

**RECOMMENDED
CURRICULUM
FOR
ORGANIC AGRICULTURE
IN TERTIARY INSTITUTIONS (UNIVERSITIES)
IN WEST AFRICA**

Funded by the Association of African Universities

MRCI/08/F07/P33 - Partnership for Regional Food Developers Initiative – A Capacity
Building Support Strategy for Poverty Reduction in West Africa and the Establishment
of a Food and Organic Agriculture Network

Cover Concept adapted from Nestle Calendar 2010

Correct citation for this document:

I. O. Olayinwola, L. Sanni, A. Dipeolu, M. A. Idowu, A. A. Adebawale, I. O. O. Aiyelaagbe, M. Egunlety and S. Fomba (2009). Recommended curriculum for Nutrition and Dietetics in Tertiary Institutions (Universities) in West Africa, University of Agriculture, Abeokuta, Nigeria. AAU/MRCI/08/F07/P33 Project. ISBN: 978-978-49396-7-6

Printed by:

JEDIDIAH PUBLISHERS

Editorial Suite : 23, Obafemi Awolowo Avenue, Behind Wema Bank, Sapon Abeokuta.

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Publishing Consultant

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08033351453

Preface

In earlier studies by the Organic Agriculture Project in Tertiary Institutions in Nigeria (OAPTIN) and subsequent interactions during the 1st West African Summit on Organic Agriculture November 2008 at the University of Agriculture Abeokuta Nigeria, the dearth of skilled manpower to teach and research in organic agriculture became obvious. This has serious implications for the development of organic agriculture in the West African sub-region, for without adequate number of suitably qualified manpower, development of organic agriculture in West Africa will be retarded. The farmers will be unable to take advantage of the booming international trade in organic produce and the use of farming methods which have grave health and ecological consequences will continue to undermine the effort to attain the Millennium Development Goals (MDGs).

The most effective way to address this skills gap is by addressing it first and foremost at the tertiary education level. This is because this tier of education produces the manpower that formulates policies and executes them. Furthermore, the need for intervention is urgent and there is little time to spend on reaching farther down the educational ladder now; that will be done subsequently.

In absence of a curriculum to guide instruction on organic agriculture in the tertiary Institutions (Universities) of West Africa our team consulted widely, drew on personal experiences gathered through international travel and articulated this draft curriculum for teaching organic agriculture in the Universities. It is by no means a finished job. For instance it addresses only the Bachelor's degree programme. Nonetheless, it is hoped that even in its present form, it will generate a lot of useful discussions

among stake holders in organic agriculture which help to arrive at a final version which is affordable, practicable and more effective in optimising the potential of organic agriculture in West Africa.

The contributors are grateful to the Association of African Universities (AAU) for providing funds for this exercise.

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Acknowledgement

The contributors are grateful to Professor Olusola Bandele Oyewole, Coordinator, Mobilizing Regional Capacity Initiatives (MRCI), and Quality Assurance Program for African Higher Education Systems, Association of African Universities (AAU) for providing funds for this exercise. The Chief Supervisor, Professor Oluwafemi Olaiya Balogun, Vice Chancellor, University of Agriculture, Abeokuta, Nigeria, and other supervisors, Dr Chief Alfred Dixon, Director General, Sierra Leone Agriculture Research Institutes, SLARI, Freetown, Vice Chancellors of Njala University and University de Abomey-Calavi, Benin Republic.

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Introduction

As a follow up to the food developer initiative for African crops its become imperative to create necessary changes that will improve the utilization of Africa crops for better livelihood and increase entrepreneurial skill of nutrition and dietetics graduates. The Principal investigator and the Coordinator of the Organic Agriculture Networks assembled a team of Scientists comprising Food Scientists, Food Technologists, Economists, Nutritionists, and Educationists to come up with a framework to design questionnaire for Organic Agriculture, Food Science and Technology as well as Nutrition and Dietetic programmes in each country. After series of brainstorming sessions and meetings, the final approved questionnaires (Appendices) were used to gather information on current approved curricula in each Country.

