The Impact of Globalization On Florida’s Environment: Is the Economy Outpacing the Environment?

Renu Khator
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Understanding Globalization?

… “the intensification of worldwide social relations which link distant localities by events occurring many miles away and vice versa” (Giddens, 1990)

…“a set of processes causing production and consumption activities to shift from local scale to national scale to a global scale” (O’Obrien & Leichenko, 2000).

…Invites foreign objects, people and experiences into the local environment.
Impact of Globalization on the Environment

Progress paradigm

Societies, by nature, are constantly evolving and that any change necessarily leads to adjustment, adaptation and thus progress
Corporations are like cancerous tumors, which forget they are part of a larger whole of the body and unleash the pursuit of their unlimited growth. With economic globalization, instead of trying to contain the cancer, we feed it – pulling down barriers in its path, allowing it to devour ever more of our natural world.

Retallack
Globalization in Florida

- International trade is the largest economic sector ($42 billion) more than tourism and agriculture!
- 55% of US-Central America trade and 45% of the US-Caribbean trade moves through Florida seaports and airports
- Florida exported goods worth $28 billion from 213 countries in 2000.
Direct Foreign Investment in Florida is growing 16% annually
Florida’s is the second most attractive destination for foreign travelers!
300 people from other countries move to Florida each day!
When it comes to movement of people, capital or products...

Geography is History!!
International travel is up...

Overnight trips to the US 1990-2000

US Residents Overnight International Trips 1990-2000

Source: US Department of Transportation, 2001
International phone calls have grown…

- The number of calls made from the United States to other countries increased from 200 million in 1980 to 6.6 billion in 2000.
- On average, carriers billed $.51 per minute for international calls in 2000, a decline of more than 60% since 1980.

Source: FCC, 2002
Value of US Trade with NAFTA Partners

Value of U.S. trade with NAFTA Partners

Year

Billions of current $US

International Investment


Source: US Department of Transportation, 2001
International Travel

- Florida ranked #2 in number of overseas visitors in 2000

Source: Department of Commerce, International Trade Administration
Foreign Direct Investment

- Foreign Direct Investment (FDI) in Florida has grown 16% annually between 1977-2000.
- There were 1574 foreign establishments related to foreign direct investment in Florida in 2000.

Primary Data from: US Department of Commerce, Bureau of Economic Analysis.
Florida’s export sales of merchandise in 2000

Florida exported goods worth $24.2 billion to 213 foreign markets in 2000

Source: US Department of Commerce, International Trade Administration, August 2001
Florida as an International Crossroad

- Seaports are critical for globalization
- Florida is located within 2000 miles of an estimated 22 different countries
- Port of Miami, Port Everglades and Port Canaveral are the world’s 3 busiest ports

Source: FDOT
Trade Agreements and Florida

- Since the implementation of NAFTA exports to Canada and Mexico have increased 38% (Trade Promotion Authority).
- Florida contributes more than 40% of US exports to the Western Hemisphere (myflorida.com, 2003)
- Florida’s 2000 export sales of merchandise is 65% above the 1993 total (US DOC, 2001)
- 55% of trade between Central America and the US, 27% of US-S. American trade and 45% of US-Caribbean trade moves through Florida (myflorida.com, 2003)
Has there been a shift in Production as a result of Globalization?

- “Florida has evolved from an agricultural state into a major international business and trade gateway between the Americas and the rest of the world (‘To diversify.., 2003)

- Large Growth in Non-Farm Employment suggests shift in production.

- In a state once dominated by agriculture, especially citrus, the focus is now on high-tech and service industries.
Change in Non-Farm Employment 1994-2004

Change in Leisure and Hospitality Employment 1994-2004

Source: US Dept. of Labor, BLS
Globalization and Environment

An ad placed in *Fortune* Magazine by the Philippine government read: “To attract companies like yours...we have felled mountains, raised jungles, filled swamps, moved rivers, relocated towns...to make it easier for you and your business to do business here.”

(Retallack, 2002, p. 16)
Impact on the Environment from Changes in Production

- Agricultural Industry
- Sugar Industry
- High Tech Industry
- Service Industry
Agriculture and Florida

- 9th nationally in value of farm products (2002) sales of $6.85 billion
- 2nd nationally in production of fresh vegetables, $1.4 billion
- Florida is the nation’s leader in citrus production with ~74% of US production in 2002-2003.

