bunches (FFBs). FFBs may contain 1,000 to 3,000 individual fruits, together weighing 10 to 20 kg. Every oil palm tree produces several FFBs every year, with fruit yield per hectare amounting to 10 to 35 tons. Palm trees have a productive age of 8 to 25 years, and afterwards the tree reaches a height that hinders harvesting activities (van Gelder 2004: 4).

The first commercial oil palm plantation was established in Sumatra in 1911<sup>1</sup>. The plantations expanded through the support of Dutch capital and the country became the world's largest exporter by 1938 (Rasiah and Shahrin 2006: 21). After Indonesia gained its independence in 1945, the oil palm plantation went through declining production periods (van Gelder 2004: 189).

Until late 1979, large-scale plantations dominated the oil palm sector. In 1979, the government initiated a contract-farming-based scheme (Casson 1999: 13; Badrun 2010: 63). Under this scheme, the state offered access to forest and village lands, infrastructure development and credit at concessionary rates for plantation development. The state provided financing for smallholders plantings, initial living expenses and housing, while the nucleus estate was responsible for extended services, for collecting and processing fresh fruit bunches (McCarthy 2010: 828). The nucleus estate (called 'inti') would obtain 20-40% of plantation plot development, while participating smallholders (called 'plasma') would obtain 40-60% of the plot called 'satellite', typically around 2 ha, as well as 0.75 ha for home garden intended for food crops, and 0.25 ha for housing (Rist et al. 2010: 1011; McCarthy 2010: 828-9). This program was then followed by similar state programs, such as PIR Khusus and PIR Lokal (Badrun 2010: 64). Between 1986 and 1995, the government released a similar program that involved migrants from other islands, mostly from Java, through a scheme called

PIR-Trans. All these schemes have become important milestones for the participation of smallholders in the Indonesian oil palm plantation sector (Surambo 2010).

In the mid-1980s, driven by the desire to outperform Malaysia as the world's largest palm oil producer, the government offered vast tracks of forest areas to large Indonesian business groups and foreign investors (van Gelder 2004: 19). In 1995, before the Asian Crisis, the government attempted to expand the development of oil palm plantations in the eastern part of Indonesia through the KKPA scheme (*Kredit Kooperasi Primer untuk Anggota/ Primary Cooperative Credits for Members*), which was a government-supported private sector and cooperative investment (Casson 1999). In the same year, the country acceded to the WTO, marking an important milestone in the country trade liberalisation policy. For crude palm oil (CPO), this will boost its competitive advantage as it is considered cheaper compared to other vegetable oils. Responding to the Asian Crisis and the International Monetary Fund (IMF) policy recommendation, the government passed a directive to remove barriers for foreign investment in oil palm plantations (Casson 1999) and pursued trade liberalisation even more. In 1999, the central government discontinued financial assistance for smallholders, and thus left them in the hands of the plantation companies (McCarthy and Cramb 2009: 117). The contract-farming-based schemes remained. However, these were then fully initiated by the private sector.

The various schemes and liberalisation policies implemented in the oil palm sector fostered production and exports. Production of crude palm oil (CPO) reached 22 million tons in 2010 of which 16.3 million tons were exported. This marks a significant increase of around 3000% in CPO production as well as of around 200% in CPO exports compared to the numbers in 1980 (Directorate General of Estates 2011: 3, 5). A major reason for palm oil's growth is its competitive advantage over other oils in terms of production costs and yields (Mather 2008: 61; Susila 2004: 108). Moreover, palm oil is a non-genetically modified organism (non-GMO) and thus is not vulnerable to consumer concern about GMOs, which is a potential case for soybeans. Additionally, compared to other oils, palm oil lacks trans fats (Mather 2008: 61) and hence is considered as a healthier choice, although palm oil also contains 50% saturated fat, which can increase overall cholesterol levels.

In 2010, the five major CPO export destinations were India, Malaysia, the Netherlands, Italy, and Singapore, altogether comprising 84% of Indonesia's CPO exports (Directorate General of Estates 2011: 56). Malaysia serves



as both a competitor and destination country for Indonesia's CPO exports due to the growing Malaysian oil processing (downstream) industry. Nonetheless, Indonesia has the advantage to focus on the upstream part, thanks to its vast land area and cheaper labour (Goenadi et al. 2005).

### Workers' Situations on Indonesian Oil Palm Plantations

As explained in the previous part, the Indonesian oil palm plantation sector has seen a remarkable development. This begs the question of whether such achievement is followed by employment opportunities and income generation for workers. This part seeks to answer this question. The descriptions of the workers' situation are mainly based on findings from my field study on three company-operated plantations (henceforth, estates X, Y, Z) as well as on smallholder-owned (both plasma and independent) plantations in Riau<sup>2</sup> in April 2012. The purpose of the selection is to compare the working conditions between company-operated plantations as well as between company-operated and smallholder-owned plantations. In terms of company-owned plantations, I chose plantations operated by parastatal and private companies. A parastatal company (henceforth, company X) manages estate X. The parastatal company operates 77,064 hectares of oil palm plantation in Riau and employs around 19,000 workers. Estate X covers areas amounting to 2,813 hectares, with 484 workers. Private plantation companies operate estates Y and Z (henceforth, companies Y and Z). These companies are subsidiaries of two foreign-owned company groups considered as "big" players in the oil palm sector (both upstream and downstream) in Indonesia and Malaysia. Both of these groups operate a substantial number of oil palm plantations in Indonesia. Company Y operates 208,000 hectares, of which estate Y manages 2,928 hectares and employs 495 workers. Company Z operates 182,840 hectares, of which estate Z manages 1,288 hectares, and employs 248 workers.

This study employs qualitative methods, especially in-depth interviews and observations on the plantations. I interviewed 21 workers, 6 *plasma* and independent smallholders, 12 estate representatives, 2 representatives from trade unions, and 3 representatives of NGOs. Questions asked focused on working conditions of workers, particularly their employment status and income. The interviews were recorded, transcribed and analysed. In some cases, I could not record the interviews and wrote down the results of the interviews instead. Access to workers on company-owned estates in many cases was only allowed under the supervision of field supervisors.

They guided me to the plots where plantation activities were conducted. That was how the respondents were selected. It was only on estate X where I could manage to find other time to interview workers without the supervision of the field supervisors. However, I did not find much difference in terms of the results of the interviews. I suspect the different results would come out only if I stayed longer with the workers. Meanwhile, access to workers on smallholder-owned estates was much easier. I went through the plots of smallholder-owned estates and interviewed workers whom I found. It was only one case in which the smallholder owner was also present during the interview. This is because the smallholder was usually working together with the workers. Among the workers whom I interviewed, twelve are women, aged mid-20s to mid-50s. The majority of these women are working as maintenance workers. Casual employment composes the largest share of the employment status of these women, whereas four of them serve as unpaid workers and only one has a permanent employment status. Meanwhile, the male workers are aged mid-20s to mid-30s. Among these male workers, there is only one worker who does not work as a harvester. Additionally, only two of these male workers work under casual employment status.

There are mainly three main phases on an oil palm plantation. The first phase involves preparation activities such as land clearing, seedling preparation and planting. The second phase starts after seedlings are planted. Activities in this phase include maintenance and harvesting activities. The third phase occurs when palm trees reach their industry limit. This phase includes replanting activities. In this paper, I will focus on the activities in the second phase.

Maintenance activities include weeding, spraying and fertilizing. In the plantations visited, I encountered three more activities. The first one is called "nangkos", a word coming from "jangkos". This activity generally means the spreading of empty bunches onto the soil in the plantation. The second involves pouring pesticide into a spraying tank. In some plantations, they do not need manpower to do this activity as they use a truck with a large tank filled with pesticides. The third one is the loading and unloading of the FFBs.

#### a. Employment and Employment Status

The oil palm plantations in Indonesia are labour-intensive. Around 1.95 million workers are employed on plantations operated by parastatal and private companies, while about 1.7 million farmers toil on smallholder-owned plantations (Indonesian Palm Oil Board 2010:



36). However, this number might not include casual and unpaid labour working in the sector. Indeed, casual labour is quite common in the Indonesian oil palm plantation sector. Meanwhile, the permanent employment status of plantation workers is different from the permanent employment status of administrative workers or the so-called "staff". A study on the labour rights situation on large-scale oil palm plantations in North Sumatra (Siagian et al. 2011: 5) describes the structure of employment status on the oil palm plantations as a pyramid, with "staff" on top of the pyramid. "Staff" refers to what we commonly consider as permanent workers. They have working contracts and receive pay slips. Below the staff category is the category of workers with an "SKU" (Syarat Kerja Umum/ General Work Requirement) employment form. Although workers in this category are also considered as permanent workers, they sometimes do not have working contracts and/or receive pay slips. Permanent workers on the plantations fall into this category. At the bottom of the pyramid, there are casual and unpaid labourers. There are two types of casual labourer employed on the oil palm plantations. The first one is a casual labourer directly hired by the company, so-called "BHL" (Buruh Harian Lepas). The other one is a casual labourer brought in by plantation workers to help them with activities on the plantations. Siagian et al. (ibid) call it "kernet" or assistant. In the pyramid, the position of a BHL is higher than an assistant.

This structure is confirmed on the plantations operated by private and parastatal companies visited in Riau. On estate Y, while plantation workers are called SKU Harian Tetap (fixed daily SKU), workers at the supervisor level, such as foremen, fall into the SKU Bulanan (monthly SKU) category. However, the structure remains similar to the pyramid described above. On estate X, BHL workers are children or family members of SKU or staff workers. Estate Y has not hired BHL workers since 2007. The company does not hire any workers with BHL status because it is not allowed anymore after the plantation received an RSPO (Roundtable Sustainable Palm Oil) certification. Nonetheless, one of the foremen interviewed mentioned that there is a possibility that workers bring someone (i.e. assistant) to the plantations to help them, especially for harvesting activities. Assistants are usually responsible for collecting individual fruits or so-called brondolan. The employment of an assistant is the responsibility of the workers who employ them, and not that of the company. This is also the case on estate Z. The employment of assistants shows that casual labour is still prevalent on this plantation. Meanwhile, unpaid workers are commonly workers' family members (e.g. wife, children) who help workers on the plantations. In most cases, they are

helping workers carry out harvesting activities.

On the three plantations visited in Riau, the SKU employment status is predominantly the case for workers engaged in harvesting activities (harvesters). Only on estate Y did both harvesters and maintenance workers have SKU employment status. This is the plantation that is already RSPO certified. On estate X, there are some maintenance workers that have SKU status, but most of these workers are BHL workers. An explanation for this situation is that the plantation will be replanted in the near future and thus the company decides not to carry out maintenance activities every day. I interviewed two SKU harvesters on this estate and both of them worked under BHL employment status. It seems that BHL status is an initial form of employment before they are hired as SKU workers. On estate Z, all of the maintenance workers are BHL workers. This estate has the smallest area compared to the other two company-operated estates. The reason for hiring BHL workers for maintenance activities is the relatively small-scale plantation area; hence there are not so many maintenance activities. In a given month, these activities can be finished within 10-15 days. The choice is that either the company reduces the number of maintenance workers but hires all maintenance workers with SKU status, or keeps the workers but offers BHL status. Additionally, workers engaged in nangkos on estate X are also BHL workers. In the same vein, workers who pour pesticides into spraying tanks on estate Z are also employed with BHL status.

On the plantations operated by plasma smallholders, workers are by and large employed under BHL status. This confirms what a large body of studies in this sector have revealed (Siagian et al. 2011; Chamim et al. 2012). A similar situation is likely to apply in the case of workers on plantations operated by independent smallholders. Workers on plantations owned by smallholders can also be family or relatives of the smallholders. The two workers interviewed mentioned that they work on 2-3 kaplings in a day<sup>3</sup>. It implies that workers are often hired by more than one plasma smallholder. These workers also bring their wives in order to help them with their work. This practice seems to be quite common for harvesters on plantations, both owned by plasma and independent smallholders.

## b. Income

With regard to wages, the system that applies to SKU workers consists of a basic salary and premium (or so-called premi). Each SKU worker has a daily target to meet. When these workers are able to achieve over the target, they will receive a *premi*, as an additional pay-



ment apart from their basic salary. For example, wages for SKU workers on estate X are based on the minimum wage for the oil palm plantation sector in Riau as mentioned below. The daily target for harvesters is 700 kilograms/day. If workers are able to harvest more than this target, they will receive a premi with several layers of possible achievement. *Brondolan* collected are calculated separately. The *premi* for *brondolan* ranges from Rp 150/kg to Rp 300/kg.

On estate Y, SKU workers receive Rp 1,133,500 in a month as their wage. The estate sets a target for harvesting amounting to 1300 kilogram/day. If workers can harvest over this target, they will get a premi. On this estate, harvesters do not only receive a premi but also an incentive amounting to Rp 13,500 when they are able to harvest more than the target. Like on estate X, on this estate, the premi for *brondolan* is also calculated separately. The estate offers Rp 125/kg as a *premi* for *brondolan* collected.

In harvesting activities, this system triggers the employment of assistants or unpaid workers. Harvesters clearly desire to get as many premi as possible. Harvesters employ assistants when the daily target is increased, especially during peak seasons. These assistants can be their relatives or friends. However, in normal cases, harvesters usually bring their wives and/or children to the plantations. In the case of one of the SKU harvesters it was found that when his wife does not help him, his yield in a day will drop as much as 50%. In another case, it was revealed that an SKU harvester has to work 2 hours longer if his wife does not come and help him on the plantation. As for a BHL harvester interviewed, around 24% of his income is contributed by the work of his wife.

Nonetheless, I found that estate Z does not apply this payment system. Instead of using the above system, the company distributes the same scale of working plot (or so-called *ancak*) amounting to 2.5-3 hectares for harvesters. SKU harvesters on this plantation are paid at a rate of Rp 46 x 1.5 ton (harvesting capacity expected by the company) x 25 days, meaning Rp 1,725,000<sup>4</sup> in a month. This payment system implies that SKU harvesters do not receive fixed wages; they are paid by their output.

Meanwhile, the payment system for BHL workers on the plantations operated by plantation companies is based on the yield of the workers. On estate X, the rate for BHL harvesters is Rp 1000/FFB. A harvester can usually collect 1 ton of FFB in a day, assuming that the average weight of an FFB is 10 kg. This means that BHL harvesters could receive Rp 100,000 in a day or Rp 2,600,000 in a month (assuming that workers also work on Saturday). One of

the BHL harvesters on estate X is able to harvest 1300 FFBs in a month compared to 2000 FFBs in the past. This implies that he receives Rp 1,300,000 in a month. The rate for BHL harvesters in the past was Rp 26-30/kg. This rate is actually better than the current rate because the current rate does not take into consideration the weight of the FFB. In the meantime, workers engaged in *nangkos* activities on estate X receive Rp 30,000 per truck of *jankos*. These workers are able to finish applying a truck of *jankos* in a day if they work full time or if it is not raining. Under less than ideal circumstances, it will take them 2 to 3 days. Assuming that they can finish applying *jankos* daily and it is not raining, these workers could receive Rp 780,000 in a month. However, I found that they are able to apply only 12 to 13 trucks of *jankos* in a month, meaning that they receive only Rp 360,000 to Rp 390,000 in a month.

Apart from wages, SKU workers on plantations operated by plantation companies are also entitled to other benefits such as housing, electricity, water and subsistence support (i.e. rice). All three estates visited offer these benefits. On estate Z, however, water is not provided by the company as a benefit in addition to wages. Workers have to pay for this utility. Estate Y provides rice in the amount of 15 kilograms/month to a worker, with an additional 9 kilograms/month for his wife, as well as 7.5 kilograms/month for each child to a maximum of 3 children. Housing is provided generally in semi-permanent houses. However, once workers are retired, they have to leave the housing. This may become a problem for workers who are not able to spend some of their income to prepare their own housing. On estate X, I found that few workers were able to save money to build their own houses. Meanwhile, BHL workers on these estates are not entitled to these benefits. BHL workers who stay in worker housing are either the spouses or family/relatives of the workers. In the case of one former BHL worker, I found that although as a BHL worker he was able to stay in the worker housing, this is because the worker entitled to the house where he stayed already owned a house. Another facility formerly provided by companies is transportation such as pick up cars, as the distance between worker housing and the plantations is often quite far. However, nowadays most of the workers have their own motorcycles, mostly bought through credit. Companies support this mechanism and sometimes help workers to get credit.

