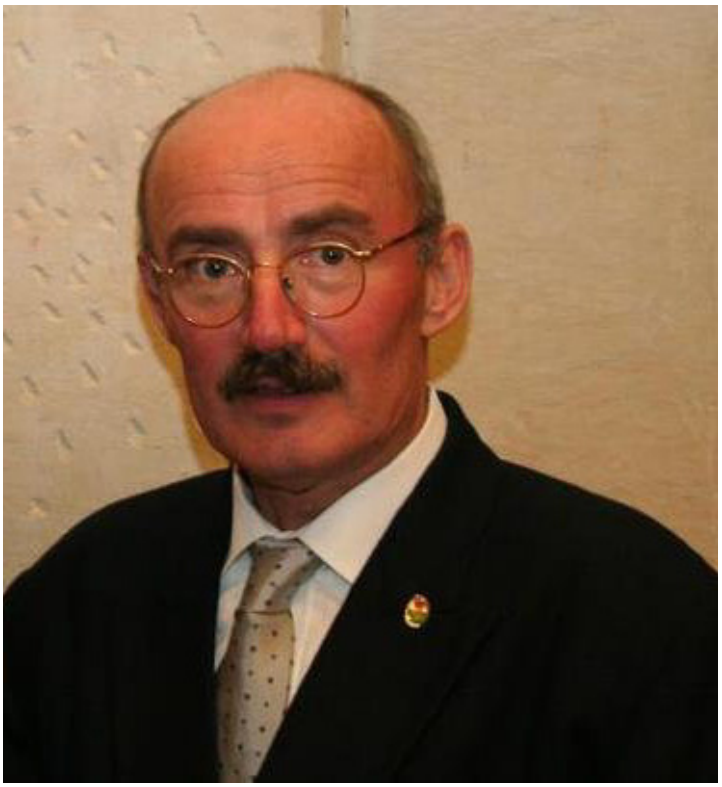
Editorial

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



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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" [1] 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

ISSN-Internet 2197-411x OLCL 862804632

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, malnutri-tion, 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[2], 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 agrochemicals 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

ISSN-Internet 2197-411x OLCL 862804632
UniKassel & VDW, Germany- December 2013

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-Sahara Africa (SSA). The IAASTD reports have been published by Island Press. A German edition is published by Hamburg University Press.

ISSN-Internet 2197-411x OLCL 862804632

Future of Food: Journal on Food, Agriculture and Society
1 (2) Winter 2013

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

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Data of the article

First received : 15 November 2012 | Last revision received : 26 November 2013
Accepted : 2 December 2013 | Published online : 20 December 2013
urn: nbn:de:hebis:34-2014021145049

Keywords

Soybean; Corn; Land Elasticity; El Niño; Yield Estimation; Brazil

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).

The expansion of land cultivation is connected to a few 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 recent spike in international commodity prices in

Citation (APA):
Bardal, Diogo F. (2013). Agricultural Production and Yield Estimation: two distinctive aspects of Brazilian agriculture and a perspective on world food problems, *Future of Food: Future of Food: Journal on Food, Agriculture and Society*.1(2): 8-17.