Source: Florida-Agriculture.com
Environmental Impacts of Agriculture

- Agriculture is the highest consumer of water in FL (Council of 100).
- Land and water development in the Everglades (EAA) has impacted wildlife and threatens the long term economic stability of local economies.
- Runoff from agriculture is suggested to be cause of Decline in coral reefs in South Florida.
Agricultural Industry and Globalization

Florida is experiencing increased pressure to stay ahead of global competition
- NAFTA has made it easier to import tomatoes from Mexico.
- Average annual US tomato imports from Mexico have increased 8-15% as a result of NAFTA’s tariff changes (Porter, 2003).

- Increase in imports of agricultural products leads to a decrease of used farm land in Florida


Source: Florida-Agriculture.com
Environmental Impacts of a Shift Away from Agriculture

- Decreased farm land use as a result of Globalization leads to
  - Less pesticides and fertilizer
  - Less water usage

- The reduction in agricultural activities could also have negative effects
  - There may be increased land conversion to more harmful non-farm uses (Aillery et al., 2001).
Sugar and Florida

- Sugar Cane was valued at $517 Million in 2002 (florida-agriculture.com)
- Sugar is available from foreign market at lower prices, but is tariffed heavily and quotas prevent importation of sufficient amounts (Schwabach, 2000).
- High price of domestic sugar ensures high level of production.
- Sugar threatens the Everglades
- High levels of phosphorous present potential impact to Flora and Fauna
- Plans are not sustainable, approximately 56 plant and animals species are threatened or endangered in the everglades (GCSF, 2001).
Environmental Impacts of a Shift away from Sugar

“Globalization of trade, seen by some environmental activists as an undiluted evil is perhaps the only means to save Florida’s Everglades” (Schwabach, 2000).

A reduction in price, tariffs, or increased export could have positive effects on the environment.

- A 10% reduction in domestic sugar price could increase the water retention of the EAA by 10,000 acre-feet per year over. This would occur primarily as a result of increased cropland retirement because it would no longer be cost effective to produce sugar (Aillery et al, 2001).
High-Tech in Florida

- Key Information Technology (IT) industries
  - IT products and Information Services
  - Software development
  - Modeling, Simulation, Training
  - Photonics, Lasers and Optics
  - Microelectronics
  - Telecommunications

- High tech - the most important source of future growth in Florida
- Employment has increased 29.4% from 1995-2000.


Source: RERC, 2002
High Tech and the Environment

- Carries significant environment baggage as seen by Silicon Valley
  - Air, water pollutants
- However, the Florida High-tech industry is recognized as a “Clean Industry”
  - Subject to the CAA, CWA, CERCLA, Toxic Substance Control Act
  - The types of products being manufactured differ.
- No signs of a reoccurrence of Silicon Valley in Florida
Service Industry in Florida

- More than 70% of Florida’s total economic output comes from service industry.

- Sectors of the Service Industry
  - Banking & Finance
  - Insurance
  - Legal Services
  - Accounting
  - Management, Consulting & Executive Search Firms

- Expansion of the white collar service industry.
- There were 13 Fortune 500 firms in Florida in 1997
  - 11 were service oriented

Source: Hartshorn, 1997
The Service Industry and the Environment

- Conducive to an environmentally friendly economy
- However,
  - The industry tends to increase human migration and put additional stress on resources
  - Additionally, low-income jobs keep infrastructure impoverished.
Summary of the Env. Effects of Changes in Production

- Shift away from agriculture and sugar
  - Less land used
  - Less water
  - Less pesticides and fertilizers

- Shift towards service and high-tech
  - Environmentally friendly economy
  - Migration creates additional stress on resources and infrastructure
Movement of People

- Globalization impacts the movement of people through
  - Tourism
  - Migration

- There is an increased number of permanent international migrants, tourists and business activities (Solecki, 2001).
Tourism and Florida

- Perceived as most important industry in Florida
- Florida was the #2 US destination for International Visitors in 2000
- Miami is the cruise capital of the world, 3.6 million passengers in FY 2002.
- 15% of visitors to Disney in 1990 were international
- Employment from 1995-2000 has increased 19.48%


Source: Real Estate Research Consultants, 2002
Tourism and the Environment

“Nowhere is the destructive effect of tourism more evident than in Florida” (Newman & Sage, 1999).
- Increased consumption of energy: growth and tourism have boosted the states energy consumption over 250% over the past 35 years (Hull, 2004).
- Increased visitation leads to increased development as well as to additional stress on natural resources.

