THE UNIVERSITY OF THE WEST INDIES
MONA CAMPUS

SUPPORTING THE AGRICULTURAL SECTOR

EDUCATION • RESEARCH • ENTREPRENEURSHIP
PROBLEM IN AGRICULTURE

Jamaica and the Caribbean are grappling with a host of problems in the agricultural sector. Among them are: the crisis in food security, loss of foreign exchange earning capacity from agriculture and rising fuel prices. If the sector is to survive these serious challenges, the UWI’s contribution will be crucial.

UWI INTERVENES

UWI, Mona has already begun to respond. The University is using a number of approaches, including collaboration with the Jamaican Government and the private sector, introduction of new programs, facilitation of advanced research to develop world-class agricultural products, mainstreaming entrepreneurship in agriculture, and the development and export of a greater range of value-added products.

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The UWI, Mona is unwavering in its commitment to playing a primary role in finding solutions and transforming the sector. This commitment is part of a larger one which the institution has made to the region. The UWI Strategic Plan 2007-2012 has mandated the UWI to provide a continuous flow of critical thought, scientific data and insights that can help policy makers to make informed decisions on a wide range of matters with a bearing on national and regional development and the quality of life of our people.

The institution is pleased to bring its expertise and intellectual leadership to the assistance of the agricultural sector and play its part in charting the way forward.

Prof. Gordon Shirley, Pro Vice Chancellor & Principal, UWI, Mona
THE UWI RESOURCES

The UWI has the best collection of intellectual and physical infrastructure in the region and also has an impressive network of academic linkages worldwide. Consequently, it is the best-equipped institution in the Caribbean to lead the transformation of the agricultural sector.

It possesses the largest cadre of academics and research facilities to support the advancement of the sector.

In preparation for research to evaluate the Hypoglycin A and B Content and the Phytochemistry of Blighia sapida (ackee), UWI student researcher is using the texture analyzer to check the ackee’s state of ripeness and to determine the variety of ackee for easy classification.

Conducting tests on food samples.

Working in laminar flow (sterile environment) using tissue culture technique on crop samples.
SUCCESES IN AGRICULTURAL RESEARCH

The work of Mona researchers has impacted and continues to impact agriculture and its outputs. UWI, Mona is currently leading a number of agricultural development projects that are contributing to modernizing and developing Jamaica’s agriculture and food sector. Ongoing research in soil types, organic farming, natural pesticides, disease control, biotechnology and genetic engineering is producing new and improved crops, processes and products:

MAKING JAMAICAN PATTIES SAFE FOR LOCAL AND EXPORT MARKETS

Producing the Jamaican patty is a technology-intensive specialty. Jamaica’s favourite fast food requires an inviolable quality control system throughout the entire chain of food custody. Taste is an iconic Jamaican patty brand that has benefited significantly from research done by UWI researchers. Their technology application aids in preventing spoilage of export products using the blast-freezing process.

EVALUATION OF THE POISON CONTENT IN ACKEE TO FACILITATE EXPORT

In the 1950s, the Chemistry and Pharmacology Departments at UWI, Mona were instrumental in isolating and identifying the toxic components in ackee, namely hypoglycins A and B. The possibility of traces of hypoglycin A (the causative agent of Jamaican vomiting sickness) remaining in ackee prevented significant development of international trade of the product. Efforts by the private sector and government agencies in establishing safe limits of hypoglycin A in processed ackees fueled renewed interest in the export of this quintessential Jamaican product. UWI, Mona research was involved in the extraction of hypoglycin from the ackee fruit (Blighia sapida), measuring levels of the toxic amino acid in the fruit and the water used to cook it, eventually resulting in the acceptance of ackee exports into the USA and other markets.

COMBATING RINGSPOT VIRUS AFFECTING PAPAYA

Jamaica’s flourishing papaya export industry suffered severely in the 1990s with the Papaya Ringspot Virus (PRSV) infestation of the crop. However, joint efforts between Cornell University and the University of the West Indies produced several transgenic papaya lines resistant to the virus, improving the capacity and yields of the Jamaican papaya crop.