BHL workers interviewed on the plantations of plasma smallholders receive Rp 100.000/ton. In a day, these workers are able to harvest 1 ton of FFBs. Assuming that they also work on Saturday, this means that these work-





**Table 1:** Comparison of worker income, minimum wage and decent living needs in Riau

Type of Worker	Estate X	Estate Y	Estate Z	Plasma Plantations	Minimum Wage	Decent living needs*
SKU workers	Rp 1,389,450 + premi	Rp 1,133,500 + premi	No fixed (basic) wage. Rp 1,725,000a	Rp 2,600,000 b	Rp 1,389,450	Rp 1,230,491 for estate X and plasma plantations. Rp 1,455,340 for estates Y and Z
BHL workers	Rp 2,600,000b	-	Rp 1,387,670c			

Notes \*: As determined by the government. Figure for 2011.

a This amount of salary requires workers to harvest 1.5 tons of FFBs.

b Assuming that the average weight of an FFB is 10 kg (workers normally can harvest 1 ton FFBs in a day) and that workers also work on Saturday.

ers receive Rp 2,600,000 in a month. A BHL worker receives Rp 125,000/ton, which is higher than the normal rate for BHL workers in that area. As the worker revealed, this higher rate is because he and the smallholder employer are cousins. Another BHL harvester mentioned that he receives Rp 1,500,000 per month. Moreover, some of these BHL workers might have additional income. Smallholders might let their workers take *brondolan* with them. Workers then sell *brondolan* to traders nearby. Apparently, not all workers have this possibility and it really depends on the willingness of the smallholders. In the case of one of the BHL harvesters, I found that he is only able to take *brondolan* with him if the employer does not know or does not watch. I observed that BHL workers who have family relations or are relatives of their employers have more possibility to do this. Additionally, unlike SKU workers on company-operated plantations, BHL workers on smallholder-owned plantations are not entitled to other benefits such as housing, water, electricity and subsistence support (i.e. rice).

According to the perspective of estate X, the wage level offered by the company is sufficient for workers to live decently. If we compare the above numbers to the minimum wage for the oil palm plantation sector in Riau, amounting to Rp 1,389,450 as of 2012, it seems that these workers are better off, except for workers on estate Y. However, there are three issues worth noting in regard to the minimum wage level (either sectoral or provincial)

in Indonesia. The first problem is that the majority of the minimum wage level does not meet decent living needs. In Riau, the decent living needs for *Siak and Kampar* (the two regencies where the visited plantations are located) were Rp 1,455,340 and Rp 1,230,491, respectively in 2011 (the data for 2012 were not accessible). We can see that while the above sectoral minimum wage applies to the oil palm plantation sector in Riau is slightly above the decent living need for Kampar regency, such a minimum wage is actually lower than the decent living need for Siak regency. If we compare the payment received by workers mentioned above to decent living needs in these two regencies, it appears that these workers are better off, except for *nangkos*<sup>5</sup> workers.

A highly contested issue is the indicators used to set decent living needs. The indicators of decent living needs are set up by the central government under Permenakertrans No. 17/2005. The regulation lists 46 items that serve as the basis for a decent living needs survey at the regional level. Workers had been demanding the government to revise the regulation by including 122 items into the indicators. The revision was eventually conducted in 2012. Under Permenakertrans No. 13/2012, the government lists 60 items for the decent living needs indicators. However, this was not yet applicable during the time of my field research. Furthermore, the current indicators only take into account the living needs of single workers and thus disproportionately affect workers with spouses



and children. Some cases described above demonstrate the income of workers with spouses and children. Although their income might be higher than decent living needs level in the regency, it is worth noting that such decent living needs are applicable only for single workers. As such, it is questionable whether the income of these workers actually meets their decent living needs. This might also explain why these workers pursue as many premi as possible. The third issue is that the minimum wage is supposedly used as a floor in determining the wage level between workers and companies. This is illustrated in the regulation, which states that minimum wage applies to workers whose working period is below 12 months. In practice, however, minimum wage is used as a maximum standard in determining the wage level.

For SKU workers on estate Y, their wages are even below the minimum wage for the oil palm plantation sector in Riau. This wage level is stated in the collective agreement negotiated between the trade union and BKS-PPS (Badan Kerja Sama Perusahaan Perkebunan Sumatra/Cooperation Board of Sumatra Plantation Companies), an association of plantation companies in Sumatra. Meanwhile, despite the fact that their income is higher than the minimum wage for the oil palm plantation sector in Riau, SKU workers on estate Z do not receive fixed wages. This estate does not set a daily target that serves as the basis for the basic salary of SKU workers. Instead, the calculation of the salary received by these workers relies completely on worker productivity.

For BHL workers on smallholder-owned plantations, they inevitably face the issues with minimum wage as mentioned above. Although it seems that these workers receive income higher than SKU workers on company-operated plantations, the main problem for them is certainly their employment status. This also means that they do not receive regular income.

As mentioned, harvesters on company-operated plantations receive a premi when they are able to harvest more than the daily target, except for the case of estate Z. The premi serves as a reward for their productivity. However, a reward is always accompanied by punishment. Indeed, harvesters are sanctioned when they do not carry out their harvesting tasks properly. The sanctions are usually fines deducted from the harvester salaries. On estate Y, there are 20 activities that can result in sanctions. Only 2 of these 20 items are related to occupational safety and health, while the rest refer to improper harvesting activities. Every day, after working hours, a foreman has to prepare a working sheet, which contains the productivity (which determines the premi) as well as the sanctions of his subordinate harvesters. This sheet will become the

basis for calculating the harvester salaries.

## Conclusions

Oil palm plantations play an important role in Indonesia's agricultural sector, particularly after Indonesia decided to pursue trade liberalisation and target export markets. It is widely held that they contribute significantly to the development of rural livelihoods in Indonesia. Nonetheless, whether the expansion of the oil palm plantations has also benefited workers remains in question.

Drawing evidence from the oil palm plantations in Riau, a province with the largest oil palm plantations in Indonesia, this paper concludes that workers have found employment but under unsatisfactory conditions. Not only are casual workers still rampant in the sector, but there is also no fixed form of employment (and payment) practices in the sector. Despite the presence of a common employment (and payment) structure, each plantation company may have its own form of employment practices. Workers on plantations also receive income insufficient for their decent living. For casual workers, who make the largest share of plantation workers, this income is also not regular.

These conclusions provide an important aspect for the discussions on the link between trade liberalisation and labour rights. The remarkable development of the Indonesian oil palm plantation sector, particularly after the country decided to pursue trade liberalisation policy, relies on poor working conditions on the plantations. The findings also shed light on food crisis discussions. Oil palm cultivation paves the way for changes in land use from polyculture to monoculture farming. This in turn makes it difficult for workers or local people to grow food crops. As a result, subsistence farming will not be attractive anymore and thus workers or local people have to rely on the local markets for their food supply. This certainly increases living cost, which may lead to food crisis at the micro level. The situation for plantation workers might be worse since their low wages further limit their access to food from the market.

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## Conflict of Interests

The author hereby declares that there are no conflicts of interest.



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1. The Agrarian Law adopted by the colonial government in 1870 enabled the establishment of state-owned plantations as the Law declared all land not under permanent cultivation as "waste land" (van Gelder 2004: 18). Thereafter, Dutch developers were also offered as much land as they needed on 75-year renewable leases at nominal rent (ibid.).
  2. Riau is a province in Indonesia that has the largest oil palm plantations in the country. In 2010, oil palm plantations covered 2 million hectares in the province, producing almost 30% of total crude palm oil (CPO) output in the country (Directorate General of Estates 2011: 9).
  3. Kapling refers to a plot of 2 ha. According to the NES scheme, each plasmasmallholder is given 2 ha to cultivate palm trees.
  4. Assuming \$ 1 = Rp 10.000
  5. *Nangkos* comes from the word *jangkos*, which literary means empty bunches. The activity of *nangkos* refers to the activity of spreading or applying empty bunches onto the plantation plots. In this way, empty bunches are treated as organic fertiliser for the plots.





# The Impact of Policy Responses to the Food Price Crisis and Rural Food Security in Sri Lanka

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## Abstract

In Sri Lanka policy responses have direct impacts on rural dwellers. Over 80% of Sri Lanka's population live in rural areas and 90% of them represent low income dwellers. Their production system may be hampered by fragmented landholding, poor economics of scale, low investment levels resulting from poor financial services as well as inappropriate or limited technology. They are vulnerable to price hikes of basic foods and food security issues due to fragmented landholding and poor financial services. Policy measures to reduce the transmission of higher international prices in domestic markets exist to protect the food security of the vulnerable population. This paper will discuss the food policy and strategies implemented by the government and outside to the above facts this paper also describes the effectiveness of the policies forwarded by the government. The objective of this study is to analyse the impact of policy responses to the food price crisis and rural food security in Sri Lanka. Outside of the above facts this study also treats the impact of policies and decisions on the nutritional condition of rural dwellers. Furthermore this study is to analyse the fluctuation of buying power with the price hikes and the relation of above facts with issues like malnutrition. This paper discusses why policy makers should pay greater attention to rural dwellers and describes the multiple pathways through which food price increases have on rural people. It also provides evidence of the impact of this crisis in particular, through hidden hunger, and discusses how current policy responses should adjust and improve to protect the rural dwellers in the short and long term.

## Introduction

It took a century (1830-1930) for the world population to grow from one billion to two, thirty years (1930-1960) for the third billion, fifteen years (1960-1975) for the fourth and twelve years (1975-1987) to reach the fifth billion. According to the estimates, the next billion will be added within less than ten years. Currently, over 700 million people do not have access to sufficient food to meet the nutritional needs for a healthy life (Pinstrup-Andresen and Pandya-Lorch, 1995, P, 17-36); they are food insecure. The traditional well known definition of food security refers to having enough food to maintain growth and health. Food security is access by all people at all

times to the food required for a healthy life (von Braun et al. 1992). The USDA too defines food security as having access to enough food at all times for an active, healthylife (Nord,2002).

The new definition of food security refers to the production, processing and distribution chain being secure from bioterrorists so that food cannot be deliberately contaminated with an agent that would make people ill, cause death or economic chaos. Food insecurity, on the other hand, refers to insufficient access to food and also insufficient food production. Food insecure people

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are those who do not grow and/or purchase the needed food or gain access to the services needed. This could be related to poor rural community.

Rising food prices are contributing to higher inflation and will at a minimum show the pace of poverty reduction in a country. The rapid increase in prices of rice, wheat, sugar, and other basic foods has sent a shock wave through poor households around the world, as well as through governments and international policy makers. While food prices are always volatile, recent increases are of a magnitude last seen in the 1970s. The impact of the price increases on poverty. The effect on the poor depends on whether they are net sellers or net buyers of food, as well as whether they depend on the agricultural sector for wages or other sources of income.

Several types of domestic policy responses (government and non government organisations) can help to protect and strengthen food security. Policy responses have a direct impact on rural dwellers. Over 80% of Sri Lanka's population lives in rural areas and 90% of them represent low income dwellers.

To sustain food production, Sri Lanka needs to develop holistic and sustainable crop and land management programmes that have been validated in other parts of the world. Research investment must contribute to the development of knowledge on more efficient methods of crop management and more productive means of crop production. The nation and its policy makers must realise that human carrying capacities of land is not only a national problem but also has a global impact, and an active programme should be developed to monitor and assess land degradation, while implementing national and international policies that facilitate access to food through a fair and equitable market system.

Sri Lanka should develop policies that are compatible with its own environment. Great care should also be taken to set up an interactive co-ordination among the agro food sector institutions and entrepreneurs and to establish policies to address issues related to socio-economic sphere, nutrition and health. A collective effort of governmental and non-governmental organisations, farmer associations and other stakeholders is of primary importance in the implementation of these policies. Accordingly, the following can facilitate improved food security; improvement of agro technology, plant breeding programmes for improved varieties, popularisation of use of alternative crops as substitutes for major food commodities, long term government policies and their efficient implementation mechanisms, promotion extension programmes, development and improvement of systems, processing and storage infrastructure at all levels.

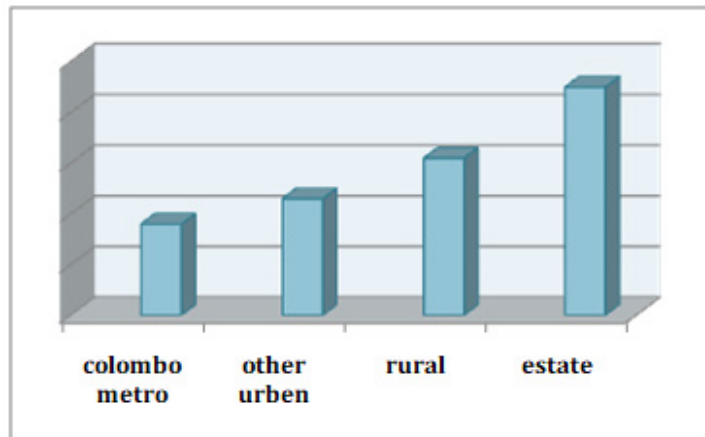
In this paper analyses the factors that affect the rural community due to the price fluctuation or food stuffs. This paper will discuss the food policies & strategies implemented by the government and outside to the above facts this paper also describes the effectiveness of the policies forwarded by government.

**Literature review**

Food security means the availability and accessibility of food to all. FAO (1996) The Rome declaration on world food security and the world food summit plan of action lay the foundations for diverse paths to a common objective of food security, at the individual, household, national, regional and global levels. Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet

**Table 1:** Gross Domestic Product (GDP) in Sri Lanka (Year on year).  
Sources: Department of Census and Statistics and Central Bank report of Sri Lanka (2011)

		Real growth. %,			Share of GDP
	2009 Q1	2010Q1	2011Q1	in 2010	
Agriculture, forestry and fishing	3.6	9.1	(5.1)	12.2	
industry	1.9	6.9	11.1	29.2	
services	1.0	6.7	9.5	58.6	
Gross Domestic Product	1.6	7.1	7.9	100.0	



**Figure 1:** Percentage of underweight children under five years old by sector

Sources: Department of Census and Statistics 2006

their dietary needs and food preferences for an active and healthy life. The World Bank has modified this formulation to indicate that food security is “access by all people at all times to enough food for an active, healthy life. Its essential elements are the availability of food and the ability to acquire it”. The World Bank has made the distinction between chronic and transitory food insecurities. Chronic food insecurity reflects continuous “inadequate diet caused by the inability to acquire food. It affects households that persistently lack the ability to either buy food or to produce their own”. Transitory food insecurity is defined as “a temporary decline in the household’s access to enough food. It results from instability in food prices, food production and household income – and in its worst forms it produces famine,

It was implied that food security meant arrangements for providing a physical supply of a minimum level of food grains at the national level, during all periods including those having harvest failures. It was subsequently recognised that physical availability alone would not ensure economic access to food for all of a population, especially the poor and vulnerable sections. It was emphasised that satisfactory production levels and stability of supplies should be matched by a reduction in poverty and increase in the effective demand to ensure economic and physical access for the poor (George 1999:466).

As food security is understood today, the availability of food is a necessary condition for ending hunger but it is not a sufficient one. There is a need to enable people to access food. This enabling route may consist of income generation opportunities like food for work programmes. Bram et al., (1992) suggested that while food security at the national level can be monitored in term of demand and supply indicators, food security at the household level can be measured by direct surveys of dietary intake and food security at the individual level

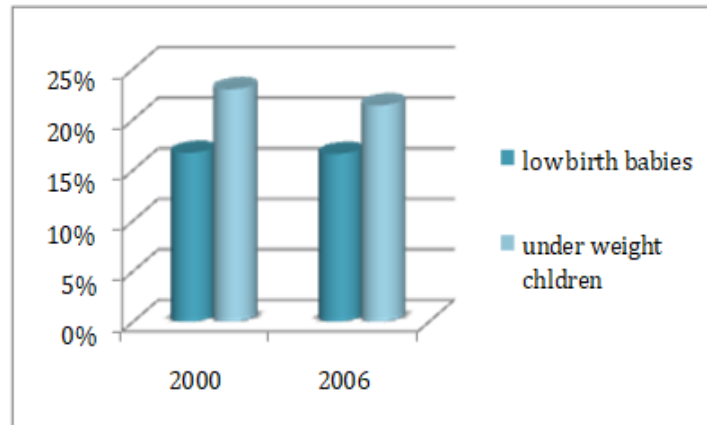
can be gauged from anthropometric information (Braun et al.1992).

