

اتحاد كليات الزراعة الافريقية

AFAA

5th. GENERAL CONFERENCE

ON

FOOD SECURITY IN AFRICA

SWAZILAND

22-28th April, 1984

SUMMARY REPORT



Prepared by
A. O. TANTAWY

ASSOCIATION
OF FACULTIES OF AGRICULTURE
IN AFRICA

ASSOCIATION
DES FACULTES AGRONOMIQUES
D'AFRIQUE

اتحاد كليات الزراعة الافريقية

AFAA 5TH GENERAL CONFERENCE

ON

FOOD SECURITY IN AFRICA

SWAZILAND, 22-28TH APRIL, 1984

PROGRAMME

I. FIRST DAY : Sunday 22nd April, 1984
REGISTRATION, University Campus

II. SECOND DAY : Monday 23rd April, 1984

OPENING SESSION
10.00-13.00

: Chairman: Prof. A.O. ADENUGA

Welcome Addresses

- Dean, Faculty of Agriculture, University of Swaziland.
- President of AFAA

Opening Addresses

- H.E. Ministry of Agriculture, Swaziland,
- H.E. Ministry of Education, Swaziland.
- H.E. Ministry of Agriculture, Egypt.
by a delegate.

FIRST SESSION
15.00-17.00

: Chairman: Prof. G. MAGAGULA
AGRICULTURAL ECONOMICS

- SIO, F.K., (Liberia)-Strategy of Food Security in Liberia.
- KARIUKI, J.G. (Swaziland)-Causes of Hunger in Africa : Suggested Theories.

DISCUSSION

BREAK : 15 minutes

17.00-19.00

- LOW ALLAN, (CIMMYT)-On Farm Research and Food Security in Africa.
- HUSSEIN EL-SAID OSMAN, (BADEA)-A Brief Review of Arab Aid to African Development with special References to the Agricultural Sector.

DISCUSSION

III. THIRD DAY

Tuesday 24 April, 1984

AGRIC. ECONOMICS (Cont.)

SECOND SESSION

Chairman: Prof. A. GOUELI

9.00-13.00

- MAGAGULA, GLENN, T., (Swaziland)
Food Security Problems in Member
Countries of the Southern African
Development Coordinating Conference (SADACC).
- EICHER, C., (AID, Zimbabwe)-The Role of Technology
Transfer in Increasing Food Production and
Food Security in Africa :
Theory and Practice.
- GOUELI, A., (Egypt)-Economics in Food Security

DISCUSSION

BREAK : 15 minutes

PLANT PRODUCTION

- KUYEMBEH, N.G., -(Sierra-Leone)-Food Security :
Losses in The Traditional Rice Post Production,
- ASAMOA, G.K., -(Ghana)-Cereal Grain Production
in Ghana.
- OSIRU, D.S.O.P., (Swaziland)-Some Aspects of Yield
Stability in Intercropping.

DISCUSSION

THIRD SESSION

Chairman: Prof. R.B. CONTAN

15.00-19.00

- BANKU GELAN, (CIMMYT)-Role of Maize
in Meeting Food Security in Africa.
- ENRIQUE, TORRES - (CIMMYT)-Wheat Impro-
vement and Food Security.
- MUKUKI, J.K., (UGANDA)-Food Production and
plant Diseases.

DISCUSSION

IV. FOURTH DAY

Wednesday 25th April, 1984

FOURTH SESSION

Chairman: Prof. C.N. KARUE

9.00-13.00

ANIMAL PRODUCTION

- LEBBIE, S.H.B., (Swaziland)-Food
Security in Africa : The Role of Livestock.
- SHAZLY, K.A., -(Egypt)-Securing Animal Proteins
in Alexandria, Egypt.

اتحاد كليات الزراعة الافريقية

FINANCE ORGANIZATION AND FOUNDATIONS

TO

AFAA FIFTH GENERAL CONFERENCE

ON

FOOD SECURITY IN AFRICA

SWAZILAND, 22-28th APRIL, 1984

- AGENCY FOR INTERNATIONAL DEVELOPMENT, AID, Washington, DC, U.S.A.
- ARAB BANK FOR ECONOMIC DEVELOPMENT IN AFRICA, BADEA, Khartoum, Sudan.
- CANADIAN INTERNATIONAL DEVELOPMENT AGENCY, CIDA, Quebec, Canada.
- COMMISSION DES COMMUNAUTES EUROPEENNES, EEC, Bruxelles, Belgique.
- FOOD AND AGRICULTURE ORGANISATION OF THE UNITED NATIONS, FAO, Rome, Italy
- THE FORD FOUNDATION, (USA) - Cairo, Egypt.
- THE FORD FOUNDATION, (USA) - Nairobi, Kenya.
- THE FORD FOUNDATION, (USA) - Lagos, Nigeria.
- UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATIONS, UNESCO,
Paris, France
- UNITED NATIONS ENVIRONMENT PROGRAMME, UNEP, Nairobi, Kenya.

ACKNOWLEDGEMENTS

The Members of AFAA Executive Committee and All AFAA member Institutions are very indebted to the above mentioned Organisations and Foundations for their generous financial help given to AFAA 5th General Conference. Their help is very much appreciated.

اتحاد كليات الزراعة الأفريقية

INTRODUCTION

The fifth General Conference of AFAA, on the occasion of the Thenth Anniversary of AFAA, was started on 22th April 1984 at the Conference Hall of Holiday Inn Usulini, Mbabane, Swaziland and last and for a week ended on the 28th April 1984. The opening addresses were delivered by Dean of the Faculty of Agriculture, Swaziland University, the Minister of Education, Swaziland; Delegate for the Minister of Agriculture, Egypt; and the President of AFAA.

Number of delegates (see next tables) attended that Conference are sixty-three from twenty four countries and ten International Organisations and Foundations. Twenty-eight of AFAA member institutions were presented by one or more delegate most of them are deans or vice-deans.

NUMBER OF PARTICIPANTS AND COUNTRIES THAT ATTENDING THE CONFERENCE

<u>Country</u>	<u>N°</u>	<u>Country</u>	<u>N°</u>
Swaziland	19	Madagascar	1
Egypt	7	Malawi	1
Kenya	2		
Morocco	2	Mauritius	1
Nigeria	2	Rwanda	1
Botswana	1	Somalia	1
Burundi	1	Sierra-Leone	1
Centr'African	1	Tanzania	1
Congo	1	Togo	1
Ethiopia	1	Uganda	1
Ghana	1	USA	1
Liberia	1	Zambia	1
		Zimbabwe	1

INTERNATIONAL ORGANISATIONS

<u>Organisation</u>	<u>N°</u>	<u>Organisation</u>	<u>N°</u>
A/D/C, New York, USA	1	FAO, Ghana	1
BADEA, Sudan	1	ILO, Kenya	1
CIMMYT, Kenya	2	ISNAR, Netherlands	1
CIMMYT, Swaziland	1	UNEP, Kenya	1
FAO, Rome	<u>2</u>	UNESCO, Kenya	<u>1</u>
	7		5

OBJECTIVES : The main objectives of the present 5th General Conference of AFAA is to discuss problems of food security in Africa in relation to :

- I - Agricultural Economics
- II - Plant and Animal Production
- III- Food Sciences and Environment
- IV - Soil Sciences and Agricultural Engineering
- V - Extension, and Training
- VI - Education

The programme which lasted for a week was loaded with different presentations started everyday at nine o'clock in the morning ended at seven in the after noon. There are eight sessions on the programme the last of which was devoted entirely for the discussion of the recommendations and AFAA business.

Finally, discussions in all sessions where very fruitful showing the importance of ways and means to solve food production and other related subjects to the problems of food security in Africa.

After long discussions and deep thoughts the conference arrived at the following recommendations. These recommendations will be translated into Arabic and French and will be distributed all over the world mainly to :

- AFAA member Institutions
- Ministries of Agriculture in Africa
- United Nation Organisations
- International Organisations and Foundations
- Other Interested parties.



اتحاد كليات الزراعة الافريقية

AFAA 5th GENERAL CONFERENCE

ON

FOOD SECURITY IN AFRICA

SWAZILAND, 22-28th APRIL 1984

ON THE OCCASION OF AFAA 10TH

ANNIVERSARY 1973-1983

RECOMMENDATIONS

I. DIRECTIVES TO AFAA

RECOGNIZING THE IMPORTANT ROLE OF AFAA IN COORDINARY TEACHING/TRAINING AND RESEARCH ACTIVITIES AMONG THE AGRICULTURAL INSTITUTION IN AFRICA : IT IS RECOMMENDED THAT AFAA :

1. sets up a standing committee to promote collaboration in postgraduate training in Africa, to create an indigenous science capacity capable of achieving food security in Africa special attention should be given to collaboration in training in crop protection.
2. establishes a research committee to coordinate research projects between AFAA member institutions, and to plan and administer regional research programmes, studies, and surveys to promote food security in Africa.
3. invites as full participants at least five representatives of relevant Pan African or regional women's associations, at each of its general conferences.
4. encourage the establishment of home economics departments as part and parcel of the faculties of agriculture. In home economics departments, students should be required to take agricultural courses.



اتحاد كليات الزراعة الافريقية

THE NEW AFAA EXECUTIVE COMMITTEE MEMBERS

NAMES AND ADDRESSES

PRESIDENT

Professor KHALID A. SHAZLY
Faculty of Agriculture,
University of Alexandria,
Alexandria, Egypt
Telex : 54467 UNIV. UN

VICE-PRESIDENT :

Professor C. N. SARUE,
Faculty of Agriculture,
University of Nairobi,
Nairobi, Kenya

SECRETARY/TREASURER :

Professor M.L. FIRDAWCY
Institut Agronomique et Vétérinaire
Hassan II, B.P. 6202 Instituts-Rabat
Morocco - Telex : AGROVET 31873 M

MEMBERS :

Professor A.O. ADENUGA
Vice-Chancellor of Ife University
Ile-Ife, Nigeria.

Professor Y. AMEGEE
Ecole Supérieure d'Agronomie
Université du Bénin
B.P. 1515, Lomé, Togo

Professor N.G. KUYEMBEH,
Faculty of Agriculture, Njala University,
P.M.P. Freetown, Sierra-Leone

Professor V. NDOREYAHO,
Department d'Agronomie
Université Nationale du Rwanda
Butare, Rwanda.

BEST REGARDS FROM

Professor Dr. A.O. TANTAWY

General Secretary of AFAA
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اتحاد كليات الزراعة الافريقية

PRESENTED PAPERS

AUTHORS AND TITLES

(ALPHABETICALLY)

- AMEGEE, Y., (Togo) : *Le Role Des Sciences Vétérinaires Dans l'Autosuffisance Alimentaire En Afrique.*
- AREF, M.M., (UNIDO, Vienna) : *The Role of Faculties of Agriculture In the Development of The Food Processing Industries.*
- ATOR, P., (FAO, Rome) : *Population Agricultural Development : Some Issues For Applied Research.*
- BEKOE, D.A., (UNESCO, Nairobi) : *Training And Research Need For the Achievement of Food Security In Africa.*
- CARSON, A.G., and ASAMOA, G.K., (Ghana) : *Achieving Self-Sufficiency In Cereal Grains Production in Ghana.*
- CONTANT, R.B., (insar, Netherland) : *Linking Agricultural Research and Higher Agricultural Education : A Partnership for Success.*
- EICHER, C.K., (USAID, Zimbabwe) : *The Role of Technology Transfer In Increasing Food Production and Food Security In Africa. Theory and Practice.*
- EL-SAHRIGY, A.F., (Egypt) : *Promotion of Food Security in Africa Through Agricultural Mechanization - A case Study in Egypt.*
- EL-GOUELI, A., (Egypt) : *Economics In Food Security.*
- GELAW, B., (CIMMYT, Nairobi) : *Maize Research And Production in Sub-Saharan Africa.*
- HUSSEIN EL-SAYED OSMAN, (BADEA, Sudan) : *A Brief Review of Arab Aid to African Development with Special References to the Agricultural Sector.*
- HUSSEIN, M.A., (Somalia) : *Irrigation Problems In Somalia.*
- KARIUKI, J.G., (Swaziland) : *Causes of F iger in Africa : Suggested Theories*
- KUYEMBEH, N.G., (Sierra-Leone) : *The Food Security Problem in Sierra-Leone : Tackling the Problem of Lo-ses In the Traditional Rice Post Production Systems.*
- LEBBIE, S.H.B., (Swaziland) : *Food Security in Africa : The Role of Livestock*

- LOW, ALLAN, (CIMMYT, Swaziland) : On-Farm Research and Food Security In Southern Africa.
- MAGAGULA, G.T., (Swaziland) : Food Security Problems In Member Countries of the Southern Africa Development Coordinating Conference (SADCC).
- MONIB, AHMED, (Egypt) : Cheap Improved Dairy Products Suitable For Solving Malnutrition Problems.
- MUKUBI, J.K., (Uganda) : Impact of Plant Diseases On Food Production In Africa.
- NOAH, S.E., (FAO, Ghana) : Human Resource Development For Food Security In Africa.
- OJANUGA, A.G., and MONSI, A., (Nigeria) : Agriculture and Livestock Development in Nigeria : Problems and Prospects.
- OKIGBO, B.N., (IITA, Nigeria) : The Role of Universities in Ensuring Food Security and Agricultural Development Through Research and Training in Africa.
- OLEMBO, R.J. (UNEP, Nairobi) : Environment Implications of Agricultural Development.
- OSIRU, D.S., (Swaziland) : Some Aspects of Yield Stability in Inter Cropping.
- POLGREEN, J.K., (ILO, Nairobi) : Agriculture in Youth Training Programmes : Realities and Possibilities.
- SIO, F. FRANWRE, (Liberia) : Strategy of Food Security in Africa.
- TORRES, E., (CIMMYT, Nairobi) : The Impact of Innovative wheat Improvement Upon wheat Production.