EXTENDING THE SHELF LIFE OF COCONUT WATER AND TROPICAL FRUIT

UWI, Mona researchers are currently investigating measures to extend the severely limited shelf life of coconut water, which in recent years has gained significant popularity as a commercial drink. Techniques such as thermal processing have been used experimentally to improve its keeping quality. Additionally, investigations into the biosynthesis of ethylene may unlock the secrets of fruit such as papaya and breadfruit; post-harvest technology such as the use of silicone membrane and diffusion channels is also under investigation as a way of prolonging the shelf-life of tropical fruits.

RESEARCH ON JAMAICAN JERK PRODUCTS

It is known that Polycyclic Aromatic Nuclear Hydrocarbons (PAHs) are generally produced in grilled/barbecued meats. Many of these have been found to be mutagenic/carcinogenic to varying degrees in experimental animals. Currently, UWI, Mona researchers are examining the conditions under which traditional Jamaican jerked products are prepared, to determine the presence of possible carcinogenic PAHs in these foods.

FIGHTING DISEASES AFFECTING SCOTCH BONNET PEPPERS

Sparked by the difficulties faced by farmers across Jamaica and the region arising from a virus that attacked the popular Scotch Bonnet Pepper, the Biochemistry Section of the Dept. of Basic Medical Services (Medical Sciences Faculty) conducted investigations into the strain of a virus affecting Jamaican farmers using molecular biology testing. Results revealed that the tobacco etch virus was the one plaguing Jamaican farmers and it was shown to be highly transmissible from plant to plant. Through collaboration with the Ministry of Agriculture & Fisheries, farmers were advised by extension officers how to manage the disease by avoiding contamination of healthy plants by contact with diseased ones.

CONTROLLING MICROBES IN LOCALLY PROCESSED CHICKEN

Chicken forms a major part of the Jamaican diet and is one of the most popular sources of protein. Chicken compost is also utilized as manure and in biogas production. Uncontrolled micro-organisms pose a threat not only to the safety of chicken for consumption, but also to the shelf life, storage requirements and the quality of chicken compost. Research by UWI, Mona scientists focused on producing effective methods of controlling and managing micro-organisms in locally produced chicken in collaboration with one of Jamaica’s leading chicken brands, Best Dressed Chicken.
COMMERCIALIZATION OF MINI YAM PRODUCTION
Developmental work by UWI, Mona agronomists and scientists has resulted in a more effective method of producing smaller, more uniformly shaped yams that are more ideally suited to packaging for export. Through tissue culture and minisett technology, increased yam exports have been made possible, allowing for improved packaging capacity of a once ungainly and unattractive-looking product.

POST-HARVEST PRESERVATION OF BANANAS
Controlling the ripening process in fruits has been a problem for many years. Researchers at the UWI in conjunction with McGill University have looked at how post harvest technology can enhance the shelf life of bananas.

DEVELOPMENT OF EMBRYO TRANSFER TECHNOLOGIES FOR THE IMPROVEMENT OF DAIRY CATTLE
Sparked by the chronic instability of safe beef and dairy product supply on world markets and the threats posed to Jamaica’s food security, research on embryo transfer technology presents the possibility of finding effective ways to genetically improve the intrinsic quality of the local dairy herd, making it more resistant to disease, increasing milk production and extending the reproductive life of the cattle.

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DEVELOPMENT OF NEW CROPS FOR SMALL FARMERS

Decreasing prices for our main commodity crops such as sugar and banana have increased the need to develop alternative crops for our small farmers. Researchers at the Biotechnology Centre have identified alternative plants which are ideally suited to become economically viable substitutes. These crops are either farmed in small quantities or are in the wild. Many of them are used to make herbal teas and root tonics and are of value as folk medicine. Most famous among them are plants such as sarsaparilla, chainy root, medina, mints, strong back and ginger. Ginger has a huge economic potential and had a large market in the past, but like other crops, is now being attacked by a plethora of soil diseases and needs clean planting material.
Tissue culture protocols are being developed at UWI, Mona to provide clean, elite planting material. Plantlets being propagated include many economically important and medicinal plants such as pineapple, aloe, ginger, turmeric, fever grass, mints, scotch bonnet pepper, spirit weed, sarsaparilla and chainy root. Some of these plants, such as the chainy root which is endemic to Jamaica, have been put into culture for the very first time by the UWI, Mona.

Tissue culture protocols are also being developed for ackee and native trees such as West Indian mahogany, breadnut, ramoon and bitterwood. Farmers in six different communities across Jamaica (Flagstaff, Quickstep, Troy and Bunker’s Hill in the Cockpit Country; Glengoffe and surrounding communities in St. Catherine; and Dallas in St. Andrew) have been trained to take data on the growth and yield of these plantlets and are in turn training other farmers.