The policies and programmes for achieving household food security are based on the identification of the characteristics of food insecure households and individuals. As there is a close link between poverty and household food security, it is relevant for various poverty alleviation macro-economic policies to address issues. Since the majority of the poor live in rural areas and since most of them are small farmers or agricultural labours the policies pursued in relation to agricultural development have a high significance Apart from macro-economic policies in general and in particular the agricultural policies and poverty alleviation programmes, a number of direct interventions such as public distribution of food grains and feeding programmes are relevant in the context of achieving household food security.

### Theoretical discussion

At the point of preparation for this paper received many suggestions, objections and feedback from the community In terms of theories. As price increases will positively benefit the producer it will on the other hand have a negative impact on the consumer. If food production purely depends on the local agricultural system, without any imports of food, rural population could treat it as a positive sign on the economic system of a country. In general the behaviour of the consumers shows some deviations with the income level as well. Most of the rural dwellers were based on the agriculture related economy, and were very sensitive to the fluctuations of external factors like weather conditions. On that ground they were highly depressed with the price hikes and it will also the buying power of a consumer.

The rationale for disaggregating food consumption



**Figure 2:** Little improvement in prevalence of underweight children and low birth weight children under five years old in Sri Lanka

Sources: Construction using DHS 2006/7 survey data : Department of Census and Statistics.2007

analysis draws on this reality, a reality entirely consistent with the economic theory of the consumer. Freedom of consumer choice in the face of a budget constraint is one of several ways commodities can be allocated among consumers. The market orientation implied by such a model of consumer choice has two extremely important policy implications, even before the model is used to understand consumer behaviour when prices and income change.

### Methodology

The objective of this study is to analyse the impact of policy responses to food price crises and rural food security in Sri Lanka. Outside to the above facts we also treat the impact of policies and decisions that effect the nutritional condition of rural dwellers. Furthermore this study analysed the fluctuation of buying power with the price hikes and the relation of above facts with issues like malnutrition.

In general most of the Sri Lankans lived in villages and most of them belong to the category of low income earners and relied on agriculture as a profession. Therefore they were very sensitive to the price fluctuations of food products. This sample is based on the rural dwellers of north, east and the tea cultivation, rural areas in Sri Lanka. In this study used primary and secondary data as resources for the research; also we refer to the central bank reports, department of census and statistics reports and interviews with rural people, as a reference.

### Rural poverty in Sri Lanka

Poverty is a major economic problem in Sri Lanka .The

agriculture sector is the cornerstone of Sri Lanka's economy with more than 70% of the population living in rural areas depending on agriculture for their livelihoods. This sector contributes to about 12.2% of the Gross Domestic Product (GDP) and 30% of the employment. But the gain is minimal due to the low investment level, poor financial services, and inappropriate or limited technology. (Central Bank report of Sri Lanka, 2011)

Poverty is concentrated in rural areas as well as the north and east provinces. The official poverty rate is 15 percent. That rate is much higher in uva and sabaragamuwa provinces where between a quarter and a third of all people live below the poverty line. Tea cultivation and war and terrorism affected areas are some of the poorest areas of the country. The consequences of widespread poverty can be seen everywhere in Sri Lanka. Malnourishment is a fact of life for millions of people. According to university researchers, out of sample of 330 mothers in the country, 38% of new born babies were not the proper size and 17% of the babies were not the proper weight. That is the situation of poverty in Sri Lanka. Poverty is raising big issues.

According to the United Nations Children's Fund (UNICEF) in Sri Lanka, despite having free health care and no significant food shortages, malnutrition affects nearly one-third of children and one quarter of women. UNICEF says although poverty is a factor, it alone does not explain the high rate of malnutrition among Sri Lankan children. The organisation blames the inappropriate infant and young child feeding practices and micronutrient deficiencies in the diet. Malnutrition affects children's growth, prevents them from reaching their full potential for growth and development, and impacts





their learning ability, UNICEF warns.

There are large numbers in Sri Lanka without adequate food: persons who are hungry, malnourished or undernourished. There is growing evidence of increasing malnutrition in Sri Lanka. The rising prices of food are likely to aggravate this situation, especially in households that do not produce food.

### Food Price Crisis and food Security in Sri Lanka

Food price trends have a major impact on food security at both household and country levels. Low income householders spend more than half of their income on food. Price hikes of cereals and other staples can force them to cut –off either quantity or quality of their food. This may lead to food insecurity and malnutrition with tragic implications. Price hikes also limit the ability to meet important non-food expenses, such as education and healthcare of the poor householders. This will badly impact on low income countries, if their main sources of food are imports, this will lead to trade imbalances as well.

A price hike makes a notable imbalance between supply and demand of foods. Specially on cereals and live stocks. In Sri Lanka, the key factors behind the inadequate supply can be identified as low and stagnating productivity, a deteriorating natural resource, weak rural and agricultural infrastructure and the inefficient markets. In the global sense numerous other factors had contributed to the recent price hikes, such as trade restrictions, speculation in financial instruments based on food commodities, and rising oil prices. Increasing oil prices put an upward pressure on domestic prices in many countries, and their affect spread from agrichemical to transportation costs.

Food inflation has been one of the most significant sources of headline inflation variation in emerging markets (EM) over the past few years. International prices for agricultural commodities have risen almost 30%, increasing the risk of fresh, food-related increases to EM headline inflation. The problem of escalating food prices is a central concern today. Sri Lanka's fiscal policy reversed radically in 2004 as the government returned to heavy budget deficits and massive expansion of the public sector with tax-free state jobs, and state enterprises running losses leading to higher budget deficits. Low income groups are particularly sensitive to the price of most basic food items. Such as sugar, milk, wheat. The present economic crisis seriously threatens the food security of rural households.

Sri Lanka is vulnerable to direct price hikes due to dependencies on other countries for many basic food item such as wheat and sugar. Sri Lanka's own drought conditions will further intensify food dependency in the coming months. On the other hand export prices on agricultural products depreciate simultaneously due to quality compliance. The year on year increase of the food sub –index was 2.5 percent as at end 2011. The price increase of fresh vegetable, fruits, fish, bread, cereal, milk powder, and meals bought from outside contributed towards this increase in the food sub index.

Food Security means access by all people at all times to enough food for an active, healthy life. Nutrition is a key element in any strategy to reduce the global burden of disease, hunger, malnutrition, obesity and unsafe food which causes disease and better nutrition will translate into large improvements in health among the population. Rice is one of the main sources of carbohydrate serials, such as finger millet, gram, cowpea, tuberous crops, manioc sweet potato on that ground it is necessary to take immediate actions to increase the production of these crops in the country.

More recently, Sri Lanka's food security has been challenged by the region's financial crisis. Unfortunately for many people, this economic crisis followed an extraordinarily unstable period of weather in some provinces, such as the north and north western provinces. It appears that poor weather including droughts was the main cause for food insecurity, with the region's economic crisis serving as a secondary factor.

During the "Yala" season of last year, there was a severe flood, also during the "Maha" season of this year there was a severe drought. Such an extreme weather pattern leads to uncertainty in food production. In the past couple of months according to statistics taken from The Island newspaper 2011, around 200 000 of paddy and other crops in the north east and north central province were affected by the drought and flood. This will reduce Sri Lanka's total rice production by nearly 400 000 tonnes, Agriculture is extremely vulnerable to climate change. Changes in rainfall patterns increase the likelihood of short-run crop failures and in the long-run production declines.

There are some examples of the solution to food security. Sri Lanka's society use its own traditional rice varieties such as "suwadal", "heenati", "allhaall", etc. Suwadal which has a low glycogenic index suitable for diabetics. By re-emphasising the awareness on traditional foods, it can be used to improve the food security and address the growing global concerns over poor nutrition and its



negative health effects

## Food policy in Sri Lanka

Food policies are designed to influence the operation of the food and agricultural system. These policies spread through the area of food production, processing, marketing, availability, accessibility, utilisation and consumption. The structure of a food policy may vary from local to global and by a government agency to business organisation. It also addresses the food assistance programmes, health and safety issues and wealth. It consists with both political and economic factors that contribute to the challenges. Food policy does not completely rely on politics but politics itself has certain impacts on food related issues. If the prices are too high to afford nutritional food products, then it notably reduces the amount individuals' purchase on higher prices and it tends to be have a poorer quality diet for low-income householders.

Such efforts revolved around institutional changes and reforms of policies. The politics of food policy in Sri Lanka was designed to liberalise trade, provide incentives for productive investment, and increase domestic savings. Associated with these reforms were many "lead projects," entailing heavy capital expenditures that were expected to provide the infrastructure for development. There are numerous features of the government's actions, some initiated immediately and others phased in over longer periods of time. For example, the government undertook promotion of institutional change through a variety of initiatives, including the formation of several new government agencies to guide and encourage both domestic and foreign private investment (U.S. Agency for International Development 1982).

There were many periods in Sri Lanka's history in which the removal of food subsidies was greeted by anger and violence. This was not the case in 1978. In determining why, a number of propositions arise. One important fact is the phased process in which food subsidies were reduced. Of equal prominence is that the transition took place concurrently with a surge of economic growth and optimism. Just as it has long been argued that social programmes are more politically palatable in an expanding economy than in a contracting one, it may well hold that reducing subsidies is more acceptable when the economy is growing and all feel that they will benefit in the not-too distant future from its continued vitality. This is juxtaposed with reducing food subsidies as part of overall austerity measures in periods of economic retrenchment.

Sri Lanka has various types of food policies. Such economic policies as devaluation of the currency to pro-

mote exports and encourage free trade come into conflict with the large fiscal and foreign-exchange costs of food-subsidy programmes. Of course, there are arguments that subsidies moderate wage demands and, thus, export goods may prove more competitive. In theory, lower wages due to subsidies may also promote increased demand for labour. There is, however, no empirical evidence that this theory was realised in the import-substitution economic environment of pre-1978 Sri Lanka, where rigid wage laws also existed. Similarly, it is noteworthy that the magnitude of recurrent expenditures on food subsidies and other social investments found in Sri Lanka during the 1970s is often the subject of criticism by economists because of the potential link of the food policy in Sri Lanka and spending with budget deficits and, consequently, inflation. However, there is an irony in that the reduction of these expenditures there followed a period of increased budget deficits, contributing to high levels of inflation. These problems can be attributed to a combination of the government's undertaking other types of investments, especially in the area of infrastructural development, and international shocks to the economy. Some policy response were to reduce to food grain taxes

The national policy documents called, "Mahinda Chintana, Ten Year Horizon, Development Framework, 2006-2016", "Mahinda Chintana – Vision for the Future", National Agriculture Policy of 2007, National Livestock Development Policy of 2007, National Fisheries and Aquatic Resources Development Policy of 2006 and the Food and Nutrition Policy for 2004-2010 of Sri Lanka provides the necessary directives to ensure food and nutrition security in Sri Lanka. The "Colombo Statement on Food Security" of 2008 provides the policy guide to all SAARC countries and highlights the need to evolve and implement people-centred short to medium term regional strategy and collaborative projects, which will help in achieving food and nutrition security. The fertiliser subsidy, "Api Wawamu Rata Nagamu", The National Program for Food Security (NPFS) of 2009, Samurdhi, Thripasha and the Mid-day meal in schools, and "Divi Neguma" are the key programmes implemented in Sri Lanka aiming at improving agricultural productivity leading to food and nutrition security.

During the last 10 years numerous programmes such as *Waga Sangramaya*, *Govi Sevana*, *Gemidiriyaya*, *Api Wawamu Rata Nagamu*, *Gmaneguma*, attest that those projects had not any considerable impact on the agricultural sector of the country. If Sri Lanka is willing to increase the level of food the government should take necessary action to implement a realistic agricultural development project, by considering the agronomic and socio-eco-



**Table 2:** Retail Prices of Key Imported and Domestically Produced Items

Item	Unit	Annual Average		
		2009 Rs.*	2010 Rs*	2011 Rs*
Rice - Samba	1kg	72.66	72.05	68.38
Rice - Kekulu (Red)	1kg	62.53	60.14	57.27
Rice - Kekulu (White)	1kg	61.74	54.26	56.58
Rice - Nadu	1kg	63.53	60.79	59.25
Coconut (medium)	nut	26.01	33.59	41.01
Fish - Kelawalla	1kg	523.43	598.15	632.32
Beans	1kg	114.99	135.26	167.34
Brinjols	1kg	76.75	87.04	90.84
Eggs	each	10.75	13.6	11.64
Sugar	1kg	81.97	93.78	96.11
Milk Powder	400g	251.73	234.35	255.92
Dhal-Red	1kg	199.7	165.4	149.2
Wheat Flour	1kg	70.84	69.61	83.92

Source: Department of Census and Statistics (2011)

Notes: \* Rs. refers to the Sri Lankan currency (Rupees-SLR) (US \$ 1 ≈ SLR 129.4)- Central Bank Sri Lanka)

conomic issues in the agricultural sector.

The present government introduced “*Mahinda Chinthanaya*”. *Mahinda Chinthanaya* envisages an agriculture sector contributing to regionally equitable economic growth, rural livelihood improvement and efficient production of commodities for consumption, agro-based industries. The government’s “*Divi Naguma*” programme introduced under the Mahinda Chinthanaya spelled out the issue of food security. According to the proposed policy issued under the development framework for the island till 2016 poverty was forecasted to drop –down at least by 5.9 percent in 2016. The target for 2009 was 8.7 percent, but the index grew from 7.8 percent in 2010 to 8.9 percent in 2011, indicating that Sri Lanka’s number of poor people keeps on growing.

The policy tools needed to address the current food crisis cover a broad range. They include immediate assistance for the poor and hungry and dramatically increased investment in country agriculture by the internation-

al financial institutions, wealthy country development agencies, and governments. Financial regulators should turn their attention to financial markets in agricultural commodities, which show signs of the speculation, mania, and overshooting that have resulted in ongoing crises in global finance and some housing markets. As painful and destructive as those crises have been, they pale by comparison with the threat of serious market failure in the case of food.

Trade policy also has a role to play. Sri Lanka aspires to link their agricultural producers to larger regional and global markets as they gain the capacity to compete against more efficient producers under conditions of volatility. However, trade liberalisation that removes flexibility from the hands of developing country governments prematurely or leads them to rely on global food markets and not invest in their own agricultural sectors has proven to be short sighted



## Conclusions

Today, food security has become a major issue in the developing world and in Sri Lanka, where the government is trying to provide food for its people in the face of shortages, natural disasters and price increases of food commodities in the world market. The problems become greater in areas where land is being fractured. Land and other resources needed to increase production are scarce. With growing population, more and more land is being used for houses and roads. Further, clearing land for agricultural activities can contribute to global warming. Other option is increasing productivity of food production. Thus, the paradigm shift that nations such as Sri Lanka need to make to sustain food production is to develop holistic and sustainable crop and land management programmes that have been validated in other parts of the world. Research investment must contribute to the development of knowledge on more efficient methods of crop management and more productive means of crop production. The nation and its policy makers must realise that human carrying capacities of land is not only a national problem but also has a global impact, and an active programme should be developed to monitor and assess land degradation, while implementing national and international policies that facilitate access to food through a fair and equitable market system.

This food crisis will affect in Sri Lanka, a majority of the population spend a large proportion of their income on food. With rising prices of food they would not be able to afford the minimum daily requirements of food. This would push more people into poverty, malnutrition and hunger.

In view of the fact that the agro-food sector is central to economic progress of many developing countries like Sri Lanka, its growth and development should dynamically endeavour to alleviate poverty through employment creation and income generation in rural areas. Great care should also be taken to set up an interactive co-ordination among the agro food sector institutions and entrepreneurs and to establish policies to address issues related to socio-economic sphere, nutrition and health. A collective effort of governmental and non-governmental organisations, farmer associations and other stakeholders is of primary importance in the implementation of these policies. Accordingly, the following can facilitate improved food security;

- Improvement of agro technology.
- Plant breeding programmes for improved varieties.
- Long term government policies and their effi-

cient implementation mechanisms, promotion extension programmes.

- Development and improvement of systems, processing and storage infrastructure at all levels.
- Enhancement of yield-increasing production technology like small- scale irrigation and irrigation management system and techniques such as Integrated Pest Management.
- Introduction and improvement of convincing extension services and technical assistance to farmers at community levels.
- Popularisation of use of alternative crops as substitutes for major food commodities.
- Maximisation of the production of the staple foods and popularization of using other crops as alternative crops.
- Promotion of small and medium scale agricultural and food enterprises.
- Consideration on attitudinal aspects on food habits, food beliefs and myths with a view to establish meaningful strategies in the popularisation programmes of minor food crops.
- Commitment of all stakeholders towards the minimisation of postharvest losses of major and minor food commodities.
- Assessing the impact of changing support to and taxes on food commodities.