The team administered the questionnaires to the participating countries as follows:

- i. 3 universities each in Sierra-Leone and Benin Republic.
- ii. 18 universities in Nigeria namely:
 - South West Zone: University of Ibadan, University of Agriculture, Abeokuta and The Bells University of Science and Technology, Ota.
 - South South Zone: Rivers State University of Science and Technology, Port-Harcourt, Igbinedion University, Okada and University of Port-Harcourt.
 - South East Zone: Federal University of Technology, Owerri, University of Nigeria, Nsukka and Micheal Okpara University of Agriculture, Umudike.

North Central Zone: University of Agriculture, Makurdi, Kogi State University, Ayingba and Ibrahim Babangida University, Minna.

North West Zone: Ahmadu Bello University, Kano, Uthman Dan-Fodio University, Sokoto and Katsina State University, Katsina

North East Zone: University of Maiduguri, Federal University of Technology, Yola and Atiku University, Yola.

In Sierra Leone three types of higher learning institutions are involved in the teaching and dissemination of knowledge on food technology and nutrition. These are the Njala University (NU) to which are affiliated the Milton Margai College of Education (MMCET), Northern Polytechnic, Eastern Polytechnic and the Young Women Christian Association (YWCA) School; Teachers Training Colleges (TTCs) and Vocational Schools (VS).

General Philosophy

The philosophy of the curriculum is geared towards training of students in the field of nutrition and dietetics which engender the variety of roles in all areas of nutritional sciences as well as dietetic practices. Human Nutrition and Dietetics programme ensure the production of highly skilled man power through adoption of effective techniques of instructions, laboratory practical, field demonstration and workshop practice and industrial attachment such that graduates can choose to specialize within any of the relevant units for entrepreneurship development. Furthermore the recommended curriculum for Nutrition and Dietetics in West Africa will assist to achieve the following:

- i. To Increase the level of competence ,awareness, extent of activities, facilities for teaching Nutrition and Dietetics in tertiary institutions (Universities) in West Africa with the focus of projecting African foods culture and overall environment .
- ii. To improve level of competencies in Nutrition and Dietetics demanded by employers of labour of Nutritional Sciences.
- iii. To unify content of syllabus, reduce gaps between available competencies and competencies demanded.

The unified curriculum for Organic Agriculture, Food Science and Technology (FST) and Nutrition and Dietetics for Universities in West Africa is geared towards repositioning our food related programs to reduce poverty, food insecurity, macro and micro nutrient deficiencies, postharvest losses, enterprises development and production of highly skilled manpower to turn around our food industries. Furthermore, the review for unified curriculum will assist to achieve the following:

- a. To Increase the level of competence, awareness, extent of activities, facilities for teaching of tertiary institutions in West Africa for teaching food technology, Nutritional sciences and organic agriculture with the focus of projecting African foods culture and overall environment.
- b. To improve level of competencies in Nutrition and Dietetics demanded by employers of labour in Nutritional Sciences industry in West Africa.
- c. To unify content of syllabus, reduce gaps between available competencies and competencies demanded.

In conclusion, the general philosophy of the curriculum is to adopt a multi disciplinary approach in training of students to give a broad base knowledge in all aspects of Food Science and Technology such that our graduates can choose to specialize in any of the relevant discipline.

The harmonized curricular for undergraduate and postgraduate programmes to be introduced for adoption by various Universities offering organic, and food related programmes as presented below. Based on our findings, entrepreneurship was missing in the curricular.

One major point to note is the relevance of entrepreneurship in universities' programme. We have inserted as appendix 1 a full review paper based on the outcome of administering questionnaires during the course of this study.

