

## Development of the Industrial Park Model to Improve Trade Opportunities for Haiti – HA-T1074-SN2

## **FINAL REPORT**



#### submitted to



Inter-American Development Bank

**September 20, 2010** 

99 Nagog Hill Road, Acton, Massachusetts 01720 USA Tel: +1-978-263-7738 e-mail: <u>info@koiosllc.com</u> Web site: www.koiosllc.com

# **Table of Contents**

Executive Summary		i
<ul> <li>Introduction         <ul> <li>A. Background and History</li> <li>B. Haiti's Current Economic Situation</li> <li>C. Purpose and Objectives of this Study</li> </ul> </li> </ul>		1 1 2 3
<ul> <li>II. Overview of Garment Industry Trends         <ul> <li>A. The Levelling Playing Field</li> <li>B. Competitive Advantages in the Post-MFA World</li> </ul> </li> </ul>		5 7
<ul> <li>Haiti's Place in the Post-MFA World         <ul> <li>A. The Structure of Haiti's Garment Production</li> <li>B. The Way Forward for Hait's Garment Industry                 <ul></ul></li></ul></li></ul>	14 22 24	<b>11</b> 11 14
<b>C. The Competitive Case for Haiti and the North</b> 1. A New Vision for Haiti – Moving on from CMT 2. Why the North?	27 30	27
<ul> <li>D. Garment Manufacturers' Requirements in North H</li> <li>1. Land</li> <li>2. Pre-built Factory Sheds</li> <li>3. Water and Water Treatment</li> <li>4. Electricity</li> <li>5. Road Transport</li> <li>6. Business Facilitation and Services</li> </ul> E. Park Development Guidelines	laiti 32 33 34 36 37 37	32
<ul> <li>IV. Site Identification, Evaluation, and Selection</li> <li>A. Site Selection Factors and Methodology</li> <li>B. Site Selection <ol> <li>Regional Context Summary</li> <li>Infrastructure Constraints</li> <li>Evaluation and Selection Process</li> <li>Site Selection Methodology</li> <li>Site Ranking and Descriptions</li> </ol> </li> </ul>	47 48 50 52 54	<b>43</b> 43 47
<ol> <li>Infrastructure Requirements and Costs</li> <li>Site Layout and Factory Buildings</li> </ol>	59 66	

3. Building Costs		68	
4. Physical Distribution of Sites		68	
5. Phasing and Expansion		69	
6. Organization and Management Requirements	5	69	
7. Land Use Planning		69	
8 Port Improvements at Cap Haïtien		70	
9 Housing Transport and Community Develop	nent	71	
10 Offsite Infrastructure Requirements	nom	74	
ro. Onsite nindstructure requirements		, ,	
V. Financial and Economic Analysis			75
A. Financial Analysis			76
1. Project Cost	76		
2. Financial Analysis Assumptions	77		
3. Financial Projections and Calculations	78		
B. Economic and Social Impact Assessment			82
1. Economic Model Assumptions	81		
2. Economic Impacts	85		
3. Social Impacts	86		
VI. Legal, Regulatory, and Institutional Enviro	onmo	ent	87
A. Overview			87
B. The Roles of Public and Private Sectors			89
C. The Role of the Industrial Park Authority			91
D. The Legal Context			94
1. The Law on Free Zones		94	
2. Industrial Park Laws		96	
C. Institutional Framework			97
1. Conseil National Des Zones Franches (CNZF)/	DZF	97	
2. SONAPI		98	
3. Industrial Park or Free Zone?		99	
4. Separation of Regulation from Management		99	
5. Investment Incentives		101	
		101	
VII. Project Implementation			102
A. Project Development and Contracting			102
1. Contracting		102	
2. Regulation, Oversight, and Coordination		103	
B. Project Financing			104
C. Implementation Plan and Schedule			109

# **Tables and Figures**

### Tables

Table 1.	Competitiveness Factors and the Countries That Have Them	8
Table 2.	Winners and Losers in the Post-MFA World	9
Table 3.	Haitian Garment Exports to the U.S.	12
Table 4.	Value of HELP Duty Preferences for Selected Product Categories	16
Table 5.	Garment Categories Not Covered by HELP with Third Country Fabric	18
Table 6.	HELP HOPE / CBTPA Tariff Preference Levels / Provisions	21
Table 7.	International Comparison of Garment Material Time on Water	23
Table 8.	Push and Pull in the Apparel Industry (Cotton Only)	23
Table 9.	Haiti's Potential Functions in a Natural Fiber Operation	24
Table 10.	Populations of towns along the CH-Ouanaminthe Road	31
Table 11.	Populations of Named Towns	47
Table 12.	Ratings Based on Field Visits	51
Table 13.	Site Scoring Criteria	51
Table 14.	Site Selection Criteria	53
Table 15.	Ranking of Sites	55
Table 16.	Characteristics of Top Three Sites	59
Table 17.	Infrastructure Development Costs for Site #2	61
Table 18.	Infrastructure Development Costs for Site #15	63
Table 19.	Infrastructure Development Costs for Site #14	65
Table 20.	Haiti Northern Industrial Park Assumptions	79
Table 21.	Haiti Northern Industrial Park Financial Projections and Calculations	80
Table 22.	Haiti Northern Industrial Park: Economic Impact Assessment Model	84
Table 23.	Alternate Financing Scenario 1	106
Table 24.	Alternate Financing Scenario 2	107
Table 25.	Alternate Financing Scenario 3	108
Table 26.	Implementation Schedule	110

### Figures

Figure 1.	Airport Industrial Park, Port au Prince	34
Figure 2.	Pre-built Factory Sheds in Jordan and Lesotho	34
Figure 3.	Straight-line Assembly Shed	39
Figure 4.	Assembly Shed for Circular Line	40
Figure 5.	Buildings at the CODEVI Plant in Ouanaminthe	40
Figure 6.	A Factory Shed in the PIM Park Undergoing Renovation	41
Figure 7.	North Haiti, Showing National Highway 121	48
Figure 8.	Major Roads Heading to Cap Haïtien	49
Figure 9.	Priority and Acceptable Sites	54
Figure 10.	Site #2	56
Figure 11.	Site #15	57

Figure 12.	Site #14	58
Figure 13.	Zone "Nord" Outline Plan	67
Figure 14.	Phasing of Private Sector Participation in Project	90
Figure 15.	Spectrum of Public-Private Partnerships	91

#### Boxes

Box 1. Regional Caribbean Trade Preferences for Garments	14
Box 2. Knitting & Weaving with Stockpiled Yarn: The Bangladesh Story	25
Box 3. Water Quantity and Quality in the Northern Region	35
Box 4. Principles for Introduction of New Housing to Support Industrial Development	74
Box 5. Governance of Egypt's Industrial Investment Zones	93

# Abbreviations and Acronyms

AGOA	Africa Growth and Opportunity Act
ACT	Agreement on Textiles and Clothing
CAFTA	Central American Free Trade Act
CBI	Caribbean Basin Initiative
CBTPA	Caribbean Basin Trade Preference Act
CFS	Container Freight Services
СМТ	Cut, Make, and Trim
CNZF	Conseil National des Zones Franches
CTMO-HOPE	Commission Tripartite de Mise en Oeuvre de la Loi HOPE
CVC	Cotton Value Chain
DINEPA	Direction Nationale de l'Eau Potable et Assainissement)
DZF	Direction des Zones Franches
EBRD	European Bank for Reconstruction and Development
EdH	Electricité d'Haïti
EU / E.U.	European Union
FZ	Free Zone
FTZ	Fee Trade Zone
HOPE	Haiti Opportunity and Partnership Encouragement Act
HELP	Haiti Economic Lift Program
IDB	Inter-American Development Bank
IFC	International Finance Corporation
IP	Industrial Park
IPP	Independent Power Producer
kW	Kilowatt
kWh	Kilowatt hour
MEF	Ministère de l'Economie et des Finances
MFA	Multi-fibre Arrangement
MW	Megawatt
PPA	Power Purchase Agreement
SEZ	Special Economic Zone
SONAPI	Société Nationale des Parcs Industriels
TEU	Twenty-foot equivalent (capacity of a 20-ft container)
TPL	Trade Preference Limit
WTO	World Trade Organization

## **Executive Summary**

#### Background and Context

Even before the January 12 earthquake, Haiti was in a dire economic situation. Years of political instability and civil strife had taken their toll. Light manufacturing, and especially garments, once a mainstay of the economy, had all but disappeared. The garment industry, which employed over 100,000 people in the late 1980s, employed barely 25,000 by 2009. By 2009, the Haitian Government and the donor community had recognized the need to jump-start the economy, with garment manufacturing as one of the pillars of growth. New trade preferences granted by the United States under the Haitian Hemispheric Opportunity through Partnership Encouragement (HOPE) Act had created new interest on the part of potential foreign and domestic investors, though they faced a critical constraint in the lack of serviced industrial land, without which they could not set up their factories.

Several donor organizations recognized this need, and the Inter-American Development Bank (IDB), together with the World Bank/IFC took a particular interest, the World Bank/IFC seeking to develop a new generation of industrial parks along a Special Economic Zone (SEZ) model and the IDB pushing for the rapid development of facilities under existing legal and regulatory regimes. A variety of industrial park and free zone projects were conceived, mostly undertaken by private promoters, though some had implicit expressions of interest from donors.

The earthquake, in addition to creating a huge humanitarian crisis, further aggravated the economic crisis. Though most of the garment industry escaped without significant damage, the need for an economic base for national recovery became even more acute. Humanitarian assistance, though it could relieve much immediate suffering, could not help Haitians become self-supporting. Only job-creating investment could do that. Following the earthquake, the U.S. Congress passed the Haiti Economic Lift Program (HELP), which expanded some of the trade preferences granted by HOPE I and HOPE II, and extended their validity to 2020. Just as the successive HOPE Acts had done previously, HELP gave some urgency to the push to mobilize investment in garment manufacturing, since even on an accelerated schedule, it would likely be two to three years before an industrial park could be built and garment manufacturers could set up their factories and begin to export.

The earthquake also highlighted the vulnerability of Port au Prince; the growth and density of the population had already put tremendous stress on fraying infrastructure, which the earthquake then partly destroyed. Many urban dwellers moved to the rural areas to be close to family and safe from further tremors, while many migrated north to the environs of Cap Haïtien. The northern region is no less geologically active than Southern Haiti, and is also more exposed to hurricanes, but the Government is actively encouraging this migration.

The IDB, in collaboration with the CTMO-HOPE Commission and the Ministry of Finance, has commissioned this study to assess the potential for creation of an industrial park in the Départements du Nord and du Nord-Est.

#### **Project Justification**

Expenditure of public and donor funds on a project of this scope can be justified only if private capital cannot be mobilized for the same purpose, and only if there is some certainty that the wider social and macroeconomic impacts will be positive and some likelihood that private capital could be mobilized for future projects of a similar character. As the financial and economic impact analyses show, this is the case for first phase of development of the northern industrial park. At concessional interest rates (grants, long-term concessional loans, or quasi-equity from donors) the project shows a modest return on investment; however, if financed at a commercial cost of capital and accounting for Haiti's risk premium, the project would generate a negative return.

Our analysis shows, however, that if the first phase of the project succeeds and if Haiti's overall economic and political situation improves over the next three years, Phase 2 could be substantially or even wholly funded by private capital at commercial interest rates. The economic and social impacts of the project are highly positive, as measured in creation of jobs and livelihoods and in the net positive effects on Government fiscal revenues. It is also probable that the success of this project could encourage private investment in other industrial infrastructure projects.

#### Evolution of the Global Garment Industry

The worldwide clothing industry has changed very substantially since the Multi Fibre Arrangement (MFA) and its successor, the Agreement on Textiles and Clothing (ATC) expired on January 1, 2005. MFA, by giving developing countries low-duty or duty-free export quotas for different categories of garments, spurred the development of garment industries in places that otherwise had nothing else to attract investors in an industry driven largely by a permanent drive to lower costs. It is only because of the quota system that countries like Brunei, Kuwait, and other high-cost environments could build large garment factories staffed by foreigners, mainly from the Indian subcontinent. Most of these factories shut down as MFA expired. In countries in which the factories employed foreigners, the shock was not great, but many countries, especially in Africa, in which the factories employed locals, the consequences were much more severe.

The abolition of the quota system changed the industry profoundly. Suddenly, efficient and lowcost producers like China, India, Bangladesh, and Vietnam, many of which also produced their own natural and synthetic fiber and textiles, faced no official caps on their exports of apparel to major markets in North America and Europe, two of the biggest markets. China was seen as such a threat that Europe pressured it to accept "voluntary" limits on its exports, though those lasted only from 2006 to 2008. For a time, it appeared that China and possibly a small number of other countries would drive all others out of the industry. It is true that the industry has consolidated substantially, with no more than 20 or so countries playing any significant part, but further consolidation is not guaranteed. Few countries can compete with China in the high volume-low margin end of the business, in which low costs, huge economies of scale, and a high degree of vertical integration give it a huge advantage, but there are other market segments in which these advantages count for less. In addition, China's labor costs are rising and other countries like Vietnam have emerged with even lower costs.

#### Haiti's (and the North's) Competitive Advantages

As a country with low labor costs, Haiti can compete in the low end of the market, but possibly not for long. Several other countries are cost-competitive with Haiti, and though Haiti enjoys substantial trade preferences others do not, this kind of advantage is never permanent. Following the September 2010 floods in Pakistan, the EU waived import tariffs on Pakistani exports, if only temporarily, while the U.S. has pledged permanent reductions in or elimination of import duties on Pakistani clothing and textile products. Though these developments will not substantially affect near and medium term prospects for Haitian exports, they illustrate the potential for future erosion of Haiti's privileged position.

Haiti's main hope, therefore, is to create a sustainable industry, rather than attracting investors that will create several thousand jobs and then move on five years later, is to move into a more nimble, higher value-added market segment. Haiti's proximity to the United States gives it the opportunity to do this, offering higher responsiveness to changes in fashion than Asian suppliers, several weeks rather than days from the market can possibly match. Success in this segment requires higher skills, better management, and the development of industry clustering effects, but these are all possible. Encouragingly, many of the main Asian investors interested in investing in Haiti seem intent on pursuing this vision, which will entail, among other things, a move into other processes and operations, including knitting, dyeing, and finishing, as well as, eventually, design, sourcing, and full package garment production.

The north of Haiti has many advantages to attract investment in the garment industry. It has substantial tracts of relatively vacant land, it is close to the Dominican Republic, through which raw materials and finished goods can pass, it has a good road connecting the entire sub-region, it has decent port facilities with unused capacity at Cap Haïtien, which is substantially closer than Port au Prince to Miami and other southern U.S. ports. The region also has more readily available water resources than Port au Prince, which is important for certain processes in the garment and textile industry. The labor pool in the region is substantial. Cap Haïtien, with 300,000 inhabitants at the last census, has a population now estimated at over 500,000, while some put the figure closer to 750,000. Ouanaminthe, the other big center in the region, on the Dominican border, has over 100,000 people, the city of Fort Liberté has some 50,000 people, while there are many substantial villages along the road between Cap Haïtien and Ouanaminthe, with an aggregate population of more than 250,000. Almost every potential industrial park site in the area would be within one hour by road of the Cap Haïtien port, and even closer to a sufficiently large potential labor pool.

Several garment manufacturing companies, mostly Korean but also Haitian, Taiwanese, American, and other, have expressed a strong interest in investing in Haiti. For the most part, Haiti's garment industry has been concentrated at the low end of the market, carrying out cutmake-trim (CMT) operations or even simple stitching of fabric cut in the Dominican Republic. These operations add little value and the companies engaged in them often move quickly in response to new trade preferences that favor another country or to changes in relative labor and other operating costs. Many countries that attracted garment industry investment on the basis of these advantages have lost most of the investment and the jobs associated with it, when other countries have emerged to offer them a better value proposition. Haiti, which exported over \$500 million worth of garments to the United States in 2009 - and became the  $21^{st}$  largest clothing exporter to the U.S., has a chance to become and remain an important participant in global apparel supply chains for many years to come. It will do so not by becoming a very low cost mass producer of simple garments but by moving up the value chain and increasing added value.

#### Demand

Many manufacturers recognize Haiti's potential. Three of the largest large Korean garment companies have made serious inquiries about investing in an industrial park in the north, and although for reasons of space it is unlikely that all three together will decide to locate in the same park, the three together have indicated a wish to acquire as many as 120 hectares of land with prebuilt factory sheds. These three are far from the only interested investors. Many companies have expressed an intention to move some or all of their operations from other Caribbean and Central American countries such as Honduras, to take advantage of Haiti's trade preferences and other advantages. CTMO-HOPE reports that at least 12 East Asian garment companies have visited Haiti to explore opportunities to set up factories. A 150-hectare park therefore seems reasonable, given that there is a high probability that at least one of the Korean investors mentioned could occupy half of this space, and that such an investment could provide a powerful encouragement to other potential investors. A 150-hectare park, in addition to accommodating one or possibly two large anchor tenants, would provide additional space for other future investors, including SMEs, which could maximize clustering effects.

#### Site Selection

Selection of the proper site for an industrial park is critical. In many countries, politics has driven the process, placing parks and zones in areas that lack any compelling reason for businesses to invest, and which are handicapped by poor infrastructure, distance from markets, lack of labor, bad topography, and excessive regulations. Governments often try to make up for these deficiencies by offering generous investment incentives such as tax holidays, but these rarely work. To the extent that investors do come, they tend to leave once the incentives expire.

Although northern Haiti suffers from many deficiencies, especially in the quality and reliability of electricity and transport, these problems are far from insurmountable.

Based on information provided by DINEPA, the water authority, by the national geospatial service, and other sources, it was possible to identify a list and approximate locations of 18 potential sites. Using a point scoring system, it was possible to rank these sites along several dimensions, which include:

- Location distance from port and from population centers
- Density of population and prevalence of human activity (agricultural, residential, commercial, etc.
- Availability of water and potential for discharge of treated water
- Topography and soil quality

- Proximity to ecologically sensitive areas such as mangroves
- Land ownership
- Availability of adjacent land for expansion of existing park or development of new ones

Based on these measures, it was possible to identify three preferred or priority sites, which received the highest scores, as well as three or four additional ones that could be considered acceptable. Of the three preferred sites, one is located immediately south of the city of Fort Liberté, one in the Madrasse area near the villages of Fleury and Chambert, and the third south of the main national Highway 121, about six kilometres east of Limonade. For a variety of reasons, including a sparser population, greater distance from the port, and congestion near the Dominican border and the CODEVI site, after a preliminary investigation and a visit to Ouanaminthe, no further sites to the east of Fort Liberté were considered. Of these three sites, the one near Fort Liberté was considered the first choice due largely to its proximity to means of transport, its proximity to both the Cap Haïtien port and ports in the Dominican Republic, the existence of adequate watercourses for discharge of treated wastewater, and its proximity to a population center, which could reduce the cost and time required for workers to get to and from their workplace.

It is important to note that the site investigation and screening was not accompanied by any detailed environmental, hydrological, or topographical research. One caveat with respect to the Fort Liberté site is uncertainty with respect to the quality and availability of sufficient quantities of water for textile and garment washing, finishing, and dyeing. The other two sites have more abundant water, but at least one may be subject to flooding in the rainy season, which could have significant effects on the cost of site preparation and drainage. Before the GoH and the IDB and other donors make a final commitment to develop, these studies will need to be done, in conjunction with a detailed environmental and social impact assessment.

#### Infrastructure and Development Cost

The cost of developing a 150-ha. industrial park on the site close to Fort Liberté is estimated to cost about \$337,000 per hectare, including both on-site and off-site infrastructure, but excluding buildings. This equates to about \$51 million for the entire site, and is consistent with costs in many other developing countries. The estimate is based on construction and building materials cost data obtained from a variety of sources in several countries.

Because of the lack of adequate power and the absence of any public sewage or water treatment facility, the park developers will need to provide these. The development plan includes a water treatment plant capable of processing 2,500 m<sup>3</sup> a day, and an 18 MW power plant. The power plant will cost an estimated \$18 million, and the water treatment plant about \$4.6 million. These costs are included in the overall development cost of \$51 million. These facilities will not be sufficient to meet demand once the park is fully developed and occupied, but their future expansion – or provision of expanded public services by provincial and local governments and by private investors – should accommodate the growing need.

Both the power plant and the water treatment plant will be located in a reserved part of the park. This has several advantages, most notably that under both Haiti's Free Zones Law and its

Industrial Parks legislation, an independent power producer (IPP) located in park or zone can sell power directly to park tenants tenants, thus bypassing the transmission and distribution monopoly of Electricité d'Haïti, which charges up to 40 U.S. cents per kilowatt hour (kWh). An IPP should be able to deliver power for as little as 20 to 25 cents which, though not cheap by international standards, would allow Haitian manufacturers to be competitive, and would be cheaper than using diesel generator sets, which deliver power at an average cost of 30 cents per kWh.

For the most part, the only off-site infrastructure requirement is for short access roads and/or ramps, since the preferred sites are located close to the main highway. There is, however, a set of infrastructure improvements that could be undertaken in the near term which would both improve business conditions and alleviate severe congestion in downtown Cap Haïtien. This would include: 1) improvement and expansion of storage and handling facilities in the port of Cap Haïtien; and, 2) improvement of an existing road and construction of a bridge of approximately 150 meters, which would enable container trucks to bypass the downtown area and link directly to the shore road close to the port. In view of the growing interest in tourism development, this is likely to become a priority development. These two projects together will cost an estimated \$5.2 million; \$4.5 million for the bridge and associated road, and \$700,000 for the port. The GoH has, however, recently announced a commitment of \$7.4 million for road improvements and construction of a new bridge in Cap Haïtien (the "Hippolyte Bridge," linking the small peninsula in the city to the beachfront road near the port), so this cost can be excluded from the estimate of project costs.

There is much talk of large-scale developments in the area, which could include a new international airport and a new commercial port to the east of Cap Haïtien, as well of large-scale movements of population from Cap Haïtien in the direction of Fort Liberté, but at this stage it is impossible to predict what will be done and when. The current assessment therefore ignores these potential projects.

#### **Building Cost**

It has become a worldwide industry standard for garment manufacturers to demand, and for industrial park developers to provide, pre-built factory sheds. This owes much to the historically footloose nature of the industry, which sought the ability to set up operations in a given country with minimal capital investment, and to move on once a new and more attractive opportunity presented itself. Given the scale of capital investment envisaged by some potential investors, this may be a lesser concern; however, there is no question that it would be much harder to attract investors without the offer of pre-built facilities.

