



TRADE AND ENVIRONMENT REVIEW 2013

WAKE UP BEFORE IT IS TOO LATE

**MAKE AGRICULTURE TRULY SUSTAINABLE NOW FOR FOOD SECURITY
IN A CHANGING CLIMATE**

EMBARGO

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UNITED NATIONS

KEY MESSAGES

- **The 2008 food crisis was an important catalyst for realizing the need for a fundamental transformation and questioning some of the assumptions that had driven food, agricultural and trade policy in recent decades.** However, actual results achieved since 2008 suggest that a paradigm shift has started, but is largely incomplete. Priority remains heavily focused on increasing industrial agricultural production, mostly under the slogan “growing more food at less cost to the environment”. The perception that there is a supply-side productivity problem is however questionable. Hunger and malnutrition are mainly related to lack of purchasing power and/or inability of rural poor to be self-sufficient. Meeting the food security challenges is thus primarily about empowerment of the poor and their food sovereignty. Furthermore, the current demand trends for biofuels, concentrate animal feed, excessively meat-based diets and post-harvest food waste are regarded as given, rather than challenging their rational.
- **The fundamental transformation of agriculture may well turn out to be one of the biggest challenges, including for international security, of the 21st century.** Much slower agricultural productivity growth in the future, a quickly rising population in the most resource-constrained and climate-change-exposed regions (in particular in sub-Saharan Africa and South Asia) and a burgeoning environmental crises of agriculture are the seeds for mounting pressures on food security and the related access to land and water. This is bound to increase the frequency and severity of riots, caused by food-price hikes, with concomitant political instability, and international tension, linked to resource conflicts and migratory movements of starving populations.
- **The world needs a paradigm shift in agricultural development: from a “green revolution” to an “ecological intensification” approach.** This implies a rapid and significant shift from conventional, monoculture-based and high-external-input-dependent industrial production towards mosaics of sustainable, regenerative production systems that also considerably improve the productivity of small-scale farmers. We need to see a move from a linear to a holistic approach in agricultural management, which recognizes that a farmer is not only a producer of agricultural goods, but also a manager of an agro-ecological system that provides quite a number of public goods and services (e.g. water, soil, landscape, energy, biodiversity, and recreation).
- **The required transformation is much more profound than simply tweaking the existing industrial agricultural system.** Rather, what is called for is a better understanding of the multi-functionality of agriculture, its pivotal importance for pro-poor rural development and the significant role it can play in dealing with resource scarcities and in mitigating and adapting to climate change. However, the sheer scale at which modified production methods would have to be adopted, the significant governance issues, the power asymmetries’ problems in food input and output markets as well as the current trade rules for agriculture pose considerable challenges.
- **Elements and key achievements of the required transformation of agriculture, elaborated upon by the authors of this Review, include:**
 - Increasing soil carbon content and better integration between crop and livestock production, and increased incorporation (not segregation) of trees (agroforestry) and wild vegetation.
 - Reduction of direct and indirect (i.e. through the feed chain) greenhouse-gas emissions of livestock production.
 - Reduction of indirect (i.e. changes in land-use-induced) GHG emissions through sustainable peatland, forest and grassland management.
 - Optimization of organic and inorganic fertilizer use, including through closed nutrient cycles in agriculture.
 - Reduction of waste throughout the food chains.
 - Changing dietary patterns towards climate-friendly food consumption.
 - Reform of the international trade regime for food and agricultural products.
- **In pursuing a fundamental transformation of agriculture, one should take into account systemic considerations** in particular (i) the need for a holistic understanding of the challenges involved due to inter-linkages between sometimes competing objectives; (ii) the merits and demerits of single climate-friendly practices versus those of systemic changes (such as agro-ecology, agro-forestry, organic agriculture); and (iii) the need for a two-track approach that drastically reduces the environmental impact of conventional agriculture, on the one hand, and broadens the scope for agro-ecological production methods, on the other.