Sri Lanka should cut high food taxes which will make vitamins more accessible to the poor and reduce malnutrition and hunger among low income dwellers.

It should be noted that what the food security situation will look like in 10- 20 years time depends on what is being done at present. Therefore, the above issues need to be dealt with by relevant stakeholders in a collective manner. When thinking of the consequences of food price shocks, it is important to bear this heterogeneity in mind. Policies such as export bans that hold down the domestic price of food are a blunt instrument that helps some households while hurting others. Only more targeted policies such as social safety nets and those that assist farmers to increase production and to respond more quickly to changing opportunities are able to take this heterogeneity into account and ensure that poor households are not disadvantaged by policies intended to help them.

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### Conflict of Interests

The author hereby declares that there are no conflicts of interest.

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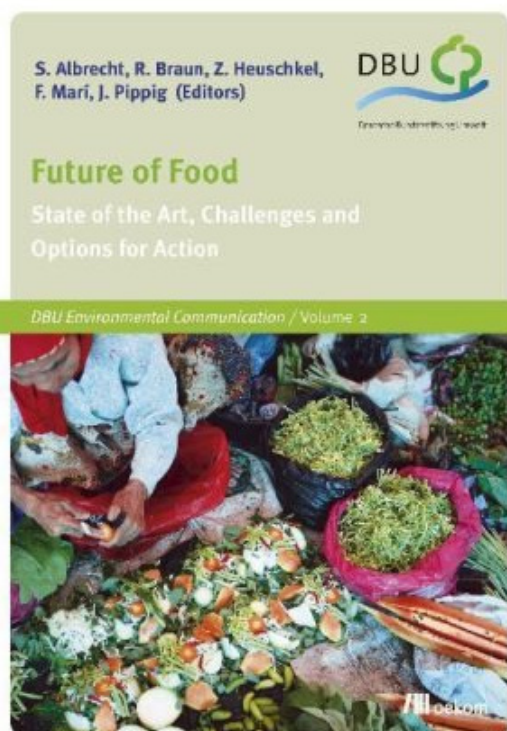
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## New Book released: Future of Food: State of the Art, Challenges and Options for Action



The Federation of German Scientists (Vereinigung Deutscher Wissenschaftler) has released their new book on the theme of Future of Food: State of the Art, Challenges and Options for Action as the product of the research project "Future of Food". This project was funded by the Deutsche Bundesstiftung Umwelt (the German Federal Environmental Foundation). This book is compiled with articles from young and experienced researchers all around the world with their critical analysis and field research experiences. Elimination from sectoral thinking, non-hegemonic approach in rural development and protecting the food sovereignty of people are some of propositions of the book. These alternative view of future of food may help to critically thinking the current discourse of food production, food processing and consumerism. The official launching festival of the book has been scheduled on 15th of January 2014. There will be a comprehensive book review in the Volume 2 Issue 1 in 2014 in the Future of Food Journal. Now readers, libraries and organizations are able to purchase this book via online sellers.

Publisher: Oekom Verlag  
ISBN: 978-3-86581-419-7.

For more details, <http://www.dbu.de/643publikation1246.html> or <http://www.oekom.de/nc/buecher/neuerscheinungen/buch/future-of-food.html>

## New UN World Water Development Report in March 2014 – “Water and Energy”



The 5th edition of United Nations World Water Development Report (WWDR) on the theme “water and energy nexus” will be launched in the World Water Day celebrations in Tokyo, Japan on 21 March 2014. This report will elaborate the appropriate responses and regulatory frameworks in water for energy that is identified as a significance in Millennium Development Goals. From 2014, the WWDR will be a thematic report which will be published annually. The report will be compiled with analyses, policy recommendations, indicators and case studies on theme of the year in UN Water.

More information available on, <http://www.unesco.org/new/en/naturalsciences/environment/water/wwap/about/>

## Strengthening the Collaboration with College of Atlantic, USA and Future of Food Journal

The Future of Food Journal on Food, Agriculture and Society has extended their cooperation with College of Atlantic (COA), Bar Harbor in United States. A managing editor Sisira visited College of Atlantic in October 2013 upon the invitation of Prof. Ken Cline, the dean of the Faculty of Human Ecology in COA and a member of the editorial board of the Future of Food Journal. A public lecture on water management issues in Mongolia, student training program on scale analysis in environmental studies and discussion about the journal were conducted in the visit. The engagement of members in “Earth in Brackets” which is an active student circle in global environmental issues was remarka-



ble. In the future, the Future of Food Journal and COA will going to organize interactive studies programs and more contribution of research papers, news and reports.



More information, <https://www.coa.edu/live/files/358-coa-fy14-endowment-bookpdf>

## **IFOAM Organic Leadership Course Europe 2014/15 Enrollment for our OLC Europe 2014/15 is now open!**

International Federation of Organic Agriculture Movements (IFOAM) was officiated in 1972 to establish a collective among participants who stand for organic agriculture and food system in the world. With the vision of ecologically, socially and economically sound organic agriculture, IFOAM works on many part of the world by organizing communities, lobbying with policy-makers and conducting awareness and education programmes. As a part of education programme, IFOAM is going to organize the second course for Europe 2014 – 2015. For this program, the applications are being called from interested young applicants from all around the world.

Please find more details in <http://www.ifoam.org/en/organic-leadership-courses/olc-europe-201415>

## **First Annual Research Symposium 2013- Ancient Heritage for Sustainable Development**



The Department of Archaeology and Heritage Management, Faculty of Social Sciences and Humanities in the Rajarata University of Sri Lanka organized the First Annual Research Symposium on the theme of “Ancient Heritage for Sustainable Development”. Irrigational Archaeology, Environmental Archaeology, Ethno Archaeology & Anthropology, Ancient Architecture and Arts, Ancient Technology and Field Archaeology are the sub topics of the symposium. The organize committee launched their first department journal “The Journal of Archaeology and Heritage Studies”. Recently, the Department of Archaeology and Heritage Management has engaged with the research project in Yan Oya Basin and Mahaweli River Basin with the Department of Organic Food Quality and Food Culture at the University of Kassel, Germany and the Braunschweig University, Germany. The International Summer School 2014 in Sri Lanka on “Ancient Heritage for Sustainable Development” will be organized in September 2014.

More information available on <http://www.rjt.ac.lk/ssh/arch/>





## Report

# Food Security Bill 2013 of India – A Retrospective Analysis

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### Keywords

Food Security; Food Security Bill India; Nutritional Security

### Abstract

Food Security means that all people at all times have physical and economic access to adequate amounts of nutritious, safe, and culturally appropriate food, which are produced in an environmentally sustainable and socially just manner, and that people are able to make informed decisions about their food choices. Food Security also means that the people who produce our food are able to earn a decent, living wage growing, catching, producing, processing, transporting, retailing, and serving food. At the core of food security is access to healthy food and optimal nutrition for all. Food access is closely linked to food supply, so food security is dependent on a healthy and sustainable food system. A food system includes the production, processing, distribution, marketing, acquisition, and consumption of food. This article examines the Food Security Bill 2013 of India and reports its benefits and also possible changes that can be taken into account to enable more food and nutritional security for people living in poverty and below poverty conditions in the country.

### Introduction

The struggle to ensure that all people have access to adequate food in order to lead active and healthy lives has existed throughout time. Events in the early 21st century clearly demonstrate that providing sufficient food to all people continues to be an urgent problem situated at the centre of society, nature and technology. Rising food prices in recent years have been the cause for unrest in many parts of the world and the number of people who do not receive sufficient nutrition has increased.

Agricultural and food production activities have been recognised as key drivers of environmental and climate change, at the same time that studies have revealed that food production could face significant and widespread impacts from these changes in coming decades. National and international food safety incidents have raised awareness of the continued international peril that food systems can transmit health threats among human populations (McDonald: 2010).

Encompassing a variety of ecological, social, economic and political issues, the notion of food security seeks to determine whether people have the food they need. Conducted at multiple levels, these examinations in-

clude the individual, household and community at the national, international and global levels. Lack of adequate safe and nutritious food has significant effects on health, well-being and livelihoods of people living in the world (McDonald: 2010).

Availability of food does not ensure food security if people do not have the power to buy them for their consumption. It is the responsibility of governments to devise ways and means to enable people to buy it. This means that policies or legislations made by the government in this regard need to bring in effective employment generation schemes which need to be included in development programmes. Such schemes should also take into account people who are too old, expectant mothers and children as those belonging to these categories are most vulnerable as their capacity for physical exertion is severely limited. In this context, the concept of food security implies implementing policies for supplementing food and nutritional requirements of these groups. Nutrition is an essential aspect, because food as such is not enough; food of right quality and content providing necessary nutrition is what is really required, for keeping the body in proper health. In this aspect, all

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food items, including, milk, fruits, vegetables, and processed and fortified foods, etc., are included. Productivity is directly related to the health of the people and this gives nutrition the paramount place in the philosophy of food security (Acharya: 1983).

### Food Security in India

Food security in India should be of great importance as one-third of the total population in the country is estimated to be poor and more than one half of all children malnourished in one way or the other. The issue of food security in India has a number of dimensions that extend beyond production, availability and demand for food.

There has been a paradigmatic shift in the concept of food security, from food availability and stability to household food insecurity, and from assessment of input measures like energy intake to output indicators such as anthropometric measures and clinical signs of malnutrition. Food security at the national level refers mainly to availability in the country of sufficient stocks of food to meet domestic demand either through domestic supply or through imports. Attainment of self-sufficiency in food grains at the national level is one of the country's major achievements in the post-independence period. After remaining a food deficit country for about two decades after independence, India became largely self-sufficient in food grain production at the macro level. There have been hardly any food grain imports after the mid 1970s. Food grain production in the country increased about 50 million tonnes to around 233.9 million tonnes in 2008-09. The growth rate of food grains has been around 2.5 percent per annum between 1951 and 2006-07. The production of oil seeds, cotton, sugarcane, fruits, vegetables and milk has also increased appreciably (Dev & Sharma: 2010).

Despite its astonishing economic growth during the last 20 years, India still suffers from extended food insecurity. It's the country with the majority of hungry people, accounting for about a quarter of the hungry population in the world. Per capita availability as well as consumption of food grains in India has declined since 1996; the percentage of underweight children has remained stagnant between 1998 and 2006; and calorie consumption of the bottom half of the population has been declining since 1987 (Garbuglia: 2009). Though India was successful in achieving self-sufficiency by increasing its food production and also improved its capacity to cope with year-to-year fluctuations in food production, it could not solve the problem of chronic household food insecurity. This necessitated a change in approach and as a re-

sult, food energy intake at household level is now given prominence in assessing food security. It has become a common practice to estimate the number of food insecure households by comparing their calorie intake with required norms. However, the widely accepted norms of the level of calorie intake required for overcoming under-nutrition have been questioned. Nutritionists argue that the energy intake is a poor measure of nutritional status, which depends not only on the nutrient intake but also on non-nutrient food attributes, privately and publicly inputs and statuses (Martorell & Ho: 1984).

India is one of the few countries which have experimented with a broad spectrum of programmes for improving food security. It has already made substantial progress in terms of overcoming transient food insecurity by giving priority to self-sufficiency in food grains and through procurement and public distribution of food grains, employment programmes, etc. However, despite a significant reduction in the incidence of poverty chronic food insecurity persists in a large proportion of India's population. At the national level the problem of food insecurity has been solved which is reflected in mounting buffer stocks. Yet there are millions of food insecure and under-nourished people in India. The limitation is not food supply but food distribution. Careful consideration of food security requires moving beyond food availability and recognising low incomes of the poor (Radhakrishna: 2002).

The biggest food based intervention in India is the system of public distribution of food, a programme that aims to provide access to cheap food to households throughout the country. The Public Distribution System (PDS) is a rationing mechanism that entitles households to specified quantities of selected commodities at subsidised prices. In most parts of the country, upto 1997, the PDS was universal and all households, rural and urban with a registered residential address were entitled to rations. Eligible households were given a ration card that entitled them to buy food of selected commodities. The exact entitlement (quantity, range of commodities and prices) varies across states. The PDS was institutionalised in the country in the 60s to achieve multiple objectives including ensuring stability of prices, rationing of essential commodities in case of deficit in supplies, ensuring availability of basic commodities to the poor and needy and to check the practice of hoarding and black marketing (Swaminathan: 2000). Food subsidisation has a very long tradition in India. For most of the last three decades, it has accounted for more than two percent of total government expenditure, and its cost peaked in 1993-94 at 55 billion Rupees (roughly 1.8 Billion US\$), almost fifty



percent of total expenditure allocated to poverty alleviation programmes, and approximately 0.8 percent of Gross Domestic Product. The bulk of these sums sustain the PDS which is one of the oldest and largest poverty alleviation programmes in the world. The programme mainly supplies rice, wheat, edible oils, sugar and kerosene at subsidized prices through a network of retail outlets known as fair prices shop (Radhakrishna, et. al.: 1997).

In India the stock of food grains available with the governmental agencies as on mid 2001 was 61.96 million tonnes, which constituted 22.75 millions of rice and 38.92 million tonnes of wheat. This level of stock was well above the buffer stock norms prescribed by the government. Thus the problem today on the food front is not one of scarcity but that of managing the surplus. The country is today concerned that in spite of the fact that the Food Corporation of India godowns are overflowing with adequate food grains which is not being consumed by the vulnerable sections of society. One is the issue of having enough purchasing power or income to buy food and the other is the access of food (physical availability of food). Though the overall generation of jobs is closely connected to efficient economic growth, there are some special aspects that must be kept in mind. Thus in remote, inaccessible rural areas both job opportunities and access to food may be constrained. In such situations, food-for-work and related schemes are necessary. They may need to be supplemented by more innovative schemes like grain banks. Community grain banks can be setup in such areas wherefrom the needy can borrow grain in times of need and repay the grain after the emergency is over. Natural disasters such as earthquakes also create conditions in which emergency assistance must be provided by the government and the administration has to be alert to such spurts in hunger. Finally, a minimal amount of social security must be provided to those who are old, sick or disabled and cannot partake in work even if it is available (TYFP Working Group: 2001).

### Food Security Bill 2013 of India

Extending throughout the country, the Food Security Bill of India, 2013 is a statement seeking to provide for food and nutritional security in the human life cycle by enabling sufficient quality and quantity of food at affordable rates to people in order to live healthy and hunger free lives and such other related issues.

Section two of the Bill puts forwards various forms of entitlements through the PDS. Entitlements are based on two categories (i) Priority households and (ii) Antyodaya

households (eligible households). Priority households are entitled to receive five kilograms of food grains per person every month and 35 kilograms for Antyodaya households per month. Priority and Antyodaya households shall extend to 75 percent of the rural population and 50 percent of the total population living in urban areas. However, the Bill does not specify the method of determining priority and Antyodaya households. Prices in the PDS are specified in Schedule I of the Bill where the cost of rice, wheat and millets are Rs. 3, 2 and 1 respectively.

The bill also specifies entitlements for children where those belonging to the age group of six months to six years will receive an age appropriate meal free of charge through Local Anganwadi centres<sup>1</sup>. Children belonging to the age group of six to fourteen years, will receive one free mid-day meal every day except on school holidays in all schools run by local bodies, government and aided schools upto class VII. For children below six months exclusive breastfeeding shall be promoted.

Pregnant and lactating mothers are entitled for a free meal at the local anganwadi centre during pregnancy and six months after child birth as well as maternity benefits of Rs. 6000 in installments.

The Bill enables states to create State Food Commissions and also specifies the constitution of members of the Commission including members belonging to the Scheduled Castes and Tribes. The functions of the State Food Commission are to monitor, evaluate, inquire into violations of entitlements, hear appeals against orders of the District Grievance Redressal Officer (DGRO) and prepare annual reports to be presented before the state legislature. The Commission may also forward any case to a Magistrate having jurisdiction, who shall proceed if the case has been forwarded under section 346 of the Code of Criminal Procedure 1973.

The Bill provides for a two-tier grievance redressal structure, involving the DGRO and State Food Commission. State governments must also put in place an internal grievance redressal mechanism which may include call centers, help lines, designation of nodal officers, or such other mechanisms as may be prescribed.