- KYOMO, M.L., - Dean, Faculty of Agriculture, Forestry and Veterinary Sciences, University of Dar-es-Salam, Morogoro, Tanzania.
- KUYEMBEH, N.G., - Dean, Faculty of Agriculture, Njala University, P.M.B Freetown, Sierra-Leone.
- LEBBIE, S.M., - Faculty of Agriculture, University of Swaziland, P.O. Luyengo, Swaziland.
- LUE, WENEZOUL, - Directeur, Institut Universitaire de Technologie Agromique (IUTA) de M'Baiki, B.P. 909 Pangui, Centr'Africain.
- LUCHELE, K.P., - Ministry of Agriculture, P.O. Box 162, Mbabane, Swaziland.
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- MUKIIBI, J.K., - Dean, Faculty of Agriculture, and Forestry, Makerere' University, P.O. Box 7062, Kampala, Uganda.
- NDOREYAHU, V., - Directeur, Department d'Agronomie, Université Nationale du Rwanda, B.P. 117, Bitare, Rwanda.
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Vétérinaire Hassan II, B.P. 6284 Instituts, Rabat, Maroc.
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اتحاد كليات الزراعة الافريقية

AFAA FIFTH GENERAL CONFERENCE

SWAZILAND, 22-28th APRIL, 1984

PARTICIPANTS

NAMES AND ADDRESSES

- ABDEL-REHIM, M.ALI, - Dean, Faculty of Agriculture, University of Alexandria, Alexandria, Egypt.
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- ADENUGA, A.O., - President of AFAA and Vice-Chancellor of University of Ife, Ile-Ife, Nigeria.
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- AMBOULOU, D., - Directeur, Institut de Developement Rural, IDR, Université de Brazzaville, B.P. 69, Brazzaville, Congo.
- ASAMOA, G.K., - Dean, School of Agriculture, Faculty of Science, University of Cape Coast, Cape Coast, Ghana.
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- EL-TANTAWY, I.M., - Dean, Faculty of Agriculture, University of Mansoura, Mansoura, Egypt.
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- KAY, J., - Faculty of Agriculture, University of Swaziland, P.O. Luyengo, Swaziland

اتحاد كليات الزراعة الافريقية

PARTICIPATING AFAA MEMBER INSTITUTIONS

- Faculty of Agriculture, Alexandria University, Alexandria, Egypt.
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5. *seeks closer cooperation with UNESCO to develop training and research programmes in agricultural curriculum review, in bio-technology, and in the use of renewable energy resources.*
6. *promotes regional cooperation in research on pests and diseases of stored products.*
7. *encourages member institutions and their governments to document their past research findings so that they can build on these results rather than starting all over again.*
8. *strengthens its public relations, communication and information efforts to make its existence and its activities more widely and better known, both within and outside Africa.*
9. *organizes regional short-term training courses and workshops in Africa on post-harvest technology and post-harvest losses, for extension agents and research scientists.*
10. *requests FAO and the UNFPA to continue to provide assistance to Faculties of Agriculture to help them reinforce their research and teaching programmes in population and development planning.*
11. *undertakes to promote and evaluate applied research projects on the interrelation between food security, population growth, and agricultural development.*

II. RECOMMENDATIONS TO AGRICULTURAL INSTITUTIONS IN AFRICA—REALIZING THE IMPORTANT ROLE OF THE AGRICULTURAL INSTITUTIONS IN AFRICA IN TRAINING, RESEARCH AND EXTENSION FOR THE PROMOTION OF FOOD SECURITY IN AFRICA, IT IS RECOMMENDED THAT AGRICULTURAL INSTITUTION IN AFRICA :

1. play an active role in the design and analysis of agricultural and natural resource surveys so as to improve the data base for national development planning for food security.
2. be more involved in providing data for governments to make national development plans for agricultural production, manpower plans and national food strategies.
3. agricultural Institutions in Africa try to ensure that the research supported from the faculties research and development budgets addresses development problems directly and relevant to smallholder agriculture.
4. modify existing systems of training extension agents so that they are aware of present-day problems such as food security, farming system, research, undernutrition, and the role of women in farming. There is need for frequent reviews of agricultural curricula which should be adapted to local conditions.
5. in collaboration with governments, undertake aggressive public relations on behalf of the agricultural profession, to gain agriculturalist recognition, respectability, and prominent stature so as to attract greater numbers of the young to become agricultural scientists and rapidly increase the critical manpower essential to tackle the root causes of the African Food Security Problem.

6. encourage the recruitment of women academic staff into each department of the faculty, and their full integration into research teams.
7. make a concerted effort to address the need and problems of women farmers. In the classroom, the role of women in agricultural production should be highlighted. New ways to deliver agricultural technology to women farmers should be explored.
8. establish proper linkages with national agricultural research institutes so as to make use of scarce human resources, infrastructure documentation, and funds; and to promote technology development and transfer to the small farm sector; and to link technology transfer to the education and training of under and post-graduate students.
9. agricultural Institutions are urged to include in their curricula :
 - (i) Concepts and methodologies of farming systems research, with emphasis on socio-cultural and economic aspects including the division of labour within the rural household;
 - (ii) Effects of demography on the patterns of food production;
 - and, (iii) Elements of human nutrition.
10. individually and jointly, are urged to intensify efforts to start postgraduate programmes in order to diversify the specializations available in Africa and to facilitate research relevant to Africa's needs.
11. they are required to intensify efforts to involve their students in research and production activities as integral parts of the teaching programmes.

12. to intensify their participation in information exchange between AFAA member institutions.
13. collaborate with national agricultural research institutions and international agricultural research centers, as appropriate, and with each others :
 - (i) farming systems research
 - (ii) post-harvest technology and post-harvest losses
 - (iii) on-farm storage methods
 - (iv) research on aspects of intercropping, with emphasis on yield stability.
 - and, (v) developing new approaches for technology transfer to, and for obtaining feedback from, the small-scale farming sector.
14. make every effort to forge good working relations with their governments to bring about a partnership which will contribute to the establishment of agricultural and other public policies to support high food production, adequate storage, processing and efficient marketing.
15. re-examine the orientation and content of their syllabuses and review educational technology currently available with a view to producing the optimum number of well-trained agricultural scientists and engineers, as well as middle-level agricultural personnel for ensuring higher food production which is a major prerequisite for food security and especially to inculcate in extension workers a greater awareness of their role as mediators in integrated community development.

III. RECOMMENDATIONS TO GOVERNMENTS

APPRECIATING THE EFFORTS MADE BY AFRICAN GOVERNMENTS TO DEVELOP AGRICULTURAL PRODUCTION IN AFRICA. IT IS RECOMMENDED THAT THE GOVERNMENTS :

1. regard food security as a top national priority issue. It should not be confused with self-sufficiency. Food security is not only

a production issue; but it also involves consumption, marketing, distribution, and trade.

- 2. formulate in sufficient depth food security strategies and corresponding measures not only at the level of individual countries but also at the regional and continental level.*
- 3. governments, which have the estimate responsibility for ensuring food security, are urged to strengthen key national and subregional agricultural and scientific institutions to enable African countries to contribute to and make effective use of modern biological research in their efforts to increase food production.*
- 4. give greater attention to agricultural infrastructure to facilitate the efficient production, marketing, and distribution of food.*
- 5. place greater emphasis on, and make greater investments agricultural research, particularly in food crops.*
- 6. accord farmers, especially small scale farms adequate production incentives, including recommendative prices.*
- 7. place greater emphasis on production and consumption of traditional food staples so as to reduce the demand for imported foods.*
- 8. governments are urged to develop and maintain strategic national grain reserves to last for at least three months.*
- 9. governments in collaboration with the agricultural institution and other relevant national institutions are required to develop and operate regional as well as national early warning systems so as to alleviate the effects of adverse environmental conditions (e. g., drought, cyclones, locusts, etc.).*

10. *governments are urged to promote cooperation among African countries, especially in the areas of trade, agricultural information exchange, and technical cooperation.*
11. *governments are recommended to confine food aid to emergency relief and manage it in a manner so as not to depress domestic food production.*
12. *governments need to develop, to the extent possible, national as well as regional agro-industries to reduce their reliance on imports of agricultural inputs.*
13. *governments are encouraged to include in their development plans coherent strategies for reducing population growth rates. Demographic factors must be taken into account in all interventions of governments.*
14. *due to shortages of capital and foreign exchange and lack of sophisticated skills among small scale farmers, Governments should encourage the use of furrow irrigation methods rather than drip or sprinkler irrigation systems, and special efforts should be made to improve traditional furrow irrigation systems.*
15. *governments are requested to seek assistance to establish viable animal breeding programmes aimed at improving the productivity of the local breeds, either by selection or by hybridization, as long-term programmes.*
16. *governments are urged to intensify research on the control of animal diseases, particularly vector-borne diseases, such as trypanosomiasis, which limit animal production in most parts of Africa.*

17. It is recommended that Governments : intensify support of research programmes in animal nutrition, so as to increase milk and meat production, especially from traditional livestock systems.
18. organize farmer training programme on post-harvest operations to reduce food losses, jointly with the agricultural research institutions and faculties of agriculture.
19. individually and collectively, institute and implement mechanisms and procedures to control the movement of plant material and animals into Africa and across the boundaries of African states, and strengthen their quarantine facilities and regulations.
20. individually and collectively, set up regulatory services to control the entry and use of all agricultural chemicals with a view to banning those that are not safe for use or constitute ecological hazards.
21. assisted by national agricultural research institutions and the agricultural Institutions reassess the relative importance of different cereals as national staples, with a view to developing policies geared to the promotion of staples that can be grown locally.

IV. RECOMMENDATIONS TO DONORS : HAVE IN THE PAST ASSISTED EDUCATION AND TRAINING IN DEVELOPING COUNTRIES EITHER THROUGH INTERNATIONAL OR BILATERAL AGENCIES. THEY ARE REQUESTED TO :

1. place less emphasis on direct transfer of technology and materials such as germplasm, machinery, pesticides and fertilizers, than on enhancing the indigenous capacity to provide scientific and technical leadership in the public and private sectors for national agricultural development.

2. *in particular, donors are requested to increase their emphasis on training and strengthening national agricultural research and production support services, and to accept 15 to 20 year program horizons rather than current 3 to 5 year project cycles.*



اتحاد كليات الزراعة الافريقية

AFAA FIFTH GENERAL CONFERENCE

SWAZILAND, 22-28 APRIL, 84

REPORT

PROFESSOR DR. A.O. ADENUGA
PRESIDENT OF AFAA

My present report will review the activities of the Association of Faculties of Agriculture in Africa AFAA during the past three years from April 1981 to April 1984. I was elected as President of AFAA at the time of meeting of AFAA 4th General Conference in Accra in April, 1981. It gives me indeed a great pleasure that we have been gathered again exactly after three years from the last AFAA General Conference as provided for by AFAA Constitution.

Going through the directives to the next Executive Committee as adopted by the General Conference of AFAA In 1981, I would like to inform you that most if not all of the directives have been implemented. My thanks go to all the members of AFAA Executive Committee for their cooperation and to AFAA Secretary General who has put in big effort to assist the Executive Committee in implementing most of the directives and to be able to hold the present AFAA Conference in time.

1. MEETINGS OF THE EXECUTIVE COMMITTEE

Three meetings of the Executive Committee were held during the period from 6th April 1981 to 22nd April 1984. These meetings were held at:-

1. Nairobi : 12 -15 October, 1981
2. Dakar : 14 .16 January, 1983
3. Swaziland: 16-20 April, 1984.

The Minutes of first two meetings were distributed to you at the beginning of the present Conference.

11. CONSTITUTION:

The Executive Committee was charged with responsibility to examine the Constitution and propose any necessary amendments in time to be considered at this Conference. An amendment was proposed and a circular note was air-mailed last year by AFAA Secretariat to all AFAA member Institutions. AFAA Secretariat suggested that we readjust AFAA membership fees and annual subscription and the Executive Committee decided that we submit such a request to the AFAA General Assembly during the Fifth General Conference of AFAA. The AFAA General Conference is hereby requested to approve the new rates to increase AFAA Financial resources and to meet the very high costs in AFAA expenditures especially in publications and other expenses.

Therefore, Article V (page nine of AFAA Constitution) which states in parts

ARTICLE V

RESOURCES

"The resources of the Association shall consist of:

- a-Membership fees applicable only to full members, which shall be one hundred pounds sterling (£100.00) or its equivalent in convertible currency :
- b-Annual subscriptions applicable only to full members, which shall be fifty pounds sterling (£50.00) or its equivalent to convertible currency, payable during the month of January of each Calender year".
- c-No change.