The rooted plantlets, still in the tissue culture vessels, are given to the farmers who are trained to harden the plantlets to decrease the unit cost and to maximize yield. Six hardening facilities and demonstration plots have been established in these communities. The farmers are also trained to collect data on the growth and yield of these new crops to facilitate informed decisions about increasing their production.

The next step in the process is the development of primary drying procedures and facilities for the harvested crops to prepare them for the processors.

This intervention by the UWI, Mona will provide more locally grown, readily accessible raw material for our local processors who currently import large quantities of their raw material. It will also provide income for the small farmers while protecting our forests from over exploitation.
SCHOLARLY CONTRIBUTIONS TO AGRICULTURE

Several faculties, cutting across many disciplines at UWI, Mona have made sustained and lasting contributions to the development of agriculture and food security.

THE FACULTY OF PURE AND APPLIED SCIENCES

Between 2002-2009 the Faculty of Pure and Applied Sciences at UWI, Mona has produced a total of 425 research papers addressing the agricultural and food sectors. The vast bulk of these studies were produced by the Biotechnology Centre and Departments of Basic Medical Sciences, Life and Marine Sciences, which accounted for 294 papers. These studies illustrate the high levels of research interest UWI staff have demonstrated in agriculture and food technology.
TACKLING FOOD SECURITY ISSUES

The task of meeting the world’s food dietary needs with the required quantity, sufficiency and affordability has become increasingly challenging. While this is not a new dilemma, it has accelerated in recent years. Concomitantly, food price inflation and food supply availability have had an unconstructive impact on the social, economic and political stability of many countries. This phenomenon is not limited to local markets. On the contrary, it’s a global reality. According to World Bank president, Robert Zoellick, approximately 100 million people are expected to be forced into deeper poverty as a result of rising food prices.  

INCREASED FOOD IMPORT BILL

Last year alone, the food import bill of most developing countries rose by some 25 percent, forcing governments to impose innovative price controls on food tax regimes in order to keep food on the tables of their poorest citizens. One strategy which many regions and countries have undertaken is the development/expansion of the local agricultural sector to address the food security problem.

The Latin American and Caribbean (LAC) region registered the largest increase of persons affected by food insecurity - more than 14 percent between 2007 and 2008. This increase was largely due to a drop in commercial import capacity as a result of a decline in the terms of trade. Even more instructive than the increase in the number of people affected by food insecurity was the 30% increase in the distribution gap. This meant that food insecurity not only expanded but also became more intense.

HEAVY DEPENDENCE ON IMPORTS

The region depends heavily on imports of grains and vegetable oils. Grain imports increased from about 30 percent of domestic supplies in the early 1980s to around 50 percent in recent years. Food aid historically accounted for a large share of imports, peaking at above 40 percent in 1987, but the region’s dependence on food aid has declined as strong economic growth lifted large numbers of people out of poverty. Food aid is still important in Haiti, the poorest country in the hemisphere, and becomes important throughout the region during times of natural disaster. Food aid accounted for only 3 percent of total imports in the last 3 years. The region’s dependence on imports made it difficult to shield consumers from rising grain prices.

W.I. SOCIAL SCIENTISTS STUDY THE PROBLEMS

With the aim of identifying possible solutions, a group of researchers in the Faculty of Social Sciences, UWI, undertook a research project which sought to explore the global food crisis, the possibilities and problems of the local agricultural sector and many of the problems that farmers face.

The project was conducted in three phases:

1. A desk-study, which explored past and current trends in Jamaican agriculture (including successful and unsuccessful initiatives), and compared agricultural best practices internationally, with a view to identifying appropriate techniques/initiatives which could be transferred to Jamaica.

2. A qualitative study which involved interviews with key stakeholders in the agricultural sector to explore the current agriculture-food disconnect in Jamaica and identify solutions.

3. A quantitative survey based on both the desk-study and qualitative study, which explored issues such as productivity and production problems and solutions, the use of technologies, youth in farming, the role of the government, access to capital and/or credit, issues of quality, logistics, institutionalisation, and supply, as well as issues of poor local human capacity/knowledge/capabilities.

