U.S. SUGAR DEAL AND THE EVERGLADES AGRICULTURAL AREA

IMPACT STUDY

September 25, 2008





Background

As part of the Everglades Restoration efforts ongoing in Florida since the year 2000, the South Florida Water Management District (SFWMD) had projected to build eleven elevated reservoirs to store water for South Florida. Recently, the SFWMD Board of Governors decided to suspend the construction of the Everglades Agricultural Area (EAA) Reservoir A-1 on May 15, 2008. On June 24, 2008, Florida Governor Charles Crist announced that the State of Florida is planning to purchase approximately 187,000 acres of the sugarcane land in the EAA for $1.75 billion to restore natural sheet flow from the Lake Okeechobee to the Everglades National Park as an alternative means for water storage and delivery in the region. The current challenge facing the State is to identify effective alternatives for use of this purchased land to enhance benefits not only in the management of water and the environment, but also in other economically vital sectors of the state.

Sustainable water management is a key to a sustainable South Florida. Sound water and environmental management principles challenge us to achieve economic efficiency, environmental sustainability and social equitability objectives in the long run. At the same time, in President Bush's State of the Union Address, the President outlined the Advanced Energy Initiative, which seeks to reduce our national dependence on imported oil by accelerating the development of domestic, renewable alternatives to gasoline and diesel fuels. Also in the Energy Independence and Security Act of 2007 passed in December 2007, the U.S. Congress formally adopted 25x'25 as a national goal, affirming that it is the goal of the United States to derive 25 percent of its energy use from agricultural, forestry and other renewable resources by 2025.

The U.S. Sugar Deal will potentially have significant environmental and socio-economic impact. The proposed study entails a comprehensive approach to examining all possible effects of the deal by taking into account all stakeholders. Moreover, this impact assessment will evaluate different alternatives for land use in terms of their projected environmental and economic value for the area.

Task 1: Land Use Alternatives Analysis

Florida International University hereby proposes to evaluate the U.S. Sugar deal impact and different alternatives for land use, and to develop an economically efficient, environmentally sustainable and social equitable approach for the purchased sugarcane lands in the EAA. The research team proposes to prepare a future roadmap for the EEA for the next ten to twenty years. To that end, we shall conduct a detailed cost and benefit analysis of different alternatives for the use of the purchased land. Following the determination of a best alternative, we shall identify technical issues associated with the selected best alternative and find the solution for these issues. Our approach will also seek to optimize both the biomass crop production and nutrient reduction objectives.

One of the land use ideas is the construction of an ethanol plant. In early September 2008 Governor Charlie Crist suggested he would support the idea of building an ethanol plant to replace a U.S. Sugar mill near Clewiston. The plant is one of the approaches the government could take in mitigating the loss of jobs in the area. Based on our preliminary analysis, some of the impacts of the ethanol plant can already be predicted. The following are the major benefits of this strategy:

1. It provides transition for 1,700 employees of the US Sugar Corp which is social equitable;
2. It will significantly reduce sediment runoff (>90%); N runoff (>80%) and Phosphorus runoff (>70%) to protect the South Florida ecosystem. Therefore, it is environmentally sustainable;
3. After eight years' operation, the $1.75 billion should be recovered from the production of cellulosic ethanol;
4. If half of the land is alternating between switchgrass production and the constructed wetlands, the EAA may serve as both treatment of the polluted runoff water from the Lake Okeechobee and biomass production. The expected net profit could be maintained at $87.5 million/year as the fermentation processes of cellulosic decreases to half of the current cost of $3 per gallon ethanol.

In order to achieve these objectives, for a transition period of six years, Switchgrass should be planted to produce ethanol. Although this approach requires the South Florida Water Management District to invest additional $64 million to build a cellulosic ethanol plant, 10% annual return of the $1.75 billion could be projected from the production of 80 million gallons of ethanol per year. Our preliminary calculations for this recommendation are based upon the best available scientific information on cellulosic ethanol production at large scale as follows:

1. The capital cost to build a 80-million-gallon cellulosic ethanol plant is about $64 million.
2. 187,000 acres sugarcane land may produce up to 80 million gallons of cellulosic ethanol per year, which will have wholesale value of $320 million/year.
3. The operation cost for the 80 million gallon cellulosic ethanol plant can be controlled within $145 million/year because transportation infrastructure exists in the EAA. Therefore, the capital cost could be recovered within the first two years' operation given that the switchgrass need one year to establish. After the second year, the net profit each year should be about 10% of the purchase cost of $1.75 billion.