The UNEP has identified possible environmental effects of tourism as:
- Overuse of water resources, pollution and degradation of fragile ecosystems (2001).
Population Growth

- Domestic and International Migration
- Florida’s population is expected to grow more than 53% from 2000-2030 (FDOT, 2003).

Source: Enterprise Florida, 2004 (FL economy at a glance)
38.6% of Florida’s foreign born population arrived in the State after 1990 (FAIR 2002)
- 12.9% of population was foreign born in 1990
- Figure increased to 16.7% in 2000 (US Census, 2003)

In 2000, ~73% of the foreign born population of Florida was from Latin America, 13% Europe and 9% Asia (US Census Bureau, 2003)
Impact on the Environment from Human Migration

- Change in Landscape
- Modes of Transportation
- Availability of Water
- Municipal and Solid Waste Production
- Flora and Fauna
Changing Landscape

Source: United States Geologic Survey
Transportation: Motor Vehicles in Florida

- Over the last 2 decades the number of registered vehicles in Florida has increased by 166% (Governor’s Commission for Sustainable Florida, 1995).
- Roadway length increases at a rate of .7%/year (FDOT, 2003).
- Overall, emissions are down slightly (FDOT, 2003).

# Enplanements for Major Florida Airports (1966-1999)

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<th>Year</th>
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<th>Tampa/St. Pete.</th>
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Source: Bureau of Transportation Statistics
Urban Sprawl in Florida

- Growth and urbanization result in reduced groundwater recharge, lowered groundwater tables, and increased pollution (GCSF, 2001)
- Million of acres of Southern Forests will be lost to urban sprawl over the next 20 years
  - Florida leads the south in the amount of Timberland lost to development (Pittman, 2001)
  - 20% of Florida forests have been lost from 1950-1990s
- New highways, driveways and fairways consume 1000 acres of wetland every year (Grunwald, 2002)
Availability and Quality of Water

- Urbanization and migration are stressing the groundwater, lowering the water table and increasing water pollution in the state (Governor’s Commission for a Sustainable Florida, 2001).

- A study conducted on the Indian River Lagoon Watershed concluded that urbanization from 1920-1990 was the single most contributing factor in increased annual and single event runoff volumes (Kim et al, 2002).

- Immigration between 1995 and 2000 increased the demand on water by approximately 30% (FAIR).
Municipal Waste Production

Solid Waste Generation and Management 1995-1999

Source: Florida Department of Environmental Protection
Flora and Fauna

- Increased migration as a result of Globalization may increase pest invasions.
  - Introductions from Asia to Florida increased from 1986-2000
  - Increase in introductions parallels increase in goods exported from China to the US (1985-$5b, 1999-$62b) (Loope & Howarth, 2002).

- Urban and Rural development are 2 of the leading causes of loss of wetlands.
If Globalization is having an negative impact on the environment of Florida we would expect....

- A decline in air quality
- A decline in water quality/availability
- A decline in biodiversity
- An increase in land usage
- An increase in the production of waste
- An increase in the consumption of resources
However, evidence shows...

- Emissions have declined
- Water quality is variable
- There has been no significant change in the status of Fauna in Florida
- Managed Solid waste has decreased

Source: EPA
Can Florida’s Environment Keep Up with the Stresses of Growth?
Policy Implications

The global economy in the post-NAFTA years may not have adversely impacted the environment to the extent hypothesized by the incompatibility paradigm; nonetheless, the state faces many long term environmental pressure points.

- Farmers
- Business
- Manufacturers
- Human migration
- High Tech Industry
- Service Industry
Are there Safeguards?

- **Global Safeguards**
  - Collaborative Treaty frameworks
  - Self imposed by WTO or NAFTA

- **National Safeguards**
  - National Policies and Laws

- **Local**
  - 35 statutes governing environment
  - 11 Regional Planning Councils
  - Centralized agencies (FDEP)
  - Growth Management as a 1985 national model
Most Significant Hurdles to the Preservation of Florida’s Environment

- Subsidies
  - The sugar industry
  - Encourages sub optimal land use
- Growth Management
- No protection against bio-invasion
- No attention to the impact of global forces
Policy Recommendations

- Need for Targeted Research
- Need for Institutional Safeguards
- Need for Reassessment of Existing Environmental Laws
  - Are existing laws sufficient?
- Need for Engaging Local Communities
- Need for Trained and Skilled Workforce