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Foreword

Not long after the 2008-2009 food price crisis, high and volatile food prices are back in the international agenda creating renewed concerns for world food security. Once again, discussions are mostly focused on suggesting quick-fixes linked to some specific contributing factors, such as food price speculation or the increasing use of bio-energy. Insufficient attention is being paid to the fact that the increasing energy intensity of agricultural production and the direct and indirect link between agricultural and fuel prices was among the underlying factors that triggered the 2008 crisis and now contributes again to the current round of food price escalation. Furthermore, the recent drought affecting the main US grain production zones, putting upward pressure on international grain prices, is an incident now increasingly frequent and widespread with global warming. As this Review highlights, agriculture is not only chiefly affected by global warming but also one of its driving forces. Quick fixes will not be able to effectively deal with the complex interplay between energy intensity, greenhouse gas emissions, global warming and food security needs. Rather, what is called for is a better understanding of the multi-functionality of agriculture, its pivotal importance for pro-poor rural development and the significant role it can play in dealing with resource scarcities and in mitigating and adapting to climate change.

Despite significant increases in agricultural productivity and the fact that the world currently already produces sufficient calories per head to feed a global population of 12-14 billion, hunger has remained a key challenge. Around one billion people chronically suffer from starvation and another billion are mal-nourished. Some 70 per cent of these people are themselves small farmers or agricultural laborers. Therefore, hunger and mal-nutrition are not phenomena of insufficient physical supply, but results of prevailing poverty, and above all problems of access to food. Enabling these people to become food self-sufficient or earn an appropriate income through agriculture to buy food needs to take center stage in future agricultural transformation. Millennium Development Goal number one is bound to be missed, mainly because agriculture has not received the attention it deserves for achieving food security and as an engine of sustainable economic, social and environmental development in developing countries.

No doubt, the 2008 food-price crisis led to a reversal of the long-term neglect of agriculture as a vital economic sector in developing countries. Also, the declining trend of public funding for agriculture was arrested and some new funding has recently been committed. However, the implementation of these commitments lacks way behind requirements. One does neither see the necessary level of urgency nor the political willingness, from the international community, for drastic changes. Priority remains heavily focused on increasing production (mostly under the slogan “more with less”). The currently pursued approach is still very much biased towards expansion of “somewhat-less-polluting” industrial agriculture, rather than more sustainable and affordable production methods. It is still not recognized that a paradigm shift is required, in particular accentuated by the increasing pressures coming from climate change mitigation and adaptation. As correctly highlighted in the Review, global warming is a threat multiplier - it compounds, supplements or reinforces other threats so that the bio-physical vulnerability of agriculture increases impacting the most vulnerable people in the world.

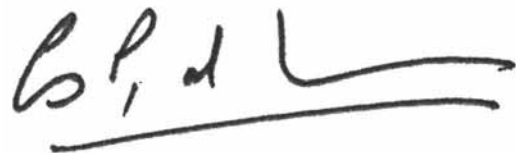
Slowing agricultural productivity growth in the future, high population growth in the most resource-constrained and climate-change-exposed regions and a burgeoning environmental crises in agriculture are the seeds for mounting pressures on food security and the related access to land and water. This is bound to increase the severity and frequency of riots, originated by food price increases, with concomitant political instability, and international tension, caused by resource conflicts and migratory movements of starving populations. Thus, the fundamental transformation of agriculture may well turn out to be one of the biggest challenges, including for international security, of the 21st century.

In paragraph 108 of the Rio+20 Declaration, adopted in June 2012, Heads of State reaffirm their “commitments regarding the right of everyone to have access to safe, sufficient and nutritious food, consistent with the right to adequate food and the fundamental right of everyone to be free from hunger. (They) acknowledge that food

security and nutrition has become a pressing global challenge and, in this regard, (they) further reaffirm (their) commitment to enhancing food security and access to adequate, safe and nutritious food for present and future generations." It is high time for these commitments to come to reality before the MDGs' deadline of 2015.

In this Trade and Environment Review, more than 50 international experts have contributed their views to a comprehensive analysis of the above-outlined challenges and the most suitable strategic approaches for dealing holistically with the inter-related problems of hunger and poverty, climate change, economic, social and gender inequity, poor health and nutrition, and environmental sustainability. The authors and the UNCTAD secretariat are looking forward to an inspiring dialogue with readers of this Review on one of the most interesting and challenging subjects of present development discourse.

