

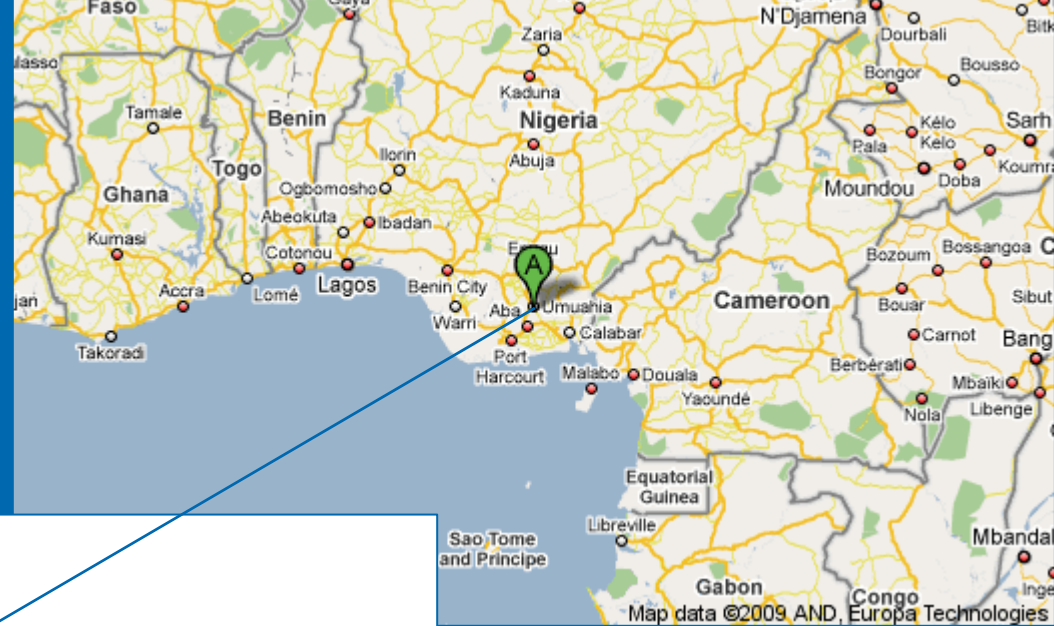
Research and Capacity Building, Priorities for Agriculture and Food Security in Nigeria

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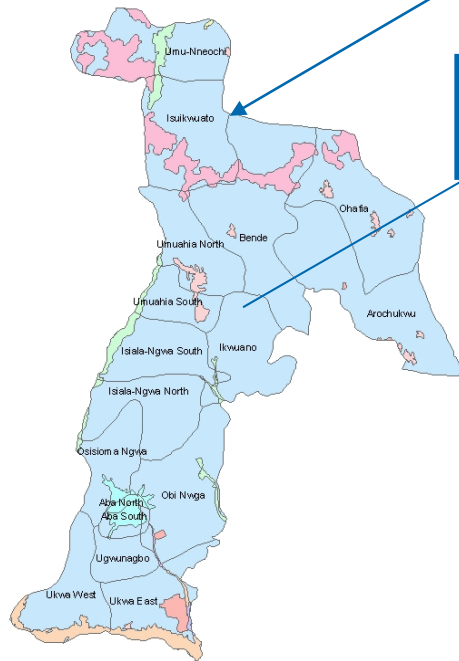
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LANDUSE MAP OF ABIA STATE BY LOCAL GOVERNMENT AREA



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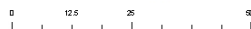
Total Annual rainfall [2008]: 2323.7 mm

Average Min. Temperature: 22.9 °C

Average Max. Temperature: 31.4 °C

Land use Description

- Agricultural Tree Crop Plantation
- Discontinuous grassland dominated by grasses and bare surface
- Disturbed Forest
- Extensive (grazing, minor row crops) Small Holder Rainfed Agriculture
- Forested Freshwater Swamp
- Intensive (row crops, minor grazing) Small Holder Rainfed Agriculture
- Major Urban
- Minor Urban
- Natural Waterbodies: Ocean, River, Lake
- Riparian Forest
- Undisturbed Forest



Introduction

- The challenges of meeting the rapidly growing food needs of the teeming population of Nigeria cannot be successfully overcome without significant and sustained investment in:
 - ✓ research and development,
 - ✓ conscious effort in turning research outputs into practice,
 - ✓ and sustained capacity building for research and extension in agriculture and related disciplines.
- Agriculture is the principal source of food and livelihood.
- Employs nearly three-quarters of the nation's work force.
- Farm and crop productivity is uncomfortably low partly due to:
 - ✓ low soil fertility, lack of appropriate crop varieties, drought, parasitic weeds, crop pests and diseases, poor access to inputs and information.