CROPS AND SOIL

INTRODUCTION TO ORGANIC AGRICULTURE

200 Level (3 Units)

Synopsis

- ♦ Basic concepts of Organic Agriculture (OA), Principles of OA (biodiversity, diversification and integration of enterprises, sustainability, natural plant nutrition, natural pest management and integrity) Scope of OA including aspects of organic gardening and farming (propagation, irrigation, tillage, transplanting, and compost production), animal husbandry, fisheries, etc.
- ♦ Historical perspective of OA, Misconceptions about OA, Opportunities and Challenges in OA, Differences between Conventional Agriculture and OA
- ♦ Basic Crop Production practices in OA, Organic Animal husbandry, Organic fish production, Organic wildlife practices and Conversion from Conventional to OA.
- ♦ Management of agricultural pests (arthropods, diseases and insects) in OA including the use of bio-pesticides.
- ♦ Standards and Certification in OA
- ♦ Marketing, Trade and Entrepreneurship in OA

ORGANIC CROP PRODUCTION

300 LEVEL (2 Units)

Synopsis

- ♦ Basic cultural practices in OA (choice of land, land preparation, planting/sowing, weeding, soil fertility

management, crop rotation, cover cropping, intercropping, pest and disease control, harvesting and post harvest handling).

- ♦ Crop rotation, manuring and composting, intercropping and companion planting, tillage and cultivation, mulching, fire (flame/thermal weeding) supplemental fertilization, cover cropping etc.
- ♦ Organic production of some vegetables, grains, legumes and fruit crops recognized for local market demand and also exports potential.

ORGANIC CROP PRODUCTION SYSTEMS

500 LEVEL 2 Units

Synopsis

- ♦ Soil management in organic cropping system (soil tillage, objectives of soil tillage, factors influencing timing and type of tillage, effects on tillage on soil properties), soil fertility management (manuring, cover cropping, fallowing, composting).
- ♦ Cropping systems in OA (crop rotation, intercropping, monocropping, mixed cropping)
- ♦ Weed management in OA (weed prevention strategies: crop rotation, tillage practices, planting and cultivation techniques, irrigation techniques, fallow period, flame weeding, organic and live mulching), mechanical weed management, hand weeding in garden and small-farm scale)

- ♦ Natural pest management schemes (physical, cultural and biological methods approved for pests, diseases and weed management in OA)

ORGANIC PLANT PROTECTION

PLANT HEALTH MANAGEMENT IN ORGANIC SYSTEMS

300 Level 2 units

Synopsis

- ♦ Basic principles of plant health
- ♦ Plant quarantine
- ♦ Identifying right plant for specific site
- ♦ Selection of pest/disease tolerant/resistant varieties
- ♦ Strategies for sustaining plant and ecological health (proper sanitation, appropriate fertilization, organic pesticides, necessary pruning, timing of planting to escape infection)
- ♦ Pest control of produce in storage

ORGANIC PEST MANAGEMENT I: FIELD CROPS

300 Level 2 units

Synopsis

- ♦ International concept of organic pest management (holistic approach)
- ♦ Pest population monitoring and disease diagnosis
- ♦ Concept, principles and application of organic pest management,

- ♦ Options in pest and disease management; physical, mechanical, Host plant resistance, Cultural, Biological, Use of bio-pesticides
- ♦ Organic protection of stored produce
- ♦ Permitted Chemicals in Organic Farming (Sulphur, Copper, Horticultural oils, Bicarbonates)
- ♦ Mechanisms of actions of permitted chemical and bio-pesticides

ORGANIC WEED MANAGEMENT

300 Level 2 units

Synopsis

- ♦ Redefinition of ‘weeds’. Classification of weeds. Weeds of economic importance.
- ♦ Basic principles of weed control
- ♦ Weed control strategies for organic systems; Crop Rotation, Cover Crops, Topping, Compost,
- ♦ Clean Seed/ Sanitation, Planting Date, Varietal selection, Row Width, Plant Population,
- ♦ Scouting for and removal of new weeds
- ♦ Organic herbicides
- ♦ Harrowing or Rotary Hoeing, Inter-Row cultivation
- ♦ Permaculture