RESULTS

The findings of the study indicate that there is a serious disconnect between agriculture-related buyers and sellers in the Jamaican society. This has made the development of a strategy to meet local demands problematic. The researchers referred to this as the ‘agriculture-food disconnect’. Other factors compounding the problem include issues of technology (inadequate or inappropriate); weak political will on the part of government, business and society; access to capital and/or credit; issues of quality; logistics; institutionalisation; supply problems on the part of local producers; and poor local human capacity/knowledge/capabilities.

The research also showed that the sector was underperforming. This deficit was attributable not only to a lack of an overall vision for the sector, but also to a failure to develop a cohesive strategic plan. Also contributing to the problem were cost of farm inputs (seeds, fertilizers, and pesticides); limited access to financial services; extreme weather conditions (hurricanes, tropical storms and flooding); market logistics

1 http://go.worldbank.org/syKyuqW7i8o
gluts and shortages – see Figure 1); and a myriad of contradicting or ad hoc policy initiatives by the Government of Jamaica. In addition, the academic community has failed in two regards: firstly, it has failed to continually advance and promote agriculture, and secondly, it has failed to replenish the aging farming population with youths who are suitable and qualified.

In addition, there are also other cultural and political issues that hinder the progress of the agricultural sector. For example, culturally, farmers embrace traditional farming techniques. As a result, productivity levels have remained stagnant for the last 40 years. Moreover, it should be noted that some of these farming techniques currently in practice were developed more than a century ago. Politically, successive regimes have chosen not to carry on or provide continuity for programmes and projects initiated by previous administrations. This trend has led to agricultural programmes with objectives spanning beyond a regime’s tenure in office being dismantled despite their current or projected benefits.

THE RESULTS OF THE STUDY TO INFORM POLICY DECISIONS

The results of the study were shared with the Ministry of Agriculture & Fisheries and some of the findings are already being implemented by the Ministry as part of its transformation of the sector. The study is expected to influence the design of new policies aimed at improving food security for Jamaicans.

FIGURE 1. CHALLENGES FARMERS ENCOUNTER

[Chart showing various challenges faced by farmers such as high transport cost, low farm gate prices, water supply shortage, etc., with percentages given for each challenge.]

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ICENS is a multi-disciplinary research centre located on the Mona Campus. The Centre has a number of staff who possess skills in areas relevant to the agricultural sector in Jamaica. ICENS undertakes studies on issues that affect health, food intake, small-farming vulnerability, crop contents and land use, resulting in the generation of data and interpretations likely to contribute to the solution of many of the problems in the agricultural sector. A significant part of its work involves investigations of the transfer of potentially toxic elements from soil through food to humans. Its research also focuses on the exposure to those elements through diet and, the possible mitigating steps that might be employed. There is potential for the work to cover enhanced uptake of desirable elements by plants for human/animal consumption. The main example of this work deals with the link between soil composition on the one hand, and food safety/nutritional benefit (including human health) on the other. In this regard the Centre has looked at 37 elements in some food crops and meats and has also examined the assimilation of some 40 elements in agricultural products and the concentrations of these in the soils on which the crops are grown. The data gathered from these studies can be used for formulating nutrition, public health and imported/export food regulation policies.

Staff members are engaged in a number of research areas such as geochemical mapping which involves on-going analysis of thousands of samples of soils, rocks, sediments, water & plants taken from accurately known locations, for as many elements as possible (currently about 60). Existing information from other programmes with geographically referenced data, e.g. agricultural productivity, biodiversity, epidemiology, geology, land use, and remote sensing are also incorporated as layers into the database. ICENS also engages in research to assess the essential elements in soils and Jamaican foods, the presence of heavy metals in Jamaican soils as well as its concentrations in the kidneys and livers of ruminants, the uptake by plants and the monitoring of air pollution in rural and urban areas using epiphytic plants.

MIAS is also engaged in a number of projects, the most notable being the Marine Aquaculture Development Programme. The essential feature of the project is to establish a world class industrially-focused research, developmentally-driven and commercialized Marine Aquaculture Programme in Jamaica. The project will emphasize the production of sea-water tilapia, in addition to the development of new marine species along commercial lines. The tilapia project is expected to produce 20,000 metric tonnes of fish annually, yielding $56M in foreign exchange/savings and creating 3136 direct and indirect jobs.
MONA GEOINFOMATICS INSTITUTE (MGI)
MGI can provide technical assistance to the Ministry of Agriculture & Fisheries or UWI’s Agricultural Unit with their projects, ranging from capacity building through specialized training in mapping and analyses, to detailed environmental and economic studies of particular areas or sectors of society. MGI’s services include:

1. Visualization of agricultural areas
   a. 2D cartographic maps at any scale of areas of interest, showing existing or planned agricultural regions, the relationships to settlement, industry, or the natural environment;
   b. 3D models of estates and estate features (detailed models of refineries, etc).

