



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

st. per



Vol 35 No 2

Junie

1996

June



AGREKON

Published by the Agricultural Economics Association of South Africa

Gepubliseer deur die Landbou-ekonomievereniging van Suid-Afrika

CONFERENCE REVIEW: FOOD SECURITY AND INNOVATIONS IN AFRICA: INTERNATIONAL CALL FOR A "MANDELA PLAN"

H.J. Sartorius von Bach,
Department of Agricultural Economics, Extension and Rural Development, University of Pretoria

INTRODUCTION

During an international symposium on "Food Security and Innovations: Successes and Lessons learned" held at Hohenheim, Germany on 11-13 March 1996, sixty speakers from 24 countries rendered their inputs. The intention was to assess the past 15 years of support to promote and subsidise global food security. During this conference it became evident that the world is looking at countries to formulate plans of actions themselves. The term "Mandela plan" was framed, meaning initialising development requirements and Africa actions proposed by the economic leading country in Africa.

Since innovations have been of concern from the beginning of economic science to serve the purpose of inventing new and useful things, they were also seen as elements to attain food security. However, the causality effect between food security and innovation should be kept in mind. It was argued that food security could be seen as goal while innovations could be seen as means to reach this goal. The concept was discussed under the following sections: generation of innovation, diffusion and adoption, impact of innovation, and policy and institutional framework.

INNOVATIONS

Walter (1996) gave an academic view of the concept during the plenary session on the foundations of innovations. He argued that the motives for innovation were emphasized by Adam Smith's "man's intrinsic desire to better his condition" or Karl Marx's call for "productive forces to push development forward". However, determinants of innovations, i.e. which economic activities by which actors. Organizations to foster innovations and technological progress and how the economic and social framework should be conditioned, is largely unknown. In this regard, Schumpeter (1911) argues that development is promoted by dynamic pioneers who achieve what he calls "new combinations", which is synonym for innovations. If these prove to be successful in the market, the pioneer is followed by imitations who jump on the bandwagon and this could result in an economic boom of new activities.

Innovations are, however, not only based on the capability to discover and exploit favourable opportunities, but also on the ability to evade endangering one's own position in the market. Innovations could be seen as a measure to differentiate, whereas imitations are attempts to level out differences created by others. Both actions, innovations and imitations or diffusions, are concurrent and mutual dependent traits of development in a competitive society. Factors which could influence the above, are firm size (Sahal, 1979), R & D (Bernstein and Nadiri, 1988) and infrastructure and demand (Schmooker, 1966). However, there exists no unequivocal evidence, coherent explanation of the theory, nor limit what makes one an innovator.

To bring about comprehensive changes in technological systems and economic paradigms calls for prerequisites, such as the bunching of entrepreneurs and the occurrence of

exogenous events, i.e. basic scientific discoveries, and political, social and environmental changes that enforce a fundamental revision of past behaviour. A change in the current economic environment is called for, instead of pushing wrong productivity resulting in unemployment, wealth should be focused at. New challenges require the establishment of a new socio-institutional sub-system, with revised patterns of aspirations and behaviour, and the fostering of employment-creating innovations (Walter, 1996).

FOOD SECURITY

The discussion of food security is often divided into macro and micro aspects. Micro aspects relate to the way in which households cope with food insecurity and the way in which food is distributed within and between households. The macro aspects relate to general economic forces which may generate poverty and food insecurity and to measures to be taken at the general macroeconomic level. Singer (1996) gave an excellent presentation dealing with the macro-level.

He approaches food security from another angle: food security is an elementary human right, as stated by Julian Huxley "human rights begin with breakfast" or Berthold Brecht's Three Penny Opera "Erst kommt das Essen, dann kommt die Moral". Singer demonstrated from a public good scenario that there is no need for hunger, since globally, food supply exceeds consumption.

