



Food Security at the Crossroads – A Wake up Call

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Abstract

Food security has top priority today and in future. There is no discussion about the fact that everybody must eat. Nevertheless, this fundamental need was globally addressed by the United Nations in the Universal Declaration of Human Rights in 1948, Article 25: “Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary services ...,” (United Nations, 1948). At the beginning of the Third Millennium, we all know that this human right is not being realized worldwide.

The right to adequate nourishment is considered to have been violated if consistent deprivation of food or food sources has brought about a violation of human dignity. In view of the numbers of starving people – estimated by the FAO at 1,000,000,000 worldwide – and of the many thousands of people dying of hunger every day, this is doubtless one of the human rights which has been most flagrantly violated over many decades. Moreover, it has been shown time and again that it is not possible to implement rights to freedom unless the right to nourishment has been realized. And vice versa, violations of economic or cultural rights – e.g. forcible displacement, prohibition of free practice of religion or deprivation of food sources – generally go hand in hand with violations of civil or political rights.

A brief look back over the last 150 years and the outlook for the next 60 years, compressed into a time frame of 30 years each, will provide an outline of conditions, backgrounds and intentions with respect to Article 25 of the Universal Declaration of Human Rights. A wake up call and an action list will be presented in order to improve food security (availability, accessibility, affordability, acceptability) as quickly as possible in order to realize Article 25 of the Human Rights Declaration.

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ANALYSIS

Anno 1864: A valuable source of information about the food security situation in 1864 is the book: *The Source of Gold or: The Farmer on the Path of Progress – A Narrative for the Common Folk as a Contribution to Promoting an Agriculture in Keeping with our Times* written by Heinrich Schwerdt in 1859.

1894: The main reason why people emigrated from the Eifel in Germany during the nineteenth century was: "... the unfavourable climatic conditions, the quality of the Eifel soils and the suitability or unsuitability of the crops grown there – from cereals to potatoes – showed that it was no easy task for the people in the Eifel to earn a livelihood. They lived in a region where the basic requirements for survival gave rise to constant uncertainty, brought about hunger and made it necessary to emigrate" (Pracht, H.-P., 1998).

1924: "The world has changed. Our age is totally unlike any which has gone before. There is no longer any such thing as isolation; all gaps have been removed. Nowadays an individual family will emigrate, moving back and forth across the world without any major hindrances in the search for better opportunities. Modern trade has brought about great changes in the world situation.

Where 1,750 million people are on the search for nourishment, will any of them have time to take things easy? Most certainly not! How bad will the situation become for the majority of the human race when the world's population rises to 3,500 million, a number which at the present rate will be reached before the year 2000? ... and the importance of agriculture was ignored." described by E. M. East (1926). Relevant answers were given by Paul de Kruijff (1928).

1954: "Hunger is the central problem of our time", wrote W. Greiling in 1954. "Hunger highlights the mistakes of our time and our world. Hunger on earth (600 million people) is a very special tragedy. It is not unavoidable. The means to overcome hunger are available, but they are not used. The rest of the world could help easily. But the rest of the world is doing more or less nothing."

1984: "Looking into the future, we can foresee that twenty years from now most of the crops we know today will be grown from plants that have been "improved" or reinvented in some way in a genetics laboratory. Many other crops will be improved by conventional plant-breeding techniques. But this will be done with a degree of precision and efficiency unimaginable just a few years ago. What used to take breeders many years to achieve – and nature many thousands of years – will be done in months or even weeks! These laboratory crops will be small miracles of applied research. They will be specially bred to grow faster; to ripen at a particular time; to resist disease, drought, or frost; to make better use of sunlight or fertilizers. They will, in short, be just what the farmer ordered." addressed in *Walt Disney World* (1984). An additional interesting guide is given by John W. Rosenblum (1983).

Furthermore, "History has taught us that wars produce hunger, but we are less aware that mass poverty can lead to war or end in chaos. Where hunger rules, peace cannot prevail" (Willy Brandt, 1973). Rising food prices



lead to a level of instability which may in turn become critical for the maintenance of national or regional security.

“Hunger still stalks far too many poor people today. Expanding the reach of improved crop technologies to areas of the globe passed over by the “green revolution” combined with foreseeable improvements in crop productivity will make it possible to provide a better diet at lower prices to more people in the future. The prospect for feeding a world of 10 billion people, while challenging, is bright.” “You cannot build peace on empty stomachs” (Lord Orr, J.B., FAO) was outlined by Norman Borlaug in 1970.

