UMES Greenhouse Network

EXECUTIVE UPDATE
February 4, 2000

Funding: W.K. Kellogg Foundation
Maryland Department of Business and Economic Development
Maryland Department of Agriculture
Economic Development Administration (EDA) Dept. of Commerce
Rural Development (RD) U.S. Dept. of Agriculture
Economic Development Commission for Somerset County

UMES: Mr. Daniel Kuennen, Director, Rural Development Center
Dr. Thomas Handwerker, Horticulturist, Director of Small Farm Institute

Industry: Mike McCarthy,
Mr. Gary Mangum,
Mr. Andy Meyer, Greenhouse Manager

Project Concept:

This is the first incubator style, campus-based economic development project initiated by the University of Maryland Eastern Shore (UMES). This project was developed to support UMES' 1890 Land Grant Mission and to fulfill these objectives:

1. improve and diversify the individual and general agricultural economy of the Eastern Shore region
2. support environmentally sound, non-polluting agricultural technology
3. encourage public-private ventures and leverage investments, and
4. develop a cooperative model for a grower network

The project recognizes that UMES will be a leader in the development of a new environmentally sound horticultural greenhouse model of production for the Eastern Shore and United States. An important aspect is the ***recycling of water and wastes*** with little or no discharge to the environment.

Planned, financed and executed as an economic development project, all funds generated by this project are targeted by the original funding agencies to continually enhance the grower network and research of the "green industry".[1]

[1] The original industry partner was unable to meet their federal funding requirements and withdrew from the project in 1998 during the construction phase of the greenhouse. In response to their withdrawal, the University initiated a Request for Proposals (RFP ES98/99-#001) that included submissions from both domestic and international companies to manage the campus facility and develop the grower network.

UMES Greenhouse Facility:

Cost:	$3.2 million
Size:	2.5 acres
Design:	Dutch Vented

One Maryland Model Project:

The project brings together a central Maryland private industry to build on their technological greenhouse growing and marketing skills in a cooperative public-private venture with UMES to benefit economically depressed counties of the Eastern Shore of Maryland.

*This project applies the goals for **One Maryland**.*

UMES competitively awarded a 5-year, renewable management contract to Bell Nursery, Inc. of Burtonsville, MD. Under this arrangement, Bell Nursery agreed in the first five years to: **$50,000** annual rental fee, less any capital improvements, provide two (2) student internships, and create 21 jobs within three years as required by funding agencies. Their proposal was selected based on Bell's commitment to develop a network of greenhouse growers. The first two crops (or turns) for Spring and Fall 1999, have been completed. Bell made additional capital improvements for selected crop production before starting the third crop for Winter/Spring 2000.

Private Firm Investment:

Bell Nursery has completed the installation of **$715,000** of Dutch 'Ebb-n-Flood' tables in the 2.5 acre facility located on the UMES Agricultural Experiment Station. This is new technology for Bell Nursery and they hope that it will provide a more uniform, high-quality product while recovering nutrients. This represents the largest additional private investment at the University for an economic development project that exceeds the first 5-year lease requirements of **$250,000** by an additional **$529,000**.

Bell Nursery has contacted over 80 potential growers.

Bell Nursery, Inc. just returned from a meeting with **Ball Seed Company** and has arranged for plug delivery (starter plants) for the greenhouse network this next spring for at least 4 Grower Partners (½ acre units). Construction has already started on two (2) network units on the Eastern Shore.

Interim UMES Financial Support:

UMES incurred operational costs to bridge the period between completion and award of the contract to Bell Nursery. During this 8 month period, additional expenses were incurred to cover the installation of a fuel tank, removal and storage of capital equipment, and disposal of production materials that were not required for production by Bell Nursery (specified in the Contract). Additional repair and operational expenses not covered by the two-year warranty are the responsibility of Bell Nursery throughout the contract period. The specifics of this management contract are covered in the documents, '**State of Maryland Procurement Contract Agreement Between the University of Maryland Eastern Shore**' and '**Lease Agreement**' on file at the State's Attorney General's Office.

Publicity and Promotion:

Maryland Public Television broadcast (January 27 & 29, 2000) a 6-minute segment for 'Maryland State of Mind' series on the Hydroponic Greenhouse project which highlighted the role that UMES has played in initiating this new industry. Interviews included UMES faculty, Bell Nursery, and potential network growers.

The Greenhouse Project has been covered by the news media: **WBOC-TV, Daily Times, Mid-Atlantic Grower, Delmarva Farmer**, with more local coverage expected upon completion of the grower units.

The hydroponic greenhouse project will be featured in **Leading Edge**, an international grower's magazine in March, 2000.

This model has been presented at **the Delmarva Greenhouse Growers Conference** (November 4, 1999) that was hosted for the first time on the UMES campus. It will be presented March 7, 2000, in Atlantic City, NJ, at the annual **Philadelphia Regional Office, Economic Development Administration, USDOC, Conference.**

The website, **skipjack.net/sfi**. showcases greenhouse construction with captioned photos.