Only a more detailed and thorough analysis will determine the feasibility of an ethanol plant, and the comparative value of an ethanol plant to other viable alternatives, but should this indeed proves to be the best land use alternative, in addition to a thorough analysis of the plant impacts the project team shall also

- design the most economic efficient ethanol production refinery plant tailored to future expansion;

- collect scientific and cost and benefit data on cellulosic ethanol production in South Florida so that Florida could follow the example to achieve 25% renewable energy by 2025.
- develop Adaptive Management Standards for integrated land and water management for sustainable biofuel production.

Task 2: Socio-Economic Impact Analysis

Purpose

The U.S Sugar deal has raised a number of questions regarding the use of the purchased land and the effects it may have in terms of loss of jobs and income in the affected area. The purpose of the socio-economic impact study is to assist stakeholders in creating a viable economic development strategy that will maintain the economic stability in the target area, and encourage a balanced and sustainable growth pattern. To that end, the research team has developed a comprehensive approach that aims to assess the effect of the U.S. Sugar Deal for residents, businesses and government. The proposed Work Plan includes an economic base study and market analysis of the target area, and entails the following phases:

Phase I: Demographic Analysis

End Product: Analysis of demographic, economic and housing trends in the study area. The data to be collected includes, but is not limited to:

Demographic Trends

- Population and household trends
- Racial, ethnic, and age distribution
- Family type and presence of children
- Migration and commuter patterns

Phase II: Economic Assessment:

In order to identify economic development opportunities and challenges, the research team will conduct an economic base study and market analysis of the target area. The economic assessment will include an overview of business patterns including employment trends and wages, major industries, real estate sectors (commercial and residential), as well as population income and spending trends. Moreover, recognizing the symbiotic dependence of residents and businesses, the study will assess the state of the economy in the study area incorporating economic and housing data, and retail market analysis. Specifically, the analysis will include the following:

Economic Trends

- Industry mix;
- Employment by industry and occupation;
- Labor market characteristics – education, age etc;
- Income and purchasing power; and
- Inventory of businesses in the area and adjoining commercial corridors

Retail Market Analysis

The Metropolitan Center research team will perform an overview and trend analysis of the area and adjoining commercial corridors. The retail market analysis will include the following components:

1) Shoppers' Goods Trade Area analysis
2) Retail Trade Area analysis
3) Convenience Goods Trade Area analysis

Office Market Analysis

Perform an overview and trend analysis of the office market including the following:

- Develop an inventory of the area's office buildings and space including lease rates
- Classify types of businesses in office buildings
- Forecast absorption and vacancy rates for the City's office/business parks

Residential Market Analysis

Perform an overview and trend analysis of the area's residential market including the following:

- Analysis of new development activity in surrounding communities
- Provide market analysis based on anticipated population growth
- Provide occupation and income analysis of the study area's existing and growing populations to determine workforce housing supply and demand
- Calculate property sales and rents
- Perform housing affordability analysis for homeowner and renter markets
- Analyze absorption and construction trends within the study area

Task 3: Public Opinion

The Public Opinion Assessment will determine the feasibility of land use alternatives and the approach that may be followed to educate the public about the long-term effects of the U.S. Sugar Deal. The assessment will include a survey of the residents in the area where the economic impact will be most pronounced, and will establish population attitudes and priorities in terms of environmental sustainability and economic development.

FACTORS AND BEST PRACTICES IN SCHOOL PERFORMANCE

Proposal Prepared for

Miami-Dade School Board

November 17, 2008

Submitted by:

FIU | Metropolitan Center

150 S.E. 2nd Avenue, Suite 500
Miami, FL 33131
305.349.1251
metropolitan.fiu.edu

FIRM EXPERIENCE

The Metropolitan Center is the leading urban think tank in South Florida, established in 1997 as an applied research unit for the Office of the Provost at Florida International University (FIU). The Center has a solid record of providing services to communities through training, information dissemination, public involvement initiatives, technical assistance, housing assessments, industry analyses and community revitalization planning. In addition, the Metropolitan Center has organized retreats, workshops, and conferences as well as public opinion forums to address specific urban issues, such as industry improvement, housing, redevelopment and transportation. Our approach to providing consulting services is to take into account the unique needs of individual communities and/or clients while adhering to recognized methodologies for survey and focus group design, administration techniques, as well as data analysis and reporting. The Center houses the ongoing South Florida Regional Database Project, which includes asset mapping, best-practice research, and full in-house Remote Sensing and Geographic Information Systems (GIS) capabilities. Moreover, the Metropolitan Center is a Census Information Center (CIS), which allows for early access to release data and data with restricted use.