Introduction

- Post-harvest losses are huge especially in fruits, vegetables roots and tuber crops.
- Mainly rain-fed and dominated (90%) by smallholder farmers with average farm size < 2ha.
- Dwindling replacement of aging (55- 65 yrs) farmers constitute a debilitating drawback on agricultural productivity and the attainment of national food security.
- Several schemes have been implemented by successive Governments in Nigeria to address the issue of food security, but these did not achieve the desired goals due to several seasons.

Introduction

- Institutions that conduct research on various agricultural problems:
 - ✓ 17 National Agricultural Research Institutes with mandates in different crops.
 - ✓ 3 Research institutes with mandate for animal production and health
 - ✓ Several faculties of agriculture in Federal, State and private universities
 - ✓ 3 specialized federal universities of agriculture
- Huge gap exist between laboratory/field research outputs and farmers' current farm practices.
 - ✓ Research efforts individualized and lacked coordination.
 - ✓ Appropriate structures for identifying and translating novel research results into practical use by farmers are lacking.
 - ✓ National extension system requires repositioning.

Introduction

- To effectively tackle the challenges of food security in Nigeria:
 - ✓ Emphasis must be placed on Research and Development,
 - ✓ Building capacity of researchers and farmers and ensuring the existence of functional extension services.

Research and Development

- Major tool to drive food security by addressing:
 - ✓ soil fertility and crop yield,
 - ✓ animal productivity and animal health,
 - ✓ food storage,
 - ✓ processing and value addition,
 - ✓ land and environmental degradation,
 - ✓ strategies for efficient management and maintenance of natural resource base.

Pathway To Achieving Desired Results in R&D in Nigeria

- Research in Universities and other institution must be
 - ✓ Adaptive
 - ✓ Problem-solving
 - ✓ Issues- and commodity-based
 - ✓ Environmentally-friendly
- Trans-disciplinary approach to research to guarantee relevance, applicability and acceptability.
- Entrenching institutional structures for
 - ✓ determining research priorities
 - ✓ research administration and management

MOU AU Approach

- Adoption of a Research Policy and Plan Document
- University Research Board under the Chairmanship of the Vice-Chancellor
- Directorate of Research and Development, headed by a Professor, administers and manages the research and development enterprise
- Delineation of trans-disciplinary research programs
- Each Research Program led by Senior academic
- University Scientists/Researchers free to indicate their membership of the programs
- Research Teams in the Programs compete for available research funding