A global view of food security must be based on facts. World cereal production has more than kept up with world population growth, although the gap between the two rates has shown signs of diminishing. The exception is Sub-Saharan Africa, where cereal production declined. This may be ascribed to marginalisation. Related to this decline in per capita production, net cereal imports to Sub-Saharan Africa increased sharply. Bonte-Friedheim (1996) visualised the diversity of our world presented in a different way. Population density, cropland, internal water resources, gross national product were shown as an anamorphosis of the world, i.e. the shape of countries and continents changed from surface to figures for the above variables. These overheads gave a clear vision on population concentration and food security related concerns with Africa in a detrimental position regarding food security relative to population activity. Singer (1996) gave six reasons for global failure in food security provision:

- The marginalisation of Africa shows in all general economic and human development indicators. In the rest of the world there has been progress, but Africa has been in regress and deterioration. The incidence of hunger and food insecurity is higher in Africa than anywhere else, even though in terms of absolute numbers the Indian sub-continent still has more hungry people. This situation will not improve unless the international community takes special measures to lead Africa back into the mainstream of economic progress. This will require no less than a "Marshall Plan" for Africa, or a "Green Revolution", but very different from the European and Indian precedent, respectively.

- Related to the problem of Africa, but not limited to it, is the spread and impact of war and conflict, observed in recent years. War and ethnic conflict destroys food security, but the reverse is also true: food insecurity is a fertile breeding ground for war and conflict (Singer, 1996). Today more than half the countries in Sub-Saharan Africa are affected by war and conflict either in their own or in neighbouring countries, and resources are heavily diverted into military expenditures.
- The third reason revolves around the tangle of deteriorating terms of trade and debt burdens of developing countries, and the nature of the structural adjustment programmes currently imposed on them to deal with their resulting difficulties with regard to balance of payments. The debt burden means that a significant proportion of export earnings is needed for servicing the debt, i.e. not available to finance food imports. Countries follow own priorities and not global recommendations. There exists a vicious circle, i.e. the deteriorating terms of trade create a need to finance imports by incurring debt, while the increase in debt burden forces countries to try to increase their exports, thus leading to oversupply and deteriorating terms of trade. The nature of the stabilisation and structural adjustment programmes imposed by the powerful Bretton Woods institutions complicate the situation (Singer, 1996). Each individual's "outward-orientated" programmes imposed on indebted developing countries, simultaneously force mean intensified competition, oversupply and deteriorating terms of trade.
- The increased globalisation of markets is also a contributing factor to food insecurity. Combined with increased urbanisation it has led to a shift from food crops to cash crops. The need for foreign exchange has led to priority for cash crops produced on the best land, while food crops were shifted to the marginal land.
- Globalisation of markets combined with pressures for liberalisation have made developing countries more dependent on food imports as compared with domestic production. Food aid is under threat as international prices for food may increase as a result of the GATT negotiations.
- Behind the areas of immediate concern there are also more fundamental and long-term global forces at work which threaten future food security, eg. Africa's increasing population. Furthermore, as the per capita income rises, the demand for food will increase in many parts of the world. While according to Engel's Law this is true, there will be a shift from direct human consumption of grains towards the consumption of meat and dairy products, which absorb proportionally more grain in the form of feed grain, thus offsetting Engel's Law and threatening global food security.

TECHNOLOGICAL PROGRESS

Experiences of the last decades of development have made it clear that human capital is ultimately the key factor behind all progress. It seems to have been a fundamental error to elaborate technical solutions in the hope that all farmers would then apply and introduce them on their farms immediately and with success. The challenge faced by agriculture requires foremost the disproportional expanding of knowledge of producers. Development must begin at the

roots, it must empower and support people, enabling them to develop their own identity and institutions on their own initiative (cf Serageldin, 1995).

Research and development calls for jointly defined objectives by farmers and those holding the dominant positions to implement new technologies in line with real demands. In this respect, diversity, democracy and decentralisation should be closely linked (cf. Chambers, 1995), so that current patterns of aspirations and behaviour can be revised. The focus of changing our attitudes to improve situations, such as food security, brings about the creation of new innovations, employment and the relevance of the demand side in the food security equation towards survival.

It was mentioned that survival can only be solved successfully, if there is a broad political and social consensus on the right of everyone to live and to survive our planet's activity. Without the necessary passion (cf. Serageldin, 1995) and without a reduction of the violence in people's heads and hearts, lamented by Swaminathan (1995), survival can not be secured. Only passionate efforts based on the moral and ethical dimension of the global food issue, could result into a conceptual solution. Dresrüsse (1996) suggests to add empathy, emotions, ethics and empowerment to agricultural development, so that progress could be made.