Mandatory transparency provisions include: (i) placing all PDS-related records in the public domain and keeping them open for inspection to the public (ii) conducting periodic social audits of the PDS and other welfare schemes, (iii) using information and communication technology in order to ensure transparent recording of



transactions at all level and (iv) setting up vigilance committees at state, district, block and fair price shop levels to supervise all schemes under the act. Food Commissions have powers to impose penalties against violators and can authorize any of its members as the adjudicating officer for the purpose.

The Bill has three schedules (these can be amended "by notification"). Schedule 1 prescribes issue prices for the PDS. Schedule 2 prescribes "nutritional standards" for midday meals, take-home rations and related entitlements. For instance, take-home rations for children aged 6 months to 3 years should provide at least 500 calories and 12-15 grams of protein. Schedule 3 lists various "provisions for advancing food security namely: (i) revitalization of agriculture, (ii) procurement, storage and movement of food grains, and (iii) other provisions (e.g. drinking water, sanitation, health care, and "adequate pensions" for "senior citizens, persons with disability and single women").

## Conclusion

In conclusion the Food Security Bill 2013 seems like another welfare scheme over another existing social welfare programme which is part of the PDS scheme. Critics appear to be under the misconception that the government is making new financial and grain commitments under the NFSB. In fact, the NFSB does little more than turning the existing food security schemes such as the Integrated Child Development Services (ICDS) Scheme, Midday Meal (MDM) Scheme, Public Distribution System (PDS) and maternity entitlements etc., into legal entitlements. The Bill seems to be inadequate in providing food in the fight against widespread malnutrition. The Bill appears to have delinked food security and nutritional security which stands contrary to the Rome Declaration on World Food Security 1996, signed by India. The Declaration reaffirmed "the right of everyone to have (physical and economic) access to safe and nutritious food, consistent with the right to adequate food and the fundamental right of everyone to be free from hunger." Further Article 47 of the Constitution of India obliges states to raise the level of nutrition and the standard of living of its people.

The Bill does not specify any time frame in implementing the entitlements as stated in the provisions. It is for each state to determine when these entitlements may be implemented. A proper redressal mechanism is not found in the Bill. Redressal starts at the district level which ignores panchayat and at the village levels.

The proposed Bill creates confusion on implementation issues and assumes that there are no food programmes in different states. For example the state of Tamil Nadu has a food programme of its own through the PDS which has almost universal coverage. It also seems that some of the states like Tamil Nadu want to be exempted from implementing the Bill due to the fact that they have a more effective and time tested programme

On the whole it seems that the Bill is a nationalised form of PDS with few modifications on the entitlements which fall short of clarity. It also seems arbitrary and irrational as it targets only 50% of the urban population whereas it is targeted towards 75% of the rural population. However, if people living in poverty and below poverty line are receiving food at the prices specified in the Bill, the initiative is good.

## Acknowledgements

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<sup>1</sup> Anganwadi is a government sponsored child-care and mother-care center in India. It caters to children in the 0-6 age group. The word means "courtyard shelter" in Hindi. They were started by the Indian government in 1975 as part of the Integrated Child Development Services programme to combat child hunger and malnutrition. There are an estimated 1.053 million anganwadi centres employing 1.8 million mostly-female workers and helpers across the country. They provide outreach services to poor families in need of immunisation, healthy food, clean water, clean toilets and a learning environment for infants, toddlers and pre-schoolers. They also provide similar services for expectant and nursing mothers. According to government figures, anganwadis reach about 58.1 million children and 10.23 million pregnant or lactating women. Anganwadis are India's primary tool against the scourges of child malnourishment, infant mortality and curbing preventable diseases such as polio.



# Speech at Farmers World Network – India\*

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\* *This speech was delivered at the Farmers World Network in India, November 2001. The critical content of the talk and its relevance to the contemporary theme as well as the discourse of food production, the editorial board decided to re-publish this speech. Here, we would like to express our thanks to Ms. Sibylle Bahrmann for introducing Mr Michael Hart and his speech.*

Good afternoon!

I have drawn the short straw today the first slot after lunch when people tend to nod off. So I just hope what I have to say is interesting enough to keep you awake.

For those of you that don't know me I am a tenant farmer from Cornwall with 102 acres, I was a milk producer until 18 months ago and I now produce beef and sheep.

I am also chairman of the Small and Family Farms Alliance, which does its best to be the voice of the family farm.

I have also always had an interest in promoting a better understanding of agriculture among non-farmers. And as often happens one thing leads to another and so I have become involved in

----- I'm not quite sure what to call it---- but agricultural politics and policy probably fits it in a loose way.

This has led me into meeting and working with many different organisations, campaigns and individuals and led this year to the opportunity to go to India and to take part in a citizen's jury in the state of Andhra Pradesh.

*For someone who has not travelled a great deal it was quite an experience and as you can imagine a culture shock. Including the taxi ride from Hyderabad to the rural village where the jury was to take place, as any of you who have been to India will know the roads are completely mad. And our taxi driver managed to knock a scooter rider off his scooter and under a bullock cart so with a near riot going on around the taxi.*

*I was very glad to be sharing the taxi with an Indian Supreme Court judge who was overseeing the jury process. My thinking being I have a witness here who will be believed that I had nothing to do with it, the judge then in the middle of this bedlam very calmly asked me to explain my thinking on the WTO while we waited for it to be sorted out. Luckily nobody was hurt and after the taxi driver had borrowed 250 rupees from me to pay for the repair of a rear light lens we continued our journey.*

Back to why I was in India and the citizen's jury. The jury was to consider the state's plan for agriculture drawn up by American consultants and called Vision 2020.

Part of that plan is to modernise and mechanise agriculture, it promotes the use of GM crops and intensive and monoculture farming systems including intensive dairy and poultry production. With much of this production being done on a contract-farming basis and with much of the produce exported.

To be considering following the route western agriculture has already taken, and with which many countries in the west now find themselves with major problems over, both for the farmers involved and for the environment, wildlife landscape and food safety and quality. I found to be rather naïve and disappointing.

To then discover that the UK government through DFID is supporting this Vision 2020 along with other aid agencies I found even more disturbing. This plan is likely to put as many as 20 million farmers off the land in the name of so called efficiency as farm size is increased and mechanisation takes place. What they are to do with 20 million ex farmers is not addressed at all other than in

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vague terms like employment in the service sector. There is also mention of training, diversification and adding value to produce as part of the Vision 2020 plan.

Now anyone who is familiar with the UK government's plan for agriculture will have read much the same plan for farming in the UK. Increase farm size giving economies of scale and so called more efficient farms, produce competing on the world market due to the opening up of free trade in food and agriculture by the WTO removing barriers. Barriers that in many cases protect countries food production and therefore their food security.

In the UK plan we also mention training for farmers, diversification and adding value and just like in AP it means people will have to leave the land.

I also became aware that like here decisions were being made about how they should farm and their futures by people who had no grass roots contact with or understanding of agriculture

So I had much in common with my fellow farmers in AP before we even looked at the current situation and once again the reality of the situation was very similar. Low prices for produce often with the selling price below the cost of production, due to cheap imports and market place power in a very few hands at the far end of the food chain from the farmer.

Increasing debt among farmers, like here where the UK's farming industry has help to fund a cheap food policy by borrowing money to the tune of about 8 billion pounds in total now and of course there were the usual farming problems of weather, pests and disease.

It is therefore not surprising to find the same results as here----- farmers committing suicide, depression, farmers leaving the land for an unknown future and a feeling of having no value in the eyes of the rest of today's society.

It is although the world over the vast majority who have left the land have become so remote from where food comes from that they fail to see the connections between what they buy in their local supermarket and farmers, the land and the environment. That failure to see the connection between what is now seen as just another commodity and the environment and farming is what has driven farming in the UK and caused many of the problems we have today.

That failure is now what is going to drive farming in AP

into the very methods of production that we in the west all claim we don't want, intensive monocultures, factory farming of animals and methods which causes damage to, the environment, wildlife, the landscape and to rural people.

We now appear in the UK to be thinking that we must swing policy the other way, in which the environment, landscape etc becomes more important than food production, ----- look at the countryside agency's submission to the food and farming commission----- and food we can import because we are a rich nation.

That way we will have the best of both world's cheap food and a fine environment and wonderful landscape to look at.

We will of course ignore the environmental consequences of transporting that food around the globe. We will of course ignore the cost to the nation who we buy that food from in terms of cultural changes, environmental damage and food displacement from food for the local people to use to the export market and remember many of these countries already have malnutrition problems.

We will claim that the people on average will be better off, ignoring the fact that farmers don't export food only exporters and trans-national companies do that, benefiting the few not the many.

These countries will use all the methods we disapprove of including GM crops. But out of sight, and therefore out of the mind of western consumers and of course because we will be sending aid out through DFID and other sources that will make it "all right".

Not for the 20 million farmers displaced from the land in AP it won't, or for the 40,000 more on top of the 50,000 who have already left the land in the UK.

And it is not just the UK and India, on the way back to the UK and with a stopover of 7 hours in the middle of the night at Mumbai airport I got talking to an Australian farmer's daughter.

*I must just say I am not in the habit of talking to attractive young women in coffee bars who are complete strangers but 7 hours is a long time to not talk to anyone.*

She told the same tale of farming in her country. In Queensland family dairy farms are giving up farming in ever-larger numbers, why? Because the price they are paid for milk is below the cost of production just like here in the UK. It is down so they are told because



they have to compete on the world market for milk products, but we in the UK are told we have to compete with farmer's like these from Australia, so just who are they supposed to be unable to compete with?

The answer to the question is, of course its not other farmer's, it is the international traders who are so few and so powerful that they are able to set the market price to suit their profits.

The result----- big factory dairy farms instead of family farms.

Although the numbers of farmers leaving the land and the effects are far greater in Andhra Pradesh than facing farmers here, as a percentage of the number of farmers it is the same.

And there are other similarities that we find here.

The lack of dialogue with grassroots farmers and rural people by government, by environmentalists and other NGO's and in the case of India the aid agencies. I can to some extent understand government's reluctance to engage in debate with grassroots farmers. But the NGO's and aid agencies and their "we know best attitudes" and with many of them coming up with their vision for farming without ever consulting with farmers I find unbelievable.

This is my one piece of technology to day the result of the Jury ----- slide of our vision

As you can see they rejected Vision 2020 and what it involves I have here a few copies of the full verdict if anyone should want one.

One of the final points made by the citizens' jury was that their verdict on their farming future should be "that foreign aid (from white people) should follow their vision and benefit the poorest". I have no doubt that DFID and the other aid agencies will claim that this is their aim too, but have they really consulted the people whom it will affect or is it a case of " we know best and our very expensive consultants agree with us"

Without a true dialogue with people their frustration and disillusionment with the existing political systems will lead to ever more radical uprisings.

Rather than sitting around waiting for the next uprising and then dealing with it, governments could have a real dialogue with farmers and consumers and that might just help them to get a handle on the complex issues of food and farming.

Unless this debate takes place, in the case of food and farming by bringing family farmers, rural people, environmentalists and consumers in to the debate rather than the current "we know best" attitude of governments and experts both of whom are driven by big business. We are in for some major problems.

I found my experience in India an interesting and exciting one but also one, which left me deeply, disturbed with its vision for agriculture.

I believe that farming is unique to each and every country for many reasons.

To do what we are attempting to do now with a one system fits all for agriculture under the WTO will in the end lead to disaster for mankind. In terms of our future ability to deliver a sustainable supply of good food for us all which does as little damage as possible to the planets environment.

India can on all the evidence I saw and heard feed itself without GM crops, without excessive use of pesticides and fertilisers and without massive changes to the culture of rural people. There are undoubtedly problems with food storage after harvest, with a lack of processing capability for crops to stop wastage and with distribution but none of them are unsolvable given the will to do so. The farmers in India undoubtedly have the skills and ability to feed India. What they don't need is aid agencies telling them we know best and placing our western material values on their lives as a measure of quality of life, or trans-national companies exploiting them, the soil and environment to make money by feeding us in the west.

I have also over the course of this year attended a number of meetings with farmers from around the world and it is clear **the farming crisis is world-wide** and for the same underlying reasons that we know of here and that I found in India.

I was in Geneva at the end of September with farmers and environmental, social and aid agency NGO's from around the world from both the North and the South, again the similar stories from around the world was very striking. I was also concerned at the NGO's lack of understanding of what I call the "real world" that farmers live in rather than the sometimes-idealistic world of some of the NGO's.

I have also become concerned at the solution put forward by many -----that access to markets in the north for farmers from the south will solve all problems. Many times this year I have heard the words if "farmer's





in the south had access to land, credit technology and markets in the north it would solve their problems”.

But when I say that as a farmer in the north I have access to land, credit, technology, the northern markets and I also receive subsidies for some products and yet I am still in trouble they have no answers.

I want to finish by asking two questions.

The first is how we can do more to get governments, consumers and society in general to understand farming and farmers both north and south so that we can come up with a sustainable future for agriculture. Because somehow we must do so.

The second is one that has only just come to me over the last few weeks following my international meetings this year and that is

- What are we going to do with all the people displaced from agriculture and the numbers are staggering when you start to add them up
- India up to 250 million
- China up to 250 million
- Other developing countries up to 250 million

And even in Europe many millions in countries like Poland who are due to join the EU, will be forced off the land by policy, by economics and some will leave in hope of a better future in urban areas.

When added up I believe we could have up to three-quarters of a billion people looking for employment outside agriculture in the next 10 to 15 years.

The International Labour Office says that in 1999 150 million world-wide were unemployed and up to one billion underemployed.

So what are we going to do with another  $\frac{3}{4}$ s of a billion people looking for jobs?

----- Taking the Vision 2020 answer we could of course have one hell of a service sector----- but I think it far more likely we will see civil unrest on a large scale.

Finally

We all have to wake up to the fact that food and those whose skills produce it are vital for our very survival, and that it is far more important to us than the profits of a few big corporations.

None of us will survive very long by eating money and living in a badly damaged environment.

Governments and others around the world have to be prepared to listen, learn and make decisions for a truly sustainable system of world food production, and one which does not exploit rural people and the environment for the financial gain of the few.

Thank you.



# TTIP, what it is about and why it must be stopped

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## Introduction

When Commission President Barroso and US president Obama launched the negotiations for a Trans-Atlantic Trade and Investment Partnership (TTIP) in June 2013, Barroso stated: *"I am delighted we have a mandate to negotiate an agreement on trade and investment with the United States....These negotiations can be a game changer. We are already each other's biggest trade and investment partners. Strengthening this relationship will bring more jobs, more growth to Europe and the United States. The potential economic gains for the EU are estimated at around €120 billion a year. And the real beauty of this deal is that it will offer real returns of around €545 per average household in Europe almost for free. This makes it the cheapest stimulus package one can imagine."*<sup>1</sup>

When leaders announce something like that, you need to be careful. Very careful. If something looks too good to be true, it usually is. And it only looks too good to be true because such promises serve another purpose: to hide the downside of such projects.

## A new drive for deregulation and liberalization

Looking closer at the TTIP project, it quickly becomes clear that in reality it is less about trade and more about a new drive for deregulation and liberalization. Such an agenda cannot be promoted openly these days – on neither side of the Atlantic.

After the financial crisis of 2008 the neo-liberal model became deeply unpopular and many people thought this era of liberalization and deregulation is now over for good. It used to be consensus from right to left, from Bush to Blair, from Sarkozy to Schröder. It had gradually lost its legitimacy even before 2008, with inequality growing more and more in almost every country. The claim that more inequality is good for a society, is good for growth and development, looked increasingly like a

frivolous lie in the eyes of more and more people. Public opinion has swung drastically against the neo-liberal project of a completely deregulated and liberalized economy in the wake of the financial crisis. Elections were won with the promise of "new policies" – but these political parties failed to deliver. We got a new rhetoric but not much of new policies. You all know the reports being published almost monthly that banks are back in the same old business as before the crisis. Key regulatory changes announced years ago such as the Financial Transaction Tax are still lingering in endless legislative limbo and are being watered down more and more. But at least – people got the impression, the era of deregulation is over.

But it's not.

Since deregulation cannot be sold openly to a sceptical public any more, you have to be a little bit more ingenious, or to be precise: deceptive. Agreements like TTIP are not necessary, except if you want more deregulation and liberalization. The trade between the EU and the US is already the highest trade volume between major economic blocs in the world. The EU trades more with the US than with China. Tariffs are low, there are no major protectionist obstacles to trade, perhaps with the exception of the agricultural sector.