Geneva, March 2013.

A handwritten signature in black ink, appearing to read 'C. P. del C.', followed by a horizontal line.

Carlos Pérez del Castillo,
Chairman Consortium Board,
Global Research Partnership for
a Food Secure Future (CGIAR).

Contents

Foreword, Carlos Pérez del Castillo, Chairman, Consortium Board, CGIAR.....	iii
Acknowledgements	xi
Acronyms and abbreviations.....	xii
Chapter 1. Key Development Challenges of a Fundamental Transformation of Agriculture	1
Lead Article: Agriculture at the crossroads: assuring food security in developing countries under the challenges of global warming	2
<i>Ulrich Hoffmann, UNCTAD secretariat</i>	
A. Introduction.....	2
B. Agriculture - a key driver and a major victim of global warming	2
C. Required fundamental transformation of agriculture	7
D. The paradigm shift has started, but is largely incomplete	7
Commentary I: Agriculture: A unique sector in economic, ecological and social terms	9
<i>Jean Feyder, Ambassador, Former Permanent Representative of Luxembourg to the UN and WTO in Geneva</i>	
Commentary II: Conceptual and practical aspects of climate change mitigation through agriculture: reducing greenhouse gas emissions and increasing soil carbon sequestration	13
<i>A. Müller and A. Gattinger, Research Institute of Organic Agriculture (FiBL), Switzerland</i>	
Commentary III: The potential of sustainable agriculture for climate change adaptation	16
<i>A. Müller and U. Niggli, Research Institute of Organic Agriculture (FiBL), Switzerland</i>	
Commentary IV: Food, climate change and healthy soils: The forgotten link.....	19
<i>GRAIN</i>	
Commentary V: Mitigating climate change with soil organic matter in organic production systems	22
<i>Andre Leu, President, International Federation of Organic Agricultural Movements (IFOAM)</i>	
Commentary VI: Agroecology: A solution to the crises of food systems and climate change.....	34
<i>Olivier de Schutter, UN Special Rapporteur on the Right to Food</i>	
Commentary VII: Promoting resilient agriculture in sub-Saharan Africa as a major priority in climate-change adaptation	39
<i>Marcus Kaplan, Chinwe Ifejika-Speranza, and Imme Scholz, German Development Institute</i>	
Commentary VIII: Yield and yield quality of major cereals under climate change	46
<i>Petra Högy and Andreas Fangmeier, University of Hohenheim, Institute for Landscape and Plant Ecology</i>	
Commentary IX: Comparative analysis of organic and non-organic farming systems: a critical assessment of farm profitability	50
<i>Noémi Nemes, FAO</i>	
Commentary X: Strengthening resilience of farming systems: A prerequisite for sustainable agricultural production	56
<i>Miguel A Altieri, University of California, Berkeley, and Parviz Koohafkan, FAO</i>	
Commentary XI: Democratizing control of agriculture to meet the needs of the twenty-first century	61
<i>Marcia Ishii-Eiteman, Pesticide Action Network North America</i>	
Commentary XII: Agriculture, food and energy	68
<i>Gunnar Rundgren, Grolink AB Consultancy, Sweden</i>	