SHOULD NOW READ:

ARTICLE V

RESOURCES

"The resources of the Association shall consist of:

- a-Membership fees applicable only to full members which shall be three hundred US Dollars (\$300.00) or its equivalent in convertible currency:
- b-Annual subscription applicable only to full members which shall be one hundred and fifty US Dollars (\$150.00) or its equivalent in convertible currency, payable during the month of January of each calendar year:"

Please Note:

At the time of the inaugural Conference of AFAA in 1973 one sterling pound was equivalent to 3.00 US Dollars (Three), therefore the requested increases in both membership fees and annual subscriptions are only for re-adjustments of payments.

However, the membership fee can only affect new members, not the old ones since membership fee is payable once in a life time.

111 AFAA SECRETARIAT :

AFAA Secretariat in Rabat has done excellent job during the past three years in conduction workshops, publications, organising the present AFAA Conference and other activities. A great effort has been made in the past three years to strengthen financially the AFAA Secretariat by getting in touch directly with some Ministers of Agriculture in Africa e.g. in Kenya, Ivory Coast, Nigeria, to finance AFAA Secretariat on annual basis so that AFAA could be able to carry out all its programmes with success has so far been achieved in this direction. Furthermore we tried to establish a financial committee in each African country of AFAA member institutions but also this method failed to bring out any positive response. It is our charge to the next Executive to follow up these initiatives with the adoption of a new strategy.

It is high time now after ten years of AFAA's activities largely made possible through international donor agencies contributions that some African Governments should finance our future work in AFAA as well as support the running of our Secretariat financially.

The struggle to establish AFAA Project Secretariat is still on and my hope is that this Secretariat will be housed in any AFAA member Institution that is able to finance that Secretariat.

1V AFAA COMPARATIVE STUDY:

It was agreed by the 4th General Conference in 1981 that a Central Team should be appointed to synthesise, edit and publish the final phase (N°.111) of the study. It was further suggested that the Swiss Government should finance phase 111 as she did the phases 1 and 11.

I should like to say at this Conference that the Swiss Government after a number of correspondences, replied that she is very well satisfied with the data and materials that AFAA had already collected and published in phase 11. Therefore, one

can say that the AFAA Comparative Study has come to completion by publishing the collected data in three volumes ~~of 1972~~ in 1980. There were distributed to all AFAA members at the time of the fourth General Conference, Accra, 1981.

The published three volumes were thereafter translated ⁱⁿ to English or French and were dispatched to all members in December 1982.

I will like to take this opportunity to stress that the collected data were correct up to 1978, and will now need to be revised and new data added. Therefore, there is now an urgent need for AFAA Secretariat to arrange for a financial support with the Swiss Government or any other Organisation that may be willing to finance the revised study and publication of the updated data.

V. COLLABORATIONS WITH INTERNATIONAL ORGANISATIONS AND FOUNDATIONS:

Collaboration and Cooperation between AFAA Secretariat and International Organisations and Foundations are excellent. I would like to summarise the situation as follows:-

1. In 1982, AFAA gains the affiliated membership with the Association of African Universities (AAU).
2. In 1983, AFAA obtained a liaison status with FAO.
3. AFAA Secretariat is doing its utmost to gain an observer status with OAU and UNESCO.

Our relationship with FAO, DAAD, DSE, EEC, SIDA, USAID, UNESCO, UNEPetc. and Ford Foundation, Rockefeller Foundation, Commonwealth Foundationetc. are excellent in every respect.

V1 AFAA/DAAD SCHOLARSHIPS FOR GRADUATE STUDIES, 1982-1983 AND 1983-1984

It is a rather strange situation that a great number of African Students know more about developed countries rather than developing African countries. They travel mostly to France, U.K., U.S.A., and other developed countries to work towards their M.Sc or Ph.D degrees. Their Governments spend quite a lot of money (hard currency) for sending these students on official missions or some other students travel by themselves on fellowships given by some countries for foreigners in both cases students work mainly on problems related to the progress of developed countries but not on problems related to their own. After the completion of their graduate studies quite a number of them remain in the developed countries where they have obtained their degrees never returning to their countries, such

are great losses to Africa.

Therefore, the programme of exchanging students among some African Universities was initiated by AFAA for the following reasons:-

- (a) Exchange of ideas between two African countries through exchange of students will create a link between them.
- (b) It serves to solve African problems by African scientists.
- (c) It minimizes the migration of African scientists to developed countries.
- (d) It can create research teams from African countries to achieve progress in Agricultural food production on the basis of joined research projects between African scientists.

The project started on the basis of a pilot experiment to exchange students among Faculties of Agriculture where Faculty members are members of the Executive Committee of the Association of Faculties of Agriculture in Africa (AFAA). This idea has facilitated the matter and solved all the raised problems immediately as their faculty members come together for meeting at least once a year.

The following countries are presented in the AFAA Executive Committee for the past three years:- Egypt; Kenya; Morocco; Nigeria; Swaziland; Togo and Zaire.

To start with, students were selected, to work towards their M.Sc. degree and the promising ones will continue their programmes to obtain their Ph.D degrees.

The exchange of students was done between faculties of Agriculture within the Anglophone or Francophone countries as follows:

1982/83

Mr. C. Tizikara, From <u>Uganda</u>	to	Ife, <u>Nigeria</u>
Mr. B.M. Bondole, from <u>Zaire</u>	to	Nairobi <u>Kenya</u>
Mr. F. Shemereirwe, from <u>Uganda</u>	to	Nairobi <u>Kenya</u>

1983/84

Mr. A. Mutayoba, from <u>Tanzania</u>	to	Nairobi <u>Kenya</u>
Mr. M. Serunjogi, from <u>Uganda</u>	to	Nairobi <u>Kenya</u>
Mr. K. Kamulete, from Zaire	to	Rabat <u>Morocco</u>
Mr. G. Koker, from Sierra-Leone	to	Alaxandria <u>Egypt</u>

These student so far are doing well.

V111 CONTACTS BETWEEN AFAA AND MEMBER INSTITUTIONS

There are up till now fifty one members in our association out of a total number of seventy-two institutions in Africa. Still twenty one institutions are not yet members although they enjoy from AFAA the same benefits and privileges as AFAA membrs. Now, I implore and call on all non-members to join AFAA for the future, I am suggesting that AFAA benefits should only go to AFAA members who have been paying their fees regularly; I must mention though that there has been an increase of six (51 total now) in the number of subscribing faculties as compared with the situation in 1981 when we had only forty five subscribing members.

V1111 AFAA WORKSHOPS, SEMINARS

THE REVISION OF HIGHER EDUCATION CURRICULA AND THE INTRODUCTION OF SOCIAL SCIENCES IN AGRICULTURAL TEACHING

DAKAR, SENEGAL - 16-17 JANUARY 83

The workshop was started on 16th January 1983 in Dakar, Senegal and the opening address was delivered by Professor A.O. Adenuga, President of AFAA and the Deputy Vice-Chancellor of Ife Univeristy, Ife, Nigeria.

Participants were twenty two delgates from sixteen countries as follows: Benin (1); Cameroon (1); Egypt (3); France (1); Ghana (3); Italy (2); Kenya (1) Morocco (2); Niger (1); Nigeria (1); Senegal (1) Sierra-Leone (1); Swaziland (1) Togo (1); Tunis (1) and Zaire (1).

The programme which lasted for almost a week was loaded with different presentations, started every day at nine O'clock in the morning, ended at seven-thirty in the evening. There were eight sessions in the programme the last of which was devoted entirely to the discussion of the recommendations.

Two working papers entitled:

1. The need to revise the agricultural higher education curricula to make them more relevant to socio-economic development. By K. Twum-Barima, Ghana.

2. Introduction des Sciences sociales dans les programmes de formation des cadres superieures de l'agriculture et du developpement rural. By: Guy Belloncle, and H. Mobarak, UNESCO, Paris, were delivered at the first two sessions followed by very lengthy discussions.

Five full sessions were devoted to papers or case-studies (Fourteen papers) each of which was followed by a discussion. The discussions were very interesting showing the importance of the revision of higher agricultural education curricula and also the need for the introduction of social sciences in agricultural teaching. At the last session discussions were so fruitful and most delegates, gave their views in the presented papers afterwards, the participants arrived at various recommendations that were sent last February 1983 to all AFAA member institutions and interested parties.

HOME ECONOMICS IN RURAL DEVELOPMENT IN AFRICA - ALEXANDRIA, EGYPT

17 - 22nd October, 1983

The workshop was started on 17th October 1983 in Alexandria, Egypt and lasted for almost a week ending on the 22nd of October 1983. The opening addresses were delivered by Prof. Dr. M.A. Abdel-Rehim, Dean of the Faculty of Agriculture, Alexandria University and by Professor Dr. A.O. Adenuga, President of AFAA, and Deputy Vice-Chancellor of University of Ife, Nigeria.

Delegates from twenty-two AFAA member Institutions were presented at the workshop namely from: Accra-Legon (Ghana); Ahmadu Bello, (Nigeria); Alexandria, (Egypt); Abomey-Calvi, (Benin); Cairo (Egypt); Freetown; (Sierra-Leone); Ibadan, (Nigeria); Khartoum (Sudan); Lilongwe, (Malawi); Lome (Togo); Mansoura, (Egypt); Manzini, (Swaziland); Nairobi, (Kenya); Nsukka, (Nigeria); Port-Harcourt, (Nigeria); Rabat (Morocco); Reduit (Mauritius); Sokoto, (Nigeria); Yangambi (Zaire); Yaounde, (Cameroon); and Zagazig, (Egypt).

Number of Participants from each Country:

Benin (1) Cameroon (1) Egypt (24) Ghana (2) Italy (1) Kenya (3) Malawi (3) Mauritius (1) Morocco (2) Nigeria (9) Sierra-Leone (1) Swaziland (1) Togo (1) USA (1) and Zaire (1)

Number of males and females: Numbers of males and females participating in this workshop were 24 and 30, respectively. Numbers from African countries other than Egypt were 8 and 20, respectively indicating that women from African countries were very well represented.

International Organisations: Three International Organisations participated each with one lady; these were FAO (Rome); Rockefeller Foundation (USA); and Inter-Planned Parent Hood (London) centre for African Family Studies (Nairobi).

Objectives: The main objective of the workshop was to discuss the roles, status and needs of African women in rural development and to show how the introduction and/or strengthening of the teaching of home economics in AFAA member Institutions would enable the graduates to better help and assist rural women and families to meet their needs. The workshop's programme included, quite a number of subjects in home economics.

The programme (thirty papers) which lasted for a week was loaded with different presentations started everyday at nine-o'clock in the morning ended at seven-thirty in the afternoon. There were eight sessions on the programme the last of which was devoted entirely for the discussion of the recommendations. One more session was given to the specialists in home economics for a meeting to establish an association named "Home Economics Association in Africa HEAA". A Committee was charged with the task of drafting a Constitution, for formulating the Association's objectives (the outlines of which had already been accepted) and make all arrangements for the first Conference of the Association, including the seeking of funds.

Overall, discussions in all sessions were very interesting showing the importance of home economics in Africa. After long discussions and deep thoughts the workshop arrived at various recommendations that were sent to all interested parties.

AFAA/FAO TASK FORCE ON THE INTERGRATION OF POPULATION OF POPULATION COMPONENTS IN THE RESEARCH, TRAINING AND EXTENSION PROGRAMMES OF FACULTIES OF AGRICULTURE IN AFRICA

At the AFAA Third General Conference in 1978, one of the topics discussed was "Introduction of Population concepts in the Curricula of Agricultural training Institutions in Africa". After a thorough discussion, most representatives expressed the wish that AFAA member Institutions should take steps to introduce or improve and expand population components and activities within their research, teaching and extension programmes.

Following this wish, the AFAA Executive Committee at its meeting in March 1979 in Nairobi, agreed to establish a Task Force to work out in close collaboration with FAO, a detailed programme for the purpose of designing a regional project to coordinate and assist the efforts of member institutions.

These members were appointed as AFAA Population Task Force (One from each of Ghana, Kenya and Morocco) and they visited twelve member institutions (one faculty in each of the following countries) : Egypt; Kenya; Tanzania; Sudan; ¹⁰⁰ Nigeria; Ghana; Togo; Cameroon; Tunis; Morocco; Guinea; and ~~Cote d'Ivoire~~ to ascertain their interests and needs in this area, and thus to establish a basis for the initial formulation of more detailed project proposals focusing on the provision of needed assistance for the incorporation by member institutions of population activities within their respective training, research and extension service programmes.

These proposals were summarised and presented to AFAA Executive Committee at its meeting in Alexandria, Egypt (March, 1980) preliminary to the formulation of formal AFAA/FAO request to the United Nations Fund for Population Activities UN FPA, for the financing of both AFAA regional and associated national institutional projects that will encompass a broad range of population education, research and extension activities.

^{FP} The project on population education has since been submitted for finance to UN FPA through FAO based on the findings to recommendations of the AFAA Task Force. This study includes eleven countries; Cameroon, Egypt; Ghana, Guinea, Ivory Coast, Morocco, Nigeria, Sierra-Leone, Togo and Tunis. The following two workshops so far were held in 1983 one for Anglophone countries the others for Francophone countries.