Modelling
   c. Environmental models to show impact of agricultural activity, either from existing data or from detailed fieldwork (GPS-assisted measurements can be plotted and modelled). Environmental models can also show the viability of agricultural activity anywhere in Jamaica;
   d. Hazard models can show vulnerability of the agricultural sector to flooding, saline intrusions, landslides, etc, as well as the impact of agriculture on the hazard system of a region;
   e. Minfired modelling of land cover change and plant health;

2. Simulations
   a. Environmental simulations can show impacts and extent of disasters (storm surges, wind storms, flooding, etc) on agricultural areas. This can be presented for various scenarios, from mild to catastrophic. Areal damage extent, as well as damage to assets can also be quantified;
   b. Economic simulations can show the potential labour force available for any sector. MGI has data on population and demography, education level, poverty, and income;
   c. Logistics simulations of farm-to-market and distribution networks.

3. Case Studies
   a. Detailed case studies done by specialists can be incorporated into GIS and used to create profiles for extrapolation to other areas.

4. High-Tech Options
   a. GPS tagging of agricultural assets – livestock, farm machinery, etc;
   b. Development of farm management systems to track inventory and telecommunications.

THE BIOTECHNOLOGY CENTRE
With a wide array of skills geared to tackle problems related to food and other issues in the agricultural sector, the Biotechnology Centre boasts expertise in areas such as virus research, medicinal plants, tissue culture, transgenic crops and, root & tuber-bioengineering. The Centre also boasts four active research groups. The outputs from these various areas of specialization have helped to find solutions to pressing agricultural problems. A prime example is a citrus planting project aimed at developing effective methods of controlling the Tristeza virus which is decimating the country’s citrus trees. This project, which generated clean planting materials for the industry, was successfully completed in January of 2007. The Centre has also tackled important viral disease propagation and management in a range of vegetables, among other initiatives. The Centre also has an active ex situ and in vitro gene bank of many economical and medicinal plants and is providing certified microbe-free elite planting materials for existing and new crops to farmers for research and commercial purposes. Graduates of the Biotechnology Centre can be found throughout Jamaica leading the biotechnological thrust in many institutions such as SRC, NCU, UTECH, Coconut board and many private ventures.
The Faculty of Social Sciences (FSS) has the infrastructure to support the agriculture and food sectors through its course offerings, research and consultancy work. The FSS possesses the requisite skills to address directly the problems related to commercialization, management and public policy issues regarding the agricultural sector. Furthermore, it provides training to graduates who are a huge source of supply of human capital to the sector.
The Department of Sociology, Psychology and Social Work through its course offerings and research can also provide an invaluable contribution to agriculture. Within the department resides the expertise that can help workers and managers in the sector deal with issues such as job loss, negotiations with trade unions, evaluations and promotions etc. Further, the department has the skills necessary to transform people’s thinking in relation to agriculture that can address the problem of the unattractiveness of the sector to younger persons and the weak collaboration among farmers which hinder their ability to make meaningful gains in sales, production, marketing and distribution.

The high level of research, skills and courses that the Faculty of Social Sciences offers, demonstrates that UWI Mona has the requisite breadth and depth to confront the commercialization and management problems which hinder the development of the agricultural sector in Jamaica. The unique advantage for UWI is that all these skills and expertise exist in one location, thereby allowing easy access and also, economies of scale in knowledge creation for a national innovation system in agriculture.

The Department of Economics and SALISES train graduates in economic planning, forecasting, international trade etc. which can be used to solve problems relating to production costs and optimal demand in the agricultural sector. The rigorous training provided by these departments to their graduates is unparalleled in the region.