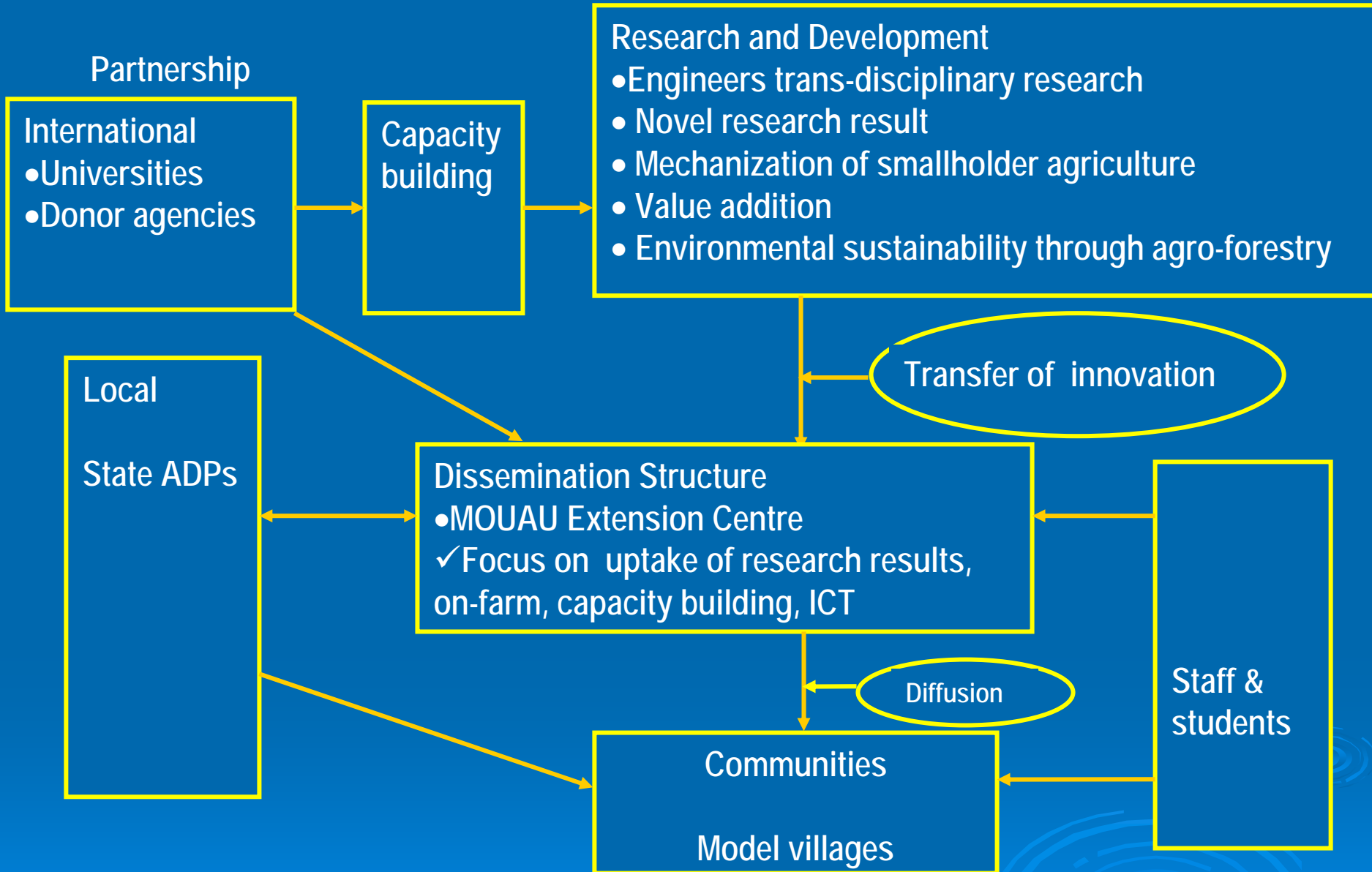


Fig. 1.MOUUAU Conceptual Model

Extension & Outreach

- Extension and outreach strategies are geared towards
 - ✓ building farmers' capacity to utilize improved crop and animal production techniques
 - ✓ designing innovative pathways for disseminating research results and innovations to farmers and industry

Extension & Outreach

- Decades of extension work in Nigeria have not yielded significant results for a number of reasons:
 - ✓ interventions were decided without participation by farmers: the scientist is seen as “all knowing”
 - ✓ farmers were treated in isolation from their households
 - ✓ socio-economic and cultural circumstances of the farmers were not factored into intervention strategies
 - ✓ target farmers may be too poor to care about new technologies
 - ✓ food production is only part of the larger issue of human well being

Paradigm Shift

- The new strategy should be holistic to address poverty alleviation of rural households through a broad-based matrix of interventions in the areas of:
 - ✓ Agricultural productivity
 - ✓ Health and nutrition
 - ✓ Sanitation
 - ✓ Education
 - ✓ Women and youth empowerment
 - ✓ Rural prosperity through establishment of agribusinesses
- This is the approach adopted by Sachs and Co in the Millennium Village Projects

Active Programs in MOUAAU

- We have adopted this broad-based approach and have selected 3 “Model Villages” in the surrounding communities where we undertake the following activities concurrently:
 - Technology dissemination to enable farmers achieve optimum production and use of their traditional crops in the face of climate change:
 - ✓ cassava, yam, maize, oil palm, horticultural crops.
 - Agribusinesses with micro-financing leveraged by the University for the establishment of small-scale:
 - ✓ Poultry farms
 - ✓ Snail farms
 - ✓ Fish farms
 - ✓ Oil palm processing facilities, etc

Active Programs in MOUAAU

- Health, sanitation and nutrition services
- Women and Youth empowerment through training for skills acquisition.
- Education for adults rain-the-trainer programs in crop and animal production, resource management & ICT

Capacity Building

- Full benefits from innovations require training, education and skill development for it to be utilized.
- MOUAAU is in the process of initiating a paradigm shift in agricultural education as a strategy for driving towards food security.
- This would emphasize a shift from use of labor-intensive hand-held tools, such as cutlasses and hoes to simple but powered small farm equipment and machines
- Although the success of this approach would depend on the design and development of appropriate equipment and machines through applied and adaptive research, building farmers' capacity and skill to use new innovations would be a major component.

Capacity Building

- This would require building farmers' capacity and skills to use the innovations (Figure 1).
- The existing nation-wide network of Agricultural Development Projects (ADP) could be used for implementation in concert with local farmers in scaling out innovations from Model villages..
- Traditional media and ICT have played a major role in diffusing information to farmers. MOUAU is partnering with private and public organizations to establish pilot projects in selected agro-ecological zones of Nigeria to demonstrate the power of ICT in addressing rural development and food security problems.
- The partnership will also assist with building the required human and institutional capacities to provide training and education to rural communities on how to manage local knowledge and information using ICT.

CONCLUSION

This paper examined research and capacity building as priorities for agriculture and food security in Nigeria. A veritable route to attainment of food security in Nigeria is through research and translating the output of such research into practical use by farmers. This would require capacity building as well as sustained and functional extension system. Packaging of scientific results in appropriate format for farmers use would be critical in the uptake of research results.