FAO/AFAA WORKSHOP ON POPULATION EDUCATION FREETOWN, SIERRA-LEONE 19-23 SEPTEMBER, 1983 (ANGLOPHONE COUNTRIES)

The aim of the workshop was to incorporate Population/Family Life education concepts into agricultural economics, home economics, rural sociology and extension courses at agricultural/rural training institutions and outreach programmes in participating countries.

The specific objectives were:-

1. To identify rural training institutions that have programmes into which population components can be incorporated.
2. To identify courses within such programmes into which population concepts can be incorporated.
3. To select the specific concepts that would be incorporated into such courses.
4. To produce revision curricula reflecting integrated population concepts.

PARTICIPATING COUNTRIES:

FAO, Rome
Sierra-Leone

Gambia

Liberia

FAO/AFAA WORKSHOP ON POPULATION EDUCATION LOME, TOGO

11 - 17 DECEMBER, 1983

(FRANCOPHONE COUNTRIES)

The seminar was organised by FAO in Collaboration with AFAA and was hosted by l'Ecole Superieure Agronomique, Lome, Togo.

The meeting was attended by participants of Faculties of Agriculture from the following countries:

Bangui, C. Afrique

Bujumbura, Burundi

Cotonou, Benin

Dakar, Senegal

Lome, Togo

Ouagadougou, U.Volta

Tananarive, Madagascar

Brazzaville, Congo

B_tare, Rwanda

Foulaya Guinea

Koulikoro, Mali

Niamey, Niger

Rabat, Morocco

FAO was to prepare the final summary report of the meeting to be distributed to the participants by end of January 1984, and the final version of the module should be sent to the participants by end of March 1984.

1X FUTURE WORKSHOPS AND SEMINARS

We would recommend the following workshop to be done by AFAA in the next five years. It would be much helpful if any of AFAA member institution could adopt one or more of these workshops to be done in its vicinity providing that it will be able to provide all the local expenses including lodging.

1. Population Education in Cooperation with FAO
2. The Role of Faculties of Agriculture in Teaching and Training of Food Industry in Africa in cooperation with UNIDO
3. Training workshop to improve University Research performance in Africa.
4. Crop Production and Crop Improvement techniques.
5. Animal Husbandry, Nutrition and Animal Improvement techniques.
6. Training Course on Food Technology, Storage and Processing.
7. Integration of Extension Services with other Agricultural Specialisation

9. Role of Genetics and Genetic Engineering in Improving Agricultural Production in Africa.

X. AFAA PUBLICATIONS 1981 - 1984

1. 1981: AFAA Constitution, 2nd Edition in Arabic, English and French.
2. 1982: AFAA Comparative Study of all Institutions of Higher Agricultural Education in Africa. Translated version of vols. 1-11 & 111 as published in 1980.
3. 1982: who's who in Higher Agricultural Education in Africa.
4. 1983: Proceedings of the AFAA Fourth General Conference, Accra 6-11 April 1981.
5. 1983: Workshop on "The Revision of Higher Education and the Introduction of Social Sciences in Agricultural Teaching. Dakar, 16 -22 January 1983.
6. 1984 Workshop on "Home Economics in Rural Development" Alexandria, October 1983.
7. 1981:1983:AFAA Newsletter vols. 4,5 and 6 two issues each.
8. 1984: 5 year suggested programmes 1984-1988.
9. 1984: 10 years of AFAA Activities 1973 - 1983.

X1 COMMUNICATIONS WITH GOVERNMENTS AND ORGANISATIONS

AFAA has continued to send its publications, ^{or} workshops, Proceedings, Newsletter and others to all AFAA member Institutions, to all Ministries, of Agriculture in Africa, other interested Governments outside Africa and to International Organisation and Foundations that are interested in AFAA activities. This dissemination information will be continued in future.

X11 FUND RAISING

AFAA Secretariat have done great efforts to obtain funds for various workshops and for the AFAA 5th General Conference. The Executive Secretary was successful in achieving a good number of grants to finance the present conference.

The Executive Committee decided at its meeting in 1980 to establish local fund raising committees in some countries in Africa, but unfortunately very few institutions gave positive response and even many of Committees formed were not active at all. In future, AFAA may have to make its direct contact through diplomatic channels. AFAA will endeavour to obtain financial help directly from African Governments.

The full financial report of AFAA in the past three years will be presented in the report to be given by AFAA Secretary/Treasurer.

It is appropriate at this stage to express my personal thanks to members of AFAA Executive Committee and to all AFAA member Institutions. We should thank also and express our appreciation to the Government of Morocco for fully supporting AFAA Secretariat in Rabat, to the Government of Egypt for partial support of the workshop done in Alexandria last year and to the Government of Swaziland for hosting the present AFAA Conference.

AFAA is grateful to all international Organisations and Foundations for their continued sustenance of financial and moral support of AFAA activities.

THANK YOU ALL.

ASSOCIATION
OF FACULTIES OF AGRICULTURE
IN AFRICA

ASSOCIATION
DES FACULTES AGRONOMIQUES
D'AFRIQUE

اتحاد كليات الزراعة الافريقية

AFAA FIFTH GENERAL CONFERENCE

ON

FOOD SECURITY IN AFRICA

SWAZILAND, 22-28th APRIL, 1984

SUMMARY REPORT

PREPARED BY

PROFESSOR DR. A.O. TANTAWY, Ph.D., D.Sc. (EDINBURGH)
GENERAL SECRETARY OF AFAA

THE ASSOCIATION OF FACULTIES OF AGRICULTURE IN AFRICA, AFAA,
c/o Institut Agronomique et Vétérinaire Hassan II,
B.P. 6284 Instituts, Rabat-MOROCCO.

DISCUSSION

BREAK : 15 minutes

-AJANUGA, A.G., (Nigeria)-Agriculture and
Livestock Development in Nigeria :
Problems and Prospects.

-AMEGEE, J., (Togo)-Le Rôle des Sciences Vétéri-
naires dans l'autosuffisance Alimentaire
En Afrique.

DISCUSSION

HALF DAY OFF

V. FIFTH DAY

Thursday 26th April, 1984

FIFTH SESSION

9.00-13.00

Chairman: Prof. N.G. KUYEMBEI

FOOD SCIENCES, ENVIRONMENT AND
AGRICULTURE ENGINEERING

-MON'LB, A., (Egypt)-Cheap Improved Dairy
Products suitable for solving Malnutrition
Problems.

-AREF, M.M., -(UNIDO, Vienna)-The Rôle of Faculties
of Agriculture in the Development of the
Food Processing Industries.

-OLEMBO, R.J., (UNEP, Nairobi)-Environment Implication
of Agricultural Development.

-EL-SAHRIGY, A.F., -(Egypt)-Promotion of Food Security
in Africa Through Agricultural Mechanisation-A
cased Study in Egypt.

-HUSSEIN, M.A., -(Somalia)-Irrigation Problems
in Somalia.

DISCUSSION

SIXTH SESSION

15.00-18.00

Chairman : Prof. R.J. OLEMBO

TRAINING AND EDUCATION

-BEKOE, D.A., -(UNESCO, Nairobi)-Training
and Research Need For the Achievement of
Food Security in Africa.

- POLGREEN, J.K., (ILO, Nairobi)-
Agriculture in Youth Training Programmes :
Realities and Possibilities.

DISCUSSION

BREAK

- OKIGBO, B.N., (IITA, Nigeria)-
The Role of University in Ensuring
Food Security and Agricultural Development
Through Research and Training in Africa.
- CONTANT, R.B., (Isnar, Netherlands)- Linking Agri-
cultural Research and Higher Agricultural educa-
tion : A Partnership for Success.

SIXTH DAY

Friday 27th April, 1984

SEVENTH SESSION

Chairman: Prof. R.B. CONTANT

9.00-13.00

TRAINING AND EDUCATION (cont.)

- NOAH, S.E., (FAO, Ghana)- Human Resources
Development for Food Security in Africa.
- ATOR, P., (FAO, Rome)- Population and Agricultural
Development : Some Issues for Applied Research.

DISCUSSION

BREAK : 15 minutes

RECOMMENDATIONS

EIGHTH SESSION

Chairman: Prof. A.O. ADENU

AFAA BUSINESS

- AFAA President, Report
-AFAA Secretary/Treasurer Report
-Directives to the Next Executive Committee
-Sixth AFAA General Conference, Theme and Venue
-Election

SEVENTH DAY

Saturday 28th April, 1984

DEPARTURE OF DELEGATES

ASSOCIATION
OF FACULTIES OF AGRICULTURE
IN AFRICA

ASSOCIATION
DES FACULTES AGRONOMIQUES
D'AFRIQUE

اتحاد كليات الزراعة الافريقية

AFAA

5th. GENERAL CONFERENCE

ON

FOOD SECURITY IN AFRICA

SWAZILAND

22-28th April, 1984

SUMMARY REPORT



Prepared by
A. O. TANTAWY



اتحاد كليات الزراعة الافريقية

AFAA 5TH GENERAL CONFERENCE
SWAZILAND, 22-28 APRIL, 1984

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- Presented Papers : Authors and titles
- Participants, AFAA member Institutions
- AFAA Report : President of AFAA
- Directives to the Next Executive Committee of AFAA.
- The New AFAA Executive Committee
members : Names and Addresses.
- Presented papers : summary.

AGRICULTURAL ECONOMICS

- Sio, F.K., (Liberia): Strategy of Food Security in Liberia
- Kariuki, J.G., (Swaziland) : Causes of Hunger in Africa
- Low Allan, (CIMMYT) : On Farm Research and Food Security in Africa
- Banku Gelaw, (CIMMYT) : Role of Maize in Meeting Food Security in Africa
- Enrique Torres, (CIMMYT) : Wheat Improvement and Food Security.
- Mukuki, J.K., (Uganda) : Food Production and Plant Disease

ANIMAL PRODUCTION

- Lebbie, S.H.B., (Swaziland) : Food Security in Africa : The Role of Livestock.
- Shazly, K.A., (Egypt): Securing Animal Proteins in Egypt.
- Ajanuga, A.G., (Nigeria) : Agriculture and Livestock Development in Nigeria Problems and Prospects.
- Amegee J., (Togo) : Le Role des Sciences Vétérinaires dans L'autosuffisance Alimentaire en Afrique.
- Hussein El-Said Osman (BADEA)::A brief Review of Arab Aid to African Development with Special References to the Agriculture Sector.
- Magagula, Glenn, (Swaziland) : Food Security Problems in Member Countries of the Southern African Development Coordinating Conference SADACC.
- Eicher, C., (AID, Zimbabwe) : The Role of Technology Transfer in Increasing Food Production and Food Security in Africa.
- Goueli, A., (Egypt) : Economics in Food Security in Africa.

PLANT PRODUCTION

- Kuyembeh, N.G., (Sierra-Leone) : Food Security : Losses in The Traditional Rice Post Production.
- Asamoah, G.K. (Ghana) : Cereal Grain Production in Ghana:
- Osiru, D.S., (Swaziland) : Some Aspects of Yield Stability in Intercropping

FOOD SCIENCES, ENVIRONEMENT AND AGRIC.

ENGINEERING

- Monib, A., (Egypt) : Cheap Improved Dairy Products suitable for Solving Malnutrition Problems.
- Aref, M.M., (UNIDO) : The Role of Faculties of Agriculture in the Development of Food Processing Industries.

- Olembo, R.J., (UNEP) : Environment Implication of Agricultural Development
- El-Sahrigy, A.F., (Egypt): Promotion of Food Security in Africa Through
Agricultural Mechanisation - A case study in Egypt.
- Hussein, M.A., (Somalia) : Irrigation Problems in Somalia.

TRAINING AND EDUCATION

- Bekoe, D.A., (UNESCO) : Training and Research Need For the Achievement
of Food Security in Africa.
- Polgreen, J.K., (ILO) : Agriculture in Youth Training Programmes; Realities
and Possibilities.
- Okiqbo, B.N., (IITA) : The Role of Universities in Ensuring Food Security
and Training in Africa.
- Contant, R.B., (Isnar) : Linking Agricultural Research and Higher Agri-
cultural Education : A Partnership for Success.
- Noah, S.E., (FAO) : Human Resources Development for Food Security in Africa
- Ator, P., (FAO) : Population Agricultural Development: Some Issues for
applied Research.



اتحاد كليات الزراعة الافريقية

AFAA FIFTH GENERAL CONFERENCE

SWAZILAND, 22-28 APRIL 1984

DIRECTIVES TO THE NEXT

EXECUTIVE COMMITTEE

1. AFAA COMPARATIVE STUDY

The Swiss Government was satisfied with what has been achieved by AFAA in Phase I and Phase II and the study therefore comes to completion. AFAA should revise and update the data involved in the study up to 1985, AFAA should try some International Organisations to finance the revision and the publication of the updated data.

2. AFAA SECRETARIAT

2.1. To further examine the issue of the General Secretariat and strengthen it financially.

3. AFAA 5-YEAR PROJECTS AND PROGRAMMES*

AFAA Financial proposal to be submitted to African governments to include the 5-year plan of AFAA activities* (AFAA member Institutions who are willing to cooperate should adopt one or two of these projects to finance the local expenditures in their local currency.)