It's a historical truth that when food prices rise, conflict increases. So it's no wonder that the spike in the cost of agricultural commodities in recent years (2008) has been a contributing factor to revolution in the Middle East and North Africa (2011, 2012). In Pakistan, people began exhibiting “extraordinary behaviours” due to a high prevalence of food insecurity – selling kidneys, bonded labour, selling children, and committing suicide because they could not support their families as reported by E. Hooper in 2010.

2014: In 1974, the mighty of this world came together for their first World Food Conference. At that time 920 million people were starving – and the good tidings ran: “Within a decade no man, woman or child will go to bed hungry.” Nothing of the sort! 22 years later, in 1996, the FAO still registered 840 million undernourished people – and soon it was time for the next hunger summit. As though the heads of state wanted to come to terms with the plague, they contented themselves then in Rome at least with the objective / ‘promise’ to halve the number of hungry people by 2015. But things were to get worse still. Four years later, at the UN Millennium Summit in September 2000, all that was actually proposed was that the “percentage” of the world’s population suffering hunger should be halved by 2025. That presumably would mean very little less than 600 million people, instead of the 400 million promised in 1996.

It is likely that even this modest target will not be attained, if claimed necessary actions are not realized in time. According to the most recent facts available to FAO, the number of people suffering hunger in most of the developing countries increased “considerably” during the 1990s. It was only because successes were recorded in a few large Asian countries that the total number of undernourished people decreased at least by six million per year. If things go on at this rate, almost 700 million people will still be suffering hunger in 2015 – stricken by lack of carbohydrates, fat, protein, vitamins and minerals.”

At the beginning of 2012, the new Director General of FAO announced that eradication of world hunger would be the goal until 2015. Well, it is a more than an ambitious objective, but nevertheless it is not ethical to respond: “Let’s see, how many people we will have in 2015 suffering from hunger”. It is an addressed challenge for all of us and everybody has to contribute to solve the problem and to safeguard the Human Rights Article 25 that all people living on earth can live in dignity and in peace.

In 2011/2012 more than one billion people are severely undernourished – this is an unacceptable tragedy! Our first priority must be to create the technical basis for producing sufficient calories and energy-rich food to meet human needs throughout the world. We must bear in mind that over the next thirty to forty years world food requirements will more than double, and this will make it necessary to double – and even treble – agricultural



production and supplies. At the same time, we will have to compensate for reduced farmland areas, water shortages and the switch from plant-based to meat-based diets. This not only requires a different sort of “green revolution”, it also requires a “brown revolution” as well as a “blue revolution” in terms of soil and water conservation and sustainable use.

In the next thirty years we will have to produce more food worldwide than over the whole of the last 10,000 years. Beside this, today, water, soil and energy scarcities, hunger, and poverty remain prevalent throughout much of the developing world. If we are to live in a 21st century more prone to peace than violence, the developed countries must move expeditiously to address the developing countries' requirements for energy, water, and agricultural production. The availability, accessibility and affordability of energy, water and food supplies are vital to the economic development that is required to alleviate global poverty, to reduce global tensions, to reduce migration, to address global environmental degradation, and to open new markets for global goods and services.

Approaches / What MUST be done?

1. Place the focus on fighting poverty through increased productivity and purchasing power.
2. Give top priority again, after many years or even decades, to the development of agriculture and food production.
3. Focus on solutions for small-scale and large-scale farmers, and cooperatives.
4. Focus mainly on rural regions, though also on peri-urban areas.
5. Enable link-ups with value creation chains and networks.
6. Enable effective and efficient use of resources with regard to
 - a. soil
 - b. water
 - c. nutrients
 - d. crop plants
 - e. biodiversity
 - f. genetics
 - g. carbon management
 - h. human resources.
7. Endeavour to avoid changes in land use.
8. Establish fair, nationally and internationally legally binding regulations governing land and water rights for the protection of local populations, and arrange for necessary investments.
9. Set up agricultural production systems able to withstand climate change.
10. Drive the development of strategies to minimize greenhouse gases in agricultural production processes. This must include fostering of plant and animal production and the production of renewable raw materials (decentralized production of agrofuels).
11. Build up strategic warehouses/storage capacities in countries struggling against hunger, with capacity for sufficient reserves in the event of extreme harvest failures due to climatic conditions, and ensure



ready availability (2010 Europe: wheat 5-year high, 144m tonnes). Take steps to effect a significant reduction of harvest and food losses:

- a. pre- and post-harvest losses > 50 %
 - b. food production losses (production/distribution) > 60 %.
12. Build up efficient national and regional agricultural research institutions in cooperation with the private sector and expand research and the transfer of technology.
 13. Double Germany's research capacities in applied and development-oriented agriculture by 2015, with special emphasis on LDC nations.
 14. Ensure that smallholders and farmers in LDC countries have free and unhindered access to modern agricultural inputs – especially in the case of women; freedom of choice must be respected.
 15. Develop higher value crop plants (for preference through public activities) which are resistant to biotic and abiotic stress factors:
 - a. tolerance to dryness, temperature, salt and ozone
 - b. ICM pests, plant diseases and weeds
 - c. building up of seed centres
 - d. optimizing the photosynthetic efficiency of crop plants
 - e. application of innovative technologies (epigenetics, ...).
- The quality/genetic potential of locally available seed supplies is already now insufficient for resource-efficient production – with increasing climatic pressure this will become more problematic still by 2025/2050, most of all in Least Developed Countries.
16. Put an end to scientific apartheid in matters of “Green Gene Technology”.
 17. Set up technical agricultural training colleges and supraregional agricultural and nutritional competence centres (agro-marketing).
 18. Protection against high price volatility:
 - a. rapid information systems
 - b. microcredits, insurances
 - c. fair trade agreements
 - d. own regional, national and international food stocks.
 19. Draw up a time/financing plan: climate change and agriculture (2015/2020/2025):
 - a. cf. Agenda 21/Rio+10 ... Rio+20 (United Nations, 1992, 2002, 2012)
 - b. global action plan with set priorities (cf., e.g., Charter for Food Security, Maxwell, S., 1997)
 - c. new, realistic targets: what can or must be done to react in time to the challenges, who must do this, and where?
 20. Convene a “Round Table” with the private sector at CEO level and take up the initiative of the agri-food industry:
 - a. all value chains/networks, combined forces of the agri-food, energy and biomass sectors
 - b. early recognition and utilization of synergy potentials
 - c. agreement on strategic cooperation clusters



21. Bring about an improvement in consumer behaviour in the industrial nations:
 - a. reduction of “unethical” value attribution in the industrial nations with regard to staple food production
 - b. throwing away of food by consumers (industrial countries: - 30 %) should to my mind be penalized in future
 - c. quo vadis pet food? (booming markets/increasing consumption of resources).
22. Take steps to reduce dependence on fossil fuels throughout all stages of food and foodstuff production.
23. Tackle the new challenges for agriculture:
 - a. do more with fewer resources and with better results – and do it in time!
 - b. enhance efficiency and effectiveness in everything we do.
 - c. dematerialization, decarbonization and reorganization of resources.
24. Start an immediate and sustained intensification in the production of staple foods and foodstuffs, with special focus on the developing countries/Least Developed Countries.
25. Lay down internationally binding regulations to prevent excessive speculation with agricultural commodity derivatives – adopt the proposals of the German Welthungerhilfe:
 - a. create transparency on the commodity futures exchanges to identify the dealers in agricultural commodities – this market should be accessible only to distributors and retailers, not to financial speculators.
 - b. impose limits on trading volumes.
 - c. set upper limits for prices in order to prevent panic reactions and price distortions, which ultimately make hunger and poverty worse still and bring about social and political instability.
26. Ensure that the broadly based FFF Report (“The Future of Food and Farming: ...”) from the Government Office for Science, London, UK (2011), with its solidly founded view on 2030 and 2050, is used in many countries as a basis for strategic action in order to achieve significant improvements in their efforts towards global food security, the fight against poverty and hunger, conservation of resources, and sustainable social development.

This FFF Report should be compulsory reading for all decision makers, for schools, and ultimately for every one of us.
28. Engage further in objective dialogue (a core duty of journalists and media), but act immediately and in good time.
29. Urge people to develop a vision based on ethical considerations and at the same time to have the courage to put this vision into practice.
30. Make sure at all costs to prevent the food and oil prices from rising worldwide by 20-30% during the coming months.