The Department of Government through its training of graduates in areas such as International Relations offers a unique advantage to the agricultural sector thereby providing it with ready access to experienced and highly skilled professionals who can negotiate trade deals that are beneficial to the local sector. This is very important in light of the erosion of trade preferences for the sector from developed nations in the North.
Having developed an admirable tradition of excellence in teaching and research, the Faculty of Science & Agriculture (FSA) is well positioned to further the development of Jamaica’s and the region’s agriculture. The product of a merger of the Faculties of Agriculture and Natural Sciences in 1996, the FSA was separated into the School of Agriculture (SoA) and the School of Science. The SoA is comprised of two departments, the Food Production Department and the Agricultural Economics and Extension Department.

The FSA is able and willing to work with the Mona Campus to develop the necessary responses to address the needs of the Government of Jamaica and the Jamaican agricultural sector. The programmes currently offered by the FSA are extremely relevant to Jamaica and range from the certificate through to the PhD level, many of which focus on agriculture and its sub-disciplines. The agricultural areas of study at the MPhil/PhD level include Agricultural Economics, Crop Science, Livestock Science and Soil Science. At the lower levels courses such as Agricultural Diversification, Tropical Agriculture and Tropical Animal Science & Production are offered.

One of the Faculty of Science & Agriculture’s prominent research projects carried out in Jamaica is the Breadfruit Improvement Project. This project was designed to specifically address the widespread decline/death of breadfruit trees in Jamaica. The FPD imported stock of 2g improved breadfruit lines from Hawaii. Plants were produced from these and ‘grown out’ in Trinidad. Suitable lines were selected for distribution in Jamaica. The project is ongoing.

THE AGRICULTURE UNIT UWI, MONA
The Agriculture Unit (AU) at UWI, Mona, represents the School of Agriculture (SoA) of the Faculty of Science and Agriculture UWI, St. Augustine, Trinidad and undertakes outreach to agricultural and related communities in Jamaica, and the region as necessary on behalf of the SoA. The AU also coordinates the SoA’s External Programme in Agriculture (EPA) and the University’s Certificate Programme in Agriculture (UCPA) in Jamaica. Additionally it carries out adaptive research; and participates in UWI, Mona’s Life Sciences Department’s teaching, research, outreach and other programmes as determined by the head of the Department of Life Sciences.

CARIBBEAN AGRICULTURAL RESEARCH & DEVELOPMENT INSTITUTE (CARDI)
CARDI, which has an office located on the UWI, Mona Campus, is the premier agricultural research and development organization in CARICOM and works collaboratively with the UWI, Mona in addressing agricultural issues.

CARDI has a mission to enhance the socioeconomic wellbeing of the Caribbean people through research that improves the competitiveness and sustainability of regional agriculture.

The Institute has offices in all CARICOM countries with the headquarters on the St Augustine Campus of the UWI. However, not all disciplines and expertise within the Institute’s portfolio are resident in each country.

In Jamaica, the research team focuses on crop improvement, livestock production, natural resources management and capacity building.

Crop improvement: CARDI specializes in the production and protection, using plant health and IPM techniques, of callaloo, cabbage, hot peppers, sweet potato and coffee.

Livestock Production: The major focus in livestock production is on improving the breeds of goats and sheep and developing feeding systems from indigenous materials to promote economic production.

Natural Resources Management: CARDI concentrates on the management and rehabilitation of fragile and marginal soils, as well as developing organic farming systems.

Capacity Building: CARDI uses the outputs of the research and development activities to train other researchers, extension agents, students and farmers, and also provide farmer services.

THE UNIVERSITY OF GUELPH
Through a strategic alliance with one of Canada’s leading universities in agricultural science, the University of Guelph, UWI, Mona has further demonstrated its commitment to the collaborative approach to problem-solving. Both universities engage in collaborative research, training, information and other reciprocal forms of cooperation in meeting the agricultural challenges facing both nations. One major area of collaboration was in the preparation of a paper “Trends and Potential for West Indies Agriculture and Food” which includes regional analyses and predictions for the agricultural sector.

THE UNIVERSITY OF TECHNOLOGY (UTECH)
The UWI, Mona enjoys an excellent relationship with UTECH and is prepared to establish linkages with UTECH in finding solutions to the problems facing the country’s agricultural sector. Discussions have already begun among UTECH, CASE and the UWI, Mona to establish a collaborative research centre at Bodles and to enhance scientific research needed for the advancement of the sector.