3.1. Population Education : In Cooperation with FAO.

3.2. The Role of Faculties of Agriculture in Teaching and Training of Food Industry in Africa : In Cooperation with UNIDO.

3.3. Training Workshop Improve University Research Performance.

3.4. Crop Production and Crop Improvement Techniques.

3.5. Animal Husbandry, Nutrition and Improvement, Techniques.

3.6. Training course on Food Technology, Storage and Processing.

3.7. Integration of Extension Service with other Agricultural Specialisations in Rural Development.

3.8. The Role of Agricultural Mechanisation in Food Production.

3.9. Strengthening the Communication and Cooperation between Institutions of Higher Agricultural Education in Africa.

3.10. Genetics, Genetics Engineering in Food Production in Africa.

- 3.11. *Plant Protection and Storage.*
- 3.12. *Agro-Energy*
- 3.13. *Ecology and Environmental Influences.*

4. CONTACTS WITH INTERNATIONAL ORGANIZATIONS

- 4.1. *AAU-Affiliation : AFAA is an Affiliated member with AAU since 1982.*
- 4.2. *FAO-Liaison status : AFAA has a Liaison member with FAO since 1983.*
- 4.3. *OAU-and UNESCO observer-Status: To make every effort towards obtaining OAU and UNESCO observer status for the Association.*
- 4.4. *To strengthen further the strong links with ACU; AAST; BADEA; DSE; GTZ; DAAD; SIDA; USAID; FAO; UNESCO; UNEP; EEC; etc. and Commonwealth Foundation, Ford Foundation, Rockefeller Foundation, IDRC. and others: AFAA should make every effort to solicity contacts with other international organisations.*

5. AFAA SUBSCRIPTION

- 5.1. *Increase in the annual subscription as the circulated note to all AFAA members, changing article v of the AFAA Constitution.*
- 5.2. *More effort is needed to recruit new members. Deans of non-member Institutions/Faculties are requested urgently to apply for an AFAA membership.*

6. AFAA PUBLICATIONS

- 6.1. *AFAA Newsletter should be strengthened and member Institutions should encouraged to use AFAA newsletter as a vehicle for communications of information e.g., new Postgraduate programmes, staff vacancies, letters to the Editor,... etc.*
- 6.2. *Who's who in Higher Agricultural Education in Africa should be revise include missing Institutes, and Faculties and new staff members.*
- 6.3. *Exchange of scientific Journals between member Institutions should be strengthened and all members are urged to send their journals free of charge to those members with no journals.*
- 6.4. *AFAA should publish a booklet with names and addresses of all Middle level colleges or schools of agriculture in Africa.*

AGRICULTURE AND LIVESTOCK
DEVELOPMENT IN NIGERIA: PROBLEMS
AND PROSPECTS.

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NIGERIA

There is presently an inadequate supply of food to the Nigerian population estimated at about 85 million people. The population is growing at a rate of 3 % per annum. In order to offset the food shortage and provide adequate food for the rapidly growing population, agricultural production must increase by more than the rate of population growth. This calls for a judicious planning to raise the level of crop and livestock production through increasing the productivity from cultivated land and converting uncultivated arable land to productive farms. Nigeria has a land resource of approximately 91 million hectares of which about 71 million hectares are cultivable. According to the Food and Agriculture Organization (FAO) only about 23.8 million hectares of land were actually cultivated in the 1970s under the traditional bush fallow system (Anon, 1982). The Cultivation is done by more than 70 % of the population living in the rural areas and producing more than 90 % of the total agricultural output. Despite the involvement of this large number of people in agriculture, food production has been very low and inadequate. In the 1970s the growth rate of agriculture was 1 % where it has stagnated presently. The growth rate of Livestock was about 0.75 %. The efforts made by the military government which mounted the "Operation Feed the Nation" programme (1976-1979) and the succeeding Civilian government which mounted the "Green Revolution" programme appear to have had little or no impact on agricultural and livestock production.

The objectives of this paper are to review the present status of the agriculture and Livestock sectors, highlight the problems militating against current government programmes for developing the sectors, and suggest strategies that can expedite increased agricultural and livestock production to meet the food needs of the people and ensure food security in the future.

As the mainstay of Nigeria's economy before the boom in petroleum mining, peasant agricultural production supplied most of the food and fibre requirements, provided some raw materials for industries and employment opportunities and contributed to the improvement of export performance to augment foreign exchange receipts.

Although these key roles were recognized during the oil era, the need for transferring resources from the booming petroleum sector to the agricultural sector was relegated and ignored. Consequently, the tendency to stagnation in agricultural output which started in the sixties degenerated to catastrophic declines which has now elicited acute national food insecurity problems.

It has been predicted that if this trend is allowed to run its full course, debilitating famine will inevitably befall the Nigerian people. It is hoped that such a disastrous consequence will be timely averted through a judicious combination of available physical, capital and human resources. The urgent effacement of government's heavy dependence on expensive and ineffective measures instituted to increase agricultural output will be salutary to national agrarian development efforts. Policies on agriculture and food strategies should subsequently be reviewed to favour a new trend that mobilizes all the peasant farming communities.

In a report of the "Presidential Mission on Agricultural Development in Egypt" setting strategies for accelerating agricultural development, it was stated :

"Given the fact that the country already falls for short of producing enough food to meet human needs and given the limited availability of arable land, one might question the desirability of expanding the production of meat and animal products. Indeed, one might question whether even the present level of resources developed to animal production can be justified"... it goes to say : "Converting large quantities of grain to meet or animal products and using large areas of fertile and to grow forages indicate a questionable allocation of scarce resources"... the strategy of continuing those policies which have favoured expanded production of meat and animal products at the expense of crops needed for domestic consumption or export appears unwise. Furthermore, we doubt that Egypt's comparative unwise. Furthermore, we doubt that Egypt's comparative advantage lies in the production of meat and animal products. Accordingly it appears better to concentrate on producing those commodities for which Egypt does have a comparative advantage and to import whatever level of meat and animal products the country wants and can afford (above and beyond local production derived primarily by using residues and by-products for feed.")

The then wrote "Two possible exceptions to this general statement might apply... the first is fish and the second poultry".

LE ROLE DES SCIENCES VETERINAIRES DANS L'AUTO-SUFFISANCE ALIMENTAIRE EN AFRIQUE

Y. AMEGEE

Ecole Supérieure d'Agronomie, Université du Bénin,

LOME, TOGO

L'Afrique cherche à parvenir à l'autosuffisance et à la sécurité alimentaire d'ici la fin du siècle tel qu'il est stipulé dans le Plan d'Action de Lagos. Pendant la période coloniale un accent particulier a été mis sur le développement des cultures de rente destinées à l'exportation, renforçant ainsi la dépendance vis-à-vis du colonisateur. Lors des catastrophes naturelles entraînant la famine, telles que sécheresse et tremblements de terre, la Communauté Internationale vient au secours de l'Afrique avec ses réserves céréalières et très rarement des produits laitiers. Aujourd'hui, aussi bien les pays donateurs que les intéressés ont compris qu'il fallait un développement autocentré axé sur les cultures vivrières pour permettre à l'Afrique de résoudre ses propres problèmes alimentaires. Cela sous-entend une augmentation de la production végétale et animale. Et c'est dans le cadre du développement des ressources animales que les sciences vétérinaires ont un rôle à jouer.

Après avoir défini ce que sont les sciences vétérinaires, nous traiterons successivement les points suivants :

- place des produits d'origine animale dans l'alimentation humaine.
- place des sciences vétérinaires dans l'autosuffisance et la sécurité alimentaires
- obstacles qui freinent le développement de l'élevage en Afrique
- dans une dernière partie nous tenterons de jeter les jalons des actions à envisager pour renforcer le développement de l'élevage.

THE ROLE OF FACULTIES OF AGRICULTURE
IN
THE DEVELOPMENT OF
THE FOOD PROCEEDING INDUSTRIES

M.M. AREF

UNIDO Consultant, Vienna, Austria

1. On 5 December 1980, the U.N. General Assembly, at the 83rd plenary meeting of its 35th session, passed a resolution proclaiming the 1980's as the Industrial Development Decade for Africa.
2. That important proclamation was the culmination of various events which led member states of the Organization of African Unity to adopt in April 1980 the Lagos Plan of Action for the Economic Development of Africa which originally brought the concept of the Decade into being "for the purpose of focusing greater attention and evoking greater political commitment and financial and technical support, at the national, regional and international levels for the industrialization of Africa.
3. In its resolution, the General Assembly called upon the United Nations Industrial Development Organization (UNIDO), the Economic Commission for Africa (ECA) and the Organization of Africa Unity (OAU), to formulate proposals to implement the programme for the Industrial Development Decade for Africa and to monitor its progress. A committee was set up by the three secretariats to co-ordinate activities relating to the implementation of joint programmes and projects, and its first task was to prepare proposals for the formulation and implementation of a programme of action for the Decade along the lines set out in the Lagos Plan of Action.
4. After a joint meeting in March 1981, at which an agreement was reached on the fundamental principles contained in the Lagos Plan of Action and on its translation into an operational programme, work proceeded on the preparation of proposals for the formulation and implementation of a programme for the Decade. The proposals were presented to an Intergovernmental Meeting of Experts on the Programme of the Industrial Development Decade for Africa, and to the Sixth Conference of African Ministers of Industry, held in October and November 1981 respectively, in the form of four major working papers :

- i) *Framework for the Formulation and Implementation of the Decade Programme;*
- ii) *Guidelines for the Formulation of Strategies for Major Industrial Subsectors and Areas;*
- iii) *Modalities for the Implementation of the Decade Programme; and monitoring and Reporting on the Implementation of the Decade Programme;*

After due consideration by the expert group meeting and the ministerial conference the four papers were amended to reflect the findings of both gatherings which adopted the proposals put forward therein. The four papers now constitute the major chapters of a document entitled "A Programme for the Industrial Development Decade for Africa which will be henceforth referred to in this paper as the Programme.

5. In responding to the concern expressed in the Lagos Plan of Action over the deteriorating food situation in Africa, the Programme recognizes that the subject of "Food Security" involves enormous problems; problem far surpassing the narrow sphere of increased agricultural production or the accumulation of grain reserves. They go to the very core of the prevailing agro-food systems in Africa, and touch upon many weighty questions.

6. One of those questions is how to re-orient African agriculture towards national food needs rather than towards exports of raw, or partially processed, materials to advanced economies. Is it better to grow cash crops for export to earn foreign currency which is hardly sufficient to import enough food for the population, or should cash crops be replaced by indigenous food crops?

7. Another question is why the industrialized countries do not suffer from a shortage of food, while countries with agriculture as the predominant sector of their economic structure seem to have a chronic food problem? In other words, could industrialization per se solve the problem of food shortages or would increased agriculture production simply eliminate it.

8. Looking at the economies of the developed countries, it becomes apparent that neither agriculture nor industry could have proceeded very far without parallel and balanced development of the other. Growth of agricultural output has usually been a critical determinant of the rate at which industrialization has proceeded. On the other hand, agricultural output and productivity in those countries could never have reached the present high levels without sufficient industrial support for agriculture and ample manufacturing facilities to process agricultural output.

9. The complementary interrelations between agriculture and industry are, therefore, essential for achieving self-sufficiency in food, and can only be fostered in developing countries within the national development plans. This is especially true in Africa where agricultural development was by and large originally dictated by the requirements of colonial powers, and does not seem to have significantly changed since colonialism had run its course.

10. As a minimum requirement, a national development plan should include a chapter on food development as a coherent whole, listing the various projects, reforms and measures to be undertaken in the various fields - nutrition policies, agriculture, industry, marketing, exports and imports (agricultural inputs, food processing industry, domestic marketing, transportation, financial and other investments etc.) - in order to attain the food objective. This should lead the political and planning authorities to take an overall view of the adequacy of the measures to be adopted and the institutions to be provided.

The World Food Council has taken the lead within the U.N. System in recommending national food strategies as the means for food self-sufficiency and the eradication of hunger in developing countries. A food strategy has been defined as an ongoing process based on a picture and a plan :

A picture of a country's present food situation - needs, supply, potential for increasing food production (including land and its distribution), storage processing, transport distribution and marketing facilities, legislative and administrative policies and machinery affecting food, availability of inputs (including seeds and fertilizers), infrastructure (including irrigation networks and roads), ~~technology, research, training and management~~

A plan to improve the picture - so that enough food of sufficient nutritional value reaches all the people in a country.

As each picture differs so does each plan, for no two countries have exactly the same problems, same needs, same economic philosophy.

But every plan contains the policies to reach the goals, the projects to carry out the policies, the technical and financial resource requirements of each project, how many of these resources can be supplied in the country and how many will have to be provided externally.

In this way, the strategy is also a prospectus for international development assistance agencies and donor countries.

Briefly, a national food strategy shows, in food terms, where a country is where it wants to go and how much it will cost to get there, and at the same time, provides the vehicle to make the trip.

At the time of writing this paper, 23 African countries have endorsed more integrated national food planning, and a national Food Policy or Strategy has already been developed in Kenya and Mali in which food processing has been given the consideration.