The financial model assumes that standard factory sheds will be built and offered to tenants, and for most tenants that will be the case. Some large manufacturers, however, which plan to develop fabric mills and/or knitting and dyeing plants, may have unique building requirements. In these cases, the park operators may offer to build to suit on provision of a long-term rental commitment and payment of an adequate deposit.

Buildings add tremendously to the cost. Even using standard factory shed models in a limited range of sizes, it is still difficult to construct them for less than \$25 per square foot, or \$270 per

 $m^2$ . At capacity, the park may contain as much as 840,000  $m^2$  of covered building space, for which the construction cost would be approximately \$227 million.

Operating costs are calculated at 5% of capital expenditure for operations and maintenance, and 5% of rental income for administrative expenses.

#### Revenue

The financial model is based on an assumed rental price of \$3.35 per square meter per month of covered space. This is more than the subsidized and fully depreciated rates charged in the PIM, but less than in the private SHODECOSA industrial park in Port au Prince and less than rental rates in other parks in the Dominican Republic and elsewhere in the Caribbean.

#### Interest and Financing

The project is assumed to be financed entirely through soft loans and grants from donors, and the GoH's own funds. The financial model uses interest rates typically charged on IDB concessional loans: 1% a year for the first 10 years, and 2% thereafter. The model assumes 10-year financing. In Chapter 7, alternate financing scenarios, some of which involve private commercial financing for all or part of the Phase 2 development costs, are explored.

#### Taxation

SONAPI, which will be the owner of the park, is exempted from all taxes under the Decree of 22 October 1981, while tenants will enjoy an exemption from corporate income taxes and payroll taxes for 15 years, and a staged phase-in of taxes for the next five years. They will also be exempt from import duties on most of their purchases, and exempt or zero-rated for VAT.

#### **Financial Projections and Calculations**

The financial calculations do not include the results from operations of the eventual park tenants. This analysis considers the park itself as an enterprise, and seeks to identify the returns on invested capital.

Calculated over 20 years, the project is expected to show an internal rate of return (IRR) of 2.14% and a net present value (NPV) of \$2.8 million, with a payback period of 18 years. These projections include all development costs and include projected costs and revenues from operation of the power plant as an IPP. They are based on a \$3.35 minimum annual breakeven rent per square meter of leasable covered space in the park. Though clearly insufficient for private investors, the return from the project would cover all development, operating, and financing costs.

The total development cost of \$279 million may be more than donors are willing or able to fund; however, there are ways in which the capital outlay can be reduced. By applying each year's net operating cash flows (exclusive of capital expenditures), which will be positive from Year 1, the total commitment by donors could be reduced by around \$50 million. In addition, by prolonging

the launch of the second development phase (construction in two phases of 75 ha. each is anticipated), the initial donor and Government commitment could be reduced.

We have also considered private investment, though this would not entail private ownership, since the mandate clearly calls for a government owned and financed development. The high initial capital expenditures, combined with the high-risk premium investors would require for a project in Haiti, make private financing of Phase I development inconceivable. Public funding for the first phase is therefore necessary and justified.

But assuming Phase 1 proves successful and that initial public financing covers some of the major expenditures such as the power plant and wastewater treatment facility, private investment at commercial rates of interest could be attracted to finance Phase II infrastructure development and buildings. This would also reduce the capital outlay required in Phase I and increase the financial viability of the government-funded portion of the project.

According to one possible scenario, the GoH and donors would fund the entire Phase 1 development, including on-site and off-site infrastructure, factory buildings, and the wastewater facility and power plant, and would also fund the on-site infrastructure (but not the buildings) in Phase 2. This would increase the IRR to 7.15% and the NPV to \$50.6 million and reduce the payback period to 13 years. It would also permit the breakeven lease rate to be reduced substantially.

Another, recommended, scenario would have the GoH and donors finance only the Phase 1 development, including on-site and off-site infrastructure, the power plant and wastewater treatment facility, and factory buildings. This investment would produce an IRR of 7.68% and an NPV of \$71.4 million, with a reduced payback period of 12 years. Phase 2 development of infrastructure and buildings would be funded entirely by private sources at commercial interest rates. Assuming a 3:1 debt-equity ratio and 15% financing, this project could show an IRR of over 34% and an NPV of over \$16 million, with a seven-year payback period. Sensitivity analysis shows that the project could remain viable at a cost of capital as high as 18%, or even higher, if higher factory rents are charged. Commercial and political risk insurance and, possibly, guarantees, might be required from government and/or multilateral sources, but no direct public investment in Phase 2 would be needed.

In many ways, this would prove the viability of the industrial park model and pave the way for future industrial park development undertaken and funded entirely by the private sector under the regulation and oversight of the State.

#### Economic and Social Assessment

The economic and social impact of the project is expected to be highly positive. We expect the park to generate about 2,700 temporary construction jobs and nearly 37,000 permanent jobs in the garment and textile factories. The park is expected to reach full employment in 10 years. Of these permanent employees, a relatively high percentage will be expatriates at the outset, though over time this will decline. Over the long term, 90% of the work force is expected to be Haitian

laborers; 5% Haitian supervisors and managers, and 5% expatriate technicians and managers. Given an average Haitian family size of seven, the 37,000 Haitian employees will provide support for more than 250,000 people.

Industrial projects typically produce substantial multiplier effects on both employment and income, and these multipliers in the textile, garment, and construction sectors are especially high. Our calculations use an average employment multiplier of 2.0, meaning that for every direct job created as a result of the project, another job is created elsewhere in the economy, mainly as a result of procurement by park tenants and spending by park employees. We have used a composite income multiplier of 2.35, meaning that for every dollar in salary received by employees in the park another \$1.35 will be generated as that money is spent and re-spent.

The employment multiplier means that the park will create direct and indirect employment of around 75,000, and that these employees will provide support for over 500,000 people.

Direct salaries paid to park employees, based on prevailing industry wage rates, will reach \$150 million per year, the vast bulk of it paid to Haitians. With the multiplier effect, employment in the park will provide over \$360 million in annual income for Haitians, equivalent to around 5% of GDP.

These employees will pay taxes. Apart from expatriate employees and Haitian management and supervisory staff, few of them will pay personal income tax, since the income threshold for complete tax exemption is HTG 60,000, roughly the annual salary for a garment worker. But the taxes paid by expatriates and by more highly-paid Haitians will be substantial, peaking at \$47 million a year and then declining to about \$35 million a year as the proportion of expatriates declines.

The expenditures by park employees at all income levels will attract VAT, even if a substantial proportion of their transactions occur within the informal economy. These expenditures may provide more than \$27 million in annual VAT receipts to the Treasury.

The park is expected, therefore, to generate an economic rate of return (essentially the return on government's investment) of 30.65% and a net present value of \$803 million.

These receipts, if a portion is properly allocated to the northern region, should pay for additional social services (including housing, health care, and education), necessary to accommodate any inflow of people and increased demand for public services to which the park may contribute.

Housing is a big concern. The growth of Cité Soleil in response to the construction of the PIM park in Port au Prince is etched on people's minds, and both government and donors are determined to avoid repeating that experience in the north. Construction of new housing, some of which is likely to house people who work in the park, is a pressing need. The Consultants, however, recommend strongly against building large housing developments adjacent to the industrial park, since these will fail to integrate with nearby communities, and could be left, stranded, without employment or access to services, if factories shut down. Many communities in Soviet Bloc towns and cities experienced this trauma as Communism collapsed and many large industrial and mining operations s shut down or were sold. Housing development should

instead take place in the context of an overall regional development plan and should be integrated with existing communities. The proposed park sites are each a minimum of 250 hectares, which provides a buffer zone around the park, which could be fenced to discourage people from moving onto the land. In addition, regional government, with the cooperation of the national government and local and municipal administrations, and in concert with park investors, should act to create the conditions for a regional transport system based on public-private partnerships, which could enable factory workers to remain in their communities while being transported, at reasonable cost, to and from their jobs.

#### Legal, Regulatory, and Institutional Framework

Establishment of the right management and regulatory systems and structures for the proposed industrial park is essential. As a rule, management of the park should be separate from regulation; otherwise, conflicts of interest are certain to ensue. There are several ways this separation of regulation from operation can be achieved, but it is preferable, to the extent possible, to do so within the framework of existing legislation and institutions.

Haiti has several overlapping laws and decrees that govern the establishment, operation, and governance of free zones and industrial parks, and several overlapping institutions that administer and regulate them. There are few, if any, substantive differences between industrial park and free zones legislation, since both provide for duty- and VAT-free imports of equipment and raw materials, and similar exemptions from payroll and corporate income taxes, for both park/zone operators and tenants. The Free Zones Law of 2002 explicitly allows industrial parks that satisfy certain minimal conditions to apply for and receive free zone designation, so that if the Free Zones Law does offer any meaningful benefit compared to those in the industrial park law, an industrial park can obtain the benefit without having to change any other aspects of its regulation or operation.

SONAPI is an autonomous state-owned corporation, which has responsibility for building and managing industrial parks. So far it has developed and operates only one park, the PIM, but it has other projects in various stages of conception and planning. There are questions as to SONAPI's capacity to undertake development of additional industrial parks, given that it has not developed any new industrial infrastructure within the past 20 years. SONAPI has limited staff and technical resources, and is likely to require outside technical assistance if it is to act as the agency responsible for the new park.

SONAPI's status as an autonomous public corporation, with the ability to enter into contracts and to own, buy, and sell, property, would, however, make it well suited to act as the executing agency for the new industrial park, though it will require substantial external assistance on reorganization, training, and capacity building, probably funded by one or more donors.

Even with appropriate technical assistance and other support, SONAPI itself may not have the ability to manage a complex new project on its own. The involvement of private companies in the development and management of the park is all but indispensable. SONAPI accepts this principle and is even exploring options for private ownership and operation of the PIM, which would transform SONAPI itself into a facilitation and regulatory body.

SONAPI, as the State's agency responsible for the project, would need to identify, select, and contract with one or more private companies to act as master developer for the park and as the park's operator and manager. In the near to medium term, SONAPI could work in collaboration with the UTE – the Unité Technique d'Exécution – which exercises similar responsibility for other infrastructure projects, especially those undertaken with donor support. The UTE is acting as the principal executing agency for the expansion of SONAPI's PIM park, which is being financed by the IDB. IDB intends in the near term to increase its technical support to the UTE and may appoint as many as three international experts to assist in development of the northern industrial park and other projects.

A wide range of configurations for private development and management is possible, ranging from a simple management contract to a concession or a variant of build-operate transfer arrangement under which a private party would assume some portion of the project's risk, but would then also be entitled to a potentially greater reward than would be the case under a simple management contract.

It is difficult to recommend an appropriate contracting mechanism in the abstract. Until the GoH and its donor partners have determined how much they have available for financing the project, and to what extent there is a gap between required and available funds, it will be premature to establish whether private financing may be needed to fill that gap.

Any private contracting mechanism will have to follow established donor procurement procedures, typically involving a two-step process of pre-qualification and selection. This process can be time consuming, but it does ensure much greater accountability and transparency.

More-precise recommendations on contracting mechanisms and their implementation will be presented in the final report and implementation plan, based on further instructions and guidance communicated by the GoH and the IDB to the Consultants.

#### **Project Implementation**

Development and management of the park should be contracted to a private company or companies. The extent of private sector participation in financing a portion of development costs and in sharing a portion of the risks with public bodies will depend on the speed at which the first, publicly funded phase of development proves itself successful. It will also depend on the extent to which Haiti's overall economic and political situation improves sufficiently to attract private foreign investment. Given the high perceived risks of investing in Haiti, and the high initial cost of the on-site and off-site development of the IP, there is no alternative to full public funding of Phase 1 of the park. There is, however, a high probability that private investors and developers could profitably carry out development of both infrastructure and buildings in Phase 2, and generate returns of as high as 25%. Sharing the risk and the funding responsibility in this way for Phase 2, would reduce the overall public funding requirement and increase the return on public investment as well.

The simplest and most effective method of contracting with private developers and operators in Phase 1 is to solicit proposals for a design-build contract, and for a management contract to operate the park, but to allow the firm selected for the design-build phase to submit a proposal for the operating phase as well. There is no inherent conflict of interest, especially if the two procurements are conducted separately.

A design-build contract has several advantages over "traditional" contracting, in which the design and the build stages are contracted separately (or, as in many cases, the design is performed by the client). In the traditional model, all design elements are established in advance, so selection of the building contractor is based solely on price. This is appropriate for construction project where technical specifications can be established precisely in advance, but it can limit the possibilities for innovation.

Traditional contracting tends to require more direct involvement by the client, who acts in some sense as a "maître d'oeuvre" or project manager, as well as the "maître d'ouvrage," or project owner/client. This would to stretch the capacity of existing institutions in Haiti, especially since neither SONAPI nor UTE has the capacity to carry out detailed design itself, thus necessitating a separate design contract. In that configuration, the RFP for construction could not be issued until the design work is complete, so the entire process could take considerably longer. Given the pressure to complete the project as quickly as possible, the faster approach of a design-build contract is preferable.

The recommended approach to financing the development of the northern industrial park is a combination of Scenarios 1 and 3, as shown in the above financial models. In Phase 1, the GoH and its donor partners would finance the development of all on-site and off-site infrastructure for that phase, including the wastewater treatment facility and the power plant. In Phase 2, private developers, having mobilized their own capital, would extend the on-site infrastructure such as roads, street lighting, electricity distribution, and water and sewerage networks, and construct factory buildings for lease to tenants. The private developer would pay a nominal lease of \$2 per m<sup>2</sup> per annum to rent the unserviced land from the State. At a 15% cost of capital and 75% debt financing, this would generate an attractive return for a private developer and investor, and the project could still be viable at interest rates of up to as much as 18%. It is, however, impossible to predict the risk premium investors will require for financing construction in Haiti in three to four years' time. If the future risk premium results in rates at or above this level, some form of government-backed guarantees may be required to bring rates to levels that can increase the viability of the project. Sources could include Exim Bank and OPIC for U.S. investors, and other national or multilateral sources of commercial and/or political risk insurance and guarantees.

Effective implementation will require strong direction from the GoH, preferably exercised through an inter-agency steering committee chaired by a Cabinet Minister or even, possibly, the Prime Minister. The activities of numerous Government bodies and public agencies, together with those of private contractors, will need to be coordinated to create the IP as a legal entity, carry out required off-site and on-site works, and establish effective regulation and governance of the park. The Steering Committee and its members, together with SONAPI as the public body designated as the IP Authority, will also need to engage with donors and with other parts of government to secure required financing and ensure the collaboration and participation of all relevant public authorities. SONAPI, by virtue of its existing relations with the customs and tax authorities, public utilities, and relevant Ministries, is well positioned, with appropriate technical support, to achieve this, especially by working in concert with the steering committee.

carried out jointly by SONAPI and the UTE in the Ministry of Finance, and will require donorfunded technical assistance and capacity building.

Given appropriate commitment and leadership by the GoH, and effective support by donors, the park should be ready to accommodate its first investors, which could begin trial production by the end of the first quarter of 2012. Though some of the construction will continue for at least another year or even two, substantial exports could begin to flow as early as mid-2012.

## I. Introduction

This document is the draft final report for IDB contract No. HA-T1074-SN2, "Development of the Industrial Park Model to Improve Trade Opportunities for Haiti," awarded to Koios Associates, LLC, which commenced June 21, 2010. A team of three Koios consultants visited Haiti from July 5 to 20, 2010, carried out field assessments, and conducted interviews with a wide cross-section of public officials, staff of international agencies, and private business operators, principally in Port au Prince and in the Northern region, encompassing the area between Cap Haïtien and Ouanaminthe. Follow-up visits by members of the project team took place in September 2010.

### A. Background and History

An April 2009 World Bank/IFC assessment of the need for serviced industrial land to accommodate expansion by existing garment manufacturers and a strong interest by companies operating elsewhere in the Central America/Caribbean region to establish factories in Haiti, observed that the country's most immediate need is "to articulate and implement a near-term strategy and action plan to increase the supply of serviced industrial land and buildings, with the aim of being able to accommodate manufacturers within 18 months or less." The urgency of the task was a function of the need to create employment and incomes to reduce high unemployment and the civil unrest that accompanied it. It was also a function of the 2006 HOPE Act, which grants duty-free access to the U.S. market for Haitian-manufactured apparel, allowing substantial Dominican and other Caribbean content to be included in eligible goods. Originally authorized for only three years, in October 2008 the Hope II Agreement extended these preferences until 2018, with no certainty that it would be extended further.

Years of political instability and civil unrest, compounded by U.S. trade sanctions imposed in 1991 after President Aristide was removed from office by a coup, have taken their toll. In the 1980s there were as many as 150,000 garment workers in Haiti; now there are around 20,000. Though the HOPE Act had made a difference – the value of Haitian apparel exports to the United States in 2009 amounted to roughly \$512 million – employment in the garment industry did not increase, while other manufacturing (Haiti used to be a major producer and exporter of sporting goods such as baseballs) had never recovered.

In spite of strong interest by companies in undertaking new investment in Haiti, which would create new jobs, the lack of suitable serviced industrial land was a serious constraint that prevented these investments from taking place. Even with an accelerated program of industrial land development, there would remain at most six or seven years of assured benefits from HOPE. Though garment manufacturers are highly adaptable and notoriously footloose as market preferences change, the shorter the duration of available preferences, the less compelling the business case for investing. The longer Haiti goes without sufficient industrial land to accommodate garment manufacturers, the less investment, jobs, and income it will gain from HOPE and other trade preference programs.

### B. Haiti's Current Economic Situation

The January 2010 earthquake has only aggravated the economic crisis in Haiti, heightening the need for increased industrial production but at the same time destroying or damaging much of the infrastructure on which that production will depend. Fortunately SONAPI, the principal industrial park in Port au Prince, was spared the destruction, and most of the nearly 50 factories in the park reopened within days or weeks of the disaster, but they still face substantial challenges with damage to the public port of Port au Prince, operated by the Autorité Portuaire Nationale, and congestion from the humanitarian aid that continues to dominate port activity.

The earthquake contributed to a substantial migration to the North. The population of Cap Haïtien, officially 250,000, is now estimated to be at least double that, while some estimates place it closer to 750,000. Ouanaminthe, with an official population of 58,000, now has at least 100,000 inhabitants. This rapid influx cannot help but overwhelm existing public services and housing, while far outstripping the ability of the local economy to provide jobs for the newcomers. Though a shift in population potentially contains the makings of an economic and social crisis, it also presents an opportunity, since an expanded labor pool, combined with a relative abundance of land suitable for industrial use, could be the basis for industrialization of the region on a fairly large scale.

Haiti's other main center for garment production, the CODEVI Zone in Ouanaminthe – which is the first Free Zone established under Haiti's Free Economic Zone Law of 2002 – escaped the earthquake undamaged. CODEVI, which sits on the Haiti-Dominican border, sources all inputs and ships all exports via the ports and roads of the Dominican Republic. Other industrial parks or free zones in the region would have the advantage of access to this route, mainly as a backup or alternate option, while relying principally on the commercial port of Cap Haïtien and, eventually, of other port facilities that may be built in the area. In spite of growing congestion in the city of Cap Haïtien, which is bounded on three sides by ocean and mountain, there are large tracts of sparsely populated land in the region. The area is traversed by an excellent road linking Cap Haïtien to Oaunaminthe, which was completed in 2008 with a €70 million grant from the European Union.

Even though the garment industry has escaped most of the devastation, the need for industrial land has become even more acute. Virtually all commentaries on Haiti's post-earthquake economic recovery have underlined the importance of the garment industry as the main immediate source of jobs and income, but without industrial land and factory buildings available, investment will stagnate. The situation calls for accelerated development of industrial parks to meet immediate demand. While this does not diminish the longer-term importance of a deliberate and sustainable approach to development of special economic zones, a simpler near-term solution is required.

In response to the worsening of Haiti's economic situation, the U.S. Congress in April 2010 passed the Haiti Economic Lift Program (HELP) Act, and on May 25 President Barack Obama signed it into law. HELP, which extends until September 30, 2020, offers several improvements over HOPE II and other trade preference regimes for which Haitian manufacturers may be eligible. It allows the value-added rule to remain at 50% through 2015; increases the woven tariff

preference level (TPL) from 70 million to 200 million square meter equivalents (SMEs), with many exclusions to accommodate U.S. industry; expands the knit TPL similarly; reduces the three-for-one earned import credit to two-for-one; and expands the list of products eligible for duty-free treatment under special assembly rules.<sup>1</sup> HELP, however, is not a panacea. Though it has undoubtedly increased investor interest in Haiti, it will have little practical effect on exports and employment in Haiti's garment industry unless some of the most severe infrastructure constraints – including the lack of serviced industrial land – are addressed.

The 2009 IFC assessment observed that accelerated development of industrial zones carries with it "some serious risks, among which environmental, social, worker safety, and labor relations risks loom large. Any such strategy that fails to provide adequate safeguards to protect against these, and other, risks is certain to fail. International customers for Haitian manufactures, many of which are large global companies, cannot afford the commercial and reputational consequences of sourcing products from factories and Free Zones that do not meet international norms. These companies conduct regular field audits of all their suppliers to ensure such compliance (as well as compliance with product quality standards) and will be quick to drop from their supplier roster any company or Free Zone that falls short. The Haitian Government therefore has a strong interest in ensuring that any accelerated development program does not abandon the safeguards necessary to protect its people and environment and ensure the international acceptability of its industrial production."<sup>2</sup>

For several reasons, including the urgency of the need, a decision has been taken by the GoH, and endorsed by the IDB, that the industrial park should be built on state-owned land and that the park should be developed with government and donor financing. Many elements of this assignment have, moreover, been influenced by ongoing negotiations between the IDB and several potential investors from South Korea, two of which have signed letters of intent to set up operations in an industrial park in the North, and one of which has specified in considerable detail its intentions with respect to industrial processes and scale of investment, as well as its requirements with respect to location, power and water, labor, and other important factors. This potential investment is also strongly backed by the U.S. State Department, which intends to contribute to several large infrastructure initiatives – including port development, housing, electricity, and water. The Koios consultants have considered these intentions and requirements, while at the same time remaining aware that this project is intended for the benefit of the national and regional population and economy rather than for any single investor.