ORGANIC PEST MANAGEMENT II (GARDEN CROPS)

500 Level 2 Units

Synopsis

- ♦ Principles and practices of organic pest management
- ♦ Companion planting,
- ♦ organic pesticides, garlic, tobacco, neem extracts etc.
- ♦ Beneficial pests,
- ♦ Ecosystem processes and biological functioning
- ♦ Foundational preventive measures to keep pests away

TECHNOLOGY DEVELOPMENT IN ORGANIC PLANT PROTECTION

500 Level 2 Units

Synopsis

- ♦ Selection, preparation and chemical analytical procedures for botanical and biocide preparation, Extract, Ashes, etc
- ♦ Infrastructural development, selection and mass culture of selected bio-control agents (predators, parasitoids, parasites, etc.)
- ♦ Plant clinics and laboratory techniques

BIORATIONAL PEST CONTROLS

500 Level 2 Units

Synopsis

- ♦ Pests Population dynamics ,prediction and development of early warning systems
- ♦ Trap crops, trap baits and sticky traps/pheromones
- ♦ Predators and parasites
- ♦ Botanical and biorational pesticides

- ♦ Border/perimeter stripping with trap crops

ORGANIC MANAGEMENT OF VERTEBRATE PESTS

500 Level (2 units) –

- ♦ Organic baiting or with permitted chemical
- ♦ Trapping
- ♦ Wire-mesh etc

BREEDING OF ORGANIC CROPS

500 Level 2 units

Synopsis

- ♦ Techniques and principles of organic crop germplasm bank. Significance of reproductive systems in organic crops: sexual and asexual reproduction. Role of plant breeding in pest and disease control in organic crops.
- ♦ Selection methods in breeding programmes of organic crops. Maintenance of organic breeding stock.
- ♦ Role of environment in breeding organic crops. Multiplication and distribution of improved organic crop varieties.

ORGANIC SEED PRODUCTION TECHNOLOGY

500 Level 2 units

Synopsis

- ♦ Environmental factors affecting organic seed multiplication. Pollination – wind and insect, hand pollination, fertilization and formation of seeds. Controlled multiplication.
- ♦ Seed certification in organic agriculture.

- ♦ Redressing deterioration of seed stock.
- ♦ Processing, storage and marketing/distribution of organic seeds.
- ♦ Gene banks

URBAN AGRICULTURE

500 Level 3 Units

Synopsis

- ♦ Rationale for urban agriculture: Migrant workers, urbanisation, prime land, ready market for high value crops and livestock products.
- ♦ Types of urban gardens/enterprises: Home gardens, fish ponds, small ruminants, large ruminants, poultry, truck farming, optimisation of combination of enterprises
- ♦ Environmental issues – stench from manure, pollution of underground water, disposal of waste. Opportunities for composting/value addition to waste.
- ♦ Practical – Study/characterisation of urban, work experience with urban farmers
- ♦ Conflicts in land use and their effects on urban farming. Legislation

ORGANIC CROP PRODUCTION SYSTEMS 500

Level (3 units)

Synopsis

- ♦ Soil resource management in organic cropping system (soil and water conservation). Soil fertility evaluation and management (manuring, fallowing, mulching, composting,

etc). Mixed farming and cropping systems in organic crop production (intercropping, crop rotation, mono cropping).

- ♦ Conservation of bio-diversity. Sustainable land clearing system. Crop protection in organic agriculture. Post-harvest handling and standards. Marketing of organic produce/ product.
- ♦ Practical: During practical year training programme (400 level) students should be exposed to organic agriculture through:
 - (i) visits to established farms
 - (ii) establishing and managing personal organic farm plot
 - (iii) at least 2 credit units allotted to practical in organic agriculture