AGRICULTURAL RESEARCH

The role and impact of agricultural research received great support during the symposium. It was stressed, how funds for agricultural research were reduced in past three decades, not corresponding with its positive contribution to development. Research is drifting away from implementation and rather concentrates on technology to the detriment of the economy. Here again a call for a fundamental structural change was stressed and it is called for some innovative ideas and approaches. Specifically in Africa, a "brain waste" of agricultural officers and researchers occurs (Bonte-Friedheim, 1996). The number of researchers increased with a stagnant research expenditure which resulted in a declined expenditure per researcher. Especially in Africa, too many institutions can not fund relevant research, i.e. the budget only covers the salaries to a great extent.

The threshold of quality research and the critical mass have to be solved by access to latent knowledge, by increased partnership arrangements of institutions and combined efforts with non-agricultural organisations. Past decline of external assistance to agriculture have to change, so that the political and financial priority of agriculture in the economic process can be utilised. The hope was expressed that the latter will be addressed at the forthcoming "FAO Summit" so that there will be a chance for sustainable food security at all level.

FINDINGS OF THE SYMPOSIUM

A few relevant points were made which give some fruit for thought.

- The issue of food security or insecurity is here to stay, especially if it remains a production orientated issue, a multidisciplinary approach is called for.
- More thorough theory and conceptual frameworks are required to address such a broad topic of the symposia

including a historical perspective. The importance of access to knowledge was a core topic. It was stressed that following rather than current generations should be equipped by utilising an education system.

- A new focus of implementation of innovation is called for, requiring testing and demonstration. Especially the private sector's role in innovation were highlighted to support creative users with new technology. Imitating innovators could be generated through the bunching of groups.
- Revision of patterns of aspirations and a high degree of passion are required, i.e. Singer's "moral" in food security or Dresrüsse's empathy, emotions, ethics and empowerment to agricultural development or is food security a "human right"?
- The food security issue is most relevant in Africa. Africa's food security could be addressed by a "Mandela plan", i.e. ideas and initiative must emerge out of own generations to gain "culture-specific" innovations and their inherent level of risk. These plans could yield similar responses as the "Marshall plan" for Europe and the "Green Revolution" for India. However, Africa's own plan has to be politically and financially supported by other continents with the ultimate objective to bring Africa back into the mainstream.

REFERENCES

BERNSTEIN, J.I. & NADIRI, M.I. (1988) Rates of return on physical and R&D capital and structure of production process: Cross section and time series evidence. NBER Working paper 2570.

BONTE-FRIEDHEIM, C. (1996) Strengthening of national research organisations through the CGIAR system. Paper

read at "Food Security and Innovations: Successes and Lessons Learned". International Symposium, March 11-13 1996, Hohenheim, Germany.

CHAMBERS, R. (1995) Interview in GTZ Akzente, Eschborn, 2/95.

DRESRÜSSE, G. (1996) Perspective of world food supply and demand: Challenges and new focuses. Paper read at "Food Security and Innovations: Successes and Lessons Learned". International Symposium, March 11-13 1996, Hohenheim, Germany.

SAHAL, D. (1979) Recent advances in a theory of technological change. Discussion paper series IIM/dp 79-11. International Institute of Management. Berlin.

SCHMOOKLER, J. (1966) Invention and economic growth. Cambridge. Mass.

SCHUMPETER, J.A. (1911) Theorie der wirtschaftlichen Entwicklung. 5 ed. Berlin.

SERAGELDIN, I. (1995) Nurturing development: Aid and co-operation in today's changing world. The World Bank. Washington D.C.

SINGER, H.W. (1996) A global view of food security. Paper read at "Food Security and Innovations: Successes and Lessons Learned". International Symposium, March 11-13 1996, Hohenheim, Germany.

SWAMINATHAN, M.S. (1995) Growing violence in the human heart. People & the planet.

WALTER, H. (1996) Foundations of Innovations. Paper read at "Food Security and Innovations: Successes and Lessons Learned". International Symposium, March 11-13 1996, Hohenheim, Germany.