## C. Purpose and Objectives of this Study

The purpose of this assignment, therefore, is to develop within a three-month period not only a strategy, but also an action plan capable of being implemented to accommodate new investors within the shortest possible time. The new park must, at a minimum, offer all the necessary

<sup>&</sup>lt;sup>1</sup> Hornbeck, J.F., "The Haitian Economy and the HOPE Act," U.S. Congressional Research Service, June 24, 2010.

<sup>&</sup>lt;sup>2</sup> Krech, R., and Krakoff, C., "Reform Strategy: Haiti's Industrial Park and Economic Zone Regime," International Finance Corporation, Investment Climate Advisory Services for the World Bank Group, Washington, D.C., April 2009.

utilities and on-site infrastructure that manufacturers will need – including industrial buildings ready for immediate occupancy – but must also have the necessary off-site infrastructure and services, which include roads, customs posts, and water and electricity connections.

The specific objectives and elements of the assignment are to:

- 1. Identify suitable and available state-owned land for development of an industrial park at a point along the Cap Haïtien-Ouanaminthe corridor;
- 2. Assess the state of infrastructure (transport, water, power, etc.) in the region as a whole and in specific locations identified as potentially suitable;
- 3. Identify other important selection criteria, including availability of labor, existing land occupation and use, and important environmental risks;
- 4. Assess the facilities and services, according to international standards and taking into account the needs of specific potential investors, that garment manufacturers will require in an industrial park;
- 5. Formulate a management and governance structure and model for the industrial park, taking into account the capacities of existing institutions and the likelihood that other industrial parks will be created according to a similar model and under the same governance structures;
- 6. Conduct a financial feasibility assessment of the industrial park project, taking into account both on-site and off-site investments and based on cost estimates for similar structures, adjusted for cost differentials in the region;
- 7. Carry out an economic and social impact assessment, which will consist largely of analyzing the employment and income effects of the park, including the multiplier effects on indirect and induced employment and income, and analyzing the fiscal effects on Government as a function of its expenditure on the project and the increased tax revenues it may receive from the economic activity generated or stimulated by the park.
- 8. Present a proposal, timeline, and implementation plan for development of the industrial park.

This interim report covered items 1 through 7 in the list above. This draft final report refines and adds additional information and analysis to these chapters, but also includes Chapter VIII, which consists of an implementation plan and timeline, and also includes additional analysis of potential funding options for the industrial park development. This final report also takes into account comments and related decisions taken by the GoH and the IDB.

## II. Overview of Garment Industry Trends

## A. The leveling playing field

Since 2005, when the Agreement on Clothing and Textiles (ACT), the successor to the Multifibre Arrangement (MFA), ended, the garment industry has seen a substantial levelling of the playing field as a result of the elimination of quantitative limits for each exporting country, which for the most part allows countries to export as much as they want, subject to normal MFN duty rates. The persistence of existing preferential market access agreements and the introduction of new ones, however, prevent the field from becoming entirely level. As a consequence, the lowest-cost producers have not driven all other competitors out of the market. In addition, though most major buyers have reduced the number of suppliers with which they work, they value some diversity of supply and have resisted the temptation to rely too much on a single supplier or country.

Current industry trends accentuate the distinction between smaller and nimbler producers, which tend to concentrate on medium- or high-fashion goods, and countries and producers whose advantages lie in high-volume, low-cost production of low-fashion items. There are a number of distinct vendor models along this spectrum that can allow a post-MFA vendor to establish and defend a position in the global market. Whether a country or vendor will fit into the picture will depend on maximizing the natural advantages of their origin, which may include location, cheap electricity and/or water, transport infrastructure, skills, and cost and availability of labor. If not, they will disappear. This has already happened in many countries and territories, including the United Arab Emirates, Saipan, and Brunei, which attracted garment investments motivated purely by MFA quota restrictions and availability,<sup>3</sup> and which relied almost entirely on imported labor. <sup>4</sup>

China's dominance of the global apparel trade has increased since 2005, but not to the extent that all other countries have been excluded from the market, though many countries with limited competitiveness have lost much of their productive capacity or have diverted most of their production to domestic markets (this appears to be the case with many Eastern European countries, which now sell almost all of their production within the European Union. In 2005, right after the expiration of ACT/MFA quotas, a massive post-quota surge in imports from China to the EU caused huge numbers of shipments to be held at the dock as the EU invoked WTO anti-surge mechanisms to bar entry. Subsequently, China accepted "voluntary" restraints on its exports to both Europe and the U.S., though these expired in 2008.

At the same time, China's factories are not always cheaper, better, or faster than those in other countries, while its costs – especially wages – are rising fast, partly as a consequence of skills shortages and partly in response to well-publicized labor unrest. So far, these have affected other industries like automotive and electronics, but could soon affect the garment industry, especially in the coastal regions. This creates opportunities for countries with low labor costs and other

<sup>&</sup>lt;sup>3</sup> Quota restraint was part of a system induced by the Multi-Fibre Arrangement that set quantitative limits on exports from certain countries beginning in Hong Kong in the 1960s and ending in 2005.

<sup>&</sup>lt;sup>4</sup> One factory in Brunei in 2004 had 6,000 workers, only three of whom were Bruneian.

advantages such as greater proximity to markets; however, fewer than 20 major countries or territories remain as significant participants in the global industry, down from as many as 100 prior to 2005.

The past five years have been an especially volatile period for the industry, though the short-term impact of the abolition of quotas was mitigated by renewed short-term restraints on Chinese exports (2006-7), as well as by the ongoing recession in the U.S. and Europe. Imports to the U.S. dropped dramatically from \$73 billion in 2007 to \$63 billion in 2009: a nominal level seen last in 2003. This profoundly affected Chinese as well as other manufacturers, and many factories, in China, and in other countries, went out of business. This process of consolidation will continue, since countries without duty preference, proximity to market or sources of fibre and yarn, or access to large and cheap pools of labor, will have few attractions for buyers. With fewer factories, buyers will come less frequently, and the process of consolidation will continue. Although China will maintain its present dominance, its market share is not likely to increase much beyond current levels,<sup>5</sup> though a cautionary example can be found in the Japanese market, which has not recently had any special-origin restraints such as quotas, where China supplies 75% of the market as against 37% of the American market.

In the U.S. market, nine countries supplied half of total demand by value in 2000, seven in 2005, and only three in 2009. China and Vietnam have the first two slots, while Indonesia and Bangladesh jockey for third place.<sup>6</sup> None of these countries has any trade preference in the U.S. market.<sup>7</sup> This trend will not be reversed, and consolidation will increase, with the top 10 countries accounting for most volume as the supplier base concentrates. Box 1, below, illustrates the potential sources of competitive advantages in the post-MFA world and identifies the countries likely to benefit from each one.

While controlling costs is important, avoiding losses is critical. Proximity and speed to market increase the probability that a garment will sell at its full retail value and not be discounted. Except for the lowest-value commodity-style products, fashions change seasonally, and buyers' demands will change from one season to the next on critical dimensions such as quantity, size range, color, and style. Providing the right fashion product at the right time is much more important in most cases than a lower cost. Markups are substantially higher in fashion goods than in basics. Markups from FOB to retail prices can be up to 300% for basics and 500% for fashion. In almost every case, but especially for fashion items, reliability, quality, and speed trump cost; if this were not so, garment manufacturers in countries like Italy would long ago have outsourced all of their production to China and similar countries.

<sup>&</sup>lt;sup>5</sup> Based on expectations of the valuation of the RMB and that future growth will come for China from its own domestic market, which is now the world's biggest.

<sup>&</sup>lt;sup>6</sup> OTEXA – Office of Textiles and Apparel, U.S. Department of Commerce data.

<sup>&</sup>lt;sup>7</sup> Bangladesh has ACP preference to the EU and other GSP countries, Indonesia has a 30% of GSP preference since it is not defined as LDC.

## B. Competitive Advantages in the post-MFA World

If the main factors were simply cost and speed, much of the world's textile industry would now be split entirely between China, the Indian subcontinent, and Indochina. But although these regions' dominance has increased, it is not, and will not become, complete.

New investment in new sources of supply, however, will no longer be motivated by the search for unused quotas, as it was in the MFA era. New investment instead will occur in places in which at least two of the following factors prevail:

- Factor 1: A large, concentrated, low-cost, and literate labor pool;
- Factor 2: Proximity to markets;
- Factor 3: Proximity to fabric/yarn formation (fibre alone is of little value without further processing (thus West Africa is marginalized despite its cotton);
- Factor 4: Many factories making a diverse range of garments <sup>8</sup> to attract buyer visits;
- Factor 5: Serviced land and infrastructure, including basic factory buildings, so investors can start shipping with minimal delay.

Haiti possesses factors 1 and 2, and to some degree Factor 3, since it is close to the U.S., the world's third-largest cotton producer. It lacks factors 4 and 5, since there are fewer than 30 factories in Haiti, most concentrated in production of two categories (underwear and tee-shirts), and the country suffers from a shortage of serviced industrial land and buildings, which would allow a manufacturer to begin production and shipping quickly.

<sup>&</sup>lt;sup>8</sup> Currently North Haiti only has one garment factory. The Dominican Republic has 120+ factories against Haiti's 23 – (figure approximate and changing).

Factor	Typically seen in	Impacts garment cost by	Examples of countries displaying
Lower direct labor cost	Flat fertile low-lying countries with huge labor concentration	Affects the making charges which generally account for 25% + of cost but also depends on efficiency	Bangladesh, Cambodia, India (?)
Lower indirect costs	Proximity of piece goods / stable environment	Fewer delays leading to few cancellations, discounts, or air shipments at vendor's expense	China, Turkey, Vietnam
Proximity of origin to market	For U.S. – Central America	Allows production closer to shipment window	Mexico, CBI, Canada
Fast turnaround from concept to delivery	Proximity mill and market	Allows production closer to retail window	Mexico, DR, Spain, Portugal, Romania, Italy
Adjacent rich and poor regions	More sophisticated origins with strong history of garment making	Offers low direct labor cost with modern management	Italy - Moldova and Albania; Hong Kong and Macau-China, DR-Haiti, Israel-Jordan
Full package of all kinds of garments [one-stop shop]	Large number of factories – e.g. China has 25,000 factories	Allows placing of complete programs, reduces sourcing cost and risk	China, Vietnam, Turkey
Proximity to fiber sources	Cotton production or melt spinning for synthetics	Typically leads to adjacent ginning, spinning, and fabric formation allowing better control of piece goods	China, Vietnam, India, U.S.
Backward integration of stitcher to fabric mill	Induced by EU rules – double transformation	Better development skills, lower risk than offshore fabric, faster turn	Bangladesh, Mauritius, Sri Lanka
Preference seeking – duty free	History proximity or mass sympathy	Removes import duty which varies from 30% + for some synthetics to 8% for cottons	Mauritius (varies), AGOA, Mexico, CBI, Haiti, Morocco, Jordan, Israel, USA Trust Territories
Craftsmanship	Very high value / danger of being copied obviates China/ or bespoke	Markups are so high that most value is in fabric or marketing but not the making	Italy, France, Spain, Other Europe
Low air freight cost for speed	Countries with large tourist industries	Higher fashion and normally as a reserve option for buyers	Mauritius, Sri Lanka, South Africa, Lesotho, Kenya

Table 1. Competitiveness Factors and the Countries That Have Them

The winners and loosers in the last 10 years									
The top ranked 21 importers into the USA now includes Haiti									
Year	20	000	2	005	2	009	Change	\$ million	
World	57,23	2	68,71	3	63,10	63,105			
	Rank	Value	Rank	Value	Rank	Value	2000-10	Key words	
China	2	4,499	1	15,143	1	23,503	422%	Proximity to fibre / full package	
_CBI	na	9,541	na	9,595	na	6,666	-30%	Preference / proximity NAFTA	
Vietnam			6	2,725	2	5,068	na	Full package	
Indonesia	9	2,055	5	2,875	3	3,861	88%	History	
Bangladesh	7	2,116	8	2,372	4	3,410	61%	Full package	
Mexico	1	8,413	2	6,078	5	3,391	-60%	Preference / proximity NAFTA	
India	12	1,786	4	2,976	6	2,846	59%	Low Direct / Proxinuty to fibre	
Honduras	5	2,323	7	2,622	7	2,032	-13%	Preference / proximity CBTPA	
Cambodia		808	13	1,713	8	1,871	131%	Low Direct / Labour	
Pakistan	20	920	18	1,259	9	1,306	42%	Proximity to fibre	
El Salvador	14	1,583	15	1,619	10	1,298	-18%	Preference / proximity CBTPA	
Thailand	10	1,820	12	1,808	11	1,219	-33%	Full package	
Sri Lanka	16	1,472	14	1,650	12	1,210	-18%	Air freight / proximity to yarn	
Guatemala	15	1,487	11	1,816	13	1,103	-26%	Preference / proximity CBTPA	
Philippines	11	1,895	10	1,830	14	1,016	-46%	History	
Nicargaua		336		716	15	892	166%	Preference / proximity CBTPA	
Italy	17	1,400	16	1,354	16	885	-37%	Workmanship	
Jordan		43		1,083	17	765	1691%	Preference USA - JO FTA	
Egypt		406		444	18	742	83%	Preference QIZ	
Dominican I	4	2,425	9	1,849	19	613	-75%	Preference CAFTA-DR	
PERU		383		800	20	600	57%	Preference ATPA	
HAITI		216		406	21	513	137%	Preference / proximity	
Canada	13	1,747	17	1,273		480	-73%	Preference / proximity NAFTA	
Taiwan	8	2,064	21	1,134		468	-77%	Switch in paperwork only	
Korea	6	2,264	20	1,155		281	-88%	Rising costs / move to offshore	
Hong Kong	3	4,486	3	3,511		277	-94%	Switch in paperwork only	
Turkey	19	1,048		944		257	-75%	Switch to EU focus	
Costa Rica	21	819		482		206	-75%	Preference / proximity CBTPA	
Macau	18	1,149	19	1,198		174	-85%	Switch in paperwork only	

#### Source: OTEXA

As Table 2 shows, despite the formidable advantages that China, Bangladesh, Indonesia, and Vietnam possess, other countries can carve out market niches in which they can not only benefit from, but also defend and reinforce, certain competitive advantages. As shown in Table 1, Haiti in 2009 ranked 21<sup>st</sup> in the list of garment exporters to the U.S. Its 2009 shipments of just over \$500 million are only 2.2% of China's and 0.8% of the total U.S. market, but then Haiti's population of close to 10 million is less than one percent of China's 1.3 billion. Haiti could double or triple its exports to the U.S. and still remain a minor player unlikely to attract much attention or opposition.

As we discuss in the next chapter, Haiti cannot position itself exclusively as a cheap labor location. Labor cost advantages can erode quickly, and are not a base on which to build a sustainable industry. Similarly, trade preferences are also an unstable base, since there is no certainty with respect to their continuation or the emergence of other countries that qualify for the same preferences. Haiti must offer other compelling reasons for buyers and investors to place programs there, and it must also continually adapt to changing market conditions, so that over time the erosion of one factor of competitiveness can be replaced by others. Whereas today Haiti's advantage may lie principally in low costs and speed to market, in the future it might evolve towards a greater emphasis on higher value added and a focus on services such as design and embellishment.

## III. Haiti's Place in the post-MFA World

### A. The Structure of Haiti's Garment Production

Haiti is often dismissed as an origin exclusively for underwear and T-shirts, mostly stitching, with minimal cutting. While these products currently account for 75% of her garment production volume, historically she did show a wider range of capacities, as shown in Table 1 (next page).

In 1989, of course, Haiti's product mix was largely a function of quota allocations and their cost, the main items being pants, shirts, blouses, bras, and sleepwear. With the abolition of the quota system, what Haiti produced before may not be terribly relevant to its current and future production. This history does, however, indicate that Haiti was once, and could again become, capable of making garments requiring higher skills and generating greater added value than the standard T-shirts and underwear the industry now produces. A new industrial park could, therefore, seek manufacturers with higher skill requirements focused on more advanced production (wovens, for example).

In view of the structure of tariffs and quotas Haiti faces under HELP and other legislation, this is likely to happen, since the duty benefit Haiti has is largely ad valorem, with a tariff rate quota that specifically affects only a small number of products such as woven pants and some T-shirts apart from the overall cap for all garments, though this relatively small number of categories accounts for around 40% of the total cap. Restrictions on T-shirts, as basic knit items, tend to encourage either backward integration (and use of another trade package not subject to cap; i.e., knitting) or a shift to other categories, which are generally more complex than T-shirts and underwear, which are among the most basic garments. Manufacturers thus have an incentive to add more value, since this increases the value of the trade preference and, hence, their own profitability and Haiti's competitive advantage.

Haitian exports to USA - selected years milling										millions			
	•	Conc	entratio	n			Conc	entratio	on		Conc	entratio	on
Category		Category 1989		1994	1999	2004	2005		2006	2008 2009		Y/E April 10	
	557												2010
Deta	ail // Event >>			Demo cracy		UN enter s	Qu er	ota ids	Hope I	Hope II			Earth- quake
0	All		\$175	\$30	\$250	\$324		\$406	\$450	\$412		\$513	\$493
2	NON - apparel	5%	\$9	\$1	\$1	\$0		\$0	\$0	\$0		\$0	\$0
12	Fabrics	1%	\$2	\$1	\$1	\$0		\$0	\$0	\$0		\$0	\$0
237	Babies playsuits		\$1	\$1	\$0	\$0		\$0	\$0	\$0		\$0	\$0
239	Baby garments		\$3	\$3	\$7	\$1		\$0	\$0	\$0		\$0	\$0
331	Gloves		\$0	\$0	\$3	\$2		\$1	\$1	\$1		\$0	\$0
336	Dresses		\$1	\$1	\$0	\$0		\$0	\$0	\$0		\$0	\$0
338	Tees - M/b -cotton	2%	\$3	\$4	\$54	<b>\$136</b>	43%	\$174	\$175	\$213	51%	<b>\$263</b>	\$243
339	Tees - I/g -cotton	1%	\$2	\$1	\$10	\$23	7%	\$27	\$20	\$9	2%	\$13	\$13
340	Woven shirts - m/b	5%	\$9	\$0	\$0	\$0		\$0	\$0	\$1		\$1	\$1
341	Woven shirts - I/g - c	3%	\$6	\$0	\$0	\$0		\$0	\$0	\$0		\$1	\$1
347	Trousers m/b - cottor	10%	\$17	\$3	\$18	\$19	5%	\$20	\$23	\$35	8%	\$42	\$37
348	Trousers I/g -cotton	7%	\$13	\$2	\$9	\$16	1%	\$6	\$0	\$2	2%	\$11	\$12
350	Gown dusters -cottor	1%	\$2	\$0	\$2	\$0		\$0	\$0	\$0		\$0	\$0
351	Sleepwear -cotton	3%	\$6	\$0	\$0	\$0		\$0	\$0	\$0		\$0	\$0
352	Underwear -cotton	1%	\$1	\$0	\$92	\$54	18%	<b>\$</b> 73	\$101	\$85	20%	\$100	\$105
369	Other cotton	1%	\$2	\$0	\$0	\$0		\$0	\$0	\$0		<b>\$</b> 0	\$0
431	Wollen cloves / mitte	ns	\$1	\$1	\$1	\$0		\$0	\$0	\$0		\$0	\$0
633	Suits synthetic		\$0	\$0	\$0	\$0		\$0	\$0	\$0		\$1	\$1
634	Coats m/b synthetic		\$0	\$0	\$0	\$9		\$2	\$3	\$1		<b>\$</b> 0	\$0
635	Coats w/g sythetic		\$0	\$0	\$0	\$0		\$0	\$0	\$2		\$0	\$0
636	Dresses sythentic	2%	\$3	\$0	\$0	\$0		\$0	\$0	\$0		\$0	\$0
638	Tees M/B - synthetic	5%	\$8	\$1	\$2	\$24	16%	\$67	\$96	\$30	4%	\$18	\$18
639	Tees L/G - synthetic	4%	\$7	\$1	\$3	\$11	2%	\$6	\$0	\$0		\$2	\$3
640	Shirts -M/B synthetic	:	\$1	\$0	\$0	\$1	1%	\$5	\$6	\$7		\$9	\$8
641	Blouses -synthetic	2%	\$4	\$1	\$1	\$1		\$2	\$1	\$1		\$3	\$3
642	Skirts -sythentic		\$1	\$0	\$0	\$1		\$0	\$0	\$0		<b>\$</b> 0	\$0
647	Pants M/b - syntheti	6%	\$11	\$0	\$5	\$10	4%	\$15	\$20	\$20	3%	\$15	\$15
648	Panst - I/g sythetic	5%	\$8	\$1	\$2	\$7		\$3	\$2	\$2	2%	\$8	\$8
649	Bras	11%	\$19	\$4	\$8	\$0		\$0	\$0	\$0		\$0	\$0
650	Dusters/ gown synth	6%	\$11	\$0	\$2	\$0		\$0	\$0	\$0		\$0	\$0
651	Sleepwear -synthetic	5%	\$8	\$1	\$22	\$1		\$1	\$1	\$0		\$1	\$1
652	Underwear - syntheti	7%	\$12	\$2	\$4	\$0		\$0	\$0	\$0	1%	\$6	\$8
659	Other synthetic	4%	\$6	\$1	\$1	\$5		\$1	\$0	\$0	1%	\$4	\$5
666	Floor coverings	2%	\$4	\$0	\$0	\$0		\$0	\$0	\$0		\$0	\$0
											Sourc	e Otexa	1

#### Table 3: Haitian Garment Exports to the U.S.

In 1989, of course, Haiti's product mix was largely a function of quota allocations and their cost, the main items being pants, shirts, blouses, bras, and sleepwear. With abolition of the quota system, what Haiti produced before may not be terribly relevant to its current and future production. It does, however, indicate that Haiti was once, and could again become, capable of making garments requiring higher skills and generating with greater added value than the standard T-shirts and underwear the industry now produces. A new industrial park could, therefore, seek manufacturers with higher skill requirements focused on more advanced production (wovens, for example).

In view of the structure of tariffs and quotas Haiti faces under HELP and other legislation, this is likely to happen, since the duty benefit Haiti has is largely ad valorem, with a tariff rate quota that specifically affects only a small number of products such as woven pants and some teeshirts, apart from the overall cap for all garments. Caps and fabric source restrictions on T-shirts, being knit and basic, may encourage either backward integration (and use of another trade package not subject to cap, such as knitting) or a focus on other categories which are generally more complex than tees and underwear which among the most garments. Manufacturers have a motivation to do this, since the greater the value added the greater the value of the trade preference.