SOIL RESOURCES AND MANAGEMENT ON ORGANIC AGRICULTURE

300 Level 3 units

Synopsis

- ♦ Nature of the soil and evaluation of soil. Soil processes and reaction. Soil fertility assessment and maintenance. Impact of soil organism and natural symbiosis in organic systems. Soil physical processes and conservation. Soil organic matter inputs, dynamics and management.
- ♦ Composting, cover cropping, crop rotation, crop residue management
- ♦ Green manures, animal manures, sludges, and other sources of nutrients

LIVESTOCK PRODUCTION AND HEALTH

INTRODUCTION TO ORGANIC LIVESTOCK PRODUCTION

200 Level 2 Units

Synopsis

- ♦ Definitions and general principles of Organic Livestock Production
- ♦ Animal management standards
- ♦ General principles of conversion from conventional to Organic Livestock Production
- ♦ Sourcing of initial breeding stock
- ♦ Breeds and breeding standards
- ♦ Prospects and challenges of Organic Livestock Production.

ANIMAL HEALTH AND ETHNO-THERAPEUTICS FOR ORGANIC LIVESTOCK

300 Level 2 Units

Synopsis

- ♦ Standards for animal health and disease prevention
- ♦ Sanitation and bio-security procedures
- ♦ Use of pro-biotics, vaccines and other medications in Organic Livestock Production
- ♦ Introduction to ethno-therapeutics and importance
- ♦ Medicinal Plants for animal disease control-sourcing, harvesting, extraction, refining and preservation of extracts.
- ♦ Combination therapy for effective disease control.
- ♦ Disease prevention under Organic Livestock Production

Practicals

- Identification of pro-biotic, medical plants
- Simple extraction techniques and preservation

ETHNO-VETERINARY MEDICINE

300 Level 2 Units

Synopsis

- ♦ Introduction to Ethno-Veterinary Medicine
- ♦ Common disease conditions in Livestock: Causes and identification
- ♦ Identification of medicinal plants and other natural resources for prevention and cure of animal mal diseases
- ♦ Identification of cytotoxic plants
- ♦ Sourcing, processing and dosing of natural products from medicinal plants
- ♦ Legislation for herbal therapy

BREEDING TECHNIQUES IN ORGNIC LIVESTOCK FARMING

500LEVEL 2Units

Synopsis

- ♦ Animal genetic resources in the tropics
- ♦ Animal variation and selection traits for Organic Livestock Production

- ♦ Genetic improvement for Organic Livestock Production (disease resistance, drought tolerance etc)
- ♦ Multiplication and distribution of stock for organic farming
- ♦ Animal behaviour, rights and welfare

Practicals

- ♦ Field trips and demonstration of techniques

ORGANIC LIVESTOCK PRODUCTION SYSTEMS

500 Level 2 Units

Synopsis

- ♦ Conversion to Organic Production
- ♦ Nutrition: Feeding standards and characteristic of feed resources for organic farm animal. Organic feed formulation and compounding, feed preservation and storage.
- ♦ Housing: Housing standards and materials. Adaptation and ecosystem, perimeter fencing and predator control.
- ♦ Organic Livestock Production system and health management.
- ♦ Manure and waste management composting, ensilage, etc)

ORGANIC ANIMAL PRODUCTS AND PROCESSING

500 Level 2 Units

Synopsis

- ♦ Transportation and pre-slaughter conditions.
- ♦ Slaughtering methods, carcass handling and evaluation
- ♦ Meat, egg and milk hygiene, preservation, storage and display

- ♦ Organic Animal Production certification

AQUACULTURE

PRINCIPLES OF ORGANIC FISH FARM MANAGEMENT AND HUSBANDRY

300 Level (3 Units)

Synopsis

- ♦ Fish Biodiversity in Nigeria
- ♦ Criteria for selection of fish suitable for organic farming
- ♦ Pond Construction & Design
 - Pond preparation
 - Fertilization
 - Stocking
 - Water Quality Management
 - Feeding Practices in organic fish production
 - Live feed production and use in organic fish farming
 - Production of organic fish feeds
- ♦ Organic fish farming systems
 - Monoculture
 - Polyculture
 - Integrated aquaculture (fish cum crops e.g. plantain/ banana, vegetables, pineapples e.t.c.; fish cum livestock e.g. poultry, ducks, pigs e.t.c)
 - Ecological Aquaculture
- ♦ Fish breeding
 - Biotechnology in organic aquaculture practices
- ♦ Fish Health and Hygiene, Integrated pest management