Located in Downtown Miami, the Metropolitan Center frequently partners with government agencies, private firms, and non-profit organizations to build avenues for positive growth. The Center raises professionalism and competence in government through a variety of training modules. Workshops and seminars are tailored to meet clients' specific needs and have included such topics as human resources management, performance measurement, public financial management, strategic planning, and organizational design and development.

As part of its commitment to public outreach, the Metropolitan Center presents the quarterly "Metro Forum." These breakfast gatherings provide high neutral ground for the discussion of public policy. Free and open to the public, they are designed to bring together academics, elected officials, and business community leaders around issues of critical concern to South Florida. Invited speakers represent authorities in their fields. Topics have included mid-term elections, poverty and housing, urban redevelopment and public healthcare.

The Metropolitan Center at Florida International University is also at the forefront of public opinion research and has a solid record of producing survey research studies in South Florida. Clients of the Metropolitan Center include local government entities, non-profit organizations and private sector firms in South Florida. Our research has served as catalyst for major policy changes and projects in the area of housing, transportation, social services and health services, to name a few. Some of our survey clients include the Department of Community Affairs of the State of Florida, the Broward County Supervisor of Elections Office, and Miami-Dade County.

The FIU Metropolitan Center brings an established applied research capacity to the School Performance Study that will utilize cutting-edge research and quantitative data analysis on the socio-economic issues in the study area. The Metropolitan Center has a full time team of academic and professional experts on economic development issues, who have prepared a range of market and impact analysis studies for various local governmental bodies, agencies and organizations. In addition, our staff has experience in performance measurement and in education initiatives. The Metropolitan Center recently served as a facilitator of the Education Compact between the City of Miami Gardens and the Miami-Dade School Board. The experience our qualified staff brings into the proposed study ensures the timely and reliable delivery of the proposed services.

STAFF EXPERIENCE

Dario Moreno, Ph.D.
Dr. Moreno is the Director of the FIU/MC and Professor of Political Science at FIU. Dr. Moreno has an extensive experience in polling and survey research. He is considered one of the leading polling experts in our community and is sought locally and nationally for his analytical skills. Dr. Moreno has conducted over 200 surveys in South Florida, including work for the City of Miami, the Human Services Coalition, the Sun-Sentinel, and Congressman Lincoln Diaz-Balart. He has also published numerous articles and books on Miami and Florida politics. He is a contributing editor to the Harvard Journal of Hispanic Policy, and has been a Pew Scholar at the Kennedy School of Government at Harvard University, and a Fulbright scholar in Costa Rica.

Marco Rubio

Kimberley Cole, CPA, MBA, Ph.D./ABD

Ms. Cole is the Deputy Director of the Metropolitan Center. She holds an active Florida license as a Certified Public Accountant. She has over 10 years of experience dealing with federal, state, and local grants as well as other financial matters. She served as a facilitator and presenter for the City of Miami Gardens Education Compact initiative as resolved by the Miami-Dade County School Board. She was also involved in the Outreach Campaign for the Earned Income Tax Credit for the city of Miami Gardens. She also has been involved in the review and updating of the Evaluation and Appraisal Reports (EARs) for the municipalities of Opa-Locka and West Miami. Ms. Cole has twelve years of experience teaching financial modeling, budgeting and accounting at the university level to include governmental and not-for-profit entities. Ms. Cole has taught numerous finance, accounting, strategic planning and management courses at the graduate and undergraduate level. She has 10 years of experience within the State University System dealing with budget and administrative systems.

Oliver Kerr, FAICP, Senior Research Associate

Mr. Oliver Kerr, FAICP, will serve as Project Manager for this assignment. Mr. Kerr is the Senior Research Associate for the FIU Metropolitan Center. He has over 30 years of experience as a planner/demographer with the Miami-Dade County Department of Planning and Zoning. He was responsible for the County's demographic studies program, preparing estimates and projections of population and housing, neighborhood profiles, and studies of Miami's changing ethnic and racial groups. He holds Masters Degrees in City and Regional Planning and in Educational Administration from Catholic University in Washington, D.C. His B.A. degree is from University College in Dublin, Ireland. He is a Fellow of the American Institute of Certified Planners, a member of the American Planning Association, and a member of the Population Association of America. He has received many awards and commendations for his professional work in Miami-Dade County.

