CHARTING THE INDUSTRIAL REVOLUTION AND ITS INTER-RELATIONS WITH THE ENVIRONMENT AND COMMUNITIES IN TRINIDAD & TOBAGO

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Accounting for the Petro-Dollar
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The concept of impact
Industrial zones in Trinidad & Tobago
General impacts of industrial development
Strategies for managing for environmental and social impacts of industrial development
Designing for harmony between industrial development and the environment
THE CONCEPT OF IMPACT

PERSISTENCE
Permanent
Temporary

EFFECT
Acute
Chronic

SCALE
Negligible
Significant

TIME
Long-term
Short-term
The Concept of Industrial Zone

Industrial Zone: The clustering of industries into defined areas of industrial activity. Industrial zones include:

- Industrial towns, e.g. Point Fortin
- Industrial estates / parks, e.g. Point Lisas Industrial Estate
- Industrial districts, e.g. Southeast Coast
INDUSTRIAL ZONES IN TRINIDAD & TOBAGO

LEGEND:
- Industrial District
- Manufacturing Industrial Estate
- Petrochemicals/Heavy Industrial Estate
- Industrial Town
- Proposed Industrial Site

1: Point Lisas
2: LABIDCO
3: Point Fortin
4: Pointe-a-Pierre
5: Sea Lots
6: Macoya
7: O’Meara
8: Southeast Coast
9: NCMA
10: Southwest Coast
## General Impacts of Industrial Development

<table>
<thead>
<tr>
<th>IMPACTS</th>
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<tr>
<td>Loss / displacement of existing (traditional) land use activities</td>
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<td>Relocation of people / communities</td>
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<td>Changes to existing ways of living and livelihood activities (jobs)</td>
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<td>Health effects on people (accidents, chronic health issues from exposure)</td>
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<td>Changes to culture, community dynamics (immigration of new people, crime)</td>
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<td>Change to aesthetics</td>
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<td>Damage to / loss of habitat</td>
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<td>Damage to / loss of flora and fauna</td>
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<td>Changes to traffic conditions (heavy equipment, more vehicles)</td>
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<td>Change in air quality (dust, noise), water quality (effluent load), soil quality</td>
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<td>Change to infrastructure (e.g. communication, social services)</td>
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<td>Changes to resource consumption (energy, water, people, space, waste sinks)</td>
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<td>Contribution to economic development</td>
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## Benefits of Zoned Industrial Development

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<th>Benefits</th>
<th>Details</th>
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<tr>
<td>Industrial activity is defined within a managed space</td>
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<td>Footprint of industrial development can be controlled through M &amp; E</td>
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<td>Demand for ecosystem sink services is limited to defined spaces</td>
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<td>Companies are encouraged to share resources</td>
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<td>Business synergy; economic benefits</td>
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<td>Easier to monitor aspects and impacts of industrial activity on people</td>
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<tr>
<td>and the natural environment</td>
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<td>Driver for the development of infrastructure</td>
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<td>Enables for monitoring of effectiveness of policy, legislation, standards</td>
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<td>Employment</td>
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<td>Knowledge &amp; skills exchange and development</td>
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AN EXAMPLE OF ZONED INDUSTRIAL DEVELOPMENT IN POINT LISAS
An Example of Unzoned Industrial Development at Claxton Bay
EARLY INDUSTRIAL DEVELOPMENT – POINT FORTIN

LIKELY IMPACTS:

- Loss of primary forest
- Oil pollution (soil, water, flora)
- Atmospheric pollution from oil fires
- Changes to aesthetics
- Employment
- Population increase
- Local area development
- Development of social infrastructure
IMPACTS OF INDUSTRIAL DEVELOPMENT IN POINT FORTIN

Natural environment:
- Coastal erosion
- Dust, soot, toxic gases

People:
- Employment
- Health effects
- Relocation of residents
- Fear for personal safety
- Loss of coastal properties
- Emergency response

Lack of social and economic resilience to changes in the energy sector
Clifton Hill Beach Erosion
IMPACTS OF INDUSTRIAL DEVELOPMENT IN POINT LISAS

Natural environment:
- Change of land use
- Loss of mangrove, nearshore habitat
- Additional stress to ecosystem sinks

People:
- Employment
- Increase in population
- Development of infrastructure
- Revival of the Couva District

- Converting gas (a former waste) into a product input
- Positive contribution to the advancement of environmental management in Trinidad & Tobago
ENVIRONMENTAL MANAGEMENT AT THE NATIONAL LEVEL

- Formation of the EMA in 1995
- Ascension of the EM Act in 2001
- Ascension of the CEC Rules and CEC List of Designated Activities Order in 2001
- Institutionalized EIA Process including public participation in the decision-making process
- Activity-based system – no specific designation for industrial estate development
IMPACTS OF INDUSTRIAL DEVELOPMENT IN LA BREA / VESSIGNY

Natural environment:
- Habitat destruction
- Death / displacement of wildlife
- Siltation of Vessigny River

People:
- Employment
- Health effects
- Relocation of residents
- Fear for personal safety
- Flooding
- Opportunity cost for alternative development
- Change to aesthetics
STRATEGIES FOR MANAGING THE IMPACTS OF INDUSTRIAL DEVELOPMENT

- Strategic Environmental Assessment
- Incorporate Social Impact Assessment into EIA
- Enable wider awareness and acceptance of the Certificate of Environmental Clearance (CEC) Process
- National Environmental GIS
Management Strategies at the Industrial Estate Level

- Develop a system for monitoring & analyzing waste outputs from industrial processes
- Define a system of accountability
- Demand Side Management (DSM) for resource consumption
- Explore and implement the eco-industrial estate model
THANK YOU

COMMENTS / QUESTIONS