ORGANIC AQUACULTURE STANDARDS:

300 Level (2 Units)

Synopsis

- ♦ Environmental Considerations in the design of production systems
- ♦ Feed sizes at different stages/phases of production (fry, fingerling, juvenile, sub-adults and table fish)
- ♦ Broodstock quality
- ♦ Standardization in organic aquaculture (fish size, quality, e.t.c.)
- ♦ Treatment of farm effluents
- ♦ Organic Post Harvest Technology of fish (handling, preservation, processing, storage, utilization and marketing)
- ♦ Additives and ingredients permitted in organic fish production
- ♦ Prohibited additives

FISH NUTRITION AND FEEDING TECHNIQUES:

500 Level (2 Units)

Synopsis

- ♦ Feeding habits of fish species suitable for organic aquaculture
- ♦ Nutrient requirements of fish
- ♦ Special Nutritional requirements based on natural habitat of cultured fish (freshwater, brackish and marine environments)
- ♦ Larval feeding

- ♦ Live feed production
- ♦ Production of Organic fish feeds
- ♦ Organic feedstuffs, their classes and nutrient composition
- ♦ Feed formulation, production and quality evaluation.
- ♦ Packaging and storage of Organic fish feeds
- ♦ Feed sizes at different stages/phases of production (fry, fingerling, juvenile, sub-adults and table fish)
- ♦ Organic Feeding practices

FOOD HANDLING AND SAFETY

Synopsis

FOOD ADDITIVES, TOXICOLOGY AND SAFETY

300 level 2 Units

- ♦ Food Additives and contaminants; importance and safety, legitimate and illegitimate uses; the GRAS (Generally Regarded As Safe) and regulations affecting use of food additives, including chemical preservatives, organic and inorganic microbial antagonists, and quality improvers such as flavourings, bufferings and neutralising agents.
- ♦ Sources of toxins; interaction of toxic synthetic chemicals with food antagonists and promoters. Organic food processing and food toxins – haemagglutinins, antivitamin, protein inhibitors, etc. toxins from foods – carcinogenic, glucogenic glucosides, steroidal alkaloids, microbial toxins (mycotoxins, etc).
- ♦ Hazards from pesticide residues. Concepts of pollution and environmental toxicants – air, land, water, sound and industrial effluents.

- ♦ Environmental policies and future of food additives.

FOOD HYGIENE, LEGISLATION AND FOOD QUALITY CONTROL

500 Level 3 Units

Synopsis

- ♦ Principles of Quality Control, Statistical quality control – types of errors and decision making; control charts for variables and attributes-construction and users; sampling plan.
- ♦ Need for standards and legislation on raw and processed organic foods. The Codex Alimentarius Commission. The Nigerian Food Standards and legislation-problems, formulation, control/monitoring.
- ♦ Organic food packaging and labelling – its values and limitations. Principles of plant sanitation and personal hygiene.

POST HARVEST HANDLING, PROCESSING, PACKAGING AND STORAGE OF ORGANIC PRODUCTS

500 Level 3 Units

Synopsis

- ♦ Handling of fresh organic products for processing (control of enzymic and non-enzymic changes), grading, sorting, cleaning, peeling, sampling and size reduction.

- ♦ Processing of organic fruits and vegetables – canning, dehydration processes including freeze-drying, spray-drying and sun-drying etc. Chemical, physical and physiological changes in organic cereals and tubers during storage and handling and methods of preservation.
- ♦ Classification and identification of micro-organisms of importance in fermented organic foods. Effect of micro-organisms in organic foods: beneficial and detrimental, microbiology of organic foods and food stuffs especially local foods. Traditional and scientific principles involved in processing technology of organic meat products: factors affecting organic meat quality-physical, chemical, microbiological and management. Processing of organic milk and milk products. Outline of methods of production, properties, handling and storage. Principles of packaging, characteristics of packaging materials for organic foods, packaging requirements for fresh and processed organic foods for local and international markets.