THE COLLEGE OF AGRICULTURE, SCIENCE & EDUCATION (CASE)
Like UTECH, CASE is a member of the team of tertiary institutions engaged in discussions with the UWI, Mona regarding the Centre of Excellence for Advanced Technology in Agriculture at Bodles.
The UWI through its new agricultural programmes will produce and help sustain a new-generation agricultural entrepreneur. S/he will be an ICT-savvy businessperson equipped with life-long learning skills for problem-solving, research, and business. This new professional will be able to capitalize on the UWI’s knowledge bank, diagnostic services, faculty expertise, and the resources of the network of partnerships worldwide. This support structure will enable better decisions, optimum resource utilization and higher levels of productivity.

The agricultural entrepreneur will be trained to seek out opportunities throughout the value chain from propagation to final consumption with a greater focus on the post harvest segment where greater value can accrue.
UWI, MONA MSc in Agriculture

UWI, Mona is well-positioned to change the fortunes of the agricultural sector by offering the MSc in Agriculture through the Faculty of Pure & Applied Sciences and the Faculty of Social Sciences with support from the Faculty of Science and Agriculture (UWI, St. Augustine). Several disciplines will intersect in the delivery of this programme: basic, applied and agricultural sciences, business/management and technology.

There will also be alliances with practitioners and industry to ensure that students are afforded the opportunity to find viable solutions to the real-life problems facing the sector. Students in this programme will be exposed to instruction along the entire agriculture value chain with an emphasis on the untapped opportunities at the higher end, such as processing, distribution, marketing and sales. Supporting the training in these advanced areas of the value chain will be adequate training in the relevant and essential areas of ICT.

LEVEL ONE (SPECIALTY-ADMITTED STUDENTS)

Business students
1. Introduction to Agro-Environmental Management
2. Introduction to Agriculture Crop and Livestock Production
3. Post Harvest Technology

Science students
1. Management Accounting/Finance
2. Marketing and Behavioural Theory
3. Decision Models for Managers, Production and Operations Management

LEVEL TWO (CORE COURSES)

1. Research Methods
2. Organizational Strategies, Standards and Risk Management in Agricultural Production Systems
3. Advance Crop Production Technologies
4. Tropical Livestock Development
5. Organizational Strategies for Diversified Farming Systems
6. Agricultural Marketing Systems Management and Strategy
7. Agricultural Project Management
8. New Venture Creation

LEVEL THREE (ADVANCED COURSES)

1. International Entrepreneurship in Agricultural Enterprises
2. The Economics of Farms and Farming Systems
3. Market Assessment and Analysis

LEVEL FOUR (FINAL PROJECT)

1. Capstone Project (may include designing and setting up businesses)

WHO CAN ENROLL?

Entrants to this course are normally required to have obtained an honours degree or its equivalent in agriculture, forestry, botany, biological, soil, environmental, or social sciences; in rural development, development planning and management or a related subject. Applicants with other qualifications and who have at least 2 years’ professional experience in a relevant field of agriculture and development are also eligible to apply for admission to this course. Applicants that do not possess the requisite qualification and experience will be required to do pre-qualification courses in agriculture/sciences and the social sciences. References are also taken into account.

CAREER PROSPECTS

Graduates from the MSc in Agricultural Entrepreneurship will be equipped with the necessary tools to start their business along any aspect of the agricultural value chain. Graduates from this programme will have the ability to work on their own and within private, national and international development institutions that focus on agricultural research and development.

OTHER AGRICULTURE-RELATED PROGRAMMES

In the pipeline are the BSc Tropical Horticulture and BSc Agriculture programmes with majors in Agronomy, Livestock, Agritechnology, Communication and Extension, and Tropical Landscaping as well as certificate courses in tropical agriculture.
The U.W.I, Mona has an unsullied reputation for effective national engagement; the requisite infrastructure; relevant and important local and international partnerships; and an enduring commitment to working with governments in responding to the region’s needs in general and the agricultural sector in particular.

Given the magnitude and far-reaching nature of issues facing the agricultural sector, the U.W.I is best positioned, of all tertiary institutions in the region, to provide the leadership required to solve the problems.

U.W.I LEADS THE TRANSFORMATION

Using tissue culture technique to generate or to multiply sarsaparilla planting materials for the field.

The U.W.I, Mona is increasingly lending its research and expertise to the agroprocessing industry (inset: a modern pattie production line).
Discussing a business plan for an agribusiness project.