11. It is quite clear from the above that the food processing industries have a vital function within any national plans aiming at food self-sufficiency and security. They increase the quantity and quality of food through reduction of waste, preservation of perishable products, and utilization of by-products for animal husbandry, and in this way satisfy a larger final demand for food from a given unit of land and other resources. This is of particular value in the current world food situation.

12. According to the Programme "Developing food industries in African countries will improve food supplies and reduce imports. It will contribute to increased self-reliance by reducing food losses, adding value to the raw materials, increasing export earnings, raising employment levels and improving incomes. It will further ensure better market opportunities, stimula-

production and rural development, reduce urban migration, improve nutrition standards both qualitatively and quantitatively, increase opportunities for investment in agriculture and processing industries, and stimulate the development of allied sectors of the economy".

13. In spite of wide variations in the pattern of development in African countries it does appear that food processing industries possess certain characteristics which make them especially suitable for all developing countries. These include :

- a) High labour intensity;
- b) Many employment linkages,
- c) Modest capital and skill requirements
- d) Prospects for rural development, and
- e) Prospects for export - led growth.

They can thus perform an important function in stimulating production, productivity and diversification in the agricultural sector and can be strategic elements in the process of development. Many of these resource-based industries have proved to be pioneer industries in several developing countries, as they were in industrialized countries several generations ago. Food processing accounts for up to 60 % of the value added in all African industrial manufacturing, but, unfortunately, the choice of product lines for local processing is often based on external demand which sometimes encourages the local production of non-indigenous crops. Most other processed foods are for consumption by a high-income urban elite rather than the mass of the population.

14. In aiming at the priority goal of food self-sufficiency, the Programme recognizes that, "the food production-processing-marketing system represents an integrated and inter-dependent relationship since no area can be developed in isolation. Viable food industries depend on steady supplies of raw materials of suitable quality, plus a steady demand for the final products. The interdependence inherent in this food "system" means that several government ministries, agencies and other bodies are involved, with the result that the system is sometimes not efficiently organized.

15. The concept of the integrated approach to the food-processing industry was one of the two basic issues examined by UNIDO's First Consultation on the Food Processing Industry. Many participants at that consultation felt that the planning, evaluation, implementation, and co-ordination at the national level of all phases of the integrated food-processing chain were essential and that among the many factors which needed to be considered along that chain were such matters as the extent and quality of land, land tenure, water resource management, crop-production practices, appropriate varieties of plant and animal types, fisheries resources, technology and technology transfer, including the negotiation of technology agreements, and training at all levels and in particular at the intermediate or technician level.

16. Most of those factors are within the functions of Faculties of Agriculture, and UNIDO is most grateful to the Secretariat of the Association of Faculties of Agriculture in Africa (AFAA) for this opportunity to help break the barriers which traditionally existed between industry and agriculture, and to present some ideas on how Faculties of Agriculture in African Universities can contribute to the development of the food-processing industries as part of an overall solution for the food security question.

17. It must be stressed that the food security question is not only a matter of socio-economic development, but seems to be moving since 1975 to the realm of political contention. It has been disquieting to read that, "The deployment of American food power is the focus of a serious policy debate now under way in Washington". That debate was apparently a result of a research report which concluded that world grain shortages, "could give the United States a measure of power it had never had before - possibly an economic and political dominance greater than that of the immediate post-World War II years". Such pronouncements, though unofficial, must not be overlooked by developing countries suffering from food deficits.

THE ROLE OF TECHNOLOGY TRANSFER IN INCREASING FOOD PRODUCTION
AND FOOD SECURITY IN AFRICA : THEORY AND PRACTICE

CARL K. EICHER

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USAID/Harare/Zimbabwe*

*I wish to congratulate the conference organizers for selecting
Food Security in Africa as the theme for its 1984 meeting. This year
marks the tenth anniversary of the 1974 World Food Conference in Rome,
a ministerial-level meeting called to deal with what was perceived to
be a world food crisis. Although the world food crisis vanished a few
years after the Rome Conference, the per capita decline in food produc-
tion in Africa over the past 15 years is real. Moreover, the food produc-
tion problem will not vanish through short term tactical responses such
as increasing aid, policy dialogue and the preparation of food strategy
statements.*

*The concept of Food security gained international attention dur-
ing the Rome Conference; it dominated the entire meeting. After several
weeks of discussion and debate, the conference recommended a three fold
attack on world Food problems : increase Food production in the Third
World, set up international measures to deal with emergencies, stocking
policies, trade and Food aid and increase aid.*

*Ten years after the Rome conference, Food security - like farm-
ing systems research - is now a household word in the development litera-
ture, in food strategy plans and in policy dialogue between donors and
aid recipients. Moreover, there is broad agreement on the definition of
Food security and Food strategies to meet it. Food security can be broadly
defined as "the ability of Food deficit countries or regions or households*

witnin these countries to meet target levels of consumption on a yearly basis" (Siamwalla & Valdes, 1984). For a nation to increase its Food security, there is broad agreement that Food strategies should satisfy Four basic objectives.

- efficient growth in the Food and agricultural sectors
- employment and income generating opportunities to enable rural and urban people to purchase an improved diet
- access to Food to ensure that the entire population can satisfy subsistence Food requirements.
- adequate grain reserves, and/or reliable trading agreements for protection against bad harvests, national disasters and uncertain world food supplies.

Africa is now at the center of the world food and hunger discussions because there is growing support for the view that the basic problem the food production gap - has been building up for several decades and it will require a minimum of 10-15 years to solve it (Eicher, 1982). To deal with the Food crisis, African states have requested increased aid and donors have responded dramatically over the past decade to the point where per capita aid levels are, by a large margin, the highest in the world (Eicher, 1983 and Lele, 1983). But in the past few years, aid flows have leveled off and donors and international organizations such as the World Food Council have urged African states to prepare food strategies. African states have responded rapidly to this request and they now represent 32 of the 50 countries in the world that are implementing national food strategies. Donors are also pressing for policy dialogue and policy reforms as a precondition for aid. For example, Edgard Pisani, EEC's Commission for Development, stated bluntly a few weeks ago that because the project approach was failing to increase food production in Africa from now on the EEC is "going to finance policies - hence the term policy dialogue" (1984, p.68).

ACHIEVING SELF- SUFFICIENCY IN CEREAL GRAIN PRODUCTION
IN GHANA

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GHANA

Ghana is basically an agricultural country with over 70 % of the population engaged in that sector of activity.

Yet domestic food production is barely enough to meet the requirement of the population. For that matter the country has continued to be dependent on food imports and aid usually in the form of maize, rice and wheat to make up for the shortfall in production.

In recent years, however, declining food production and scarcity of foreign exchange are contributing to widening deficit in the food supply of the nation. As a result prices of food have risen beyond the means of the average person and for the first time real hunger is beginning to show up due to the fact that food is now being distributed along purchasing power rather than according to need.

Cereals, roots, tubers and starchy fruits (plantains, bananas) constitute over 80 % of the food supply. Since there is practically little international trading in roots, tubers and starchy fruits and no appreciable change in their production over the years, any deficit in food supply is usually borne from cereals. In effect, any discussion of food production should focus on the adequacy of cereal supplies. Ghana's requirement of cereals is expected to reach 2,4 million tonnes in 1985 on the bases of an average per caput consumption of 185 kg/person/annum (FAO, 1980) and an expected population of 13.4 million.

What accounts for Ghana's low domestic food production particularly cereals is the lack of improved agricultural technology. Some of the practices which impede production of cereals have been identified. The requisite technological improvements have been embodied in a phased development programme with two main goals. The short term goal will be to increase cereal output through a package of improved cultural practices. These are to be adopted and operated under the framework of shifting cultivation system of farming. Then there is a medium term objective of increasing the productivity and efficiency of farmers by introducing a package of innovations consisting of introduction of mechanized land preparation, well designed crop rotations, and low-cost weed diseases and pest control measures with the aim of replacing shifting cultivation with a more permanent cultivation system.

The concept of creating a network of Farm Service Centres in all the regions will be exploited to transfer these packages to farmers for adoption.

SOME ASPECTS OF YIELD STABILITY IN INTERCROPPING

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In many parts of Africa, the traditional cropping system is based on the simultaneous culture of several species of crop plant on the same piece of land, commonly referred to as mixed-cropping or intercropping (Willy and Osiru, 1972; Okigbo and Greenland, 1976). Depending on the local agroecological situations, 60 - 90 % of all the rainfed crops are still grown mixed with other crops. In East Africa, for example 75 - 90 % of all the beans are grown mixed particularly with maize or sorghum. In Malawi, 90 % of all the total area devoted to groundnuts is grown in association with other crops (Edje, 1980) while in Swaziland, recent reports indicate that during the past 10 years, intercropping practice has actually increased (Anonymous, 1982). Over 60 % of the farmers on Swazi Nation Land grow most of their crops in various combinations; the most popular one being maize and pumpkins.

The prevalence of intercropping practice and its persistence in many parts of Africa, may be attributed to a number of factors; first, in comparison to his counterpart in the temperate climate, the African farmer faces considerable problems for which he lacks sufficient control; rainfall varies unpredictably, both between and within years; soil productivity is rapidly lost due to heavy storms, while insects, diseases and weeds which thrive in the high temperatures and humidity cause untold damage to crops. The general lack of improved crop varieties, commercial fertilizers, pesticides and fungicides all add to his problems. Secondly, the greater proportion of the small farmers in Africa manage very small farms, usually less than two hectares. For example, the average farm size in Northern Nigeria is 1.59 ha (Norman, 1976) and on Swazi Nation Land, the area devoted to crops ranges between 0.5 to 1.0 ha, particularly on the Highveld and Middleveld (Anonymous 1983). Average farm sizes in many other

parts of Africa are certainly not any higher than these. In addition the small farmer relies on family labour and simple tools to accomplish the daily activities on the farm. The farmer has neither the capacity to absorb risks nor enough land to diversify cropping by growing different sole crops on pieces of land.

Thus by growing his crops together, the farmer would wish to ensure that both his profit-oriented and subsistence-oriented requirements are met from the same piece of land; secondly he would wish to ensure that the overall level of production achieved from that piece of land is reasonably stable from one season to another. For families engaged in subsistence farming, it is probably logical to say that their major concern is to reduce the probability of production falling below their requirements rather than effect any overall increase in the production. It is now generally considered that the stability of yield which is possible with intercropping is the one major reason why the system has remained extremely widespread in the developing countries on the grounds that it offers the desired insurance against uncertainties (Aiyer, 1949; Norman, 1974; Jodha, 1977). The objective of this short paper is to briefly discuss, in general the major ways by which yield stability can be achieved in intercropping.

MAIZE RESEARCH AND PRODUCTION

IN SUB-SAHARAN AFRICA

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In Sub-Sahara Africa maize is the most important staple food crop. Production has remained stagnant over the last two decades averaging about 1 ton per hectare. In some countries production per capita has actually declined. The poor performance of maize in Sub-Saharan Africa could in part be attributed to unfavourable agroclimatic environments, poor soil fertility, pests and diseases, the practice of growing maize as a subsistence crop, socio-economic and policy issues and the colonial legacy of growing cash crops for external markets at the expenses of food crops.

Improved varieties and hybrids as well as production practices do exist for increasing production. To realize this potential, location specific research by multidisciplinary research teams backed by strong national research programs is needed. Currently maize research is being conducted mainly by the national agricultural research institutes assisted by International Research Centres such as CIMMYT and IITA, bi-lateral agencies, private companies and missionaries. In certain countries research trials average 5-6 tons per hectare but national average yield levels are between 1-1.5 tons/hectare. Commercial farmers average 4-6 tons/hectare. Further advances in breeding hybrids or varieties would benefit the large scale farmers but are unlikely to have a large impact on the farmers who grow the bulk of the maize and who need help most, the small scale farmers.

The first research need for small scale farmers should therefore focus on those management factors that will double their present yield levels with minimum cash investments. Once they attain the 2-3 ton/hectare yield level, emphasis could be on use of hybrid seed and fertilizers so that they can also achieve 4-6 tons/ha yield levels presently obtained by large scale farmers.

The International Maize and Wheat Improvement Centre (CIMMYT) is collaborating with national research institutes in raising the productivity of resources committed to maize by farmers in the developing countries. The centre concentrates on providing improved, widely adapted and stable germplasm along with training procedures and other intermediate inputs. National programs are ultimately responsible for developing improved technologies and production practices for their farmers.

THE IMPACT OF INNOVATIVE WHEAT IMPROVEMENT
UPON WHEAT PRODUCTION

ENRIQUE TORRES

CIMMIT Wheat - East Africa

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The increasing wheat consumption throughout Africa is depleting stocks and has inflated imports in most African countries. This dual effect obviously endangers food security at continental and national levels by enhancing dependence from major wheat exporters.

Although the physical environment can be an unsurmountable constraint to wheat cultivation, the crop is amenable to fitting into suboptimal growing conditions by genetic manipulation.

Innovative genetic improvement of wheat has produced cultivar with shorter, stronger stems that can bear a heavier load of grain adaptable to a wider range of environments and resistant to rusts.

Successes in this endeavour have been possible from a technical side by the exploitation of the genetic variability present in wheat and wheat-related gene pools, and, beyond, by the exploration of crosses made with more distant genera such as Secale, Elymus, Hordeum and Aeropyron. Alternate evaluation of the progeny at ecologically different sites, and multilocation testing of new lines are also essential features of this successful approach.