UMES Academic and Research Benefits:

Academic benefits include exposure in the local agricultural community to attract and retain students interested in horticultural technology and greenhouse management. One UMES student completed an internship at Longwood Gardens and was hired by Bell Nursery at their Burtonsville site. School trips and requests for information from local organizations and institutions have already illustrated our program to over 100 potential students. Public exposure will increase with the expansion of production.

A private, professionally operated business illustrates horticultural career opportunities to students. Bell Nursery has already established a linkage with student activities and provided Christmas plants for sale to support agricultural student activities. Student involvement will increase as the diversity of crops increase.

> The state-of-the-art greenhouse attracts students to UMES' Department of Agriculture horticultural program

Research benefits include the partnership with Bell Nursery and other horticultural enterprises with financial support and matching collaborations. This includes engineering evaluations, crop development, medicinal plant production, integrated pest management, and business management for any interested faculty and student. The operation of the state-of-the-art facility on campus also positions UMES as a collaborator in regional projects and national initiatives.

Industry and Agency Collaboration:

Bell Nursery has collaborated with **Janco Greenhouses** (Laurel, MD) to design a ½ acre grower greenhouse that includes equipment and construction. This facility, to be built at a grower's location, is estimated to cost **$238,000 (without tables)** or **$300,000+ (with tables).** Locate financial institutions such as **Farm Credit, Inc.** and **Rural Development/USDA** have participated in grower meetings and are reviewing several financial applications. Their presentations have indicated that Farm Credit, Inc is willing to loan the initial capital with only 20% collateral on a 5-year note. However, new growers will still need to secure an additional **$70,000** short-term line-of-credit for operational expenses.

A presentation booklet with budgets generated by Bell Nursery indicates that two (2) 8-week crops in the Spring will cover operational expenses, labor, debt service and provide **$16,000** to **$30,000** annual return to the grower. After the end of the fifth year the **$50,000** payments will be *added* to the grower's income.

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> Sixth year net grower income of **$66,000** to **$80,000**

Obviously, growers will have the opportunity to produce more crops in the Summer and Fall as the market is developed. Bell Nursery indicates that each ½ acre unit will need about 4 hours per day of management, irrigation is done by robotic boom sprayers, and IPM by a contracted scout. Labor will be high at the beginning and harvest of each crop to place or move the 11,000 flats of plant material. Rolling benches however significantly improve the grower's operation.

MidAtlantic Farm Credit reported that they have processed over 9 grower applications for Bell Nursery and answered a large number of quick inquires during the last 5 months. Farm Credit has funded several central Maryland existing growers for additional greenhouse capacity.

> **Farm Credit**: "*this project has greater potential for Maryland agriculture than any program we have ever participated with*."

Recognizing the "world class" greenhouse facility and UMES as the promoter of hydroponic greenhouse production in the State, two State agencies are assisting in promoting UMES development efforts in the Netherlands and Spain, two of the major European countries in the hydroponic greenhouse industry.

The **State of Maryland Department of Business and Economic Development** (DBED) has referred to the UMES development team, the DBED Netherlands-based European business and economic development representative who has been contacted by Dutch greenhouse growers interested in starting businesses in the U.S. UMES acts as the contact for referrals from the DBED representative. As these international contacts prove successful, these new horticultural enterprises will increase the choice and diversity for network greenhouse growers on the Eastern Shore

Also, UMES was assisted by **Maryland Department of Agriculture**, International Trade Representative (ITR), to establish contacts through the Agricultural Counselor, U.S. Embassy in Spain to develop business relations with greenhouse firms in Spain that are interested in setting up businesses in the US. Specialists traveled to Valencia, Spain for the International Horticulture meetings for information and potential collaborators. The Maryland ITR has taken promotional information about the greenhouse to various international agricultural trade missions.

Grower Network Organization:

A **Grower's Cooperative** is being organized as part UMES' **University Outreach**. The Co-op will provide individual members the ability to purchase and lease the "Ebb-n-Flood' growing tables at affordable terms. As a new industry, the initial capital costs for this technology is currently too high for the first series of grower units but is needed to reduce operational costs, improve nutrient recover, and maximize grower return in a global market.

> The members of the Cooperative will lease equipment, receive low-interest credit, and participate in other profit-sharing ventures as the industry grows.

To meet this financial need for minority and limited-resource farmers, the UMES **Rural Development Center** and the **Small Farm Institute** Development team is attempting to secure additional support for a revolving loan fund for bridge financing, a grower's cooperative, and research funding for innovative technologies. A **$2 million** grant request has been submitted to the W. K. Kellogg Foundation to capitalize a 'gap' financing revolving loan fund to financially assist network growers.

This overall program positions UMES as the leader in the development of the Greenhouse Grower's Network that will achieve national stature.

Submitted by: Thomas Handwerker & Daniel Kuennen

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