The TTIP project is actually not so much another free trade agreement, it is a project for a massive new wave of deregulation and liberalization, in the US as well as in Europe. This is the economic agenda of European industry, of the EU Commission and of key economic ministries in member states such as Germany, UK, and Netherlands – essentially those countries with at least some strong and competitive sectors looking for access to new markets.

Amazingly, with all the debates about re-regulation in the wake of the financial crisis – trade policy has managed to escape public scrutiny almost easily. So why not present an agreement about deregulation as a trade

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agreement? Free trade sounds so much better than de-regulation.

### **“Regulatory Harmonization” - a Trojan horse**

TTIP is designed to reach “regulatory harmonization”. That does not only refer to existing regulation but also to future regulation. If TTIP would not address future regulation, the regulatory harmonization would quickly erode over time, so this agreement is about keeping this harmonization locked in forever. Trade Commissioner De Gucht recently proposed a “Regulatory Cooperation Council”<sup>2</sup> an unelected body stuffed with bureaucrats and industry representatives who would have the last word on any proposal for new regulation, no matter whether such proposals come from the American or European side, from the US Congress or the European Parliament. It would mostly aim at reaching a joint position on the kinds of rules and standards that would be drawn up in the future, not so much to revamp the existing ones.

Unlike the negotiation mandates, the positions of the business lobby are no secrets. The US Chamber of Commerce and BusinessEurope, uniting business on both sides of the Atlantic, have jointly called for “proactive requirement”, “advising” governments how to change laws. TTIP should “put stakeholders at the table with regulators to essentially co-write regulation”<sup>3</sup> Stakeholder obviously refers not to you or civil society, it is corporations.

This is not only a democratic scandal. Imagine how much sovereignty a parliament would give up when such proposals get ratified – quite a lot. After all, we elect parliamentarians to do their job and not to hand over their responsibilities on a silver plate to unelected technocratic committees. It would also take away our potential to take the necessary steps for the transformation to a green or sustainable economy, steps proposed in a Sustainable Development Strategy, steps to achieve biodiversity or climate or energy targets, steps to make our agriculture greener and so on. It will be a big obstacle to any regulatory measures to be taken in the future – the Regulatory Cooperation Council would veto anything powerful business interests don’t like.

But what about existing regulation? Make no mistake, we are not talking about the abolition of regulation as such. One of the ideas that has been put on the table for the TTIP negotiations is “mutual recognition of standards” - since we are unlikely to achieve common standards across the table between the EU and the US for many issues at stake. Mutual recognition will mean,

for instance, you can get your permission to bring a new chemical to the market in Europe or America. If you find Europe’s REACH system for chemicals too cumbersome, you just get an American permission and this will be valid in Europe as well. You don’t have to abolish REACH, one of the key environmental achievements in Europe over which we had many fights with industry - you just make it meaningless.

For future instances, this will make a higher level of regulation only possible if both the US and Europe agree – which is rarely the case. Imagine, as an example, in five years’ time the problems with antibiotics in animal farming have taken such proportions that the EU decides to ban them. The agribusiness lobby would disagree, the US as well, the Regulatory Cooperation Council says no, and that was it. It would be against regulatory harmonization, and so it would be incompatible with TTIP. Period. Your parliamentarians get vetoed by unelected technocrats.

But don’t think Europe’s regulations are always better than the American ones. When it comes to financial markets, public outrage over Wall Street’s greed and misbehaviour has led to more comprehensive regulations of the financial sector in America compared to Europe in Europe, the UK successfully has blocked every meaningful regulation of the financial sector – essentially Britain’s only economic sector where this country still is globally competitive. American banks are already looking to the TTIP project to get rid of any regulation that is stricter than the European ones. The big banks and insurance companies are already lobbying for making the Dodd-Frank rules enacted after the Lehman Brothers crash “compatible” with the proposed TTIP, as Business Week reports.<sup>4</sup>

TTIP will not create something like the Single Market that the EU created twenty years ago. It would create something like a Single Market without a European Parliament, without a European Council, without a European Commission – except for DG Trade and DG Competition as the only institutions, and of course with a Regulatory Cooperation Council. It would be fundamentally undemocratic.

Let me summarize this: Regulatory harmonization is one of the key components of the TTIP project, and it is totally unacceptable from a democratic point of view, and also from an environmental point of view. We will get a race to the bottom in standards and regulation – forget the promises of governments and Commission that we won’t get this race. The entire logic of “regulatory harmonization” is based on making higher standards of regula-



tion a competitive disadvantage. This is the essence of deregulation and “regulatory harmonization”.

### More market access – let’s globalize everything that is not yet globalized

But TTIP is not only about deregulation, it is also about trade. It’s an agenda of market access, of opening America’s markets to European exports, and to some extent also vice versa. Remember, the WTO got stuck about 10 years ago and essentially nothing has been moving in this organization since then. But, corporate interests and the trade ministries, DGs and representatives are flexible about their instruments. As long as the WTO advanced their agenda, it was fine. As it got stuck, they switched to bilateral and regional agreements – in this sense they have been much more flexible than the NGOs. The NGOs lost interest in the trade agenda when the WTO got stuck – but that was a mistake. Many, many agreements were concluded in the last ten years with hardly anybody taking notice.

So what is on the trade agenda in TTIP? If you look at the public debate in Europe, it may seem like US corporations are about to invade Europe – but this is only the case for food and agriculture. Any other sector of the US economy that is internationally competitive today has no market access problem at all in Europe. Food and agriculture is the only sector where US corporations face significant protectionist obstacles to enter the European markets. US agribusiness companies have long been annoyed by Europe’s opposition to things like GMO food, growth hormones in beef and milk production, chlorine treatment for chicken and so on. Regulatory harmonization could do away with all this stuff at once, so they hope. But these issues are highly emotional in Europe, nobody wants to eat GMO stuff here, in particular not if it comes as part of a treaty where the US can force Europe to do it. So these issues are set to be the Achilles’ heel of the TTIP in European public opinion: if TTIP protagonists don’t dump them, the public may well dump the entire project – but if these issues are dumped, it will mean America’s most important “offensive interests”, i.e. market access interests would be dumped. And that would be a problem for the negotiations.

Europe’s offensive interests, however, are much more comprehensive. In some regards, the US is less of a single market than the EU. America’s states have many different regulations that are barriers to trade. It is full of state and local “Buy American” stipulations. Foreigners cannot have majority ownerships of airlines or ports and other “strategic assets”. In terms of market access, it is obviously the EU that is a powerful exporter – while America has

a notorious trade deficit. The question is, who will benefit from complete and total market access more? And why should it be in the public interest that the US trade deficit should grow even more, and why should regional economic structures in US states be challenged by European exporters? The export surpluses of those EU countries that stand to gain from this market access are big enough, and except for the Germans everybody believes they are already too high.

### Secretive courts as supranational authority

Now let’s address the third and probably most scandalous issue that TTIP is about. It is called the “Investor-state dispute settlement mechanism”, acronym ISDS. This will become the last resort for an investor - if the Regulatory Cooperation Council fails to stop regulatory measures a company does not like. Remember, TTIP means Trans-Atlantic Trade and Investment Partnership, so it’s also about protecting investors. Any measure a foreign investor claims is equal to “indirect expropriation”, such as policies reducing their profits, can be challenged in offshore secretive courts, created by treaties containing ISDS clauses, bypassing our democratic legal system. *“Each Party shall accord fair and equitable treatment and full protection and security to investments and investors”*<sup>5</sup> - that is the phrase used in the EU’s draft text and well-known from many other ISDS treaties guaranteeing the right to sue governments for protection from regulatory measures they deem to be “unfair and inequitable”.

If an investor sues, a panel is created for this case. The panel will enforce investor protection in trials which markedly differ from the courts we know: The trials are held in secret. The judges are corporate lawyers, not judges working in the public interest. Civil society or the public have neither access nor a right to participate. There is no right of appeal on the merits of the case. But such secretive courts can overthrow the sovereignty of parliaments and the rulings of supreme courts.

ISDS is already being used in many parts of the world to stop regulations in the public interest, in so called bilateral investment treaties. But they are becoming increasingly controversial. Australia now requires that cigarettes must be sold in plain packets, marked only with shocking health warnings. The decision was validated by the Australian Supreme Court. But, using a trade agreement Australia struck with Hong Kong, the tobacco company Philip Morris now wants an ISDS tribunal to award it a vast compensation. Australia has decided not to conclude such treaties any more. Likewise, South Africa has started to terminate all such treaties it concluded in the past.





When Argentina imposed a freeze on energy and water bills, it was sued by the international utility companies whose vast bills had prompted the government to act – and sentenced to pay over a billion dollars in compensation. When El Salvador's government refused to give permission for a gold mine threatening to contaminate water supplies, a Canadian company that wanted to operate the mine sued El Salvador for \$315m – for the loss of its anticipated future profits. Canada itself is also affected. Canadian courts revoked two patents owned by the American drug company Eli Lilly, because the company had not produced enough evidence that they had the beneficial effects it claimed. Eli Lilly now sues Canada for \$500m, and demanding that Canada change its patent laws. A US company called Lone Pine demands \$250m compensation from Canada because the province of Quebec has put a moratorium on gas fracking.

Something like what we currently experience in Germany with Sweden's Vattenfall Company. They are suing Germany in such a secretive court for a 3.7 billion compensation for the nuclear power plants they had to close after Fukushima. In every European country we have laws and courts dealing with such complaints, but in a secretive investor protection court your likelihood to win is much bigger.

These are only a few examples how corporations use ISDS treaties signed by the countries they are suing. Originally, ISDS treaties were invented to facilitate investment in unstable jurisdictions. An investor did not have to trust the Pakistani legal system to invest in Pakistan, he could have resorted to an offshore investment court in Washington. But when all sides are fully-fledged democracies such as Europe or the US, ISDS becomes a way to bypass the constitutional legal system and pervert the meaning of "the rule of law". Members of parliament who approve such treaties are essentially creating special laws for foreign investors that probably would be declared null and void by a Constitutional Court if they ever were challenged. Hardly any parliamentarian is aware of that – remember, we are talking about treaties they have ratified, apparently without reading them. But if you believe in neoliberal deregulation ISDS is a wonderful instrument to challenge – or prevent - regulation you oppose.

Nobel Laureate Joseph Stiglitz put this crystal-clear in his op-ed piece congratulating South Africa's termination of ISDS treaties: *"Those supporting the investment agreements are not really concerned about protecting property rights. The real goal is to restrict governments' ability to regulate and tax corporations – that is, to restrict their ability to impose responsibilities, not just uphold rights. Corporations*

*are attempting to achieve by stealth – through secretly negotiated trade agreements – what they could not attain in an open political process."*<sup>6</sup>

### Secret negotiations

So now we have regulatory harmonization, market access to the detriment of consumer protection and regional economic structures, and an outrageous secretive court to serve corporate interests.

On top of all that comes the secrecy with which TTIP is negotiated. The EU's negotiation mandate has been discussed between the Commission and the European Council, i.e. the governments of the member states. Neither the European Parliament nor the parliaments of the member states have a say in its draft, it is secret and neither they nor the public have no right to know it. It remains a mystery to me why parliaments let themselves to be side-lined and marginalized in such a way. Whistle-blowers, not parliamentarians are the heroes and heroines of transparency and accountability today – the mandate was leaked in various phases of its being drafted and can be read online<sup>7</sup>. Negotiation documents are equally secret, and so are the reports about the negotiations themselves. When you look at the far-reaching consequences of such agreements, it is entirely unacceptable in a democratic society that laws and treaties are made in such a secretive way.

Germany's second parliamentary chamber, the Bundesrat which represents the federal states, on 7 June 2013 approved a resolution about TTIP calling on the government to make sure that Europe's high standards in consumer protection and the precautionary principle are maintained, that investor protection is dealt with in a balanced way and it called for more transparency, including making the mandate public. Apparently the resolution had no impact on the government – only 5 days later, then-minister of economics Rösler tweeted out of the Cabinet meeting "TTIP negotiation mandate approved without changes and reservations". The Bundesrat will have to vote one day about TTIP ratification – let's see whether they will remember their 2013 resolution.

While Germany's Cabinet ignored the wishes of its Bundesrat, other interests were not ignored. In response to an access to information request from Corporate Europe Observatory, the European Commission has released a list of 130 'meetings with stakeholders' on the EU-US free trade talks (TTIP). At least 119 meetings were with large corporations and their lobby groups. This means that more than 93% of the Commission's meetings with stakeholders during the preparations of the negotia-



tions were with big business. The list of meetings reveals that, in addition to the civil society dialogue meetings reported on the DG Trade website, there is a parallel world of a very large number of intimate meetings with big business lobbyists behind closed doors - and these are not disclosed online<sup>8</sup>.

The secrecy around TTIP is no exception, it is the rule for trade negotiations and agreements. In October the Canada-EU free trade agreement (CETA), a blueprint for TTIP, was signed by Commission President Barroso and Canadian PM Harper. So far, nobody except the signatories has the text. Nobody can look into it, no parliamentarian, no journalist, not you and not me. In four years of negotiations, we have neither been informed nor consulted. Next year, the European and Canadian Parliaments will be asked to approve it, not only the EP but also the 28 member states. They had no influence over its content, no influence over the negotiation mandates, they cannot alter it. They can only say yes, or no. In the past, Parliaments have willingly accepted to be side-lined and marginalized. They always said yes. Yes to ISDS, yes to rules undermining our sovereignty and yes to delegating away accountability. When it comes to trade agreements, usually they have behaved like the Supreme Soviet: they say yes to everything, no is not an option. Some Canadian provincial parliaments have made a mockery of parliamentary democracy by dutifully approving CETA before they even knew the text.

The only exceptions was ACTA last year, the shipwrecked agreement aiming at creating new intellectual property provisions, and ten years ago the aborted "Multilateral Agreement on Investment" (MAI), a kind of global ISDS agreement. ACTA was a similarly secretive agreement whose negotiations were a mystery to the parliaments that ultimately would have to ratify it - and the wave of public outrage caused the EP to approve a resolution saying it would not ratify it. However, the new intellectual property provisions of ACTA that corporate interests have long demanded are set to come back via TTIP. We will see which parliament will be the first to opt out of TTIP - and it may well be that this will be the US Congress which has always been much more independent of the government than European parliaments.

What happens if one of the 30 parliaments that need to ratify TTIP says no? We are talking about the US Congress, the European Parliament and the 28 parliaments of the EU member states. Let's ignore for a moment that in the US the agreement is likely to touch the rights of the US states. In the EU, TTIP is projected as a so-called mixed agreement since it is about issues that are both the responsibility of the Union and of the member states. Now

what would happen if, let's say for a moment, the Lithuanian parliament would say no? Or the second chamber of the German Parliament, the above-mentioned Bundesrat?

Basically, nothing. It would not matter. The ratification process starts in the European Council and the EP. Then the European Council (the governments of the EU) can decide to implement TTIP provisionally. The EP has to approve this decision, and then the agreement is "provisionally" in force until the ratification process in the EU, usually taking a few years, is completed. But what happens if this ratification fails? The Scientific Services of Germany's Bundestag was asked last year what would happen then, and in their response they said: this is unclear. The Lisbon treaty has only introduced the instrument of "provisional implementation" to speed up the implementation of such treaties, but there is no clause saying what would happen if the ratification process fails. A fact that is quite revealing about the self-perception of Europe's parliaments - they don't even think of such a possibility that they could reject agreements over which they had no say anyway.

The Bundestag's Scientific Service assumed that in such a case - a member state fails to ratify - the "provisorial implementation" would have to be repealed. How would that happen? There is no clause, so the Scientific Service assumed the government of the country whose parliament failed to ratify would have to ask the Council to repeal the provisional implementation. However, it probably would not be obliged to do so. But what if the Council does not approve such a motion? Then the treaty would be "provisionally" in force for an unlimited time. It remains unclear how that could be in line with constitutions that clearly stipulate that international agreements need parliamentary ratification. It is revealing that hardly any parliamentarian, be it in the EP or in the member states, is aware of this constitutional problem, and you wonder whether MPs have ever read the Lisbon treaty before they approved it.

That is the legal reality. Whether the political reality is the same, remains to be seen. It is definitely high time that we end the completely unacceptable situation that trade policy is a democracy-free zone in which administrations can secretly write far-reaching international treaties, in collusion with corporate lobbyists, and neither parliaments nor civil society can exercise their normal democratic rights, and finally parliament's rubber-stamp the treaties like the Supreme Soviet used to do. When it comes to trade policy, it seems like MPs all over Europe are on strike, refusing to be the constitutional checks and balances for the administration they were



elected and are paid for. So the debate about TTIP is a debate about its contents as well as a debate about the state of democratic participation and government accountability.