One political basis of this success has been the unrestricted flow of wheat germplasm and exchange of relevant information throughout a global network of wheat scientists coordinated by CIMMYT. Current efforts of the network seek to fix further changes in wheat physiology to introduce tolerance to acid and alkaline soils, and resistance to foliar and head diseases with the aim of extending the wheat boundaries into the warmer, more humid environments of African, Asian and South American lowlands.

While the main thrust of the network still is the production of high yielding wheat lines for conventional wheat environments, CIMMYT-derived cultivars for the humid tropics are likely to become a viable option for those African countries committed to satisfy locally some or most of their wheat needs.

FOOD SECURITY IN AFRICA - THE
ROLE OF FARM LIVESTOCK

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This 5th General Conference of the Association of Faculties of Agriculture in Africa has been planned to consider the problems of and the potentials for increasing and securing food in Africa in order to free its ever increasing population from the bondage of hunger and malnutrition. While we may be mainly concerning ourselves with crops as the primary producers of human food, we do of course also recognise the potential of farm animals in meeting this human food budget either directly or indirectly. This paper, therefore, is an endeavour to look at these potentials, the constraints that sort of militate against the full exploitation of such potentials, and the opportunities that exist to overcome these constraints.

SECURING ANIMAL PROTEINS IN ALEXANDRIA, EGYPT

K. A. SHAZLY

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Food security could be defined as the means of securing the optimum requirements for energy, proteins and other nutrient to each person in a population at all times. This involves; Technical aspects of the problem, i.e. improved methods of production or the application of up to date technology to maximize production economically.

Socio-economic aspects which deal with the ability of individuals to at least obtain their minimum requirements to keep healthy and to perform their duties in life efficiently. It also deals with habits of food consumption which can result in unbalance of nutrients causing excessive consumption of certain nutrients and sometimes severe deficiencies in others. It also includes managerial aspects which deals with organizational matters for efficient utilization of available resources.

Political aspects which are responsible for just or unjust distribution of wealth hence of food requirements.

It is well known that more than 200 million inhabitants in the world exhibit one or more signs of nutritional deficiencies. Among these many are actually starving or on the verge of starvation.

The problem of food security has two dimensions - one dimension relating to the population and its rate of growth and the other is production and the rate of increase in production.

It is important to keep the rate of production always ahead of the rate of population growth otherwise the food gap will widen and the nation becomes more and more dependent on foreign aid.

For Egypt, this gap is unfortunately widening as shown from the figure 1 which shows the difference between utilization of major food commodities and their production from 1960-1980 (Wally, Youssef "Strategies for Agricultural Development in the Eighties." 1982).

The increase in production has not coped with the rate of utilization causing the widening gap. The result is continued increased dependence on importation of food commodities which reached over 50 % in Egypt.

This same picture repeats itself in most African and other developing countries but not necessarily exhibiting the same pattern. However, the overall picture is more or less the same.

- Increased rate of population growth
- Low production and inferior productivity
- Increased rate of consumption
- Greater imports and lower exports.

The potential for improving this situation in Egypt could be attained if constraining factors are to be removed. The potential is even greater for African countries to attain self-sufficiency in food production. Kenya has already succeeded in reaching that goal. However, greater efforts are needed to stay there and to produce even more for the less fortunate African Countries.

To do so the leaders of the countries and their governments are required to believe in the cause for food security and to treat it as part of the National Security. I have suggested in Egypt that a council headed by the president of the state for food security should be established in the same way as the presidential council Security. It is essential to have the authority breaking through bureaucratic boundaries and overcoming all constraining factors such as those given above i.e. Technical - socioeconomic and political.

7. FINANCE

- 7.1. To continue contacts with various governments in Africa and International Organisations and Foundations for financial support of the Association.
 - 7.2. Contacts should be made with African countries through the diplomatic channels that each country should contribute on annual basis the sum of five thousand US Dollars to AFAA annual budget.
 - 7.3. Contacts should be made, after ten years of AFAA activities, with International Organisations for their annual contribution in AFAA budget.
 - 7.4. Advertising for Commercial companies should be allowed in AFAA Newsletter, and other publications.
 - 7.5. Commercial companies should be invited to display their products during AFAA activities in return for their contribution.
8. Exchange of professors among member institutions should continue to be encouraged. Also collaborative research among member institutions should be adopted and emphasised.

9. THE SIXTH AFAA GENERAL CONFERENCE

- 9.1. Time : April, 1987
- 9.2. Theme : Food Security in Africa II - Follow up.
- 9.3. Venue : Rwanda, Alexandria (Egypt), and/or Togo.

STRATEGY OF FOOD SECURITY IN LIBERIA

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The above in a nutshell is the state of food security in Liberia. Following the broad guidelines given by the F.A.O., it can be seen that, Liberia is fully involved in the identification of the problems and impediments in the way of national food sufficiency, and has planned and implemented as many as possible within her finances, those strategies that will lead to increased food production.

Although the present level of food security is unsatisfactory, it is our fervent hope that the continued planning and implementation of government objectives in agriculture, will in the long run achieve the much needed for security for the country.

CAUSES OF HUNGER IN AFRICA : SUGGESTED THEORIES

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Today Africa cannot feed itself. Per caput food production has been declining gradually over the last two decades. Yet the continent is rich in land, water and human resources. And paradoxically enough, Africa is a net exporter of food products, but she has become increasingly reliant on imports of food - every year she has to pass round her begging bowl to the gods of international charity, because she cannot pay for the food. What has gone wrong?

Natural calamities, particularly droughts, are serious causes of food shortages and therefore hunger in Africa. But wars, inefficient national agricultural policies, and even sheer incompetence, are equally to blame. Population expansion, more especially the rapid increase in urban populations, is a further complicating factor. Additionally, existing international forces of exploitation exert a suffocating stranglehold on Africa's initiatives.

ON FARM RESEARCH AND FOOD SECURITY
IN SOUTHERN AFRICA

ALLAN LOW

Regional Economist

CIMMYT Eastern " Southern Africa

Economics programme

In this paper I have presented OFR as a tool which is designed to reorientate research towards the needs and objectives of small non-commercial farmers. Since most of these farmers are primarily food producers we can expect OFR to contribute directly to improved crop and livestock technology that will be adopted by these small farmers.

OFR also has an indirect role to play in halting the steady reduction in food production per capita in Africa; This indirect role derives from those parts of the OFR procedures that are aimed at understanding the circumstances, aims and objectives of small farmers. We have seen how this understanding is leading to research activities based less on what constrains crop yields per hectare and more on what factors force farmers to compromise their management strategies and how farmers can be assisted in reducing those compromises. For example, we are gaining an understanding of why Botswana farmers broadcast their sorghum seed and do not weed, when they can get better yields per unit area by row planting and weeding. We are asking why Zambian farmers plant late, apply fertiliser late and weed late. We are beginning to understand why neighbouring farmers in Swaziland, with similar resources and access to markets and inputs, have very different husbandry and production levels. By gaining an understanding of farmers' objectives and strategies at the microlevel through OFR we can not only redirect research towards more appropriate technologies but we can also contribute to an understanding of how macro policy changes are likely to affect decisions at the farm-household level. Both are important because cannot be expected to solve the food production problem in Africa.

For example, the same kinds of difference in production performance observed between neighbouring farmers in Swaziland have been not in Zimbabwe where cattle owners in the area were observed to achieve high yields than non-cattle owners in the same area. It is becoming increasingly evident that non-farm factors play an important part in determining how farm-households organise their farm production.

A BRIEF REVIEW OF ARAB AID TO AFRICAN
DEVELOPMENT THE SPECIAL REFERENCE TO
THE AGRICULTURAL SECTOR

HUSSEIN EL-SAYED OSMAN

The Arab Bank for Economic Development
in Africa BADE
Khartoum, SUDAN

In conclusion let me, Mr. Chairman, strike a more personal note. It is a source of great pride and joy for me to be attending with you the triennial meeting of your esteemed organization with which I have been closely associated right from the beginning.

I had the honour and privilege of being a member of the steering committee which was instrumental in establishing this association. Further honour and privilege were conferred on me when I was elected as its first president. Much ground has been covered since that time and your organization has emerged as a force to be reckoned with both regionally and internationally in all matters related to agricultural education and training. By coordinating the efforts of the various faculties of agriculture and facilitating exchange of experience it has contributed towards the optimum use of very scarce resources; and by highlighting the importance of training it has brought faculty expertise and know-how direct interaction with the problems of the wider community to the advantage of all concerned. This innovative trend is well worth the support of all friends of Africa who are strenuously striving for a more dynamic role for the university in general and the faculties of agriculture in particular a role characterized by a closer and more positive involvement with the problems of economic and social development in a continent which is very much in need of the concerted efforts of its enlightened sons for attaining progress and advancement.

FOOD SECURITY PROBLEMS IN MEMBER COUNTRIES OF THE SOUTHERN AFRICAN
DEVELOPMENT COORDINATING CONFERENCE (SODCC)

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Luyengo, SWAZILAND

The paper has attempted to highlight two of the many factors which condition agricultural production in the SADCC region, namely, rapid population growth rates and the effect of the extremely unstable weather conditions on food security. It must be noted, however, that words alone, though useful, are highly inadequate to address these problems. It is of far-reaching importance for SADCC governments to develop appropriate strategies and action plans to mitigate the effects of these insidious forces on agriculture. In as much as governments have to take immediate action in this regard, faculties of Agriculture and research scientists have an equally important responsibility to generate adequate and appropriate information not only to assist policy formulation but to be readily available in the execution of a consistent strategy for alleviating this region from the disastrous effects of these problems.

- 5) *Lack of Mechanization Extension Specialists*
- 6) *Need for financial support*
- 7) *Lack of Integration of Agricultural Equipment Marketing and Local Manufacturing.*
- 8) *Need for an Agricultural Machinery Industry*
- 9) *Current Irrigation Systems*
- 10) *Basic need for Applied Research and Development.*

The Mechanization Plan provides an official assessment of mechanization extension requirements and addresses all anticipated needs for capital investments, support facilities, credit funds, maintenance and repair infrastructure, personnel requirements, operating costs and training installations. As such the Plan is an integrated package of requirements designed to initiate comprehensive mechanization of agriculture throughout the cultivable land area of Egypt.

The five year Agricultural Mechanization Development Plan is summarized in the following :

- The Mechanization and Seedbed preparation at a 100 % rate after clearing the land from previous crops. Mechanical harvesting of wheat, rice, fava beans at the rate of 100 % by introducing combine operations in allowable holdings. In the remaining areas, two machines are used one for threshing and one for winnowing.*
- Sugar Cane and Horticultural Mechanization services reach a 100 % rate.*
- Mechanized Agricultural Planting and Harvesting operations for the remaining crops reach a 40 % rate.*

The following summarizes the procedures necessary for the proper implementation of the plan.

- a) *Establishing a 100 Pilot Governmental Machinery Service Centers (Servicing 5000 feddans) equipped with appropriate*

agricultural machinery suitable for area crops. Training and Extension are also included in the center.

- b) Facilitating the provision of loans for farmers and Tractor holders to encourage them in owning and operating Tractor powered agricultural machinery.
- c) Encouraging the establishment of either cooperative and private service centers or stations in regards to unobtainable, expensive machinery for ordinary farmers, also in terms of its operations and maintenance, (each station servicing 5000 feddans).
- d) Each Pilot Extension Station is provided with an adequate financial support, Also a high powered tractor and a sub-soiler for landlevelling operations are provided.
- e) Covering all cultivated areas in the country with workshops, maintenance and repair centers, is one of the National Plan's objectives. Also developing the 532 of present workshops on village levels (each servicing 10,000 feddans). The construction of 134 more central workshops, one for every 40,000 feddans (investments required for each workshop is LE 200.000).
- f) Several supportive plans are needed such as, Training Extension, Field Irrigation Development, Local Manufacturing in order to achieve the comprehensive plan objectives.

PROMOTION OF FOOD SECURITY IN AFRICA
THROUGH AGRICULTURAL MECHANIZATION-CASE STUDY IN EGYPT

AHMAD FARID EL SAHRIGI

Agricultural Engineering Ain Shams University, and Director, Agricultural Mechanization Projects and Research Institute, Ministry of Agriculture.

In the past Egypt was essentially self sufficient in Food Production. Since about 1960 food production failed to keep pace with consumption and the country had become increasingly dependent upon food imports.

In the first part of the 20th century, the Egyptian population increased from 1.5 to 2.7 percent accompanied by a decrease in cultivable land. In the Nile Delta the cultivable land diminished at the rate of 75,000 feddans during the years 1970 to 1980 due to the expansion of urban areas with the relative increase in the newly reclaimed land by about 90,000 feddans every year during the same period. However, the increase in Agriculture Production was very much limited to 1.5 percent in the plant crops and 3.8 percent for Animal Production (SAAD, 1982). This indicates that the Egyptian Economy will be under severe pressure and the gap between Food Production and consumption will be ever widening unless a drastic revolution in production accompanied by a substantial decrease in consumption is to take place.