Commentary XIII: Sustainable agriculture and off-grid renewable energy.....	72
<i>Mae-Wan Ho, Institute of Science in Society, London</i>	
Commentary XIV: Soil Erosion: A threat to food security and climate change.....	77
<i>David Pimentel and Michael Burgess, College of Agriculture and Life Sciences, Cornell University, Ithaca, New York</i>	
Commentary XV: Competition for water for agriculture through 2050	82
<i>Brent Boehlert, Industrial Economics, Inc., and Kenneth Strzepek, Massachusetts Institute of Technology</i>	
Commentary XVI: The impact of agrifood supply chains on greenhouse gas emissions: The case of a coffee value chain between Tanzania and Germany	86
<i>E. Krain, K. Linne and M. Gaebler, GIZ, Germany</i>	
Commentary XVII: Food waste reduction: A global imperative.....	91
<i>Julian Parfitt, Principal Resource Analyst, Oakdene Hollins, Aylesbury, United Kingdom, and Mark Barthel, Special Advisor, Waste and Resources Action Programme, Banbury, United Kingdom</i>	
Commentary XVIII: The role of sustainable consumption in fostering a fundamental transformation of agriculture	95
<i>Lucia Reisch, Copenhagen Business School, Denmark</i>	
Commentary XIX: Food safety and systemic change: Limitations of food controls for safeguarding food safety	102
<i>Jutta Jaksche, Policy Officer Food, Federation of German Consumer Organisations</i>	
References	108
Notes	132
Chapter 2. Livestock Production: A Climate Change and Food Security Hot Spot.....	137
Lead Article: Livestock production and food security in a context of climate change, and environmental and health challenges	138
<i>Anita Idel, Federation of German Scientists and Tobias Reichert, Germanwatch</i>	
A. Effects of inexpensive energy and nitrogen fertilizers	139
B. Sustainability requires a new definition of the terms productivity and growth	142
C. The role of agricultural and trade policy in the industrialization of animal production.....	143
D. Risks associated with selective breeding for higher productivity.....	145
E. The push for biosecurity poses a threat to animal and consumer protection	146
F. Deforestation and animal feed production.....	147
G. Grasslands and ruminants: an example of misconceptions and opportunities	148
H. Grasslands of the world.....	150
I. Global landscape gardeners	151
J. Cattle as ideal users of feed.....	151
Commentary I: Excessive industrialization of livestock production: The need for a new agricultural paradigm	154
<i>Friedrich Ostendorff, Deputy Chairman, Agricultural Committee of the German Parliament</i>	
Commentary II: Why industrial livestock farming is unsustainable	157
<i>Joyce D'Silva, Compassion in World Farming</i>	
Commentary III: Integrated crop, livestock and energy management: The case of biogas in rural Ethiopia	161
<i>Stanley Gwavuya, Knowledge Management Coordinator, Partnership for Development Initiative Trust, Zimbabwe</i>	
References	165
Notes	169

Chapter 3. The Role of Research and Technology and Extension Services..... 171

Lead Article: The role of research, technology and extension services in a fundamental transformation of agriculture	172
<i>Hans R. Herren, President, Millennium Institute</i>	
A. Introduction.....	173
B. Agricultural production and value added	176
C. Livestock production, nutrition and livelihoods	176
D. GHG emissions.....	177
E. Enabling conditions	177
F. The way forward.....	177
Commentary I: Effective extension services for systemic change: Achievements and barriers to implementation.....	180
<i>Laurens Klerkx, Communication and Innovation Studies, Wageningen University, The Netherlands.</i>	
Commentary II: Combining indigenous African knowledge with modern knowledge systems for food security in changing climatic conditions: Challenges and prospects.....	184
<i>H.O Kaya, and Y. N. Seleti, IKS Centre of Excellence, North-West University, Mmabatho, South Africa</i>	
Commentary III: The symbiosis between modern science and traditional knowledge for enhancing food security and climate change adaptation	188
<i>S.M. Mbuku, Kenya Agricultural Research Institute, National Beef Research Centre, and I.S. Kosgey, Department of Animal Sciences, Egerton University, Njoro, Kenya</i>	
Commentary IV: Addressing the causes of land degradation, food and nutritional insecurity and poverty: A new approach to agricultural intensification in the tropics and subtropics.....	192
<i>Roger RB Leakey, Agroforestry and Novel Crops Unit, School of Marine and Tropical Biology, James Cook University, Cairns, Australia</i>	
Commentary V: Adapting to climate change and improving household food security in Africa through agroforestry: Some lessons from the Sahel.....	199
<i>Chris Reij, Facilitator African Re-greening Initiatives, Centre for International Cooperation, Free University, Amsterdam</i>	
Commentary VI: Genetic engineering and biotechnology for food security and for climate change mitigation and adaptation: Potential and risks.....	203
<i>Jack A. Heinemann, Centre for Integrated Research in Biosafety and School of Biological Sciences, University of Canterbury, Christchurch, New Zealand</i>	
References	211
Notes	218

Chapter 4. The Role of Changes in Land Use..... 219

预览已结束，完整报告链接和

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