Three equations written by Paul Collier in 2010 are landmarks for shaping the future in a sustainable way:



Nature + Technique + Rules = Prosperity,
Nature + Technique - Regulation = Plundering, and
Nature + Regulation - Technology = Hunger.

2044: “Overall, land use and land use changes have to be avoided as much as possible” (Burke, M. and Lobell, D., 2010).

“To acclimatize non-indigenous cereals in our regions, we must reproduce the conditions under which they thrive in their country of origin and as far as possible eliminate the factors which cause them to fail. At the same time we should not subject them to excessive artificial refinements, thereby turning them into weaklings attracting a host of diseases which we seldom observe in the wild growing plants.” was claimed in Austria by Ignatz Magini in 1819.

2074: Vision: A global wake up call in 2012 and the implementation of shown actions will improve food security (availability, accessibility, affordability, acceptability) in order to go for Factor Fⁿ: Future Farming, Food, Feed, Fitness, Fuel, Fiber, Flowers, Freshwater, Fishery, Forestry, Flora, Fauna, Fortune, Fun, Freedom, which are milestones on a roadmap for tackling the challenges of the 21st century.

Sustainable production of food, feed, fibre, fuel, freshwater and industrial products will depend for its success on a future-oriented, knowledge-based, resource-conserving, and added-value agriculture – that, finally, will eradicate hunger, enable freedom and safeguard global peace.

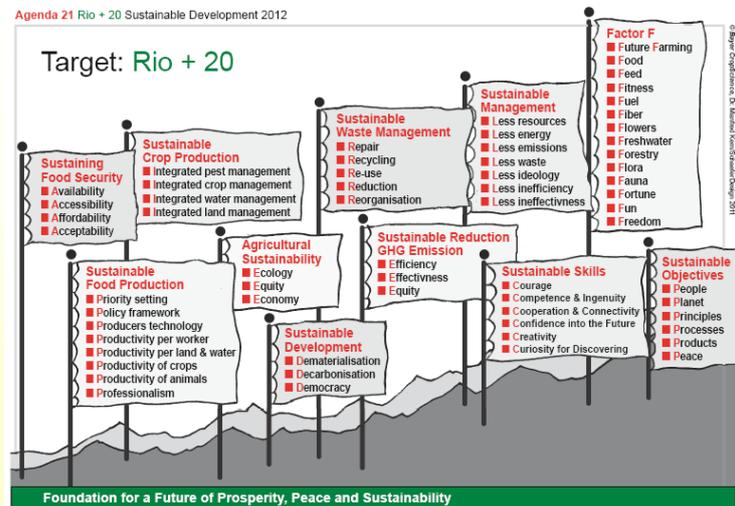
Concluding Remarks

Several future-oriented reports and recommendations for action which have been drawn up since the publication of Agenda 21 in 1992. They are concerned mainly with describing the major goals which have to be achieved. Basically everything that needs to be done has been said, everything has been excellently described. The important thing, now more than ever, is to act immediately and more quickly than in 1992, knowing that the roads to be taken will be arduous and difficult.

Allow me to end on a hopeful note with the words of J. W. von Goethe: “To act is easy, to think is hard, to act as one thinks is the most difficult.” We’ve done more than enough thinking, it’s now 2012 and time to act!

A pdf of the exhibition “Visualized Agenda 21 / Rio+10 / Rio+20” (English, French, German, Portuguese, Spanish) is available on request.

Agenda 21 Rio + 20: Sustainable Development 2012



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Dr. Manfred Kern, biologist, futurologist, CEO of agriExcellence GmbH, did work in the chemical crop protection industry for Hoechst AG, AgrEvo GmbH, Aventis CropScience AG and Bayer CropScience AG in leading functions in science and technology, marketing and communications during the last 30 years.

Since 1995 he is running a project: "Future of Agriculture: Vision 2025/2050", a comprehensive study on the safeguarding of world food supplies. Dr. Kern has more than 150 publications to his credit and has given over 1,000 presentations at international/national congresses, conferences, symposia and workshops.

He was awarded by different organisations for significant accomplishments in the field of innovations in agriculture. In 2007, the secretariat of UNCCD (United Nations Convention to Combat Desertification) recognized Dr. Kern by upholding his title as "*Eminent Person*".

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