Maria Ilcheva, Ph.D. (Candidate)
Ms. Ilcheva is a Senior Research Associate at the Metropolitan Center. Ms. Ilcheva has recently completed a Comprehensive Community Needs Assessment for the Miami-Dade Community Action Agency, assessing the needs of low-income residents and resources available to them. She is currently managing the secret shops of Miami International Airport vendors for the Miami Dade Aviation Department. Some of her recent projects include a survey project for Miami Dade Cultural

Affairs Department concerning their Culture Shock program, and the annual survey of Florida Women Executives. Ms. Ilcheva's previous involvement includes housing and economic studies including an assessment of the business environment in the Miami Downtown area for the Downtown Development Authority, a Monroe County study on affordable housing, and a study of the economic environment in City of Hialeah. She has also participated in the research and analysis of projects on youth services assessment, health services, and hurricane preparedness. Ms. Ilcheva is a Ph.D. candidate in Political Science working on her dissertation on ethnic issues.

SCOPE OF SERVICES

The School District of Miami-Dade County is the largest in Florida and fourth in the nation, following the New York, Los Angeles and Chicago school districts. With the District facing budgetary reductions that may significantly impact the school system's ability to provide quality educational opportunities to children, it is becoming increasingly important to understand the underlying factors which influence school performance. Aggregated school level achievement is very important as an accountability indicator, and affects the financial and human resources available at that school. However, resources in terms of funding and staff are not the only factor affecting school performance.

The goal of the study proposed hereby is two-fold. First, it aims to determine whether there is a correlation between the characteristics of the student body and school level achievement. Studies have shown that educational performance is strongly associated with the socioeconomic characteristics of a child's neighborhood and with the relative levels of education, income, and occupation of the child's family.[1] Brookover et al. (1979) introduced a model of a school social system and its influence on achievement and several other outcomes.[2] Brookover's model noted the importance of student demographics, and the Brookover model used aggregate, demographic descriptions such as "mean school socioeconomic status" and "percentage White" as school descriptors. Brookover also included "school social structure" or climate in his analysis, concluding it is also one of the crucial factors for school success. One of the variables in the school social climate is parental involvement which Hawley and Rosenholtz (1984) identified as one of four factors in effective schools that is expected to improve student achievement.[3] Research has shown that parental involvement in school events is associated with better student attendance, behavior, grades, and student academic achievement.[4]

The second goal of the study is to examine best practices used throughout the state and nationally and to determine their applicability in the Miami-Dade County school system. Best practices will be collected from large metropolitan areas, especially areas with mixed demographics, in order to ensure optimal comparability.

The study will thus aim to answer two specific questions:

1. What factors influence school performance?
2. What strategies can be pursued to mitigate or resolve the negative impact of such factors?

The proposed study will answer these questions following a work plan that includes the completion of the tasks below.

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[1] Gorard, S., Fitz, J., & Taylor, C. (2001). School Choice Impacts: What Do We Know? *Educational Researcher,* 30(7), 18-23. See also Ma, X., & Klinger, D. A. (2000). Hierarchical Linear Modeling of Student and School Effects on Academic Achievement. *Canadian Journal of Education,* 25(1), 41-55.

[2] Brookover, W.B., Beady, C., Flood, P., Schweitzer, J., and Wisenbaker, J. (1979). Schools, Social Systems and Student Achievement: Schools Can Make a Difference. New York: Praeger.

[3] Hawley, W., & Rosenholtz, S. (1985). Good schools: What Research Says about Improving Student Achievement. Peabody Journal of Education, 16, 1-178.

[4] Griffith, J. (1996). The relation of parental involvement, empowerment, and school characteristics to student test performance: An organizational analysis. *Journal of Educational Research,* 90(I), 33-41. See also Henderson, A. T. (1988). Good news: An ecologically balanced approach to academic improvement. *Educational Horizons,* 66, 60-62; Stevenson, D. L., & Baker, D. P. (1987). The family-school relation and the child's school performance. *Child Development,* 58, 1348-1 357.

Task I: Baseline Characteristics

To serve as a baseline for the study, the Metropolitan Center will conduct background research of the county including standard demographic variables including race, age, and gender, as well as socio-economic variables such as educational attainment, family characteristics, income, poverty, etc. The data points enumerated above will be collected for the year 2000 from the U.S. Census Bureau as well as other data sources from Miami-Dade County and the State of Florida where more up-to-date data is available.

Task II: Factors in School Performance

This study will employ a comprehensive approach in terms of school and area characteristics analyzed, as well as in defining school performance. Performance measures will be represented not only in terms of standardized test results, but also including suspension, dropout, and graduation rates, as well as student continuation to a postsecondary institution. The school characteristics which will be examined in relation to performance include.