## B. The Way Forward for Haiti's Garment Industry

#### 1. Trade Preference Levels

The HELP Act does not grant duty-free allowances for unlimited quantities of Haitian garments, except if made using regional/American yarn or fabric (e.g., local knitting) or which can attain at least 50% domestic value added. Indeed, HELP places very specific restrictions on some categories with respect to quantity, source of fabric, and other elements. Some of this is covered by CBTPA and some directly from HELP / HOPE. Restrictions of this kind will persist throughout the life of HELP, and similar, though different restrictions will almost certainly remain for the foreseeable future, under any U.S.-Haiti trade regime that might ultimately replace HELP.

#### Box 1. Regional Caribbean Trade Preferences for Garments

Garment manufacturers in Haiti can potentially use one of three U.S. trade preference regimes that apply to Haiti and/or other Caribbean and Central American countries. These are: 1) HOPE I and II, supplanted by HELP; 2) CBTPA, the Caribbean Basin Trade Preference Agreement; and 3) CAFTA, the Central American Free Trade Area.

HOPE I, HOPE II, HELP are purely for Haiti. HELP gives Haiti more flexibility than either CBTPA or CAFTA on the origin of fabric for some categories.

CBTPA applies to some Caribbean countries, including Haiti. CBTPA preferences are yarn-forward for most categories.

Haiti itself is not a CAFTA beneficiary, so can export under CAFTA only in combination with the Dominican Republic, hence the appellation CAFTA-DR. It grants duty-free status only to products made with regional yarn or fabric (except for a few categories like bras, sleepwear, and luggage), and products must also be shipped from the Dominican Republic. Many of the big Haitian manufacturers rely extensively on CAFTA-DR, importing fabric from the DR, sewing garments, and shipping back to the DR for export to the U.S.

The garment industry is notoriously footloose, especially where the simplest products and production processes are concerned. Capital investments are lowest in pure cut and sew and assembly operations, so as soon as a new set of trade preferences is introduced or a new, low-cost production location emerges, manufacturers will pack up their machines and move away, with minimal cost or interruption to production schedules. For this reason, trade preference legislation such as HELP, which not only imposes restrictions on source of fabric, but also requires continual re-evaluation of the U.S. position on those restrictions, can actually benefit Haiti by forcing its manufacturers to export under a variety of different trade regimes and also by pushing in the direction of greater domestic or regional content. This induces manufacturers to

move into more-complex and higher-value operations, which require greater capital investment, and gives them a greater incentive to stay in Haiti and adapt to changing conditions rather than leaving for the next hot location. It also lends itself to greater stability and sustainability of the industry. Manufacturers, instead of depending on a single trade preference regime that is highly subject to the vagaries of Haiti's relations with the U.S., can ship under other trade regimes that apply to the Caribbean and Central American region as a whole. Also, the more that fabric sourcing requirements lead to greater use of American yarn, the greater the constituency within the U.S. for the trade preferences to continue.

Garment industry trade conditions and restrictions are fiendishly complex, and there are some surprising gaps in HELP and other preference regimes on what can be made with non-regional fabric and what cannot. For example, one can make dresses and skirts but not ladies' blouses. But a Haitian blouse maker may be able to source American fabric faster than and nearly as cheaply as fabric from East Asia. With respect to home furnishings, bed covers and towels can be made from non-regional fabric, but not sheets and blankets.

Table 4 shows the percentage value of the duty preference on a sampling of product categories listed in HELP as specifically allowing the use of fabric from any source, subject to caps on the pants and T-shirts and to the overall TPL (trade preference level) on use of these categories only.

Cat number	Item	Comment	Duty rate for non- preference origins	Value added
334	Coats M+B	Cotton	3.8 - 15.9%	High
335	Coats W+G	Cotton	14%	
336	Dresses	Cotton	5.6%	Varies
338	T-shirts M+B	Cotton *separate TPL	Around 15%	No
339	T-shirts W+G	Cotton *separate TPL	Around 15%	No
342	Skirts	Cotton	5.6 – 14.9%	Medium
350	Robes + Dusters	Cotton	8.7%	Low
351	Sleepwear	Cotton	8.5 - 8.9%	Medium
433	Coats – other M+B	Wool / animal hair	5.6% or US \$0.386 per kg or 10%	High
434	Coats – overcoats other	Wool / animal hair	5.6% or US \$0.386 per kg or US \$0.617 per kg or 16% or 5.7%	High
435	Coats – other W+G	Wool / animal hair	5.7% or 5.6% or 18.8% or US \$0.644 per kg or US \$0.564 per kg or 16.5% <sup>19</sup>	High
438	T-shirts M+B	Wool!	Varies and generally applies as an ensemble 5.6 –16%	Low
633	Suits M+B	Synthetics or CVC – better	14.9 – 28.2%	High
634	Coats – other M+B	Synthetics	5.6 - 28.2%	Varies
635	Coats –other W+G	Synthetics	5.6 – 28.2%	Varies
636	Dresses	Synthetics	5.6 – 14.9%	Varies
638	T-shirts M+B	Synthetics *separate TPL	Varies – 28%	Low
639	T-shirts W+G	Synthetics *separate TPL	Varies – 28%	Low
651	Sleepwear	Synthetics – Synthetics	14.9 – 16%	Low

Table 4. Value	of HELP Duty	v Preferences	for Selected	Product	Categories
			IUI GEIECIEC	IIIOuuci	Calegones

651SleepwearSynthetics - Synthetics14.9 - 16%LowM+B = Men's and Boys', W+G = Women's and girls', CVC = Chief Value Cotton (a 60%<br/>cotton - 40% polyester blend)

These complex – and often-changing – conditions raise two important questions with respect to future large-scale investment in the garment industry:

1. Regarding certain major categories, especially T-shirts and woven pants, and also the categories that allow third-country fabric, such as coats, suits sleepwear, and dresses,

<sup>&</sup>lt;sup>9</sup> Many of these category designations are applied to ensembles, with duty rates applied to the main item imported (usually the upper or jacket).

can Haiti support two or more big producers without bumping up against quota restrictions?

2. Can the U.S. offer competitive fabrics for use if the fabric option (CAFTA through the Dominican Republic or CBTPA from Haiti) is used?

Although some of these categories appear attractive for investment, many may not be. As a general rule, a trade preference of less than 10% is of little value and is probably insufficient to overcome most competitive disadvantages. Even if that criterion is met, an investor has to consider many other factors, including:

- The availability of a relevant HELP category (or a provision in another trade preference scheme like CBTPA) with a quota cap that other manufacturers have not yet reached;
- The investor's ability to make its own fabric with U.S. yarn (for example, if it has a textile mill in another country);
- Availability of suitable U.S. fabric at a competitive price;
- Capacity in a neighboring country (e.g., the Dominican Republic) that would allow the investor to buy U.S. yarn and indent production of the fabric;
- Possibility to increase value added by doing more embellishment or by using Asian yarn and American fabric formation;
- Exporting some output outside the duty-free quota (this is feasible only if the volumes are high enough to allow, say, 10 % of production to be subject to normal duty without substantially affecting the average landed cost per unit. It can be difficult to do this, given the many variables involved).

Many very common garment categories are not included in HELP. Table 5 shows a sample of some of the major categories – mainly those that Haiti could produce competitively – that the Act excludes.
Cat	Item	Comment	Value
number			added?
Apparel			
340/640	Shirts – not knit M+B	Example: normal work dress shirts	Medium
341/641	Shirts/ blouses – not knit W+G	Blouses	Medium
345	Sweaters	Only linking for arms so labor content can't be low	Low knit to shape
347/8	Knit pants MMF	*other TPL for woven's	Medium
647/8	Knit pants Synthetics	* other TPL for woven's	
349	Bras – cotton	Generally sports style if only cotton	Medium-low
649	Bras – synthetic	Normal kind – Special provision in DR CAFTA?	High
352	Underwear		Low
642	Skirts	Synthetic	Varies

Table 5: Garment C	<b>Categories Not</b>	Covered by	HELP with	Third Country	y Fabric

Homeware			
361	Sheets	Covers bedspreads / towels / floor coverings but not sheets	Low
464	Blankets	Ditto	Low

This brings us to the question of whether the existing tariff preference levels can accommodate more than one large maker of products subject to special limits: namely, men's and boys' T-shirts and woven pants, especially since two big Korean apparel firms that have expressed a strong interest in the industrial park plan to make these products.

This is most likely to be an issue if they both use fabric not of U.S. origin yarn or fabrication. But from what the two companies have revealed of their plans, their products may not compete within the same category. One company plans to do washing and dyeing but no fabric formation, whereas the other plans to do knitting as well. In this case, each would be using a different trade package. By doing knitting, this second investor could use the provisions of the DR-CAFTA or CBTPA with use of American yarn, or could use the value added provision and/or the two-forone swap. The other company, for its part, is likelier to use the basic HELP package, meaning that each company's products would enter the U.S. under different quantitative caps. These, and other manufacturers, have vast experience adjusting their production to get around trade restrictions, and are certain to apply that experience to their operations in Haiti.

In the very near term, before either company moves into more-complex operations and remains concentrated on simple cut and sew, both firms could find themselves competing head-to-head for quota allocations if both import the fabric from non-regional yarns and mills. The HELP Act is too new to see much conclusive data from the figures, since the biggest existing T-shirt producer are exporting under CBI / CBTPA provisions, which just require use of regional fabric or yarn.

At present, manufacturers in Haiti can use one of several trade preference packages offered under HELP, DR-CAFTA, and CBTPA. These include:

- **Two-for-one swap:** If they use at least 66% American fabric under the two-for-one swap based on SME (Standard Meter Equivalents, so we can compare like with like, e.g., underwear to coats, etc.), they can import the remaining fabric from anywhere without being subject to any cap. This could be very attractive for some of the big Korean manufacturers that have expressed an interest in the new park, since they have their own, or associated, mills and are accustomed to using these to supply their factories worldwide.
- **Standard HELP regime:** Fabric from any source can be used, and most categories but not blouses, woven shirts, knit pants are eligible, though subject to two very specific restraints: 70 m and 85 m square meter equivalent (SME) cap and 400 million total cap.
- **CBTPA:** Uses American fabric/yarn (actually all is needed is the yarn) and is subject to no overall restraint.
- Increased Domestic Value Added: Under HELP, a different regime applies for products with domestic value added (local content) of 50% or more, gradually increasing over the life of HELP. If, for example, a manufacturer imports greige fabric, which it washes and dyes in Haiti, it would reduce the proportion of imported content relative to total product cost. Using this method for basic garment items would reduce the imported content to no more than 50% of total product cost. Exploiting existing company supply chains could lower the import content to as little as 45%. If a company, instead of importing knit fabric, imported yarn and produced the knit fabric in Haiti, it would be easy to increase domestic value added still further. At least one of the big Korean potential investors has expressed its intention to do this. In addition, some Korean head office costs could be transferred to Haiti (e.g., design, sample making, fabric development, etc.), which would offer a very real alternative to the use of the direct HELP category cap.

Increasing domestic content and value added is, of course, the key to sustainability, since it: 1) requires greater fixed capital investment, thus reducing firms' propensity to move to another location at the drop of a hat; and 2) creates and reinforces sustainable competitive advantages based on management and technical skills rather than purely on cheap labor.

However under CBTPA there is a cap that limits duty-free shipments to 1.5 percent of total U.S. imports, but this limit has never been approached. In 2009, total apparel imports from Haiti were 237 million SME, but total imports were 46,606 million SME or around 0.5 percent – and it is not clear how many of these exports count in this cap since 197 million SME used American yarn or fabric.

Men's polos and most ladies' tops except tank tops are not restricted by the T-shirt TPL on third country fabric. This, however, is a sourcing issue for the manufacturers themselves, which will shift production from one country to another to gain the maximum possible benefit from the trade preferences for which these countries qualify. A Haiti manufacturer could, for example,

make its polos in another country or, alternatively, use the regional fabric provision or do knitting in Haiti for men's and boys' garments.

**Find a short supply rule:** This is unlikely for T-shirt fabric. Short supply rules are exceptions to regional or local sourcing requirements allowed for fabrics not commercially available or unavailable in adequate quantity. They have been used extensively by other Caribbean countries under CBTPA, and by Mauritius under AGOA. Obtaining the exception involves a relatively simple application to U.S. Customs.

Table 6: HELP HOPE	CBTPA	Tariff Preference	Levels /	Provisions

TPL/	Quantity	Products affected	Conditions	Relevance
Total Act Limit: Limits imports to 1.5% of total US imports	Cap 1.5% of imports *46,606 m SME (2009) = 699 m SME	All garments	Production would need to triple before this could be a factor and would depend on how the total imports to the US moved	Application very confusing. But may not apply if using US yarn or fabric
347/8 647/8 pants – woven part	70 million cap	Wovens only, mainly chinos and jeans	Haiti shipped 18.6 million SME of all kinds of pants in 2009, and apparently not subject to the limit in HOPEII which indicates that yarn and/or fabric must have been sourced regionally.	Would have to triple on volume to hit currently – can't happen for jeans as they would normally need washing which is unavailable
Men's T-shirts and some basics for ladies (e.g. singlets)	85 million cap	T-shirts, not polos	No shippers are using this currently. While men's tees in 2009 showed 122 million SME, all of this was shipped under TBPA or DR CAFTA	Impacts T- shirt producers making basics & not using US/regional fabric/US yarn
Earned Import allowance	2 for 1 swap	Producers seeking flexibility of fabric origin	Improves from 3 for 1 swap of HOPE II	Is an option for flexibility and uses a neat online system
Value added provisions – this is mentioned in HELP but is really part of CBTPA		All garments - value added increases from 50% to 60% to 2020	19 million SME used this in 2009	Not being used significantly

As Table 6 shows, there are several ways to obtain duty-free preferences under these regimes. The greater the degree of backward integration, the more options manufacturers have to expand from using fabric and yarn imported from outside the region (mainly Asia) which is currently the dominant mode of sourcing. Some manufacturers may find it difficult to change, but others, especially those with access to global networks and finance, will be able to do so effectively, thus multiplying the opportunities to export to the U.S. under duty preferences. In addition, the more manufacturers use the high added value provision, the more stable their costs will become, which in turn will increase their attractiveness to U.S. buyers.

### 2. How Will Haiti Fit into Global Supply Chains?

Different production locations fit into a company's global or regional supply chain based on a combination of factors, among them shipment times and trade preferences. For Haiti, its proximity to the U.S., plus its status as the poorest country in the region (and therefore having the lowest labor cost) are the main advantages. Haiti is closer to the U.S. than almost any other country, and it is cheaper even than countries that are as close. Proximity by itself is not enough. Inefficient transport and bureaucratic delays can cause a closer country to have longer lead and delivery times than another country that may be slightly farther away. Even more fundamentally, to the extent that Asia is the main source of fabric, Haiti's greater proximity to the prized U.S. market than China or Vietnam or Bangladesh may make little difference, since although Haiti's delivery of finished garments to the U.S. may take only one-sixth or one-eight the time required from Asian ports, its lead time for delivery of fabric from Asian mills will be correspondingly lower.

For Haiti's proximity to the market to translate into a real competitive advantage, its manufacturers would need to stockpile greige fabric and then respond quickly to buyers' demands with respect to color and style. As a general rule, the closer a manufacturer's production can get to the time of sale, the more accurately the buyer can forecast demand. Since basic garments are less sensitive to fashion and thus less sensitive to lead times, Haiti's competitive advantage is likely to tilt towards medium- and even high-fashion items than to commoditized basic garments. The higher prices and value added for higher fashion production would also negate the cost disadvantage a manufacturer might have from stockpiling fabric.

Garment buyers don't always want to deal with backward-integrated manufacturers, since they often prefer greater flexibility in the source and cost of fabric, whereas a mill owned by a garment manufacturer may not offer the same combination of product and price they may be able to get from other mills (or simply by using multiple suppliers). Nevertheless, the ability of their suppliers to source fabric locally is very attractive to buyers since it shortens supply chains, so they are likely to accept even tied mills for some, if not all, products.

In the short term, any manufacturers that set up factories in the northern industrial park will begin with simple sewing operations; however, the park should be designed to accommodate more-complex and higher-value-added operations, which in the medium and long term play far more to Haiti's strengths.

Country	Shipment time for piece goods (if imported) [excl. order time]	Shipment time – finished garment ex fty to warehouse	Total on water (in weeks)
Mexico	0 or imported 4	0	0-4
China	0	3	3
Vietnam	0 or imported 2	3-4	3-6
Lesotho	5	5	10
Bangladesh	0-2*	4	4-6
Turkey	0	4	4
Morocco	3	2	5
Haiti	5	1/2	5.5
Jordan	4	2-4	6-8
Philippines	1	3-4	4-5
Source-Various	•		

Table 7: International Comparison of Garment Material Time on Water

Table 7 offers an international comparison of the total on-water time a garment or its raw materials spend in ocean transit (it does not include trucking or time in port). Piece goods are the fabric and trims that go into production of a garment.

Haiti's advantages are the inverse of Asia's: while it takes Haitian manufacturers longer to get imported raw materials, especially from Asia, it takes far less time for the finished product made with those components to get to market. There are significant advantages with respect to quality and timing for manufacturers to be close to their raw materials suppliers; however, proximity to the market gives a manufacturer considerable advantages in its ability to respond quickly to fashion shifts and get finished products on the shelves while an item is still highly desired.

Stockpiling is one possible response to this conundrum. A manufacturer in Haiti, close to the market but far from the source of piece goods, can stockpile certain yarns and fabrics. Yarn - 24 or 30-32 single yarn either combed, semi-combed (tandem carded), or carded -offers the most flexibility because it can be dyed and knit into fabric of different specifications, but greige (undyed) fabric comes a close second, as shown in Table 8, below.

Stage	Name	Number of distinct types (i.e., yarns, constructions or shades)	Can stockpile
Spinning	Yarn	Hundreds	Yes
Weaving / knitting	Greige fabric	Thousands	Yes
Dyeing	Dyed fabric	Millions	Technically possible for black & white, but inadvisable because of fashion changes

#### Table 8. Push and Pull in the Apparel Industry (Cotton Only)

Table 9 illustrates the range of different natural fiber operations that Haitian manufacturers could engage in. though ginning, spinning, and weaving are unlikely to be feasible in Haiti in the near to medium term, many other functions are possible and could add to Haiti's competitive advantages.

Operation	Needs	Haiti possibilities	Conclude
Ginning	Lint	None, though historically Haiti did grow cotton	Would require development of low-cost cotton production
Spinning	Ginned Cotton	Could be possible in future but not immediately. High electricity consumption; high ambient relative humidity is undesirable	Regular, low-cost power required, and only large- scale operations are feasible (thus requiring a much bigger textile and garment industry than now exists)
Weaving	Yarn	Low: weaving depends on economies of scale and requires a lot of electricity	Sufficient domestic demand for fabric
Knitting	Yarn	High: knitting can be done on a smaller scale than weaving, and potential investors have indicated strong interest.	Smaller-scale operations possible
Dyeing	Greige fabric	High: potential investors have indicated strong interest	High power and water consumption. Need for water treatment and discharge
Cutting	Dyed fabric	High	US yarn or knitting. Increased cutting capacity in Haiti
Sewing	Cut fabric	The basis of Haiti's current industry. Will continue.	
Washing	Made garment	High, especially for denim; potential investors have indicated strong interest	Water and water treatment
Finishing	Denim	High for special finishes like sand blast and die cut: potential investors have indicated strong interest	Avoid exceeding sub-TPL limit for woven pants

Table 9.	Haiti's	Potential	Functions	in a	Natural	Fiber	Operation
Table J.	nan 3	i otomuai	i unction3	ma	naturai	I IDCI	operation

#### 3. Beyond HELP

The HELP Act is expected to expire in 2020; however, the value of HELP trade preferences could erode as other countries are granted special treatment for geopolitical or humanitarian reasons. The challenge, therefore, is to ensure that Haiti's garment industry will remain competitive and that buyers will still be inclined to source from Haiti as and when this occurs. Success in this likely to depend, above all, on the responsiveness and flexibility of Haitian manufacturers to buyers' demands.

Haiti will never be able to compete with places like Bangladesh for basics or China for complex garments, and it is doubtful that it will ever offer the highest fashion, the fastest turn, or the lowest cost. Instead, Haitian manufacturers will need to position themselves with an advantageous (and flexible) mix of each of these three factors. This implies, in turn, that manufacturers will need to develop specific programs and vendor models, which include:

**Stockpile yarn and have local or regional knitting and weaving.** This has proven a successful model for Indonesia and Bangladesh, neither of which produces substantial quantities of cotton or synthetic fiber. The lack of fiber means manufacturers must stockpile yarn and do in-country knitting and weaving or use regionally available fabrics.

#### Box 2: Knitting and Weaving with Stockpiled Yarn: The Bangladesh Story

Bangladesh has limited cotton production – its local fiber output is too coarse - mostly jute. But it has been very successful in the last few years producing basic T-shirts and acrylic sweaters using yarn imported from India and elsewhere. By buying yarn and doing knitting locally, Bangladeshi manufacturers can offer their customers huge flexibility and also comply with the EU GSP provisions requiring double transformation, which entails transforming yarn into knit or woven fabric and thence into garments. Since regional cumulation is often allowed, fabric and yarn can be sourced from other countries in the region and still qualify for double transformation treatment under EU GSP.

**Focus on finishing and embellishment**. The lack of fabric means manufacturers should focus on finishing and embellishment – printing, garment dyeing, embroidery, etc. – Cambodia is a model here. With only one fabric producer, which makes only medical fabrics, all other fabric must be imported. This is unlikely to change, since Cambodia is close to the major fabric producing countries like India and China and could never achieve the economies of scale needed to compete with them, so many Cambodian garment manufacturers concentrate on garments such as denim jeans, which typically requiring substantial finishing and/or embellishment.

**Full-package program.** With development of an apparel industry school teaching both fashion/design and industrial processes, Haiti's highly developed artistic, craft, and design traditions could enable manufacturers to become full-package contractors, offering a complete range of services incorporating design, fabric procurement, cutting, sewing, trimming, packaging, and distribution. Many companies, especially in Asia and Latin America, offer a full-package service.