ENVIRONMENTAL RESOURCES MANAGEMENT

TREES IN ORGANIC AGRICULTURE

300Level 2Units

- ♦ Definition of trees, uses and importance of trees, multiple land use – Definition, Agroforestry as example of multiple land use,
- ♦ Concept of agroforestry, classification of agroforestry systems and practices, Development and management of agroforestry nursery. Examples of useful multipurpose

species (fruits, vegetables, medicines, fodder, shade, boundaries etc)

NATURAL ECOSYSTEMS

500 Level 3Units

- ♦ Definition of ecosystems, classification of ecosystems, Ecosystems functioning, Biodiversity consideration
- ♦ Definition of biodiversity, impact of organic agriculture on diversity, consideration of biodiversity of non-timber forest product in organic agricultural production systems.
- ♦ Classification of non-timber products:- fibre, medicinal, edible products or forest foods exudates, industrial oil, domestication of mini livestock, conversion of organic municipal waste for organic manure.

FRUIT TREES OF NUTRITIONAL VALUE IN ORGANIC AGRICULTURE

500Level 3Units

Synopsis

- ♦ Origin, distribution, identification, genetic variation in germplasm
- ♦ Ecological requirements, propagation, plantation establishment and management -weed, pest and disease control.
- ♦ Harvesting, preservation, processing and presentation of the following: *Treculia africana*, *Dacryodes edulis*, *Chrysophyllum albidum*, *Irvingia gabonensis*, *I. wombulu*, *Artocapus spp.* *Mangifera indica*, *Anacardium occidentale*, *Parkia biglobosa*, *Citrus spp.* *Etc*

AGRICULTURAL ECONOMICS

INTRODUCTION TO ENTREPRENEURSHIP

300 Level 2 Units

The objective of the course to provide students with the knowledge, skills and motivation to encourage entrepreneurial success in agriculture, it draws on the spirit of innovation, creativity, and opportunity. The course offers the students a broad overview of entrepreneurship from historical and current perspectives

In the context of organic agriculture, the course concept can be adapted to bring out the salient features which the would-be entrepreneur has to bear in mind for a successful effort.

- ♦ Historical background of entrepreneurship
- ♦ Basic concepts and definitions of entrepreneurship
- ♦ Functions of the entrepreneur, Characteristics of the entrepreneur, Benefits of Entrepreneurship
- ♦ The entrepreneurial process (Record keeping, planning and Forecasting, Budgets and budgeting, Start off)
- ♦ Feasibility Study / Business Plan (Resources validation)
- ♦ Practical/Case studies : What can we learn from the local Entrepreneur? This aspect is the practical aspect that will take place in the Farm Practical Year (400 Level)

ORGANIC AGRICULTURE POLICY AND MARKETING

500 level 2 Units

Synopsis

- ♦ Organic Agriculture in the economy of West African Countries, contribution to GDP etc.
- ♦ Policies in organic agriculture, setting regional standards for organic agriculture produce, tracing, marketing, etc
- ♦ Certification procedure, enforcement, packaging and labelling.
- ♦ Certifying bodies
- ♦ Participatory Guarantee Scheme (PGS)
- ♦ International trade issues

AGRICULTURAL EXTENSION TECHNIQUES FOR INTRODUCING ORGANIC AGRICULTURE TECHNOLOGIES

400 Level, 2 units.

- ♦ Definition of key terms
- ♦ Principles of organic agriculture
- ♦ Technological change in organic agriculture, existing organic agriculture technological packages,
- ♦ Extension methods and communication
- ♦ Diffusion of technologies- definitions, theories on diffusion of technologies, diffusion processes, diffusion rates and factors influencing diffusion of organic agriculture technologies
- ♦ Innovation decision process
- ♦ Adoption – theories, adoption rates and process, factors affecting/influencing adoption of organic agriculture technologies, determination of adoption rates ,

characteristics of change agents and necessary social attributes for introducing organic agriculture technology

- ♦ Potentials of organic agriculture technologies in promoting social change.