- School and class size,
- Percent of low performing students,
- Percent of students who are non-English speaking,
- Concentration effect – presence of students who share similar demographic and socio-economic characteristics,
- Percentage of students in the Free and Reduced Meals program,
- School climate – parental involvement, student/teacher ratio, student involvement (student organizations and events attendance)

The school characteristics will also be examined in the context of the students living environment. To that end, the research will also include the following data elements related to area characteristics:

- Neighborhood demographics – race/ethnicity of the area's population, family status, i.e. married couples, single-parent families, grandparents raising children etc.
- Area employment and disposable income - major employment sectors, wages, household expenditures, including housing, transportation, healthcare etc.
- Resources – organizations and programs targeting the area's population, particularly those concerning children and families with children such as childcare services, tutoring, after-school programs, parental skills classes

The Metropolitan Center will also conduct Visual Pattern Analysis which includes presenting school performance patterns in the context of other subject matter and geography. Geographic Information Systems (GIS) mapping will show patterns of school performance within the district based on the percent of students that met the performance standards and in relation to their characteristics, including the factors that influence school performance. Density maps will be prepared to demonstrate correlation between socioeconomic characteristics and school achievement.

Task III: Best Practices

The final list of best practices will be the results of a review and comparison of the Miami-Dade School District performance to other comparable school districts, the successful programs they have implemented, as well as an assessment of other strategies discussed in the educational and scientific community. Therefore, this task is divided in three phases.

Phase 1: In order to create a list of best practices in improving school performance, the proposed study includes a review of the Miami-Dade School District performance in comparison to other school districts in the state and country. The project team will conduct a thorough research of all programs available to students and their families that support a healthy learning environment. Comparison will be made with school districts which are similar to Miami-Dade in terms of size and demographic composition. For example, scholars have recognized the effects of the second language acquisition process on school performance and assessment results.[5] For that reason, it is important to compare the performance of the Miami-Dade School District to similar districts containing a large percentage of Latino students. It is interesting to note that some of the largest school districts in the country are also the ones with the biggest heterogeneity. The Chicago School District, for example, is the third largest in the country with a student composition of 47 percent African-American and 39 percent Latino students. The Houston Independent School District also has a large representation of minority students with 60 percent Hispanic and 28 percent African American students. The Philadelphia School District includes 17 percent Hispanic and 62 percent African American. These are some of the school districts which will be used to compare the Miami-Dade public school system. The following school districts will be used for comparison purposes as they are comparable both in size, include a diverse student population and share some economic characteristics with Miami-Dade County, including high poverty rates.

- New York City, NY
- Los Angeles Unified, CA
- City of Chicago School District, IL
- Broward County School District FL
- Philadelphia City School District, PA
- Clark County School District, NV
- Houston Independent School District, TX
- Palm Beach County School District, FL
- Hillsborough County School District, FL
- San Diego City Unified, CA

Phase 2: Following a performance comparison across districts relative to composition of the student body and area characteristics, the project team will review programs implemented in each school district intended to improve school performance. If sufficient time has elapsed to allow for the assessment of performance improvement programs, the review will include benchmarks, performance change, and costs of these programs.

Phase 3: Finally, the best practices review list will be completed with a review of other proposed programs and strategies which have not yet been implemented. Information on proposed performance improvement strategies will be obtained from a thorough review of ongoing discussions in the scientific and academic community, as well as among education and public policy practitioners. The review will include anticipated costs in the contexts for which programs have been proposed as well as an assessment of their costs in the Miami-Dade County school system.

[5] García, G. E., (1991). Factors Influencing the English Reading Test Performance of Spanish-Speaking Hispanic Children. *Reading Research Quarterly, 26*(4), 371-392.

Task IV: Recommendations

Based on the analysis of all information in Tasks I-III, the study will conclude with recommendations and plan of action for the Miami-Dade County School Board. Recommended Plan of Action will take into account budgetary restrictions and potential sources of funding.

Reporting & Deliverables

A Draft Report shall be prepared including but not limited to:

- Executive summary with key findings
- Overall report including the following sections:
  - Correlation of socio-economic factors and school performance in Miami-Dade County;
  - Comparison of Miami-Dade public school system performance with other comparable school districts;
  - Best practices for school performance improvement, implemented and proposed; and
  - Program and policy recommendations.

Draft report will be presented to the School Board and upon review and revisions by the School Board project manager, the Metropolitan Center will have one week to produce a final report.

- Deliverables include:
  - Three (3) color hard copies
  - One (1) CD containing an electronic copy of the report, including maps
- The Metropolitan Center project team shall make a formal presentation of the study upon request.

PROJECT COST AND TIMELINE

The estimated costs for the proposed study is $120,000.

PROJECT CONTACT

Dario Moreno, Ph.D.
Director

FIU Metropolitan Center
150 S.E. 2nd Avenue - Suite 500
Miami, FL 33131

Office: 305.349.1251
Fax: 305.349.1271

Email: morenod@fiu.edu

OR Marco Rubio