Full-package production obviously adds far more domestic value than simple sewing operations, but it also will help anchor investors, since they will not only have invested significant fixed capital, but will also have integrated Haitian operations much more fully

into their global supply chains, so that moving to another country would be highly disruptive. Evolution towards a full-package program would go through several steps:

**Step 1a:** The big stitching companies demand ancillary services which they use only occasionally, or which are too specialized, to perform in-house, so they outsource to other, specialized companies and benefit a faster turn with use of stockpiled fabric;

**Step 1b:** Develop cutting operations. Cutting operations, currently done in the Dominican Republic, can be moved to the new park for better control and integration with sewing processes;

**Step 2**: Develop independent knitting and weaving facilities. These may be owned and developed by companies that sew and assemble garments too, but they should not be purely captive, so that in addition to selling to in-house sewing operations they should be free also to sell their output worldwide, but especially to other customers in the region that want to export under a variety of regimes, including CBTPA, ATPDEA (Andean Trade Promotion and Drug Eradication Act), CAFTA-DR, EU-EBA, ACP, and Canada GSP;

**Step 3:** Increase the range of ancillary services done by manufacturers in Haiti as subcontractors for manufacturers in Haiti or other countries. Some of these services are already available in Port au Prince, but their availability should increase throughout the country as production grows. Ancillaries include contract dyeing, washing, embroidery, screen-printing, rotary printing and flat bed, die cutting;

**Step 4:** Full production range. This includes cartons, printing for labels, hang tickets, thread, buttons, freight forwarding, CFS<sup>10</sup>, dedicated freighter aircraft, fashion college, and contract design;

**Step 5:** Diversification of factory types and services. Increased specialization, with some factories becoming larger and more integrated while others become smaller and more focused, and with growth of more specialized service providers (packaging, labelling, logistics, and more).

As the industry moves through these steps it will be transforming itself into a real and sustainable textile and apparel cluster, which will be highly responsive to changes in internal production conditions and external market conditions, and which will make it far more capable of sustaining itself and cementing its position in the global apparel industry.

Many policy decisions concerning large-scale investments may need to take place for this vision to become a reality, of which the northern industrial park is a critical one.

<sup>&</sup>lt;sup>10</sup> CFS=Container Freight Services – e.g., console sweeper boxes (containers) for smaller volumes.

## C. The competitive case for Haiti and the North

### 1. A new vision for Haiti – moving on from CMT

Haiti's garment industry has declined substantially during the past 30 years for reasons largely unrelated to global industry trends, instead resulting from domestic political turmoil, which subsequently led to U.S. trade sanctions and the withdrawal of many manufacturing companies in garments and other sectors such as sporting equipment. Even before the January 12 earthquake, employment in the garment industry had fallen from over 100,000 workers in the late 1980s to just over 20,000, while total industrial employment had dropped by a similar proportion.

Though the HOPE I and HOPE II Acts, and additional provisions in the HELP Act, which supplemented HOPE, have provided new opportunities for Haitian garment manufacturers, few existing manufacturers currently use either HOPE or HELP, and most export under older CBTPA preferences. Consequently, and especially given that HELP offers one of the most generous sets of trade preferences given by the U.S. to any country, factors other than market access have prevented Haiti from attracting the amount of foreign investment that might be expected.

So what is holding back the investor? Political uncertainty and instability, crime and lack of security, poor infrastructure, bureaucratic difficulties and delays, and corruption have been a constant feature of the investment landscape for years, and the earthquake has only accentuated them. A lack of serviced industrial land is one critical factor.

In Port au Prince, there are areas that could conceivably accommodate one or more factories, but so far none has been developed to a standard required by most international garment manufacturers. There are many industrial park projects in various stages of planning, but none so far that have opened for business. Indeed, many of the planned industrial park and free zone projects are based on a range of unrealistic assumptions and are confronted by critical obstacles – which may include, but are not limited to, lack of land title and planning approval – but even those that appear realistic have not advanced very far, largely for lack of financing, and in spite of an apparent demand from companies seeking to set up garment factories.

The problem lies largely in perceived and actual risk. The extent of Haitian risk is certainly exaggerated by the mainstream media, but even for those investors who have visited Haiti and seen for themselves, the risks appear high relative to other potential investment destinations. Especially in a first phase of investment, textile and garment companies want firm guarantees that the on-site infrastructure in an industrial park, including pre-built factory sheds, as well as essential off-site infrastructure, will be available within a specified time and to a sufficient level of quality. Even before the earthquake, government's capacity was low, and its ability to act in response to these critical needs, was limited. Since the earthquake, capacity has fallen further. Meanwhile, many other countries have proven that they can offer the required facilities at a cost and according to a schedule the investors require. Haiti has yet to prove that it can do the same.

The industrial park projects, which could reduce this risk for the garment producers, themselves depend on external financing, much of it from private sources. Yet foreign infrastructure investors also have significant concerns about risk, especially since industrial park projects tend to have lower financial returns and much longer payback periods than a typical industrial project. Other infrastructure developments, including water treatment and power generation, are essential, especially if garment manufacturers are to invest in anything more sophisticated than simple CMT (Cut-Make-Trim) operations. But these projects, too, may be hard to fund from private sources alone. Public funds and guarantees, from both government and donors, will almost certainly need to contribute to their financing, whether these entities assume the full cost or share the cost and risk with private investors.

If all manufacturers in Haiti rely principally on HELP preferences, the industry will remain concentrated in the lowest-value-added segment of the market: at best CMT, but possibly even less than that, with stitching done in Haiti using fabric cut in the Dominican Republic. The economic contribution of this kind of industry would be far from negligible; it is likely that employment in the garment industry could grow from its current level of around 21,000 to over 100,000, approaching employment figures last seen in the 1980s. This kind of scenario, however, lends itself to a repeat of the earlier industry collapse, if for different reasons. As HELP approaches its end, and as the U.S. grants similar trade preferences to an increasing number of countries (or lowers its overall tariffs on clothing) many, if not most, manufacturers will depart. This has already happened in many countries. Jordan, which attracted substantial international investment in its QIZs, based entirely on special trade preferences under the QIZ program, lost 30% of its industry when the U.S. launched a similar program for Egypt.

Given the current trade environment and the industry trends discussed earlier, in order to establish a genuinely sustainable and growing apparel industry, Haiti will need to develop an industry that is based on far more than trade preferences and fiscal incentives that may be granted to manufacturers. This implies an evolution towards a much more diversified industry than the country now has, which can grow and adapt in response to market conditions. The industry will need to achieve a dynamic balance of cost, speed, product quality, compliance with social and environmental standards, and reliability, while also fostering development of: 1) a wide cluster of support industries and services; 2) a broader national base of technical and management skills in apparel; and 3) a future entrepreneurial class.

What are the ways to achieve this? The industry can evolve through one or more of these stages or concepts, concentrating on a single one or encompassing several different models at once:

**Concept 1** (low added value): Attract large international manufacturers interested primarily in CMT, though every effort should be made to accommodate their longer-term plans to add new, higher value-added operations. The main initial draw for these companies are the HELP trade preferences (though other trade regimes may also be applicable), and proximity to U.S. ports, which will reduce lead times. These firms are large, multi-country vendors, most of them based in East Asia, which are accustomed to and expert in sourcing all piece goods themselves. Their requirements are fairly low, and include prebuilt sheds of 30,000 to 60,000 square feet each, and reliable and reasonably priced power.

**Concept 2** (medium added value): Establish big composite sewing and fabric mills – at least greige fabric forward – which may be linked to but should not be wholly captive of the garment manufacturers. This is the anchor for development of a more competitive and sustainable industry which, by stockpiling yarn or fabric and dyeing, cutting, and sewing to order, could provide a very fast turnaround of finished product in less than half the time comparable factories in China can achieve. This speed allows a buyer to go from concept to store shelves within a single season. A good example of this concept is Zara, a huge Spanish manufacturer and retailer of garments, which keeps all its production in Spain precisely to achieve this turnaround speed. U.S. buyers could obtain a similar benefit from Haitian production, with turnaround times comparable to those of domestic suppliers but with labor costs on a par with those on the Indian subcontinent.<sup>11</sup> These manufacturers will require factory sheds of around 65,000 square feet, with water treatment and higher power capacity than in Concept 1.

**Concept 3 (high added value):** The move towards competitiveness is not necessarily a question of size and scale. Successful clusters in a wide range of industries often contain small firms that may specialize in a single product or service or may have generalist capabilities that enable them to move nimbly from one activity to another. These firms tend to be much smaller, though no less sophisticated, than the companies in Concepts 1 and 2. These firms can work according to different models, which include:

- **E-tailoring:** Company receives electronic tailoring instructions from bespoke tailoring operations such as Savile Row tailoring shops, turns out product within 24 to 48 hours, and dispatches by courier.
- **Fashions incorporating indigenous design:** Production of low-volume, high-end fashions (mainly women's) using Haitian design elements adapted to European and North American fashion, sizing, and quality, sold to tourists, cruise liner passengers, or via the Internet. Builds on existing skills base.

Operations of this kind are likely to need subdivided factory/workshop space of about 5,000 to 12,000 square feet.

Ideally, a first industrial park should cater to each of these types of operation, and offer factory sheds of suitable size. Subsequently, when there may be several parks in close proximity, some may specialize in one or another of these production models and orient their offering and promotion to attract the right type of investor. This overall approach lends itself to a more precise and permanent positioning of Haiti into global supply chains and three distinct value propositions that correspond to the evolution of the world apparel industry: *faster turn, lower costs, and higher customization*. It also allows Haitian manufacturers to serve very distinct market segments and even to switch production from one to another as demand evolves.

<sup>&</sup>lt;sup>11</sup> http://en.wikipedia.org/wiki/Zara\_%28clothing%29

#### 2. Why the North?

If we accept that Haiti is potentially an attractive location for garment industry investment of the kinds described above, what factors make a location in the north an attractive proposition for investors?

In view of changing demographic patterns in Haiti and the many constraints to and risks of industry expansion in Port au Prince, there is a strong case to be made for encouraging industry development in other parts of the country. The experience of many countries, however, has shown that such geographic diversification can succeed only if there is a compelling business case for locating in a new area. Governments often offer investors a tempting array of financial and fiscal incentives to induce investors to move to remote and undeveloped areas, but the results of such initiatives have invariably proven disastrous, with wasted government expenditures, mass retrenchments of workers, and a failure to attract a critical mass of new investors.

Northern Haiti, however, offers many features that contribute to a strong business case for investment and would help avoid the fate of industrial developments in unsuitable locations. These advantages are especially pronounced in the context of an industrial park, which would accommodate multiple investors and could thus achieve economies in development of the necessary infrastructure.

The region between Cap Haïtien and Ouanaminthe is close to essential transport infrastructure, including the Cap Haïtien seaport and international airport, and also to a large labor pool. Cap Haïtien has at least 500,000 inhabitants (some estimates put it at 750,000 or more) and Ouanaminthe has over 100,000. There are also several smaller yet substantial population centers, all located on or near the main national road between the two cities, including the areas around Fort Liberté, Quartier Morin, Limonade, Trou du Nord, and Terrier Rouge (see Table 10).

#### Table 10. Populations of Towns along the CH-Ouanaminth Road

Department Nord of which	District	Designation	Total	Number	Km2	density
Department Nord of which	District		Demoletie	i tumber		uchany
Nord of which	District		PODUIATION	lof		-
Nord of which	District		ropulation	Housebolds		
Nord of which				Tiouscholus		
of which	Total	Town	335,604	67,537	37	9,117
of which		Village	107.096	20,996	19	5,601
of which		Rural	527,795	104,649	2.059	256
of which	du Nard Tatal		070.405	402 402	2 445	450
of which	du Nord Total		970,495	195,102	2,115	409
	Cap Haitian District + town		249,541	48,384	54	4,664
	Quartier Morin		24,881	5,606	60	412
	Limonade		50,150	10,291	132	380
	Grand Riviere du Nord		58,759	12,809	205	287
	Other Parts of the North		587,164	116,092	1,665	353
Nord - Est	Total	Lown	143,387	30,890	17	8,601
		Village	13,464	2,854	6	2,375
		Rural	201,426	39,550	1,601	126
	Nord Est Total		358,277	73,294	1,623	221
of which						
	Fort Liberte District and envir	ons	55,139	12,160	350	158
	For Elberte District and envir		55,155	12,100	550	1.50
	Fort Liberte	Town	22,123	4.935	3	6.526
		Rural	9 192	2 024	237	30
	Ferrier	Town	7 371	1 796	1	6.826
		Rural	5 944	1 332	69	86
	Perches	Town	5 528	1 134	2	2 924
	r crenes	Rural	4,981	939	38	132
	Ouanaminthe district and env	virons	133.214	26.556	362	368
			,			
	Ouanaminthe	Town	58,250	12.045	3	18,551
		Rural	38,265	7,393	196	195
	Haut Maribahoux	Town	??	??	22	
		Rural	22	22	22	
	Capotille	Town	1.069	221	0	3.341
	oupouno	Rural	16 557	3 050	68	242
	Mont-Organise	Town	3 931	829	1	4 625
		Rural	15,142	3,018	94	162
		<u> </u>	404 500	24.744		007
	TIOU DU NORD DISTRICT and env		104,582	21,/14	505	207
	Trou du Nord	Town	21,805	4,595	3	7,815
		Rural	22,693	4,138	128	177
	Sainte Suzanne	Town	1,995	479	1	1.847
		Rural	23 497	4 808	127	184
	Terrier Rouge	Town	20,091	4 532	3	6 014
	i sinor i tougo	Rural	7 /86	1 // 9	168	0,010
	Caracol	Town	2 690	0.83	0	12 810
	Caracon	Rural	4.325	1.033	75	58
			.,020	12,000		40
	District of Vallieres total		65,342	12,864	405	161

#### Population Summary highlighting towns along the CH- Ouanaminth Road

*Note:* This table includes only people 18 and over, and is based largely on Haiti's 2000 census, which put the population at about 6.7 million (versus the current estimated population of 9.6 million). This would give the Département du Nord-Est at least 512,000 people and a work force of over 285,000. The areas of the Département du Nord-Est between Cap Haïtien and the Nord-Est border add at least another 550,000 people, of whom over 300,000 are of working age. The existing population, excluding future migration, is more than adequate to meet the labor requirements of a 150-ha. industrial park, together with those of other businesses that will grow as a function of direct IP requirements.

There is also a great deal of relatively flat land and vacant land owned by the state, endowed with substantial water resources and unencumbered by competing ownership claims, large settlements, intensive agricultural activity, or substantial environmental risks. In many respects, not least the adequacy of the water supply and land on which to build a water treatment plant, the area lends itself to higher value added industrial processes, which include fabric and garment dyeing, washing, and finishing. Electricity is in short supply, but this problem affects all parts of the country, including Port au Prince. There is plenty of land in the northern region on which a new power plant could be built, while fuel supply would not pose a substantial challenge. Several airlines already offer direct flights between Cap Haïtien and other airports in Florida and the Caribbean, which increases the area's attractiveness to U.S. buyers, who can make quick and frequent visits, possibly going and returning the same day or, at most, spending one night. Cap Haïtien already has two reasonably good international-standard hotels.

### D. Garment Manufacturers' Requirements in North Haiti

This section does not consider the possible effects of construction of a new airport or seaport or large expansion of existing facilities. These may occur in the context of a master development plan for the region, a study for which has just been commissioned by the Haitian government, but even if a decision were taken today to build a new port or airport it would be at least five years for an airport and not less than 10 years for a seaport to be completed. Since the demand for a park is immediate, we base our analysis on the assumption that most major infrastructure will remain as it is, with a few important exceptions, detailed below. Existing facilities, though far from perfect, are adequate for expected requirements for at least the next five years, provided certain specific improvements are undertaken.

#### 1. Land

One of the most important functions of an industrial park, free zone, or special economic zone is to offer investors unencumbered land on which to set up their factories. Haiti has a complicated system of land tenure and lacks a proper cadastre and judicial system that could establish and enforce property rights, but it is hardly alone in this respect. Many developing economies – and some developed ones – have conflicting land tenure systems, which often involve a patchwork of civil, customary, and tribal laws and practices that an investor, especially a foreign one, could find daunting. Industrial parks and similar facilities, to be effective, must offer investors certainty that their right to land they buy or lease will not be subject to subsequent challenges.

It can be difficult to provide an ironclad guarantee of security of land tenure, but in Haiti the government has opted to build the zone on state-owned land, which tends to offer more security and comfort to foreign investors, especially in locations of high perceived risk. Haiti's land records are incomplete, and there is no functioning land registry, but there is a fairly high certainty that many large tracts of land, with at least partly defined perimeters, belong to the State and are not the object of competing private land claims. Though there is such land throughout Haiti, the north has more of it than any other region. This includes three tracts in the

area between Cap Haïtien and Fort Liberté, one of an estimated 26 square kilometres and two of approximately 260 square kilometres each.

An initial demand assessment, based largely on interviews with three interested investors and contacts with other industry participants, indicates that a park of 150 to 160 hectares, which would accommodate these three investors while leaving additional space to accommodate a number of other, possibly smaller, manufacturers, is indicated.

### 2. Prebuilt Factory Sheds

Historical political instability – often spilling over into violent civil unrest – together with corruption, poor governance, a complicated and uncertain system of land tenure, and a troubling vulnerability to natural disasters, have all contributed to an image of Haiti as a difficult place to do business and a risky place to invest. Garment manufacturers, as well as support and service providers and other light manufacturing enterprises, are unlikely to set up operations in Haiti unless prebuilt factory and warehouse sheds are readily available. Numerous potential investors in Haiti have mentioned this as a nonnegotiable requirement, though of course the exact terms on which those buildings are offered remain highly negotiable. There exists a fairly new and large, privately developed industrial park in Port au Prince – the Airport Industrial Park – which remains virtually empty (see Picture 1). There may be several reasons for this, but the one most frequently mentioned by industry and property experts is the failure of the developers to provide factory buildings.

For low value added production (Concept 1, as described in the previous section, consisting mainly of CMT) the manufacturer needs only a large shed of around 30,000 square feet (3,000 sq. m.). For Concepts 2 and 3, different kinds of buildings may be needed: larger buildings of as 60,000 sq. feet or even as large as much as 100,000 square feet in Concept 2 (which may incorporate knitting, dyeing, washing, and finishing); and smaller buildings of 10,000 sq. ft., which in turn may be divided into small spaces of a few thousand square feet for the workshops expected in Concept 3, as well as for the ancillary production and service operations the big Concept 2 manufacturers will need.

#### Figure 1. Airport Industrial Park, Port au Prince



Figure 2. Pre-built Factory Sheds for Garment Industry in Jordan (L) and Lesotho (R)



#### 3. Water and Water Treatment

In Concept 1, water requirements are minimal. Water is not used in any CMT industrial processes, so water treatment facilities are not needed. A well and a septic system are sufficient to meet water and discharge requirements, which are limited mainly to toilets, cafeterias and canteens, and, possibly, housing for expatriate employees.

Water requirements will increase dramatically as park tenants launch dyeing and washing operations, and will increase even further as they move further up the value chain, importing and dyeing greige fabric. One potential Korean investor has indicated a near- to medium-term need (within the first five to six years) for over 12,000 cubic meters of water per day, which implies a need for a water treatment facility and discharge capacity of at least 1,600 cu.m. for its needs alone (based on maximum re-use ratio of 87%. If there are other companies in the park that also plan to engage in water-intensive processes, the need will be much greater. In our cost and

financial projections we have assumed an initial water treatment plant capacity of 2,500 cu.m. per day.

The ultimate decision on where to place the park will depend to a large degree on water treatment. The availability of water is also critical, but preliminary research (to be confirmed by a detailed assessment now being undertaken by DINEPA) indicates the presence of an underground aquifer in the area between Cap Haïtien and Fort Liberté, large enough to meet the demands of a growing industrial base and population, as well as increased agricultural activity. Though water quality is also important, and must be tested, dyeing and washing operations can use water treated to meet specifications with respect to mineral content, though this can increase production costs. DINEPA has stated that its own tests indicate the water is soft and would not

#### Box 3. Water Quantity and Quality in the Northern Region

Water in the northern region is abundant, though quantities vary according to location, and tend to decline the farther east one moves. Wells reportedly can deliver small to "enormous" quantities, while some rivers augment the supply. The aquifer in the Plaine du Nord consists of quaternary alluvium between 100 mm and 300 mm thick, and is fed by local rainfall and runoff from the mountains. Deforestation, however, is a risk, as it reduces the amount of runoff available for recharge, and over time will reduce water levels and yields. Depth to water is generally between 5 and 25 meters, and deposits are accessible by soft rock drilling techniques. Wells can yield between 15 and 150 liters per second. Many areas "are suitable for high-yield municipal and irrigation wells." A test of the water quality from one well near Quartier Morin, immediately to the southeast of Cap Haïtien, yielded the following results:

- TDS 230 mg/L,
- pH 8.53,
- temperature 26 °C,
- Ca 2.85 mg/L,
- Mg 15.73 mg/L,
- Na 21.64 mg/L,
- K 1.05 mg/L,
- HCO3 195.25 mg/L,
- Cl 13.4 mg/L,
- SO4 15.88 mg/L,
- NO3 3.4 mg/L.

Source: U.S. Army Corps of Engineers

have to be treated for use by garment manufacturers.<sup>12</sup> These assertions are backed to a large degree, by previous water surveys, including a 1999 nationwide study by the U.S. Army Corps of Engineers,<sup>13</sup> which stated that the best areas for ground water exploration in the region are the alluvial areas of the Plaine du Nord, which consists of the area between the Massif du Nord and the Atlantic Ocean and west of the Dominican border, which covers about one-fourth of the total area of the Département du Nord and one-third of the

area of the Département

du Nord-Est, and includes the entire area in which this industrial park assessment has been carried out. Apart from the coastal strip, where the water is saline or brackish, the ground water is abundant and of good quality, as shown in Box 3.

<sup>&</sup>lt;sup>12</sup> Gerald Jean-Baptiste, CEO, DINEPA, personal interview, July 12, 2010.

<sup>&</sup>lt;sup>13</sup> U.S. Army Corps of Engineers Mobile District and Topographic Engineering Center, *Water Resources Assessment of Haiti*, August 1999.

For water treatment, however, detailed soil testing must be conducted to determine the type and location of treatment and filtration ponds, while adjacent watercourses must be surveyed for vulnerable species and for their physical capacity to receive the expected quantities of treated water discharge.