SOCIOLOGY OF ORGANIC AGRICULTURE

500 Level, 3 units

- ♦ Understanding Social system-definition, social structure, social class, belief and value systems, leadership and power relations, gender, Communication and social relations
- ♦ Social perspectives on organic agriculture-concepts of perception, theories, traditional farming and organic farming, contemporary thinking on organic agriculture, collective action, group dynamics
- ♦ Social skills for promoting organic agriculture

ORGANIC AGRICULTURE PROJECT IN TERTIARY INSTITUTIONS IN WEST AFRICA

Development of Institutional Capacity in Organic Agriculture

QUESTIONNAIRE

Aim: The aim of this study is to

1. Determine the level of competence (awareness, extent of activities, available facilities for teaching) of tertiary institutions in West Africa (Specify your Country) in teaching organic agriculture.
2. Determine competencies demanded by employers of labour in the organic agriculture industry in West Africa (Specify your Country).

3. Identify gaps between available competencies and competencies demand.

A. Base line information

1. Name and address and geo-position of Institution
.....
2. Status Federal () State () Private()
3. Date established
4. Year of first award of degree in Agriculture
.....
5. Staff Strength.....
6. Departments
-
-
-

B. Perception of Organic Agriculture

1. Are you aware of the concept of Organic Agriculture?
Yes () No ()
2. What is your definition of Organic Agriculture?
.....
.....
3. Do you have an existing curriculum in Organic Agriculture?

4. How many staff have been exposed to training in Organic Agriculture in the last 3 years?
.....
5. In which aspect of Organic Agriculture do your staff have competence?
 - a. Production c. Trade e. Advocacy
 - b. Certification d. Research f.
6. Which courses do you offer in Organic Agriculture? Mention course code taking them this session
 - a.
 - b.
 - c.
 - d.
 - e.
7. Which courses do you offer that have components of organic agriculture in them?
.....
.....
.....
8. At which level is Organic Agriculture taught
 - a. Undergraduate
 - b. Masters
 - c. Postgraduate Diploma
9. How many student project reports were produced in the 2004/2005 academic session

<u>Dept</u>	<u>Total</u>	<u>No organic</u>
.....		
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.....		

10. How many student project reports were produced in the 2005/2006 academic session

<u>Dept</u>	<u>Total</u>	<u>No organic</u>
.....		
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11. How large is your Teaching and Research Farm (ha)?

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12. List the major enterprises on your teaching and research farm

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13. Is a portion of the T & R farm earmarked for Organic Agriculture?

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14. Which of the enterprises listed in 12 has an Organic Agriculture component?
-
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-
-
15. Does your undergraduate farm practical year curriculum include distinct modules in Organic Agriculture?
-
-
-
-
16. How would you judge the general attitude of the students to Organic Agriculture?
- a. indifferent b. enthusiastic c. resentful
- d. other (pls specify)
17. List technologies in Organic Agriculture currently in use on the T&R farm

- a.
- b.
- c.
- d.
- e.
- f.

18. Which of these were developed in this University?

C. Future outlook

19. Would you favour teaching of Organic Agriculture in your University?

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20. At which levels do you think this may be taught

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21. Would you favour a specialized degree programme in Organic Agriculture?

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22. At what levels?

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23. Would you prefer rather that Organic Agriculture be taught as electives?

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24. List constraints you envisage in introducing Organic Agriculture in this University

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25. Would you be available to assist in the development of a curriculum and teaching material on Organic Agriculture?

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26. Any advice on the Organic Agriculture project in tertiary institution in West Africa (Specify your Country)?

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