### Sideshows: What TTIP is not

One more thing. In the debate about TTIP, there are many sideshows and smokescreens. Many in the Western foreign policy community, since the end of the Cold War constantly searching for new issues and sometimes new enemies to deal with, believe TTIP is about creating something like a “trade NATO”, about “economic self-defence” of the democratic West against the emerging BRICS powers, particularly China. This “the West against the rest” mentality is in itself deeply reactionary- maintaining white supremacy over the world is not only impossible, but also an entirely backward- looking impetus.

Apart from that, countries like Brazil, South Africa or India are democracies that share at least as many values with Europe as the US does. When it comes to Social Democrats or Socialists, this constant adjuration of “common values” with the US looks even more strange – Social Democrats or Socialists are ruling in Brazil and South Africa but don’t even exist in the US. Trade unions can operate freely in Brazil, South Africa and India and are stronger there than in most European countries – but in the US they have been fighting for their survival since Reagan took power in 1981. Europe has a lot of common values with many countries – and more common values with quite a number of countries than with the US. Consequently, democratic South Africa for instance is now terminating the bilateral investment treaties it has with many rich world countries because ISDS is not compatible with the rule of law.

But the “transatlantic values” are not the only smoke-screen. Likewise, “regulatory harmonization” between the EU and US will not create a “transatlantic economic fortress” that can set standards in an arrogant, imperialist manner for the world. Regulatory harmonization would not only benefit US and EU corporations, it clearly would also benefit Chinese exporters at least as much as any other transnational company doing business on both sides of the Atlantic.

A similar smokescreen is the mantra, we cannot negotiate with the US as long as they are eavesdropping on our communications, spying in EU embassies and listening to Chancellor Merkel’s cell phone. Of course we can – the negotiation mandate was known to the NSA at the very minute it was agreed in the EU, and I am sure the EU knows the US mandates as well. This whole sur-

veillance scandal has been a transatlantic intelligence service scandal from the very outset. It’s not the US spying on “us” - it is a transatlantic intelligence-security complex out of control spying on everything. The NSA and its first-class ally, Britain’s GCHQ and its third-class allies from Germany, France etc. have been colluding against democratic values, constitutions and civil societies jointly all the time. Since an agreement like TTIP is in the interests of European business, the Commission won’t stop negotiating if the other side is spying. TTIP and its deregulation agenda is in the interest of powerful corporate interests on both sides of the Atlantic. These corporations, their shareholders and their lobbyists are no longer really affiliated to a country – they hop from one jurisdiction to the next as it suits their interests. The corporations standing to benefit most from TTIP have essentially seceded from any nation state. Nothing illustrates this more than the revelation that companies like Google or Amazon don’t pay taxes anywhere – they have used laws made in their favour so efficiently that they are not obliged to pay relevant taxes in any country.

Let us not get distracted by such sideshows. The struggle over TTIP is not a struggle between Europe and America. It is a struggle between corporate power and democratic decision-making. TTIP is not about a new foundation for an increasingly fractured transatlantic alliance. It is not about “the West vs. China”. It is not about a “free economic stimulus”. And it has nothing to do with the NSA scandal. TTIP is the next wave of a neoliberal deregulation drive, serving powerful corporate interests and undermining democracy and parliamentary government. It is in the public interest to stop this mad deregulation drive, this subordination of democratic institutions to corporate interests.

We must not allow our parliamentarians to abrogate another big chunk of OUR sovereignty to transnational corporate interests, like they have done many times before. This agreement would bind the hands of future parliaments and make necessary environmental and many other regulations almost impossible. Let us stop it like we stopped ACTA and the old MAI, and let me point out that we stopped these agreements not by saying we want nicer and greener agreements, but by saying – we don’t want it at all. We have a good chance to stop TTIP. TTIP is a big deregulation drive, much more ambitious than the WTO ever tried. And this ambition also means, chances are good that it can fail because it will have such a widespread impact.

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# 18 MONTHS AFTER RIO+20 – DID THE CONFERENCE HAVE ANY IMPACT AT ALL?

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## Introduction

Tens of thousands of people representing governments, civil society, NGOs and many other pressure groups gathered, trying to build on the momentum of 1992. When we came back from Rio, disappointment dominated, both in our media releases as well as in the coverage by the media. Another useless summit - that was the main echo. The German NGOs commented on the summit being "even more disappointing than expected".

However, this does not mean it was entirely useless. The same criticism was the case after the first Rio conference itself, and indeed essentially after all other such meetings, including the Kyoto conference 1997. After some time, we look at these conferences with a milder attitude. Sometimes it takes a few years until you can really assess how meaningful a conference, a decision taken at a conference really is. The decision to launch negotiations about "Sustainable Development Goals" or SDGs may be such an example. This was a proposal put forward in Rio by Guatemala and Colombia, two countries that are rather unlikely sustainability champions that got momentum when it was supported by the Brazilian hosts. The Europeans, who like to be seen as the quintessential pioneers of sustainable development, were initially rather lukewarm – after all, SDGs would apply to all countries, not only to developing countries like the "Millennium Development Goals".

So the SDGs got agreed, with a rather bureaucratic text: *"We resolve to establish an inclusive and transparent inter-governmental process on sustainable development goals that is open to all stakeholders, with a view to developing global sustainable development goals to be agreed by the General Assembly."*

I can't remember anyone – including myself - coming back from Rio who celebrated this decision as a success. Another non-binding set of goals, not even negotiated

at the Rio conference itself, but only in the years to follow?

Well, the United Nations is a slow organization, like any organization that has to work by consensus. Looking back at the role model for the SDGs, the Millennium Development Goals (MDGs) agreed in 2000, we must admit, they were nonbinding but probably more effective than a whole lot of legally binding treaties. The MDGs developed a dynamic of their own, became a focus for the entire development agenda of the world, multilateral development banks paid tribute to their implementation – and hopefully the SDGs can become something like that.

In fact, the MDGs were a pure and in many ways quite traditional development agenda – and of course, that is a rightful agenda for the poor of the world. In Rio, many reports were presented about successful development, hundreds of millions of people lifted out of abject poverty, children enrolled in elementary schools, health services provided to rural populations, and so on. At the same time, many reports were presented about the deteriorating state of the world's ecosystems, oceans being emptied of fish, forests being cut down at record speed, soils deteriorating due to inappropriate ways of agriculture, groundwater levels falling to levels never recorded in history, and so on.

The problem is, if we would have been more successful in poverty alleviation, more successful in development in a traditional way, the reports about the state of the world's environment would have been even more disastrous. Even more forests would have disappeared, even more fertile soils would have been degraded, even less fish would have remained in the oceans, and so on. And this means, our model of development is unsustainable, and we are undermining the very basis of our development success stories. How can you fight hunger when your fertile soils are shrinking, when fishermen around

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the world get less and less fish, when entire regions become arid due to falling groundwater levels? It is impossible.

Indeed: The black spot of the old MDGs was sustainability. The MDGs, approved only 8 years after the first Rio conference, ignored the lessons of sustainable development, ignored that there is a difference between development and sustainable development. The consequences can be felt now. So it was high time to close this sustainability gap, it was high time for Rio+20 to decide that we do not only want the scheduled MDG review process with a new set of global goals for the period 2015-2030, but to complement them with Sustainable Development Goals.

It was a positive move that the UN General Assembly in September decided that there will be one single set of goals for sustainable development, the merger of the MDG review process and the SDGs from Rio, to be approved at the General Assembly in 2015.

Let me be clear – we do not yet know what will be in this new set of goals for sustainable development, in UN jargon the “Post-2015” agenda for sustainable development. The big difference between traditional Development Goals and Sustainable Development Goals is – only SDGs realize that there are planetary boundaries, that the ecosystems of the planet are limited and that human economic activity has to stay within these limits, otherwise we are not only destroying the environment but also the very basis of human development. In every country of the world, it is a constant political battle between powerful economic interests and common sense to accept these limits.

The lessons of the Rio process are, we will never get a global understanding about the fundamentals of sustainable development without global justice. As long

as the rich world continues to claim a disproportionate share of the planet’s resources, there will be overexploitation and ultimately destruction of these resources. Gandhi once said, the earth has enough for everybody’s needs but not for everybody’s greed – and when he said that, the world had 3 billion inhabitants. So with 7 billion it is even truer. The “ecological footprint” of the global consumer class therefore has to shrink in order to allow everybody a decent life free from poverty.

Can the Post-2015 agenda for sustainable development deliver that? It may well be that we will be disappointed, that we will criticize it as not ambitious enough, not sustainable enough, and so on. It is actually likely that this will be the case. At the same time, the new set of development goals will most likely be more of a sustainable development agenda than the old one, it will not be completely blind to the environmental limits of development, and so we will see small incremental steps towards more sustainability.

In that sense, Rio+20 made a difference. A small difference, compared to the enormous efforts that went into organizing this mega-summit. It is appalling how much effort was needed for such little substance – substance that first was not discernible even with a lot of goodwill. And we must admit, these results are fairly indirect results. It may well be that even without Rio the UN would have agreed to a new set of development goals with more sustainability than the first MDGs - simply because the environmental problems cannot be ignored any longer. But that is speculation, and essentially pointless.



# Free Trade or Food Security – Did India succeed at WTO Bali?

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Free Trade, World Trade Organization (WTO), Indian National Food Security Act

## Abstract

In this article, we critically analyse the imbalanced outcomes of the WTO Bali conference and briefly examine the evolution of India's public food subsidy programme. We show that India did not completely succeed at the Bali negotiations. The result of this "half-victory" is that the WTO structurally continues to favour powerful nations from the North at the cost of food security for millions of poor people living in the South.

## Introduction

This month in Bali, the World Trade Organization (WTO) has once again made it clear that for this powerful global institution, food security acts primarily as a barrier to free trade in agriculture. Under the WTO's free trade rules, governments should be prohibited from buying food at state-regulated prices and then redistributing that food to citizens in need.

This outcome of the WTO Ministerial Conference in Bali is being ignored thanks to reports emanating from influential think tanks such as the Peterson Institute which estimate that the Agreement could create 21 million new jobs, generate extra trade worth up to one trillion U.S. dollars and also lower the costs for international trade up to 10 percent (Hufbauer et al, 2013). The reduction of bureaucratic barriers and costs for trade is of major interest to export-oriented industrialized and emerging economies. The "Bali package," however, has few things to offer to countries with long-term problems of food security.

### India's victory?

During the negotiations at the WTO Bali conference, the Government of India wanted to assure that its public stockholding of rice and other food grains for food security purposes - in order to supply its 800 million poor citizens - would fall under an indefinite exemption from

WTO rules. This initiative faced special opposition from the industrialized countries who are implementing large farm subsidies themselves. The industrialized countries argued that India's grain policy would probably violate WTO limits on subsidies as established under the Agreement on Agriculture (AoA) ("WTO deal", 2013). India remained firm till the end of the negotiations in order to be allowed to subsidize staple crops under its new food security law (Walker, 2013) and succeeded in establishing a "peace clause" under which members have agreed to refrain from WTO disputes against the country.

But the "victory" of India's government, explicitly stated in the light of upcoming national elections, is only a half-truth – if not even a half defeat. The Government of India is restricted from expanding its subsidy policy to more nutritious foods such as lentils or milk (Behn, "Die WTO am Scheideweg", 2013). Further, the Indian government has to accept strict WTO controls so that subsidized products do not negatively affect trade interests of other countries (Bali Ministerial Declaration, 2013). As the "peace clause" is a temporal exemption that might be renegotiated in four years, India has only bought time for itself. Other countries from the G-33 group are not included in this agreement and have to stick to the limits on WTO subsidies.

"The negotiations have failed to secure per-

Citation (APA):

Roy, Devparna and Doerr, Florian. (2013). Free Trade or Food Security – Did India succeed at WTO Bali?, *Future of Food: Journal on Food, Agriculture and Society*, 1(2): 91-94



manent protection for countries to safeguard the food rights of their peoples, exposing hundreds of millions to the prospect of hunger and starvation simply in order to satisfy the dogma of free trade." - John Hilary of War on Want ("WTO 'deal' condemned", 2013).

### India's Public Distribution System (PDS) as a top-down approach

India's Public Distribution System (PDS) is a food subsidy program that has been in existence since pre-independence days (from 1939) and is meant to address both national-level and household-level food security. The PDS is also a minimum support price mechanism for Indian farmers. The PDS has passed through several stages since its inception. In the current era of economic reforms, the logic of neoliberal economics and the logic of populist politics influence the PDS in contradictory directions (Mooij, 1998). The PDS used to be a scheme for all consumers, but in 1997, the Indian government redesigned the PDS, creating the Targeted Public Distribution System (TPDS) in order to enhance subsidies to the poor and reduce those to the non-poor. TPDS distinguishes between APL (above poverty line) and BPL (below poverty line) households, and (since 2002), the poorest of the poor households were categorized under the AAY (Antyodaya Anna Yojana). State governments are responsible for identifying the APL, BPL and AAY households. Furthermore, the central or federal government purchases food grains from Indian farmers through the Food Corporation of India (FCI) at minimum support prices. The central government also determines the price at which FCI sells food grains to various state governments to distribute through the TPDS's fair price shops.

The TPDS has not been particularly successful in meeting the food security needs of the poor households due to many reasons. For example, only 37.6 percent of the rural households that fall below the poverty line have BPL cards, according to the NSSO 2004-05 survey (Jha et al, 2013). So the majority of the below poverty line households cannot even buy grains from fair price shops as they don't have the required cards. The extent of leakages from TPDS are also significant: 36.7 percent of the subsidized grains intended for poor households ends up as sales to non-poor households, 10 percent of all grains are spoilt during storage and transportation, and the government ends up spending 8.5 rupees to transfer one rupee to the poor (ibid).

### Challenges for the Indian National Food Security Act (NFSA)

Given the problems of continuing hunger (about a fourth of the world's hungry live in India, according to the World Food Program), widespread malnutrition (particularly among children and women of child-bearing age), an inefficient TPDS, and legal compulsions for the Indian state to provide food to all citizens, the Indian Parliament passed the much-heralded National Food Security Act (NFSA) in September 2013. The NFSA is a complicated program that could have very problematic impacts on the country's economy and food security. For reasons of space, we will look at only two of the problems. First, the NFSA promises heavily subsidized wheat, rice and coarse grains for those below the poverty line—about 67 percent of the total population. But this emphasis on cereals and aggregate calories does not target malnutrition (the result of inadequate consumption of non-staple foods, such as fruits, vegetables and pulses).

An even bigger problem with the NFSA is its complete silence on how food grains are to be produced (by small farmers or corporate farms?) and how small farmers are to sustain their livelihoods and maintain their rights to food. India has arguably the largest contingent of farmers on this planet. More than 600 million Indians depend on agriculture as their source of livelihood. Ironically, many small farming households suffer from hunger and malnutrition because government policies encourage them to use costly inputs (fertilizers, pesticides, irrigation water, and improved seeds), grow cash crops or cereal crops (which have to be sold on the market in order to pay for costly inputs).

### From food security to food sovereignty

However, despite its problems, the NFSA has initiated a much-needed national public and policy debate in India on various issues related to food security. The debates are based on many questions, such as: If food is a basic human right and the country is self-sufficient in food grains since many years, then why are cereal and caloric intakes insufficient among many millions of Indians? Is food security, which is a top-down approach to solving problems of availability and access to enough food, the right approach for India? After all, food security privileges food trade over self-sufficiency in food production. Should we pay more attention to the notion of "food sovereignty," which is a bottom-up approach that privileges small farmers and local communities right to decision-making regarding food? In a democratic country, what role should be given to state procurement of food and state provisioning of food? Given the developments at the WTO Bali meeting, is it feasible for even a large





democratic country such as India to fashion its domestic food policies free of interference from powerful actors in the global political economic system? After all, is the Right to Food a matter of charity or that of justice?

### Further imbalanced outcomes

In light of these conflicts, it is indeed remarkable that the "Bali package" has been unanimously adopted as the WTO's first comprehensive agreement since its existence. WTO re-emerged strengthened as the platform for trade negotiations, after it seemed to be challenged by alternative regional and bilateral trade negotiations and mechanisms during the last few years. However, it is our contention that the WTO Bali Agreement cannot really overcome the basic problems and underlying contradictions in the development project and global trade system.