A water treatment facility could be built in or adjacent to the industrial park, though if, as seems likely, the region will eventually accommodate several parks relatively close to one another, a larger facility could be developed to serve all of them. In our financial projections, however, we assume that a single water treatment plant will be built, commensurate with the projected needs of a single industrial park.

### 4. Electricity

As mentioned previously, existing electricity generation capacity in the north is insufficient to meet the current needs of the existing population and industry -13 MW installed capacity vs. a demand of 15 MW, let alone the increased demand that will come from new industrial activity and anticipated growth in both population and incomes. All industrial activities require reliable electricity supply at a reasonable cost. Potential investors in the industrial park have stated that they would need power at a long-term cost of less than \$0.25 per kWh.

In Haiti, electricity is very expensive. According to a study of the garment industry value chain prepared in September 2009, electricity in Haiti cost \$0.23 per kWh, more than 60% more than in the Dominican Republic (\$0.14) and Mexico (\$0.15), and three to four times as much as in South Asia and China.<sup>14</sup> Electricity prices in Haiti seem to have risen substantially since then. Another more recent report, however, states that the tariff was raised in August 2009 to a range of \$0.30 to \$0.35 per kWh,<sup>15</sup> while the EdH website itself indicates a tariff for low-voltage industrial users of 13.97 gourdes, or US\$0.35, per kWh.<sup>16</sup> Anecdotal reports indicate that the price can exceed \$0.40 per kWh.

Investment plans shared by potential Korean investors indicates a near-term requirement of 18 MW of generating capacity, though eventual demand could reach 60 MW. This would indicate that in the near- to medium-term, a power plant with an installed capacity, capable of a guaranteed power supply of 20 MW, will need to be built, in or adjacent to, the park. This could be part of the total infrastructure package provided by the government, or it could be provided by an Independent Power Producer (IPP).

EDH has a monopoly on electricity transmission and distribution in Haiti, which means that IPPs must sell their power and industrial users who generate their own power must sell their surpluses

<sup>&</sup>lt;sup>14</sup> Bringing HOPE to Haiti's Apparel Industry: Improving Competitiveness Through Value-Chain Analysis, Nathan Associates, Inc., Washington, D.C., September, 2009.

<sup>&</sup>lt;sup>15</sup> Cereijo, M., "The Electric Power Sector in Haiti," The Americano, April 9, 2009, http://theamericano.com/2010/04/09/the-electric-power-sector-in-haiti/ http://edhhaiti.com/commercial-facture-edh.html

under power purchase agreements (PPAs), back to EDH, which then resells the electricity at its own tariff. The Free Economic Zones (ZEF) Law, however, provides an exception to this rule and permits an IPP in a Free Zone to sell power directly to tenants, bypassing EDH. The exact tariffs would depend on many factors, but would almost certainly be lower than those charged by EDH, and would also compare favorably with the cost to manufacturers of running their own diesel generators at a cost of about \$0.30 per kWh.<sup>17</sup>

### 5. Road Transport

One of the great advantages of the region between Cap Haïtien and Ouanaminthe is the new road, built with EU funding, which connects the two cities and provides a reliable transport link between northern Haiti and the Dominican Republic. The city of Cap Haïtien, however, is highly congested. The main road that connects the national road to the city center and the port passes through highly congested commercial and residential areas, and also passes near parts of the Old City, which is expected to become an important location for tourism. As containerized traffic increases, an alternate route may become necessary. This would probably consist of one or two bridges or causeways that would cross a portion of the bay from a point near Petite Anse to somewhere close to the port. It would be a costly development – though low-cost solutions such as pontoon bridges could be used temporarily – but in the absence of an entirely new port there are few feasible alternatives.

### 6. Business Facilitation and Services

One advantage that industrial parks and free zones can provide investors is some measure of insulation from national and sub-national bureaucracies. Though investors in these parks and zones are not exempted from laws and regulations, the right park management and regulatory structures can facilitate investors' dealings with these outside authorities. Proper cooperation with customs authorities and facilitation of customs clearance is perhaps the most important among these regulatory issues, and there are numerous examples from other countries in which the lack of an effective working partnership between a zone and the customs authorities ends up negating many of the other advantages investors derive from being in a zone. These issues, and ways to manage them, are discussed in detail in Chapter VI of this report, which deals with management and regulation of the industrial park.

## E. Park Development Guidelines

It should be stressed that Koios Associates has not prepared a master development plan for the industrial park, which is not part of the terms of reference for this prefeasibility assessment. A true master plan would require a final decision on site selection, which itself would require surveying and establishing exact boundaries, a detailed environmental impact assessment, detailed topographical surveys, soil and water testing, and, possibly, a detailed social-impact assessment. Nevertheless, based on information the Koios team has gathered in Haiti, and based

<sup>&</sup>lt;sup>17</sup> Private communication from garment manufacturer in PIM.

on its experience of garment manufacturing and industrial park development in many parts of the world, it is possible to present here general development guidelines for a future industrial park.

Discussions with interested potential investors give a fairly high level of confidence that at least one or two large "anchor" investors can be attracted in the near term (Phase 1), and that these three companies together would require about 75 hectares of land in Phases 1 and 2. Both of the possible anchor investors are likely, in a second phase if not immediately, to engage in some combination of washing and dyeing in addition to stitching, cutting, and ancillary services such as embroidery.

Throughout this report, we refer to three companies that are likely to constitute the initial investors in the park, based on our discussions with some and on documentation provided by the IDB and other sources with respect to all three. Rather than refer to them by name in this report, since no firm investment commitments have yet been made, we designate them as follows:

**Investor A:** A large Korean textile group that makes basic tees for discount to medium or better buyers from Walmart to Gap, and which plans to build an integrated fabric forward knitting to sewing plant. Their fabric side is likely to start two to three years after the initial sewing operation is set up. Investor A in August 2010 signed a memorandum of understanding with the GoH, the U.S. government, and the IDB "to work towards the development of a globally competitive industrial park in the Northern part of Haiti." Investor A has sent its representatives to view the potential IP locations in the north, and is considered a probable investor.

**Investor B:** Designates another large Korean group, which intends to start with CTM manufacturing but to construct a fabric mill and fabric-forward operations in three to five years.

**Investor C:** Intends to concentrate production on greige fabric forward (i.e., no knitting). Makes mainly ladies' knitwear including T-shirts, cardigans, and jackets.

At least two, and possibly all three, of these prospective investors aim for a significant level of vertical integration, with at least two of them using industrial processes likely to require a lot of water and appropriate water treatment facilities.

Since both Investors B and C are still investigating potential sites, and have not yet decided whether they want to invest in the north, it is premature to consider them probable investors. Our basic land use plan, however, assumes that one or both of these, or another prominent investor or investors, will take up at least 30 hectares over the first two phases.

Factory sheds are expected to range in size from 10,000 to 60,000 square feet under cover. Since plenty of land is available, it is less costly to construct a single-story building than to save space and build to two or more floors. Though there is no single standard construction used for garment factories all over the world, a single-story bolt-assembly building with breeze block infill sides is very common, and appropriate to the Haitian climate. For the bigger units of more than 60,000 square feet of floor space, a central support column is recommended, even if local building codes do not require it. Most of the buildings in the PIM park in Port au Prince were built according to this standard, and all but one building, which was built on two levels, survived

the earthquake without substantial damage. These "Butler-style" buildings have a life span of 30 years or more, if properly maintained, and can be assembled quickly, in less than two months. These buildings require a high ceiling because they are passively- or self-ventilated, and it is recommended that they should also be insulated.

These buildings can be built as long rectangles with a long, continuous space suitable for straight T-shirt assembly lines with 22 or more stations per line in straight line, as illustrated in Picture 3, or a circular line that can be housed in a more nearly square building, as shown in Picture 4.

Figure 3. Straight-line Assembly Shed



Figure 4. Circular-oriented Assembly Shed



Figure 5. Buildings at the CODEVI Plant in Ouanaminthe



Though several different sizes and layouts of factory sheds may be offered, they should be according to a standard design that can accommodate most garment manufacturers. Any manufacturer with highly distinctive design preferences may be offered a choice among several standard designs or, alternatively, the option to construct its own buildings to its own specifications. Every effort should be made, however, to design standardized buildings capable of responding to most investors' needs.

Most garment factories in Haiti use team or group production incentives, which lend themselves more to circular than to straight production lines. They are more common than the use of GSD (General Sewing Data) basic minute piece rates, so shorter fatter buildings may be appropriate. Haitian workers don't generally demand cooling except through overhead fans but this would change should foreign workers be used as well.



Figure 6. A Factory Shed in the PIM Park Undergoing Renovation

Standard construction of factory sheds might also include:

- Flooring simple epoxy finish on a hardened concrete floor is suggested.
- Window screens
- Self-ventilating fans
- Overhead windows
- Overhead fans
- Low voltage electricity connection no need for a separate transformer

Each investor is also likely to have some unique requirements based on its own management and production processes, so the sheds should be built to a common standard that will permit the tenants to make certain modifications and add-ons themselves, or the zone management to make these changes in response to individuals investor requirements (lease payments could reflect these incremental costs).

Examples of such possible add-ons include:

- Fire extinguishers wall based and wheel one per shed wall based 8 per shed
- Sprinklers but people don't want these in fabric storage areas in case they go off by accident
- Painted exit lines on floor
- Bus bars for power for sewing machines
- Compressed air

- Evacuation plans and areas
- Medical kits one per shed
- Showers
- Toilets and offices maybe one mezzanine per building
- Exit signs
- Emergency lighting
- Smoke detectors

Chapter IV provides further detail on site selection, and the process and evaluation methodology Koios Associates used to arrive at a short-list of preferred industrial park locations in northern Haiti.

# IV. Site Identification, Evaluation, and Selection

## A. Site Selection Factors

There exists a large body of research on site selection practices and criteria used by different countries in development of industrial parks, free zones, and similar structures. In developing site selection criteria appropriate for northern Haiti, we have drawn extensively on principles and practices developed and applied with considerable success in other countries. Some of these approaches are described below.

The Philippines, which has one of the most successful industrial park/special economic zones programs in the world, uses a simple set of criteria in selection or approval of new parks, which in the Philippines are called "Ecozones."

- "The proposed area must be identified as a regional growth center in the Medium-Term Philippine Development Plan or by the Regional Development Council;
- The existence of required infrastructure in the proposed Ecozone, such as roads, railways, telephones, ports, airports, etc., and the suitability and capacity of the proposed site to absorb such improvements;
- The availability of water source and electric power supply for use of the Ecozone;
- The extent of vacant lands available for industrial and commercial development and future expansion of the Ecozone as well as of lands adjacent to the Ecozone available for development of residential areas for the Ecozone workers;
- The availability of skilled, semi-skilled and non-skilled trainable labor force in and around the Ecozone;
- The area must have a significant incremental advantage over the existing economic zones and its potential profitability can be established;
- The area must be strategically located; and
- The area must be situated where controls can easily be established to curtail smuggling activities."

Western Australia has a different set of criteria for industrial park site selection or approval, with environmental and social protection among the most important considerations:

- "Minimum site size, which should include room for expansion and adequate buffer zones to separate the estate from residential and commercial sites;
- Elevation, which should be above 100-year flood plain;
- Not within public drinking water source area;
- Ground water at least 5 meters below surface;
- Hydraulic conductivity, with a minimum two-year transit time of contaminants;
- Topology, which precludes any site with a slope of more than 4%;
- A minimum 3-km. (preferably 6-km.) buffer between an industrial estate and conservation, residential, or commercial areas;
- Site within 25 km. of major transport routes (rail, road, sea, port);
- Minimal impact on traffic congestion;
- Close to waste treatment facilities;
- Clear definition of land ownership;
- Land already zoned for industrial use;
- Adequate water supply."

The criteria in both of these lists are important, and need to be taken into account in selection of a site for an industrial park in the north of Haiti. These elements, however, do not fully address the needs of garment manufacturers, which include:

Logistics: Frequency and cost of inward and outward shipping (air, sea, and road) and the existence of more than one potential shipping route are key factors for garment investors. Factories in the North can rely on the Cap Haïtien seaport for container traffic, but an alternate route by road via Quanaminthe to ports in the DR is also available, which may prove useful in case of a hurricane or other natural disaster that could temporarily close the port. Cap Haïtien is a half-day sailing closer than Port au Prince to Miami and other U.S. ports, and thus offers an important advantage. Though Cap Haïtien now has a lower frequency of vessels and fewer lines than Port au Prince, but it is close to main shipping routes and there is every reason to expect that increased demand for shipping services resulting from an industrial park will be met by increased shipping. The port at Cap Haïtien, which handles only roll-on roll-off (RORO) container traffic, currently operates at fraction of capacity. There are virtually no exports, while import shipments range from 150 to 300 TEU a month. The port has a commercial quay with two berths that can accommodate ships with up to 200 TEU capacity, giving it the ability to handle several thousand TEU a month. Though storage space within the port is limited, reliance on RORO traffic limits the need for storage and places no real constraint on the volume of container traffic the port can handle. The port, additionally, has a single-berth cruise ship quay, which may be converted to commercial use, especially since the Labadie cruise ship port operated by Royal Caribbean has been opened to ships from other lines.<sup>18</sup>

Port au Prince, by contrast, is highly congested, in part because of damage from the earthquake and in part because it is the landing point for most humanitarian aid. Though it can accommodate larger vessels (up to 400 TEU capacity) than Cap Haïtien, port surcharges are high, and there is limited excess capacity, even when private ports such as Lafiteau and Terminal Varreux are taken into account. Though these constraints are temporary to a large degree, investors could take them into account in the short and medium term.

Although five airlines serve Cap Haïtien, they all appear to use light aircraft, which are unsuitable both for exports of high value-added garments and for imports of heavy spare parts. It is, however, possible to move such goods by road from the DR or even from Port au Prince. Availability of air freight and courier services for samples is critical. DHL has a pickup and drop-off location in Cap Haïtien, but the other main services – Fedex, TNT, UPS – do not. Import clearing times are another critical dimension. Apart from CODEVI in Ouanaminthe, which has its own border crossing and customs station, any park in the North is likely to be subject to greater difficulties and delays, though these can be mitigated by having a customs post within the park, as is the case with the PIM SONAPI park in Port au Prince.

**Labor:** Although Haiti scores poorly overall on the World Bank *Doing Business* indicators, its greatest strength is in labor conditions, on which dimension it ranks 28<sup>th</sup> out of 184 countries. This allows investors greater flexibility in hiring and firing and setting shifts and working hours,

<sup>&</sup>lt;sup>18</sup> Claude Lamothe, Director of Cap Haïtien Port, personal interview, July 13, 2010.

and also in bringing in expatriate technicians and managers without stringent restrictions on number or eligibility.

With regard to the specific conditions in the north, the region has a more than adequate population living in fairly close proximity (less than an hour by road) to any likely industrial park site. In the near term, manufacturers would need to provide bus or similar transportation for workers, though as the region grows other private operators might enter the market and charge prices workers can afford. These conditions will help the north avoid replicating the experience of Cité Soleil in Port au Prince, which became a huge slum as people moved into the area, attracted by the PIM industrial park. As a general rule, urbanized populations tend to have higher levels of literacy and skills than rural ones, as well as a more developed work ethic, which bodes well for factories in the north. With regard to expatriate managers and technicians, there is relatively little to attract a European or North American employee, though it is far from impossible and conditions will improve with the parallel growth of tourism in the area. East Asian manufacturers, however, are likely to build their own housing for expatriate staff, either within the industrial park or immediately adjacent. It would be inadvisable to provide housing for local employees, however, since there is a risk that if the factories close for whatever reason there would be large populations stranded in semi-remote areas with no source of livelihood.

**Utilities:** As in any other location in Haiti, the north has inadequate power generation, transmission, and distribution. The Cap Haïtien power plant has a generating capacity of 13 MW, inadequate even to meet current demand in the area, estimated at 15 MW. An industrial par will need at least 15 MW immediately, and if fabric operations are developed, up to 60 MW could be required. Nowhere in Haiti has proper sewage or water treatment systems, which will be critical if washing and dyeing operations are envisaged. A water treatment plant of sufficient capacity would also need to discharge treated water into a watercourse with substantial existing flow, while avoiding discharge not only contaminants but also of water at a high temperature, which could also affect fish and other aquatic life. The proximity of the potential sites identified in this study to the northern floodplain is also a concern, as is the size, location, and depth of underground aquifers.

These concerns are no different to those prevalent in any other location. The Free Zones Law allows for the construction of independent power projects in zones, and grants them the ability to sell directly to companies located in the zones, thus allowing manufacturers to obtain electricity at lower tariffs than those charged by EDH. Questions about soil, water, drainage, and water treatment can be answered in detail only after an environmental audit has been performed, which is a requirement for participation by the IDB and other donors, but so far there is no indication that the environmental risks in the north are greater than anywhere else in the country.

Land and buildings: It is conceivable that in the future manufacturers may prefer to construct their own buildings to their own specifications, but this is not the case at present. In Haiti, as in many other locations, garment manufacturers (as well as other service and light industrial concerns) prefer to be able to move into pre-built factory, warehouse, or office space. This is especially true in high-risk locations, but it is equally true of Dubai, where the first zone, Jebel Ali Free Zone, offered standard factory and warehouse buildings in two or three standard sizes, but where even the most recent zone developments contain a high proportion of pre-built space

to allow investors to move in with a minimum of cost and difficulty. Singapore's industrial estates operate on a similar principle. These buildings need to be physically suited to tenants' requirements but, equally important, they must be available on acceptable lease terms, which balance investors' desire to reduce the risk of long-term commitments with the developers' need to ensure their investment is paid back.

**Domestic market:** A large domestic market is a plus, since it enables manufacturers to sell overruns locally, or even to dedicate a portion of their production to local consumers, thus providing welcome diversity of buyers and also potentially increasing short-term cash flow. Haiti, with a relatively small population and very limited purchasing power, does not offer this, but in this it is no different from other garment industry centers in the Caribbean and Central America. With the exception of very large countries like India, Indonesia, Bangladesh, and Egypt, few garment manufacturing locations in the world have a domestic market served to any significant degree by export-oriented manufacturers.

**Cluster effects:** The availability of ancillary products and services – including embellishment, washing and dyeing, packaging, buttons and accessories can be an important consideration in location decisions. The local or regional availability of fabric, yarn, and/or fibre can also be a critical element, since most trade preference regimes, including HELP, have strict provisions and different treatment for garments using different proportions of local and regional fabric. Though Haiti currently offers none of these elements, many are available in the Dominican Republic. Since the northern and northeastern regions of Haiti are closer to the DR and have better transport links than Port au Prince, this provides another reason for investors to set up shop in the north.

**Other considerations:** In no particular order of importance, garment industry investors will take the following considerations into account:

**Language of locale and officialdom:** Though it is a French-speaking country, English is widely spoken in Haiti, and international investors are accustomed to operating in English.

**Licensing and bureaucracy:** As previously mentioned, Haiti is not an easy place to do business, and bureaucratic hassles and delays are among the biggest issues investors must deal with. An industrial park, especially if it is under a Free Zone or Special Economic Zone regime, often is able to institute its own procedures and issue some, if not all, approvals, thus reducing bureaucratic interference with zone tenants. This can apply to customs operations, but can also apply to a wide range of labor, immigration, land, licensing and other areas.

**Local currency valuation:** Overvaluation of the currency can be a problem in resource-rich countries or in countries where the currency is not freely convertible, but this is not an issue in Haiti, where the U.S. dollar is legal tender and the value gourde, floats freely. Though there has been a gradual depreciation of the gourde, volatility has been very low, to the extent that the earthquake had no effect on the exchange rate. Also, since Haiti is not a resource-rich country there is scant risk of "Dutch disease," or substantial currency overvaluation.

**Availability and cost of bank finance:** This is far more important for SMEs than for international investors, which can borrow freely in dollars at competitive international rates, even if the prime rate in gourdes is over 15%. SME finance, in any case, is far more costly, typically over 30%, but this is common in most developing countries. Local interest rates are, however, a

consideration since factory buildings may ultimately be made available for purchase, to allow manufacturers to re-mortgage them in lean times.

## B. Site Selection

### 1. Regional Context Summary

The investigation sought to find suitable Industrial Park (IP) sites focused within a 1,500-squarekilometer section of northeastern Haiti bounded on the north by the Atlantic Ocean, the west by National Highway #3, on the east by Haiti's border with the Dominican Republic, and on the south by geographic latitude19\*32'00'North. The city of Cap Haïtien lies just west of the region of interest. The region is mostly level (55%), gently rolling (30%), ravined, swamp, or watershed (10%), and seacoast (less than 5%). Three important bays (Cap Haïtien, Caracol, and Fort Liberté extend into the area, and the latter two have served as anchorages over the past 350 years. The Grande Riviere du Nord is the most important watercourse, but the area is also traversed by five smaller streams, each of which runs northward until it reaches the sea. Aside from the main centers at Cap Haïtien (population estimated at over 500,000) and Ouanaminthe (estimated population greater than 100,000), the major named towns from west to east are Quartier Morin, Limonade, Trou de Nord, Ferrier Rouge, and Fort Liberté. Estimated populations of these places are:

TOWN	DEPARTMENT	POPULATION
Quartier Morin	Nord	24,881
Limonade	Nord	53,103
Fort Liberté	Nord Est	55,139
Trou du Nord, including Caracol and Terrier Rouge	Nord Est	79,090
TOTAL		212,213

Table 11. Populations of Named Towns

Source: DINEPA

The area is traversed by National Highway #121, a road which has been reconstructed to a quality as high as any in the entire Republic of Haiti. This excellent thoroughfare was the central axis of field investigations by the study team. It constitutes a transportation corridor on which future urban and industrial development should logically be aligned.

According to data from USAID and the United Nations OCHA (Office for Coordination of Humanitarian Affairs), as of late February the northern region had received some influx of people from the areas worst afflicted by the earthquake: approximately 14,000 in the Département du Nord and 9,000 in Fort Liberté. These figures are by OCHA's own admission underestimates, since they include only those people using GoH-provided transportation. The real figures as of September 2010 are almost certain to be at least triple these numbers, indicating that current migration trends, plus future migration that may occur in response to the announced park development, are likely to ensure an adequate labor pool.