In this respect and with evidence of having an enormous potential in increasing production, the Egyptian Ministry of Agriculture has taken all necessary measures to launch a program through strengthening research and extension efforts.

The major topics of concern to the Egyptian Ministry of Agriculture are :

- 1. National Production Campaigns*
- 2. National Research Programs*
- 3. Upgrading of the Experimental Stations*
- 4. Training and Extension*
- 5. Agricultural Credit.*

In order to have successful campaigns several measures are planned :

- a) Application of the technology in demonstration areas, these demonstration areas for some crops will reach 10 % of total area by the fifth year.*
- b) Availability of inputs according to the requirement of the technological packages. These inputs include : seeds, chemical fertilizers, pesticides and mechanization.*
- c) Strong emphasis of extension through the subject matter specialists for each crop.*
- d) Solution of soil and water constraints especially in the areas of the campaigns, by better coordination with tile drainage, soil improvement and irrigation projects.*
- e) Assurances of availability of financial support to meet the recurrent costs of the campaigns.*

Through the National Research, the new technology is produced or adopted and tested in farmer's fields. This is a long term development system since it is a continuous source of technology that will be applied by the National Production Campaigns.

Mechanization will then be responsible to interlink the different technological packages for efficient adaptation and application. However, mechanization will face different factors hindering its development, these may be summarized as follows :

- 1) Land fragmentation*
- 2) Inadequate Training*
- 3) Need for Service and Maintenance Support*
- 4) Spare parts problems due to diverse supply success.*

DISCUSSION PAPER PRESENTED TO THE APRIL 1984 AFAA GENERAL CONFERENCE

IN SWAZILAND

POPULATION AND AGRICULTURAL DEVELOPMENT : SOME ISSUES FOR APPLIED
RESEARCH*

PAUL ATOR

FAO, ROME

It is now universally acknowledged that population phenomena affect the course of development, and are affected by it, even though there exists a wide range of differing and even conflicting opinions on the nature and importance of these reciprocal influences.

Comprehensive theories on this subject have unduly occupied the center of the stage in the "population debate" in the seventies, and there is now an increasing awareness of the fact that we need to know a lot more about the specific, sectoral, local effects of population change before good interpretations of the macro-economic effects of that same can be proposed. Furthermore, what is of concern to the day-to-day practice of development policies is precisely the specific, sectoral and local effects of population dynamics. It is also realized that population growth is not the only "population problem" or the only population factor which plays a role in development. Urbanization, migrations, changes in population structures, also play a major role, especially as regards the equilibrium and prospects of the agricultural sector.

* This paper was prepared by Alain Marcoux, FAO Consultant, for the Human Resources, Institutions and Agrarian Reform Division. It draws upon an earlier, more comprehensive piece of work prepared for the Policy Analysis Division of FAO as a contribution to preparatory work for the 1984 International Conference on Population (Expert Group on Population, Resources Environment and Development).

Formulating, monitoring and evaluating agricultural development policies and projects require better insight into the socio-demographic dynamics of rural populations, both as determinants and consequences of economic change in the rural environment. From the point of view of human resources, this implies that the institutions which are entrusted with the task of training the practitioners of agricultural development make these aware of this aspect of the reality they will have to cope with.

However, the information and data base for such a training will have to be developed. The evidence on interactions between population change and agricultural change is scattered and fragmentary. FAO has attempted to put part of it together for the use of agricultural training institutions.

But research will be needed at country level to identify those interactions in a context that is locally relevant for agricultural policies and projects. A methodological effort will also be needed to adapt the relevant concepts to the reality of developing countries' agricultural sectors and rural populations. The Faculties of Agriculture could play an important role in promoting such practical research through students' fieldwork and academic programmes.

Here follows a review of a few issues which appear to deserve attention in this context. This selection is based upon the priorities recognized by international conferences (2) as well as upon our more recent review of topics for training (1). From the substance standpoint, the range of issues presented reflects a belief that the most important population-related issues confronting agriculture are :

- the pressure of population on agricultural resources such as land, water and energy, which may limit overall access of the agricultural sector to those resources and cause the degradation of rural ecosystems;*
- the considerable changes occurring in agricultural/rural employment patterns because of the general dynamics of the labour force and, in many instances, of the growth of landless wage labour;*

-the streams of rural-urban and intra-rural migration and their changing patterns;

-and the dynamics of food consumption, with its consequences on health and related questions.

HUMAN RESOURCE DEVELOPMENT FOR FOOD SECURITY IN AFRICA*

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It should be emphasized that the only permanent solution to the problems of food security in most of the food-deficient African countries is the adequate growth in food production. There is a fairly widespread consensus that the food gap has widened as food production has failed to keep pace with the rising consumption needs. It cannot be the task of this paper to cite the long list of the internal and external constraints which have led to the deterioration of the over-all agriculture and economic situation in African countries, which have been extensively documented and discussed in other papers. But the main concern will be the effective utilization and mobilization of the under-developed human resources in Africa, and to suggest ways and means of overcoming the apparent scarcities in skilled manpower required for agricultural production. In broad terms, the increase in trained agricultural manpower in terms of professional extension workers, agriculture administrators and managers will constitute the essential elements required to supplement technical expertise to foster improvements in the organizational structures of the various agencies and institutions involved in agriculture and rural development programmes and projects.

One of the most cost-effective ways of approaching the food scarcity problems in Africa is the adequate education and training of the required numbers of the various agricultural professional and technicians who will manage agriculture development programmes such as extension, credit, inputs, marketing etc. at the national and local farmers levels. Despite the effort so far maintained by African countries in establishing effective agriculture extension and training systems, increased agriculture and food production has been constrained by the improper structure and functioning of these educational systems and other public services concerned with providing agricultural services to the farming communities in the

rural areas. Recent studies and surveys on trained agricultural manpower in Africa, particularly the Sub-Saharan Africa, has revealed that the major problems of human resource development is related to the shortages of high-level manpower with critical skills and competence, and the redundant or underutilized and chronic disguised unemployment in the rural areas. With human resources development as the main target, most African countries are at present committed to agricultural and rural development, and are to a greater extent, engaged in the process of modernization and transformation of their social, economic and political institutions.

LINKING AGRICULTURAL RESEARCH AND HIGHER AGRICULTURAL EDUCATION ;
A PARTNERSHIP FOR SUCCESS

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In much of Africa, the institutions of higher agricultural education and the agricultural research institutes constitute the two main concentrations of manpower trained in agricultural sciences. There are several reasons for the a priori assumption that they would cooperate. Firstly, their overall objective is the same, namely to contribute to agricultural and rural development. As a result, these two pools of highly trained staff cover similar areas of specialization, are able to discuss and work together, to share tasks, and to complement each other. Secondly, through cooperation they are able to make better use of scarce human resources, infrastructure, documentation and funds. And thirdly, cooperation enable them to exploit the many areas of complementarity, and to avoid the risk of duplication. The educational institutions can benefit from help given by the research institutes in teaching, tutoring, and thesis supervision, and from access to the infrastructure of the research station networks. The agricultural research institutes, on their part, can benefit from the educational institutions' specialized laboratories and libraries, their concentrated pool of specialists in a wide range of disciplines, the potential of their students as a mobile force for short-term assignments, and their ability to attract flexible project funding.

Design all these potential benefits one often finds that little is done to promote collaboration, either by the institutions concerned, or by governments, or by technical assistance and funding agencies. It is my strong belief that the potential for cooperation is great and that this should be exploited intensively as a matter of national concern. The purpose of this paper is to demonstrate the scope of this potential. In order to do so, it is necessary to first review the roles of the institutions of higher agricultural education, as well as those of the agricultural

research institutes. We shall then be able to see clearly in which areas these two kinds of institutions can help each other overcome their weaknesses, reinforce their areas of strength, and better fulfill their respective roles. In particular, it will permit those responsible for higher agricultural education gathered at this conference to see what their institutions can give to the agricultural research institutes, and what they can receive from them.

THE ROLE OF UNIVERSITIES IN ENSURING FOOD
SECURITY AND AGRICULTURAL DEVELOPMENT THROUGH RESEARCH

AND TRAINING IN AFRICA

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The food crisis of Africa south of the Sahara which surfaced most dramatically during the Sahelian drought of 1970-74 is currently of worldwide concern. Although the drought is now history and has hit some countries again in 1983, recent studies and prognosis on the future are unanimous in predicting a bleak future unless there are major changes in food and agricultural development policies and suitable shortterm and long-term interventions. According to McIntire (1981) short term policy measures to attain food security call for stabilization of production and consumption which requires the maintenance of consumption of essential foods at an acceptable level. It involves management of food supplies including imports and in some cases food aid. The short-term policy is also linked with food self-sufficiency by which imports can be replaced with locally produced food stuffs, in addition to establishment of grain reserves. Long-term food security according to McIntire (1981) is attained by developing agricultural and industrial production. This paper discusses the role of universities in the longterm investments required to increase food production as a component of agricultural development. But according to Mosher (1970) factors essential for agricultural development include, (1) effective marketing system for agricultural procedure, (2) continuous and systematic research in agriculture developing technologies needed by farmers, (3) presence of adequate production incentives for farmers and operators of agricultural support services, (4) presence, maintenance and operation of efficient transportation and communication system that reaches most farms and (5) local availability through manufacturing or importation of inputs and equipment needed by farmers at reasonable prices. The realization of potentials of these factors is accelerated by (1) presence of educational and training facilities for per-

sonnel in agriculture and for support services, (2) farmers organizations to enhance group action (3) availability of production inputs, (4) means of improving and expanding agricultural land, and (5) mechanism for planning and directing agricultural development programs as integral part of overall economic development.

Universities as institutions of higher learning and research have vital roles to play in facilitating not only food security but also in ensuring the development or presence of one or more of the above essential factors or accelerators of Mosher (1970) with respect to the following :

- Research for development of improved technologies and techniques for increasing production;
- development of equipment and inputs including finding ways for their more efficient utilization in industrial and agricultural production;
- education and training of staff in many relevant disciplines at different levels, and
- development of effective and ecologically sound methods of land development and soil management.

Universities may also indirectly influence agricultural development through research and training that significantly improve marketing systems, determine sound policies for providing incentives to farmers thereby boosting food production and ensure more effective communication of results of research to farmers and the public. The rest of this paper reviews what universities are and their roles in food production and agricultural development.

TRAINING AND RESEARCH NEED FOR THE ACHIEVEMENT OF FOOD SECURITY
IN AFRICA

BEKOE, D.A

UNESCO, Nairobi, Kenya

An Address presented on behalf of Unesco, to the Fifth Conference
of the Association of Faculties of Agriculture in Africa.

Swaziland. 22-28th April 1984

On behalf of the Director-General of UNESCO, Mr. Amadou Mahtar M'Bow. I would like first of all to thank the organisers of the Fifth Conference of the Association of Faculties of Agriculture in Africa (AFAA) for inviting UNESCO to this meeting. My presence and UNESCO's modest financial contribution to the organisation of this Conference are a further expression of UNESCO's commitment to education, training and research. While recognising that within the United Nations system, the Food and Agriculture Organisation has the primary responsibility for Agriculture, UNESCO maintains an active interest in the training and research aspects of food production and related fields, as in other areas in which the sciences can be applied to the complex and integrated process of development.

The theme of this Conference, Food Security in Africa, highlights a topical and critical problem on the African continent. It is no longer necessary to draw particular attention to the existence of a food crisis in Africa. This has been recognised as only part of an African crisis of many dimensions. The recent decisions of the Secretary-General of the United Nations to set up a Special United Nations Office on the African Crisis is the clearest testimony to this.

As far as food production goes, we are all aware of the current situation in which many countries which used to export food have become food importers. In countries which could not produce enough in the past, increased population, drought, political instability and inadequate agricultural policies in various combinations have made them even more dependent on food imports. And to crown it all, the overall African economic condition and global international economic relations have made it more difficult for those African countries that need to import food to do so in adequate quantities.

What can we all do about such a crisis? and what can Faculties of Agriculture in Africa in particular offer towards the resolution of the food crisis, bearing in mind that without food security the other aspects of the crisis, - health, increased all-round productivity, economic and political stability, etc. - will be even more difficult to tackle:

As with any crisis situation, we need to address ourselves to immediate relief and long-term measures. The role of the Association of Faculties of Agriculture in Africa in bringing about immediate relief is not, I believe, crucial. Other international organisations and friendly countries are in much better position. But I am convinced that our Faculties of Agriculture, given the necessary support and resources, can individually and collectively provide the critical initiatives and drive for the successful attainment of efficient and high food production and food security in the medium and long-term.

It is not necessary at such a forum as this to state the obvious, i.e. that high food production does not necessarily lead to food security. It is however, an important prerequisite. And providing the trained manpower for ensuring efficient food production is the business of any faculty of agriculture; soil and crop scientists, animal scientists, agricultural economists and engineers, and experts in the processing of farm produce have to be trained in adequate numbers. Apart from training personnel at the degree and sub-degree level for crop production and animal husbandry, it is necessary to provide the large numbers of extension personnel who should be the link between the farmers on the one hand, and on the other, those who provide various scientific and technological services and others responsible for innovations in production methods and practices. It is also your responsibility to carry out research and postgraduate training which will enable the peculiar agricultural problems of our environment to be effectively tackled.