A further example of the weaknesses of the WTO Bali Agreement is that it failed to address other issues of utmost relevance to developing countries, such as how to deal with the promises made in the WTO's 2005 Hong Kong meeting regarding the United States' cotton subsidies and other export subsidies of rich states ("WTO 'deal' condemned", 2013). The USA and the EU policy makers continue to heavily subsidize their richest farmers, but question other countries' right to protect their poorest citizens from hunger and starvation. There are about 2.5 billion small farmers in today's world that provide for more than 70 percent of the global food security. Thus, it seems inconsistent that the WTO considers buying food from small farmers at fixed prices as a distortion of fair competition (Behn, "Die WTO am Scheideweg", 2013). Government-procured food feeds billions of people worldwide (Behn, "Zum Wohle der Unternehmen", 2013).

The right to food as a basic human right according to the UN recognition (UNESC 12.05.1999. E/C.12/1999/5, Art. 11), the question arises as to whether food security should be negotiated at the WTO level alone, or in a different framework that take this recognized human right as a basic criterion. Such a framework would involve more than just commercial interests; it would take political and ethical aspects into consideration (Behn, "UNO statt WTO", 2013).

### Conclusion

As shown with the case of India, WTO stays an institution that de facto continues to work against food security interests of developing countries. The question is whether developing countries will be able to achieve food security through global trade, or whether they should instead

opt for food sovereignty. We argue that inside developing countries, important lessons have to be learned as they decide between free trade and local food sovereignty.

Furthermore, genuine global free trade has probably never existed and will probably never exist. The free trade doctrine is often used to impose conditions that favour access to southern markets for highly subsidized products from rich countries. U.S. cotton exports regularly outcompete the cotton produced by Indian and West African farmers and this constitutes a prominent example of how WTO structurally favours rich farmers over small ones. In this way, global inequalities are deepened. In contrast, promoting local smallholder agriculture and local food sovereignty promises a socially, economically and ecologically more equitable outcome.

The 2001 Doha Round aimed at a more just future for the world's poorest inhabitants, but the Bali Agreement shows how hollow this free trade argument is in reality. Even though increased market access and the reduction of trade costs for companies from the south sounds like a good promise from a neoliberal economic standpoint, it is unlikely to resolve structural power imbalances that shape trade in the global political economy.

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# Die Zukunft auf dem Tisch: Analysen, Trends und Perspek- tiven der Ernährung

A review by Dimana Licheva

Editors: Angelika Ploeger, Gunther Hirschfelder, Gesa Schönberger

Publisher: Springer VS

Published year: 2011

Language: German

ISBN: 978-3-531-93268-2

Length: 437 pages

Eating is an inevitable and important part of our lives. Yet most of us do not pay enough attention in our hectic daily routines to what food we buy, in what quantities we consume it and what effects our food choices have on our health and environment. In the age of globalisation, we are used to having every type of food in the nearby supermarket regardless of the season. At the same time more than 2 million children die due to malnutrition each year (Horton and Lo, 2013: 1). Mass production has taken agriculture to new levels, and the pursuit of maximum yields exhausts the soils and pollutes the environment. An increase of the people's awareness has resulted in many movements and different agricultural practices, but will we eat better in the future and will we become more conscious of our food choices?

“Die Zukunft auf dem Tisch” aims at answering these questions and many more. Examining today's global trends, the authors try to give a clearer picture of how the global challenges will affect what is and what is not on our tables in the future, what trends we may see, what will our food culture tomorrow be, and strives “not only to show, but also to analyse and discuss our perspectives for the future” (Ploeger et al., 2011: 16). It focuses on the fact that even though the future cannot be predicted, we can develop possible scenarios, but for that we need to better understand and analyse from different angles what tendencies we see today and in which direction we are going. The book comprises of 25 articles which lead the reader through discussions on lifestyles, global trends, challenges and opportunities, creating an idea of what we can expect tomorrow.

Having this big and ambitious goal in mind, the authors skilfully examine the problems from different perspectives—historical, political, cultural, social, scientific, physiological

and even emotional. Supporting their statements with data from various studies, credible literature and their own experience, the writers examine in detail, for example, the possibilities and challenges we face with our “eating out” habits if we go for sustainable consumption; to what extent is globalisation responsible for the interplay between production and consumption, hunger and abundance; what is the historical and traditional background of our eating habits and which are the influencing factors; what are the consequences of the observed today nutrition transition towards more sugar and fat and less fruits and vegetables and the so-called “Western diet”; what political hindrances we must overcome; what is done today for the food education of our children and how we can improve it; who are the LOHAS (Lifestyles of Health and Sustainability) and are they catalysts of awareness or just a marketing term for a social trend; and so on. Only from these few topics (and they only just to name a few), can the reader grasp how complex the whole notion of nutrition is and how difficult an adequate prognosis for its future development can be given.

The rich palette of authors (scientists, social researchers, nutritionists, university professors, CEOs, journalists, etc.) encourages the readers to open their minds to new perspectives and to realise that there is much more to food production and consumption and everyday food choices than they thought. With this regards the book “Die Zukunft auf dem Tisch” can be recommended not only to professionals in the nutrition field, but also to ordinary citizens, and even politicians. For after all the biggest challenge for the society today is to manage the individual and global nutritional demands, mitigate hunger and obesity and provide food security for us and for our children.



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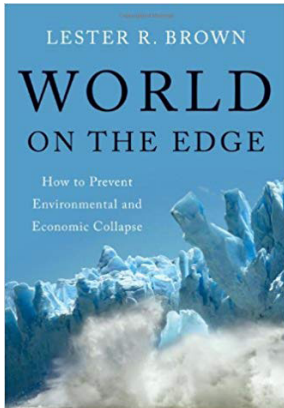
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# World on the Edge: How to Prevent Environmental and Economic Collapse

A review by Dimana Licheva

Author: Lester Russel Brown

Publisher: W. W. Norton & Company

Published year: 2011

ISBN: 978-0-393-33949-9

Length: 256 pages

Lester Brown is an environmental analyst and influential global thinker. Founder of the Worldwatch Institute in 1974 and of the Earth Policy Institute later in 2001, his broad educational background and many years of experience in the sphere of global issues enable him to create a bigger picture of the state of the world today and identify, from different perspectives, possible trends for the future and their consequences. During his time in Earth Policy Institute, he published many books dedicated to reaching sustainable economy and saving the planet. *World on the Edge* came into print in 2011 and tries to answer two main questions - if we continue with "business as usual" (or simply put if we continue doing what we are doing now) how much time will pass before we face our own demise and what can we do in order to avoid this collapse.

The book examines many of our current global issues, such as climate change, global warming, resource depletion, failing states, increasing population and hunger, environmental refugees, unsustainable agricultural practices, etc. Unlike other similar works in this field, *World on the Edge* provides supporting evidence with concrete facts, numbers, countries and historical events. Data and endnotes used in the book and additional sources can be found on the official website of the Earth Policy Institute, so the reader has access to all relevant information and does not have to blindly believe the words of the author but can make conclusions of his/her own.

Even though at some point one may feel that he is reading a history schoolbook, all these summaries of facts, years and numbers are needed to get the opinion of the author across - although we may not know for sure what will happen in the future, we are heading towards a serious collapse in

the global economy if we continue with "business as usual" (Brown, 2011: 12).

Nevertheless *World on the Edge* does not carry a negative tone. On the contrary, at the end the reader feels full of hope that it is not too late and we can still change the path we are going down, and what is more important, he feels personally engaged and responsible for that change. In most cases one may think he is too insignificant and that all it lies in the hands of the government, but the truth is we as individuals also have the power to make a difference by altering our lifestyles and habits and be the change we want to see.

Lester Brown carries out an impartial review of what was the past and what is the current state of our world and what needs to be done to reach sustainability and avoid crisis. Moreover he does not only propose vague directions we should follow, but gives specific guidelines for the necessary measures (the so called "Plan B") and even a rough estimation of the possible costs on a global scale (Brown, 2011: 199). Some suggestions include energy saving through technology, retrofitting, increased fuel efficiency and use of more renewable resources (Brown, 2011: 99 pp), investing in education, health and family planning as means of diminishing hunger, population growth and poverty (Brown, 2011: 164 pp), utilising the food production potential and shift in food habits as ways of improving food security (Brown, 2011: 170 pp) and many more.

Some may argue that Brown is too optimistic and does not mention other important factors such as disease and corruption, thus failing to present a holistic view of the situation today, still my personal opinion is that since everything is connected and intertwining, the indirect result of these



factors is taken into account in some form or another.

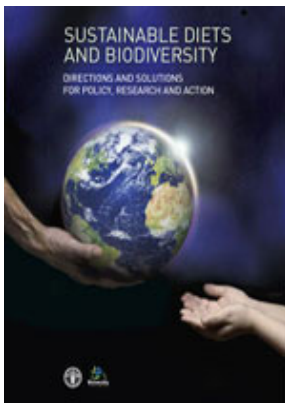
World on the Edge is an engaging book not only for those familiar with the topic, but also for those who are just being introduced to it. The author's main aim is to raise the awareness and provoke discussions and actions from the side of the common citizen, not only the authorities. In that sense, Lester Brown manages impeccably to simplify the complicated notions and make them accessible to the unacquainted reader. His book is a wakeup call for all of us, encouraging us to take action and make a choice – to continue with an economy that keeps destroying its support systems until it crashes down or to move into a sustainable progress. As the author states it, the "choice will be made by our generation, but it will affect life on earth for all generations to come" (Brown, 2011: 202). It is all in our hands.

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Dimana Licheva is currently pursuing M.Sc. in International Food Business and Consumer Studies, Kassel University and Fulda University of Applied Sciences, Germany. She holds a B.Sc. in Biotechnology from Sofia University "St. Kliment Ohridski", Bulgaria.



# Sustainable Diets and Biodiversity: Directions and Solutions for Policy, Research and Action

A review by Cristina P. Rodríguez Torres

Editors: Barbara Burlingame and Sandro Dernini

Publisher: FAO, Rome, Italy.

Published year: 2012

ISBN: 978-92-5-107288-2

Length: 309 pages

Undoubtedly, “sustainability” has become a very valuable term during the last years. This term refers to a balanced course, which addresses the environment, society and economic development. There is an emergent recognition about the effects of the carbon footprint, the importance of the conservation of biodiversity and food security with the growing world population. In this context, two questions will arise. Firstly, how can the goals for humanity and ecology be achieved together? And secondly, is there a linkage between sustainability and health? In order to answer these inquiries, the Food and Agriculture Organization (FAO) and Biodiversity International propose a compilation of scientific opinions presented in the International Scientific Symposium.

Many experts from all over the world debated and contributed with their knowledge, and shared different points of view regarding these debates. Therefore, from the gathered information, the book seeks to establish a connection between these demanding issues, which are used as an approach to the development of sustainable diet models. In addition, it analyses the food production systems in response to the worldwide problem of hunger, malnutrition and poverty.

To be more specific, a formal definition of a sustainable diet has been built. It constitutes a nutritious balanced diet that promotes a decrease in its environmental impact, while preserving the local natural resources, biocultural diversity, and health for the present and future generations.

Furthermore, a sustainable diet should address the security and accessibility of food on an equal and fair trade way, with the support of seasonal foods (Burlingame 2010, p.7). It is also pointed out that the direction of sustainable food

development includes the use of water and land for agricultural practices, which means that there is an environmental footprint of food production systems and modern diets with focus on consumer choices. To give a rough idea of the situation, meat and meat related products contribute to 12% to the global warming whereas fruits and vegetables only add 2%, based on a study about the environmental impact of the products consumed in the EU (Iannetta et al. 2010, p.276).

The FAO encourages us, as consumers, to think about the effects of our dietary patterns. Changes in our lifestyles can play a significant role on the conservation of nutrition, health and ecology. It can be possible to achieve through the discovery and appreciation of many less known or abandoned plant species and by incorporating them into our diet. Additionally, it is recommended that the genetic material of the traditional seeds, for instance, should be protected with the respective local knowledge about the methods of cultivation and their usage. Something vital is to avoid falling on intensive agriculture and deforestation.

There are 7000 domesticated plant species employed for food production. Despite this, barely 30 crops are been cultivated such as corn, rice and wheat which meet 50% of the food needs of the world (Petrillo 2010, p.227). The FAO underlines the importance of the support to farmers and rural development through buying local food varieties and enhancing the acceptance of more sustainable agricultural systems.

Moreover, organic farming is considered a model for a sustainable agricultural system, as well as the Mediterranean diet, which according to the United Nations Educational, Scientific and Cultural Organization (UNESCO), has become



a perfect model for sustainable diets, mainly because it includes a greater proportion of fruits and vegetables and a moderate consumption of meat (among other characteristics) (Petrillo 2010, p.228).

In conclusion, we can accomplish something worthwhile by simply starting with small changes. The future of food can be shaped by joint efforts from all of us. In fact, it is necessary to take actions at the national and international level. The creation of detailed guidelines, policies and the initiative of running projects are fundamental for the development of sustainable diets, along with the total food supply chain.

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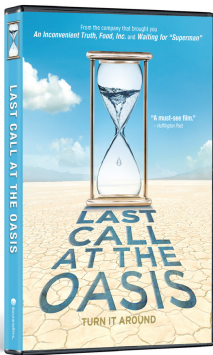
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Cristina P. Rodríguez Torres is from Ecuador and obtained her bachelor degree in Nutrition Science in Argentina. At the present, she is studying a master program in Germany, called International Food Business and Consumer Studies at University of Kassel. She has experience in the field of clinic nutrition and food management, especially in catering services and hospitals in South America. Her aspiration for the moment is to complement her knowledge abroad in the food business sector, with focus on food technology, quality management and organic food system.



# Last Call at the Oasis

A review by Sally Yip

Writer and Director: Jessica Yu  
 Studio: Docurama  
 DVD Release Date: 2012  
 ASIN: B008LW2520  
 Run Time: 105 minutes

“Last Call at the Oasis” is a wake-up call for everyone who inhabits planet Earth. Through “Last Call”, director Jessica Yu alerts her audiences about the true reality of our current water supply. As introduced by Erin Brockovich, who is an American legal clerk and environmental activist, “water is everything. The single most necessary element for any of us to sustain and live and thrive is water”. Yet, water is currently under the threat of shortage for all corners of the world.

The film explores various environmental, social, economic and political issues surrounding the availability of water, which demonstrates how indisputable the global water crisis is and how water shortages will affect our livelihoods. It also illustrates how we have been spoiled with the luxury of water for far too long. Now is the peak of water crisis and preventive action is need to be taken to reduce drought, water problems and water diseases on a global scale.

One of the most heated debates in “Last Call” is the water availability for all citizens who live in the “sin city”, Las Vegas. A city located in the middle of the desert has had precious water delivered to it for over a hundred years. Hoover Dam has been the major contributor to Las Vegas’ water supply, but it is currently under threat with drought in recent years. In the next few years, the dam could be emptied if a backup plan is not put into effect. With constant urban expansion, growing population and climate change, the water supply in Hoover Dam can no longer sustain Las Vegas’ water demand. This issue creates a huge debate between politicians, lobbyists, business owners and citizens in nearby cities. On one hand, politicians, lobbyists and business owners in Las Vegas wish to have a new pipeline build from Baler, Nevada to bring in an extra water supply for this “sin city”.

However, citizens of Baler are actively protesting this greedy idea to save their ecosystem and subsistence of Baler. How will this story ultimately end? Only our future will be able to tell us.

“Last Call” further demonstrates how serious this global water crisis is through various current issues. These stories illustrate how water conservation plans are much needed for all of us to stay as inhabitants on this planet.

Water is the most basic need for all living organisms. Water is valuable. If there is no water, we will have no food and ultimately no future. It is time to do our part to save our water supply for our future.

## Information about the author:

Sally Yip is currently studying an International Master Programme of “International Food Business and Consumer Studies” at University of Kassel in Witzenhausen, Germany. For the past three years, she has specialized in technical sales management of food ingredients for dairy, bakery, frozen food, culinary, meat and non-food sectors. With five years of food product development and technical sales experience in North American food industries, Sally has grown a strong interest in food innovation, marketing and regulatory standards on a global scale. She wishes to pursue in Food Category Management in her future.





Photo credit: George Chelebiev

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Department of Organic Food Quality & Food Culture,, Faculty of Organic Agricultural Sciences, the University of Kassel, Germany and the Federation of German Scientists (VDW)