Figure 7. North Haiti, Showing National Highway 121

### 2. Infrastructure Constraints

The study area has historically been one of the most important regions in Haiti. However, its infrastructure conditions present a situation that will require improvements if the area is to successfully transform from its present agricultural economy into a mixture of industrial activities. The most significant of these are the following:

**Seaport facilities.** Outside Cap Haïtien, there are no commercial seaport facilities. The Port of Phaeton, in the western part of Fort Liberté Bay, which operated as the shipment point for export of sisal products, was abandoned after the closure of the Dauphin sisal plantation, while fuel bunkers on the northwest part of the bay have not been used for decades. Although a private consortium has proposed and reportedly has been granted authorization to build a commercial port and industrial park near these bunkers, investment plans have not progressed to the point of specific layout proposals. Consequently, in the near and intermediate term (less than seven years), Cap Haïtien has the monopoly on regional seaport services and facilities. Its existing facilities include: diesel fuel storage (with very limited off-loading capacity); a container yard (total capacity approximately 200 boxes); two piers (which can accommodate RORO operations); two warehouses; and port administration buildings. Current container through-flow

averages less than 350 TEU per month. Industrial development within one or more industrial parks in North Haiti would certainly increase the number of ship visits, which could ultimately require expansion of container storage fuel storage facilities in or adjacent to the port. Road access to the port is also unsatisfactory. The existing, overcrowded street immediately west of the river, "Rue A," (running north of Point #3 on the photograph below) represents a commercial bottleneck that impedes fast and secure delivery times to the port.



#### Figure 8. Major Roads Heading to Cap Haïtien

An industrial park located in the survey area would also have access, via the Ouanaminthe border crossing, to Puerta Plata, Manzanillo, and other ports in the Dominican Republic. Though Cap Haïtien is certain the be the main port on which IP manufacturers rely, the Dominican ports offer an important backup, especially if shipment volumes eventually outstrip Cap Haïtien's capacity.

**Water supply.** Five rivers or large streams flow through the study area, but with the exception of the Rivière Marion, near Fort Liberté, none of these is a significant source of urban water supply. While some are tapped for the consumption of nearby small villages, the main source of water for the towns is well water. A 1997 water resources study by the U.S. Army Corps of Engineers indicated that groundwater is abundant throughout most of the region, though there are localized differences in supply and, generally, available quantities decline towards the east. DINEPA has commissioned a study of water resources in the north, but the results of that evaluation are not yet known. Any final site recommendations will be contingent on the findings of the DINEPA study or of independent assessments.

**Electric power**. At present, North Haiti is not interconnected with the country's electric power grid. Each community draws electricity from small local generators, usually diesel powered. While there is a sizable plant in Cap Haïtien (13 MW reported capacity), even this source is inadequate to that city's current electric power demand (estimated at 15 MW). Consequently, any new industrial activities will have to depend on new energy sources that are currently absent on the planning boards. These new energy sources should be integrally planned with the design of new IP's in North Haiti.

**Wastewater treatment.** All sewage is dumped directly into watercourses, harbors, or cesspools. Haiti is only now introducing wastewater treatment, and the first plant in the country is being developed in Saint Marc, 130km to the south. The introduction of industrial activity into the now-agricultural north will be accompanied by new forms of water polluting processes and agents, and this will oblige responsible planning to address wastewater solution facilities.

### 3. Evaluation and Selection Process

Using information from government and private sources, together with direct observation, the consultants developed a list of 18 potential IP locations in North and Northeast Départements, which formed the basis for further site evaluation and selection.

Areas that were excluded within the region were those west of National Route #3 from Hinche, and the area south and east of Fort Liberté on both sides of National Route #121. The reasons for these exclusions were as follows:

West of National Route #3, most land is already built up in the areas closest to Cap Haïtien. One site in this area was considered for a combination port-and-industrial park. After on-site investigation the shorefront and adjacent land near Le Petit Anse was found to be heavily populated (therefore unsuitable due to the cost and disruption of existing communities) and unsuitable for economical port development (due to poor marine conditions arising from shoals and unprotected waterfront. Southward from this area, the main disadvantage for industrial park locations is the absence of publicly-owned land.

South of Fort Liberté, the main constraint arises from the presence of the large and growing industrial garment complex near Ouanaminthe. Its success has led to plans for expansion, and this expansion cannot help but to create competition for available labor. Given that Ouanaminthe itself is the sole regional population center, the available labor supply could be insufficient to meet the needs of new factories. In addition, there is limited available state-owned land in the area. The CODEVI Free Zone, which covers 40 ha., has unused space, but not enough for construction of a new, large industrial park

Consequently, the primary target area for closer inspection was found to lie between Limonade on the west and Fort Liberté on the east.

Number & Name of Area	Outcome of Ratings Following Field Visits
#1. Fort Liberté Center	Poor
#2. Fort Liberté vicinity	Preferred
#3. Phaeton	Poor
#4. Paulette and Fond Blanc	Poor
#5. Madrasse, west of Savane	Acceptable
Carrie	
#6. North of Limonade	Poor
#7. North of Limonade	Good
#8. La Genère	Poor
#9. Northeast of Limonade	Poor
#10. South of Caracol Bay	Acceptable
#11. North of National Highway	Acceptable
#12. East of Dubout	Poor
#13. Madrasse	Acceptable
#14. South of Highway	Preferred
#15. Madrasse, near Chambert	Preferred
#16. Southeast of Chambert	Poor
#17. North of Highway	Poor
#18. Madrasse	Acceptable

#### Table 12. Ratings Based on Field Visits

#### Table 13. Areas and sites that were inspected and dropped from further consideration

Number & Name of Area	Reason For Exclusion		
#1. Fort Liberté Center	Upon site inspection, area was found to be marshy and too close to		
	built-up area.		
#3. Phaeton	Area is heavily populated nearby, and there is no sufficiently large		
	tract on which to build. In addition, it is remote from National Hwy.		
	Area is prone to flooding in rainy season.		
#4. Paulette and Fond	Area is hilly and populated, with intensively cultivated areas nearby.		
Blanc	No perennial streams, but area is prone to flooding in rainy season.		
#6. North of Limonade	Area is populated as part of Limonade commune. In addition, it is		
	remote from surface watercourse and paved roads.		
#8. La Genère	Same constraints as #6.		
#9. Northeast of	Area is 3km from unpaved road and is tilled agricultural land.		
Limonade			
#12. East of Dubout	Area is somewhat hilly and is used for agriculture.		

### 4. Site Selection Methodology

The following table was developed to provide a method for screening areas and help to differentiate between superior (Preferred), marginal (Acceptable), and Poor locations. Using a points system that combines elements of a number of other site selection methodologies, we were able to rank the sites according to the criteria outlined in Table 3, below.

Differentiator	Good: 4 - 5 points	Acceptable: 2-3	Poor: 0-1 points
		points	
Physical Conditions:			
Expandability	Mainly surrounded by vacant land.	Adjacent land sparsely populated with some agriculture	There is little or no vacant land around the target site
Topography (level, flood, etc.)	The area is level and generally at grade with surrounding roads	Hilliness and/or grade differences within the area and adjacent roads	Hilliness, swamps, shoreline, or standing water are found. Roads not at grade
Soil quality	Underground water appears plentiful and of good quality	Underground water is less plentiful and/or of poor quality	Underground water absent and/or of poor quality
Land Ownership: State ownership confirmed or likely	State ownership or control is reported with high level of confidence	State ownership or control is likely, subject to confirmation	State ownership or control cannot be verified
Location: Access to main road	Direct access to Natl. Highway #121	500m to 2 km from main highway	2 km + from main highway
Proximity to Cap Haitien or Fort Liberte	0-5 km	5-10 km	over 10 km
Proximity to Cap Haïtien port	0-20 km from port	20-40 km from port	Over 40 km from port
Freshwater access /Wastewater access	Rivers or significant watercourses abut or are close to the area	Watercourses more than 300m distant	Watercourses more than 500m distant.
<b>Environmental Issues</b> (other than wastewater treatment), e.g. Vegetation cover issues or wildlife, marine life threats	Existing vegetation is savanna or absent altogether	Existing tree cover is forest or mangrove, or otherwise sensitive	Mangrove or heavy forest, deserving special protection
Political Considerations: Jurisdiction location *	Departement du Nord:	Departement du Nord-Est	Departement du Nord-Est
Social/human Issues:			
Potential land use conflicts	No intensive agriculture or population centers	Scattered habitation and/or some agricultural activity	Heavily populated and/or presence of active, productive agriculture

#### Table 14. Site Selection Criteria

\* Senior CTMO-HOPE executives and advisors have expressed a strong preference for the park to be located in the Département du Nord rather than the Département du Nord-Est. The exact reasons for this preference are unknown, but they may reflect a desire to "spread the wealth"; since the Département du Nord-Est already has the CODEVI Zone, it may be seen as more equitable to put the new park in the Département du Nord. Sites in this Département are therefore given a slight preference in the scoring.
**Other physical considerations:** Seismic issues were not found anywhere on dry land. However, an important fault line runs northwest-to-southeast approximately 15 to 25 km north of the coast, and this fault's past history suggests that earthquakes such as the one which leveled Cap Haïtien in 1842 might be repeated, and worse, could even cause *tsunami* events. Therefore, the selection scope was confined to sites that are well inland and significantly (10+ meters) higher than the shoreline.

Religious, cultural, or historic sites are common only in the vicinity of Fort Liberté and Cap Haïtien. None of the sites demonstrated any evidence of fragile, indigenous natural vegetation or wildlife habitation.

Special note should be given to the soil quality criterion. Interview sources at DINEPA and UTE indicated that there is abundant groundwater throughout the area and that the quality is generally poorer in the east (Dept. du Nord-Est) because of its higher salinity. However, no surveys of the amount of groundwater nor the depth at which it can be tapped have been completed. DINEPA is reportedly commissioning a survey of the aquifer characteristics, and this survey's results are vital to the accuracy of these site selection analyses and to the assumptions regarding infrastructure costs that follow later in this paper.



#### Figure 9. Priority Sites

#### 5. Site Ranking and Descriptions

The Preferred Sites are Numbers 2, 14, and 15. A combination of location, lack of competing land use, ownership expandability, soil quality, water and drainage, and lack of obvious

environmental or topographical problems, and similar factors as scored in Table 5 caused these sites to be selected, though some of those classified as "acceptable" could move up in the rankings once certain environmental and/or ownership questions are resolved.

Differentiator	Site #2	Site #15	Site #14	Site #7	Site #13 / #18	Site #5	Site #10 / 11
Physical Conditions:							
Expandability	4	4	3	2	4	3	4
Topography (level,	4	4	4	4	3	4	3
flood, etc.)							
<b>_</b>							
Soil quality	4	4	4	4	4	4	4
Freshwater access	0	-	-		2	2	0
/wastewater access	3	5	5	4	3	3	3
Land Oversehin.							
State ownership							
	4	4	2	2	1	4	1
commed of likely	4	4	3	2	4	4	4
Location:							
	_	-	_	-	-	-	
Access to main road	5	3	5	3	2	3	2
	_						
Proximity to Cap	5	1	1	4	3	3	2
Haitien of Fort Liberte							
Provimity to Can	2	2	4	5	2	2	2
Haition port	2	3	4	5	3	2	3
namen por							
Environmental							
Issues (other than	4	4	4	4	4	4	4
wastewater				•	·	•	
treatment), e.g.							
Vegetation cover							
issues or wildlife.							
marine life threats							
Political							
Considerations:	4	4	4	5	4	4	4
Jurisdiction location *							
Social/human							
Issues:							
Potential land use	4	4	3	2	3	3	3
conflicts							
Total Points	44	42	40	39	37	37	36

Table 15. Ranking of Sites

**Site #2:** South of Fort Liberté. This area satisfies most of the selection criteria very well. It is level; free of competing, productive land uses; adjacent to not one, but two paved roads; close to the Rivière Marion, which is the major source of water for the city of Fort Liberté;; less than 3km from the population center of Fort Liberté; and is reportedly under state ownership. This site and its surrounding areas are shown on the following page. The main area of the site consists of a

quadrangle bounded by the main national road to the South, the main Fort Liberté road to the East, and the Rivière Marion to the West, covering an area of about 2.4 square kilometers, or 240 hectares. The exact positioning of the park on this site will require more detailed topographical and environmental evaluation. There is substantial additional vacant space to the west and northwest of this area, which could be used for further industrial development.



#### Figure 10: Site #2

**Site #15**: Madrasse district, about 500m north of Highway 121 between the villages of Chambert and Fleury in Dept. du Nord Est, due north of Trou du Nord, bounded on the west by the road to Caracol, on the east by the Grande Rivière Trou du Nord. The site covers approximately 200 hectares. This site also generally meets the criteria, though it lacks direct access to the National Highway, and therefore would require construction of an access road of 0.5 to 2.0 km. The river to the east of the site has substantial perennial flow and is likely to be suitable for factories using substantial water and requiring discharge of treated water. The land is devoid of habitation and intensive cultivation, and appears to be used primarily for small-scale grazing. There may be, additionally, some potential for the site to expand to the west of the Caracol road, though there the ownership of the land remains uncertain.

Figure 11: Site #15



**Site # 14:** This area of about 220 hectares is located midway between Limonade and Trou du Nord, south of Highway #121, to the east of a north-south road about 6 km east of Limonade, and west of a perennial north-south river, which contains sufficient flow to accommodate treated water discharge. It is level and devoid of habitation or intensive cultivation. This area, known as "Pister" has been designated as the site of a new university to be built by the government of the Dominican Republic on a plot of about 60 "carreaux," or 78 hectares. The entire land area is reported by various sources in Port au Prince and Cap Haïtien to be entirely state-owned, though the Consultants were unable to obtain official verification. For this, as well as for other sites, an exhaustive title search will have to be conducted of the site and its surroundings in advance of any commitment to develop it.





Several areas were identified that merit future consideration as targeted industrial or employment areas. These locations included:

Site #7: This is a promising site, which just misses being included in the top three, and could be the site of future industrial development. It is a 280-hectare polygonal area due north of Limonade and northwest of Carrefour Panois, and west of the village of Montolon, bounded on the west by the road leading from Highway #121 through the village of Borony to Bor de Mer de Limonade, and on the south by a road that leads east to the village of Génère. The vacant Don Bosco Farm lies to the southeast of the site. The area has scattered habitation, but no apparent intensive agriculture. It is, however, close to several large villages and by far the closest to Cap Haïtien. An industrial park in this area would be able to draw workers from both the Limonade and Cap Haïtien population centers. Land tenure on the site has not, however, been fully verified. It includes a parcel of about 60 hectares, which belongs to the Banque Nationale de Credit (BNC), a state-owned institution. BNC, which has so far not provided precise coordinates of its holding, has indicated a willingness to sell the plot or, possibly, contribute it as part of an investment in the industrial park project. The remainder of the site is reportedly state-owned, but this has not been verified conclusively. One further caveat is its location close, though not immediately adjacent, to the marshy areas along the seacoast. The potential environmental impacts of establishing an industrial park on this site would have to be examined carefully Finally, as the site closest to Cap Haïtien, only 6 km from Nan Jesus, the current limit of the urban agglomeration, it could be the most susceptible to urban sprawl, and potentially the most vulnerable to the spread of informal settlements around the industrial park.

**Area #5:** On the road to Port Phaeton (19\*38'00"N/71\*55'00"W). This area, south of the village of Paulette, is level and at grade with the National Highway; is free of competing, productive land uses; and is reportedly under state ownership. Its remoteness from any towns and distance from adequate watercourses render it less desirable than the "priority" sites. In addition, a map and report on road conditions, prepared in July 2010 for the World Food Program, states that many of the secondary and tertiary roads in the Madrasse area, especially between Terrier Rouge and Phaeton, are subject to flooding during the rainy season.

**Area #10/11:** Madrasse district, west of river (19\*40'00"/72\*03'15"). This area is level, well situated next to a watercourse, and reportedly under state ownership. However, its distance from National Highway #121 and from any place with labor supply renders it inferior to any of the "Priority Sites." In addition, #10 is only 2km from the sensitive marshes and coastline of Caracol Bay.

Area #13 and 18: These areas are located immediately west of Site #15 and abut a small river. They are level and can be expanded to the west and south. However, their remoteness from towns and some uncertainty about state ownership justify their "secondary" consideration as a site for an industrial park.

In summary, the three most promising "Priority" sites have the following characteristics:

Site Number & Name	Approximate Size	Distance From Cap Haitien	Existing Land Use
#2 Fort Liberté	240 hectares	48 kilometers	No population; second growth savanna
#14 South of Highway, east of Limonade	220 hectares	18 kilometers	No population; some grazing
#15 Madrasse – Fleury/Chambert	200 hectares	24 kilometers	Pasture, no population but some nearby homes

Table 16: Characteristics of Top Three Sites

## C. Development Costs

### 1. Infrastructure Requirements and Costs

Each of the following site cost estimates is based on the following assumptions:

- The industrial park development will take place over two phases: Phase 1 from Years 1-3, and Phase 2 from Years 4-6.
- The total industrial park development is 150 ha. A larger area of 200 to 240 ha., which includes the park, will be fenced to provide a buffer against slum development and as a reserve for possible future expansion.
- There is no land acquisition cost, since the land already belongs to the State.

Unit cost estimates (including electricity generation, transmission, and distribution; lighting; water and water treatment; fencing; road construction and surfacing) are based on a variety of sources, and take account of the higher cost of building materials in Haiti (as much as 70% higher than in the Southern U.S.). Sources include:

- New Hampshire Department of Transportation (U.S.)
- U.S. Department of Transportation
- Private sources in the United States, Haiti, and Jordan
- Agence Pour les Investissements et les Grands Travaux (APIX), Senegal
- Rawlinson's Australia International Construction Cost Guide 2008
- CPM Constructors, Maine, U.S.
- Power Engineers, Denver, U.S.

#### Site #2 (Fort Liberté)

**Off-Site Infrastructure.** Since this site has frontage on two major roads, it doesn't require the construction of any access road. The Industrial Park gate can easily open up directly onto one of the two highways, preferably the north-south road to Fort Liberté. Similarly, if its boundary extends to the small river to the west, there will be no need for offsite wastewater sewage drainage pipes to connect with the river.

**On-Site Infrastructure**. A Table of the required infrastructure elements for Site #2 follows:

 Table 17: Infrastructure Development Costs for Site #2

ITEM	DESCRIPTION	COST/UNIT	NO. OF UNITS	SUMMARY AND NOTES
Site prep, clearing, surveys	150 hectares	\$75,000/hectare	150	\$ 11,250,000
Electric Power Generation—	IPP power plant	\$1,000,000 per MW	18 MW	\$18,000,000
Electric	1000 kVA	\$36,600	2	\$73,200
phase/2phase				
Electric Power	Primary cable			
Distribution	(alum., 240 mm)	\$47.00/m	10,000	\$470,000
	Secondary cable			
	(alum., 150 mm)	\$22.50/m	15,000	\$225,000
Water Supply—	well to supply	\$150,000	2	\$300,000
	depth of 50 m			
Water Distribution	50mm diameter	\$15.00/m	10,000	\$150,000
	70mm diameter	\$24.00/m	5 000	\$120,000
Wastewater	Ponds to treat	\$4,575,000	1	\$4,575,000
Treatment	2,500m3/day	<b>A</b> / <b>A A A A A A</b>	-	
	Waste pumping	\$100,000/	0	Waste pumping unnecessary
Wastewater	30mm diameter	\$50/meter	7,000m	\$350,000
Collection	pipe			
Wastewater	100mm diameter	\$100/meter	2 000 m	\$200,000
outui	pipe	φroo/meter	2,000 m	\$200,000
Road External	Paved road with	\$250/meter	1,500 m	\$375,000
	less than 5cm			
	10m wide with			
Deedlateme	drainage	\$000/m	40.000	<u> </u>
Road Internal	Paved road 8m wide with	\$200/m	10,000 m	\$2,000,000
	drainage			
Dorking	Dovement	¢100/m2	$2.000 \text{ m}^2$	\$300,000
Security	External 5 meter	\$36.50/meter	7.000 m	\$255.500
	high fencing	<b>+·············</b>	.,	
	Vahiala gata 8	¢50.000/upit	1 unit	\$50,000
	gatehouse	\$50,000/unit	i unit	\$50,000
	0			
	Lighting : 7-meter poles	\$565/pole	305 poles	\$172,500
TOTAL				\$38,866,200
Contingency 15%				\$5,826,180
design. etc.) 15%				\$5,826,180
Estimated Total				\$50,518,560

Site #2 onsite infrastructure development would cost \$50.5 million, or approximately \$337,000 per hectare.

#### Site #15 (Madrasse)

**Off-Site Infrastructure.** This site lies 1.3 km north of Route 121. As there is no public road connecting with that highway, an access road of that length must be constructed to the proposed IP's entrance gate.

**On-Site Infrastructure.** A table of the required infrastructure elements for Site #15 follows:

#### Table 18: Infrastructure Development Costs for Site #15

ITEM	DESCRIPTION	COST/UNIT	NO. OF UNITS	SUMMARY AND NOTES
Site				
Preparation, Clearing,	150 hectares	\$50,000/hectare	150	\$ 7,500,000
Surveys	IPP nower plant	\$1,000,000 per	18 M\\/	\$18,000,000
Generation—	irr power plant	MW		\$10,000,000
Electric Transformer. 3 phase/2phase	1000 kVA	\$36,600	2	\$73,200
Electric Power	Primary cable			
Distribution	(aluminum, 240 mm)	\$47.00/m	10,000	\$470,000
	Secondary cable	¢22.50/m	15 000	\$225,000
Wator Supply	(aluminum, 150 mm)	\$22.30/11	15,000	\$225,000
water Supply—	sec. from depth of 50 m	\$150,000	2	\$300,000
Water	50mm diameter	\$15.00/m	10,000	\$150,000
Distribution	70mm diameter	\$24 00/m	5 000	\$120,000
Wastewater	Ponds to treat	\$4,575,000	1	\$4,575,000
Treatment	2,500m3/day	\$ 1,01 0,000		\$ 1,07 0,000
	Waste pumping station	\$100,000/unit	1	\$100,000
Wastewater	30mm diameter pipe	\$50/meter	7,000m	\$350,000
Collection				
Wastewater	100mm diameter pipe	<b>#100/</b>	0.000	<b>#</b> 222.202
Outfall Bood External	Doved read with less	\$100/meter	2,000 m	\$200,000
Road External	than 5cm pavement. Max. 10m wide with drainage	\$250/meter	1,500 m	\$375,000
Road Internal	Paved road 8m wide with drainage	\$200/m	10,000 m	\$2,000,000
Parking	Pavement	\$100/m2	3,000 m <sup>2</sup>	\$300,000
Security	External 5 meter high fencing	\$36.50/meter	7,000 m	\$255,500
	Vehicle gate & gatehouse	\$50,000/unit	1 unit	\$50,000
	Lighting : 7-meter poles	\$565/pole	305 poles	\$172,500
TOTAL				\$35,215,700
Contingency (15%)				\$5,282,355
Fees (15%)				\$5,282,355
Estimated Total				\$45,780,410

The estimated cost to develop Site #15 is \$45.8 million, or approximately \$305,200 per hectare. The major difference between this site undertaking and #2 is its flatter topography and sparser vegetation, which reduces site clearance and preparation costs.

#### Site #14

**Off-Site Infrastructure.** Since this site has frontage on National Highway #121, it doesn't require the construction of any access road. The Industrial Park gate can easily open up directly onto the highway, though on/off ramps, or deceleration lanes, will need to be built.

**On-Site Infrastructure**. A Table of the required infrastructure elements for Site #14 follows.

ITEM	DESCRIPTION	COST/UNIT	NO. OF UNITS	SUMMARY AND NOTES
Site Preparation,	150 hectares		150	\$ 7,500,000
Clearing, Surveys		\$50,000/hectare		
Electric Power	Power plant	\$1,000,000 per	18 MW	\$18,000,000
Generation—		MW	-	
Electric	1000 kVA	\$36,600	2	\$ 70,000
Transformer. 3				
phase/2phase	Drimony cohio			
Distribution	(aluminum 240 mm)	\$47.00/m	10.000 m	\$470.000
Distribution		ψ-1.00/11	10,000 111	\$470,000
	Secondary cable			
	(aluminum, 150 mm)			
		\$22.50/m	20,000 m	\$450,000
Water Supply	well to supply 10liter/	\$150.000	2	\$300,000
	sec. from depth of 50			
	m			
Water Distribution	50mm diameter	\$15.00/m	10,000	\$150,000
	70mm diameter	¢04.00/m	5 000	¢400.000
Wastowator	70mm diameter	\$24.00/m	5,000	\$120,000
Treatment	2 500m3/day	φ4,575,000	i unit	\$4,575,000
Treatment	Waste numping	\$100 000/unit	1 unit	\$100.000
	station	<i><i><i>ϕ</i> i 00,000,000,000,000,000,000,000,000,00</i></i>	1 unit	\$100,000
Wastewater	30mm diameter pipe	\$50/meter	1,100 m	\$55,000
Collection				
Wastewater	100mm diameter pipe			
Outfall		\$100/meter	800 m	\$80,000
Road External	Highway on / off	\$365/meter	1,000 m	\$365,000
	ramps 500 m each			
	Paved road with less			
	than 5cm pavement.	\$250/meter	700 m	\$175.000
	Max. 10m wide with	• • • • • • •		÷ -,
	drainage			
Road Internal	Paved road 8m wide	\$200/m	10.000 m	\$2,000,000
	w/ drainage	<i><i><i><i><i><i><i>ϕ</i></i></i> = <i><i><i>ϕ</i></i> = <i><i>ϕ</i></i> = <i><i><i>ϕ</i></i> = <i><i><i>ϕ</i></i> = <i><i><i>ϕ</i></i> = <i><i><i>ϕ</i></i> = <i><i><i>ϕ</i></i> = <i><i>ϕ</i></i> = <i><i><i>ϕ</i></i> = <i><i><i>ϕ</i></i> = <i><i><i>ϕ</i></i> = <i><i><i>ϕ</i></i> = <i><i>ϕ</i></i> = <i><i><i>ϕ</i></i> = <i><i><i>ϕ</i></i> = <i><i><i>ϕ</i></i> = <i><i>ϕ</i></i> = <i><i><i>ϕ</i></i> = <i><i>ϕ</i> = <i><i>ϕ</i></i> = <i><i><i>ϕ</i></i> = <i><i>ϕ</i> = <i><i>ϕ</i></i> = <i><i><i>ϕ</i></i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i></i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i></i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i><i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i><i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i><i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i><i>ϕ</i> = <i><i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i><i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i>ϕ</i> = <i><i>ϕ</i> = <i>ϕ</i> </i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i>		+_,,
	Ŭ		_	
Parking	Pavement	\$100/m <sup>2</sup>	3,000 m <sup>2</sup>	\$300,000
Security	External 5 meter high	\$36.50/meter	7,000 m	\$255,500
	fencing			
	Vahiela gata 8	\$50.000/unit	1 unit	\$50,000
	venicie gale a	φ50,000/um	i unit	\$50,000
	gatoriodoo			
	Lighting: 7-meter	\$565/pole	305 poles	\$172,500
	poles	<u> </u>		· · · · · · · · · · · · · · · · · · ·
TOTAL				\$35,052,500
Contingency 15%				\$5,257,875
Fees 15%				\$5,257,875
Estimated Total				\$45,468,250

Site #14 will cost an estimated \$45.5 million, or \$303,788 per hectare.

The site development costs for the three preferred sites range from \$304,000 to \$337,000 per hectare. These estimates are considerably higher than for comparable sites in the U.S., where the costs typically range from \$35,000 to \$150,000 per hectare, exclusive of land acquisition costs. In the United States and most other industrialized countries, however, reliable and reasonably priced electric power is universally available, as are public sewage and wastewater treatment facilities. The power plant and wastewater treatment facilities together add \$22.7 million to the site development costs: around 45% of the total, or slightly over \$150,000 per hectare. Our basic financial model includes both of these facilities as essential to the development of an IP; however, it is likely that a private independent power producer, which could source private and donor funds, could develop and finance the power plant independently.

#### 2. Site Layout and Factory Buildings

Consistent with prevailing practices in the garment industry worldwide, and with garment manufacturers' requirements as communicated in discussions with potential investors, the proposed industrial park must provide standard factory sheds as part of the lease package offered to park tenants.

Figure 8, below (Zone Nord Outline Plan), shows a schematic layout of a 150-ha. industrial park, based on the expressed requirements of potential investors and estimates of future land requirements for other investors the park is likely to attract. In order to match capital costs more closely with the expected demand for space in the park, we propose – and our financial model reflects – a two-phased development approach, with 75 hectares developed and built in Phase 1 (a 3-year period) and 75 hectares additionally in Phase 2 (Years 4-6). The three potential investors having expressed a strong interest in investing in the park together are expected to occupy 57 ha. A separate area of 7 ha., to accommodate SMEs and specialized, but smaller-scale, manufacturers is also planned. An Administration Building (which may accommodate a customs post and offices for other government departments) will occupy 1 ha. A 9-ha. plot is reserved for the power plant and water treatment facility, and 10 ha. for roads and common areas. Together, these developments require 84 ha., leaving 66 ha. to accommodate other investors. The space requirements are based on an assumed plot coverage ratio (covered area to total space) of 70%. For the entire site, this translates into a total of 910,000 square meters of factory buildings. With a mix of buildings in three basic sizes of  $1,000 \text{ m}^2$ ,  $3,000 \text{ m}^2$ , and  $6,000 \text{ m}^2$ , the site will accommodate roughly 300 buildings.





#### 3. Building Costs

The administration building and furnishings are expected to cost \$1,000,000.

Based on several estimates received for the cost of construction for factory sheds, we use a figure of \$270 per m<sup>2</sup> (roughly \$25 per sq. ft.), which translates into a total cost of \$226.8 million for the entire park, or \$1.89 million per hectare of built space (1 hectare = 7,000 sq. m. of factory space x \$270 = \$1,890,000 x 120 ha. = \$226,800,000). The cost estimates per square foot or square meter of covered space come from a variety of sources, including the expected costs of the new SONAPI PIM buildings (about \$23 per sq. ft.) and range from a low of about \$20 to a high of \$30 per square foot. Taking the mid-point of \$25 per square foot, this indicates a cost per square meter of about \$270.

#### 4. Physical Distribution of Sites

The widespread availability of both "priority" and "acceptable" sites in North Haiti suggests that additional land areas can be considered for industrial park planning and development. A distribution of several sites (three or more) involving closer analysis of the "acceptable" areas would have the following advantages:

- Such a pattern would help address the most serious physical constraint, i.e., the absence of large rivers in the study region. Industrial demand for water is driven by the need for access to watercourses whose volume can absorb industrial waste. Depending on their industrial processes, one or two large (i.e., over 100ha.) industrial complexes could produce wastewater discharges that would exceed the capability of the area's existing small streams. To avoid this environmental issue, it could be advisable to constrain the maximum size of each industrial park so as to these watercourses to absorb fully or partially treated water before it reaches the sensitive sea water at the northern coastline. However, this is not to argue that two sites should be developed simultaneously because of the very significant capital costs that are indicated for each individual area.
- Access to labor supply could be increased. Aside from Cap Haïtien and Fort Liberté, each of the region's towns is smaller than 70,000 population. Multiple smaller employment enclaves could individually be accessible to the residents of a larger number of towns. Each small town could provide a convenient "base" of labor supply to its nearby industrial park.
- Demand for limited groundwater resources could be distributed. Although the supply of groundwater within the eastern part of Dept. du Nord and its adjacent western part of Dept. Nord Est is believed to be adequate, a heavy concentration of industrial activities in one zone could create a demand condition that might threaten the quality of the aquifer (now under study by DINEPA) that lies beneath.
- Utility infrastructure, especially electric power generation, could be more efficient in a multi-nucleated pattern because this would minimize voltage loss that occurs whenever electric power must travel over distances. Since the governing

assumption for providing power to future industrial park sites will be delivered through individual "IPP" (Independent Power Plant) arrangements, voltage loss can be avoided through the development of several sites.

For all these reasons, a multi-nucleated system of medium-sized industrial parks has benefits and may be encouraged as a longer-term development plan for the northern region is developed and put into place.

#### 5. Phasing and Expansion

Outside of Cap Haïtien and Ouanaminthe, industrial development in the region is virtually non-existent. The extent of future growth has not been forecast, but sound management of industrial parks takes into account planning for expansion. Economic development is cyclical, not "straight-line," and flexibility is essential in order to accommodate economic cycles of growth and shrinkage. The potential industrial strategy for Haiti's North should provide industrial parks that can accommodate additional industrial entrants. Therefore, each designated industrial area should be generously, if not "redundantly," sized for future expansion with campuses larger than 60ha.

#### 6. Organization and Management Requirements

Haiti's existing system for industrial park management includes essentially three models:

- Government control and sponsorship, as evidenced by the SONAPI model. Under this arrangement, SONAPI owns, develops, and governs one industrial complex, the PIM in Port-au-Prince adjacent to the international airport. SONAPI reportedly has other park developments in various parts of the country, but these are, apparently, in early planning or conceptual stages. Several sources have suggested shortcomings in the design layout, land management practices, and delivery of essential services within this important "flagship" of SONAPI's authority.
- A "mixed" management system in which government agencies exercise their authority through contractual arrangements with private parties.
- Private enterprises, which develop and operate their own industrial parks. SHODECOSA in Port-au-Prince is one example, of this model, and there are several other private parks in development or planning stages.

### 7. Land Use Planning

The Government of Haiti needs to develop – and reportedly has recently commissioned - a regional development and land use plan, which will, among other objectives, to identify and reserve areas for industrial development. Such a plan should, among other basic objectives:

- Identify specific enclaves for industrial development;
- Identify specific zones of "critical environmental quality and/or protected natural habitats";
- Designate areas for tourism development;
- Reserve specific sites of "cultural and/or historic heritage" for protection;
- Address housing and public service needs of a growing regional population, especially in the context of future development of the industrial, tourism, and agricultural sectors;
- Designate existing towns that may be expanded and/or redeveloped into more densely-populated areas;
- Designate specific natural features (e.g. rivers, watercourses, coastal wetlands) that justify special standards for development regulation.

In July 2010 the GoH reportedly engaged a Canadian firm, Daniel Arbour & Associates, to prepare a development plan for the region, though it is not known when this plan will be delivered and whether and when it will be adopted.

### 8. Cap Haïtien Port Improvements

The Government of Haiti should commence a targeted effort to redevelop the Port of Cap Haïtien as a more efficient commercial port. Given the achievements by the private sector in developing a successful and expanding port dedicated to tourism at Labadie, Cap Haïtien seaport development should be rationalized in the direction of commercial services, most notably for expanded container, fuel depot, and RO-RO operations. Without seaport improvements, industrial development in Haiti's north will forever be constrained. Consequently, a package of improvements should contain the following elements:

- Improved street access that will allow seaport traffic to bypass Cap Haitian's congested downtown, especially "Rue A." One useful proposal would produce a highway-causeway system to originate east of the river. An improved road would run directly north-northwestward from National Highway #3 past the existing Public Market ("Mercado") to connect with a new bridge connecting with the existing port road at a point southwest of Cap Haïtien's existing power plant. The location and alignment of this road-bridge combination is shown on a following exhibit. Approximate costs for this port undertaking are:
  - For a bridge approximately 385 meters long with paved roadway: \$4,000,000
  - For street improvements (re-paving, drainage) +/- 635 meters: \$235,000
  - For acquisition of at least three commercial properties: \$225,000
  - Approximate Total Expenses: \$4,460,000

The GoH in August announced plans to allocate \$7.4 million for a similar project, which would expand existing roads in the area between the Cap Haitien airport and

seaport and construct a bridge (le "Pont Hippolyte"), so this development need not be considered as a cost associated with the IP project.

- Improved container storage facilities (beginning with augmented RO-RO parking areas at the port) to accommodate future freight growth originating from industrial park development outside the city in North Haiti. One key ingredient of additional container storage should be in the design of the IP itself. Each industrial park should include sufficient land to accommodate 25 to 50 container spaces, or 50 TEU, within its protected boundaries in order to efficiently manage the flow of freight and goods arriving and leaving the industrial tenants. The close placement of RO-RO container vehicles near operating factories will speed pickup and discharge times and contribute to the efficiency of product flows.
- Improved logistical innovations (e.g., IT networking) would also enable faster container dispatches within the region and minimize movement of empty containers.
- Installation of additional storage tanks and seaside fuel delivery facilities. At the present time, Cap Haïtien's diesel generating plant lacks the ability to handle shipborne fuel deliveries. In order to relieve EDH's (Electricite d' Haiti) current and costly dependence on diesel fuel delivery trucks dispatched from Port-au-Prince, port investments should be made to allow delivery from the sea. One short-term solution might be based on a dedicated floating barge or even obsolete tanker vessel to be housed adjacent to the existing electric generating plant. In addition to re-fitting the port to accommodate vessel deliveries, the port should also be improved by increasing its diesel fuel storage capacity aside from the needs of the power plant. This will be necessary to satisfy the future demands of industrial parks outside Cap Haïtien that are the subject of this paper.
- Expanded electric power generation to better satisfy regional demand (estimated by EDH at 15mW). The existing diesel-powered generating plant in Cap Haïtien is rated at only 13mW. Since its capacity is already exceeded even without the additional demands that will arise from new industrial operations the new IP(s) must be planned and financed with adequate capital funds to pay for new (diesel) electric power generators. On the basis of preliminary investor input, the first industrial park should be planned for a minimum to meet an expected demand for approximately 18mW of generating capacity sufficient to meet expected demand in the project's initial phase.

#### 9. Housing, Transport, and Community Development

Although this is not, strictly speaking, an "infrastructure" issue, the growth of an industrial economy in North Haiti will inevitably create a demand for new residential communities.

In view of the civil unrest, violence, and extreme poverty that have characterized Cité Soleil since it sprang up in response to the construction in the 1980s of SONAPI's PIM

industrial park nearby, both Government and the IDB have expressed a determination to avoid a repeat of this experience. Both have mentioned a need to provide housing for employees of companies in the park, especially in view of the slum that has grown up around the CODEVI Free Zone in Ouanaminthe during the eight years since the zone was launched.

The reality, however, is that development of a new industrial park with the potential to create tens of thousands of new jobs will begin to draw people from all over the country as soon as it is announced. While this phenomenon should ease the fears of potential investors that the labor pool in the north is too small, it also carries substantial risk of replicating the experiences of Cité Soleil and Ouanaminthe.

One suggested solution to this potential problem is to build worker housing in or adjacent to the park (the Free Zone Law does not allow residential development in a free zone), but this is probably not a good solution. Building dedicated worker housing can create more problems than it solves. It contributes to labor market rigidity, since employees, not wanting to lose their homes, will remain in their jobs even if they would otherwise prefer to seek new opportunities elsewhere. It virtually guarantees problems later on when a worker retires or is dismissed, since not only the individual worker but also an entire family would lose its home. Alternatively, if some inheritable property right is attached to the housing, then over time a majority of the occupants may no longer be employed at factories in the park. Finally, if market or economic conditions change and manufacturers cut capacity or close down altogether, a large population can find itself in a somewhat remote location with no way to earn a livelihood. This has happened in many parts of the world, especially in countries of the former Soviet bloc, where a town built to house workers in a mine or a factory has found itself in dire straits when the industrial facility reduces capacity, shuts down, or is acquired by another company in a privatization transaction, which may involve large-scale retrenchments.

*Avoiding* these failed models and addressing the housing challenge in North Haiti could draw upon successful experiences such as that of East Bandung, Indonesia, where local leaders (*camat*, head of a *kecamatan* and the equivalent of a village mayor) were consulted as to the locations and sizes for small, organically-planned enlargements of existing communities that were specifically organized for relocating employee housing. Several principles could be observed in introducing new residential stock in proximity to the new IP(s) as portrayed in Box 4.

It would be a mistake to begin to construct worker housing in any location in the absence of an approved regional land-use plan. There have been proposals to move large populations from Cap Haïtien to Fort Liberté, which according to some scenarios would become the industrial hub of the north, but approval and implementation of these plans remain far off. At the same time, Fort Liberté appears to have a lot of abandoned housing stock, some of which could be usable, and plenty of space on which new housing could be built. The transportation needs of workers are a key element in the ranking of potential IP sites. The Nathan Associates garment value chain report indicates that workers often spend a substantial portion of their income on transport to and from work. Many people need to as many as three or four rides in tap-taps each way, at a cost of 7 to 10 HTG per ride, which could eat up more than half the daily minimum wage of HTG 125.<sup>19</sup> Those sites within walking distance or at most one bus or tap-tap ride each way are preferable to those at a greater distance from main population centers. Site 2, which is less than 3 km from the center of Fort Liberté, ranks high on this account.

Factory owners may be encouraged to provide transport for workers, but this is not common practice in most other countries. In an industry notorious for thin margins and intense price competition, many factory owners may decline to do so. There may, therefore, be a need for organization of, and investment in, a regional transportation system to deliver industrial park commuting employees to and from their places of work. It may be worth considering a publicly-funded regional transportation network in the context of a regional development master plan, though this could take considerable time to develop. Another option might be for the GoH and donors to sponsor a program similar to South Africa's taxi recapitalization program, which paid taxi owners to scrap vehicles no longer roadworthy and established a fund to provide owners with financing for new, approved vehicles. Such programs, however, would not necessarily reduce the cost of transport unless they were heavily subsidized. The most cost-effective solution for workers, employers, and government alike may be to locate industrial parks as close as possible to population centers and to undertake housing developments accordingly, integrating a new industrial park into the social fabric of the region. In addition, for any industrial park an area substantially larger than the expected industrial requirements could be set aside and, ideally, fenced. This could help reserve suitable land for future industrial development, but could also prevent the implantation of informal settlements around the park itself.

Assuming an initial park development of 150 hectares, to be undertaken in two or possibly three development phases, this would imply that an area of at least 200 hectares, and potentially as much as 500 hectares, should be reserved for future development and also as a buffer against slum encroachment.

<sup>&</sup>lt;sup>19</sup> Nathan 2009, *op.cit.*, p. 37

# Box 4. Principles for Introduction of New Housing to Support Industrial Development in North Haiti



#### 10. Off-Site Infrastructure Requirements

Numerous large-scale infrastructure development projects for northern Haiti are in early discussion and planning stages. These include a new commercial seaport to the east of Cap Haïtien; extensive expansion of and renovations to the Cap Haïtien airport (or construction of a new airport); large-scale housing developments; improvements to major trunk roads, including the road between Cap Haïtien and Port au Prince; and new road construction. Any or all of these may affect the competitiveness of enterprises located in the proposed industrial park, but it is impossible to predict whether and when these developments may occur. These projects, if they do come to fruition, will be undertaken for the benefit of the entire region and country rather than specifically for the benefit of the industrial park and its tenants, so their costs should not be considered as part of the assessment of the industrial park project itself. There are, nevertheless, other developments that may be undertaken in the near to medium term largely, if not exclusively, for the tenants of the proposed industrial park and future industrial enterprises in the area. The main such projects are: 1) expansions and improvements to the port of Cap Haïtien; and, 2) the road improvements and bridge to enable container trucks to bypass the congested downtown area of Cap Haïtien city. Since the GoH has already committed funds for the road and bridge project in Cap Haïtien, the only such off-site infrastructure project directly associated with the IP is that of improving port facilities. This is expected to cost about \$700,000.

## V. Financial and Economic Analysis

The proposed 150-hectare industrial park in Northern Haiti is financially feasible and will generate an impressive economic return for the country, as well as making a positive social contribution in the form of employment and incomes. This analysis is based on the assumption that the park, including on-site infrastructure and buildings, will be publicly financed. As such, the financial analysis is intended mainly to establish whether the project will generate sufficient revenues to cover recurrent operating costs and capital costs. Secondarily, the net present value calculation can be used to compare this project with others Government might undertake, especially if there aren't sufficient resources to do all of them. As a general rule, those projects with a higher NPV are preferable. When combined with the economic value and economic rate of return, these calculations can be useful in helping Government and donors deploy their resources in ways that promise to produce the greatest benefit.

There is another compelling reason, however, to carry out a financial analysis: to assess whether public funding is required. If a project is capable of generating a sufficiently high return, private investors will willingly fund all or a large part of it. If, however, the returns on invested capital are lower than the minimum private investors require, then the project, if it is to be undertaken, will require public financing. In the case of the northern industrial park, the economic calculations and social impact assessment indicate that the project will be highly beneficial, but the financial returns are modest. Infrastructure projects in most cases tend to generate more modest returns and require a much longer payback period than most other industrial or commercial investments. Given the requirements expressed by potential investors (including pre-built factory sheds) this effect is especially pronounced in Haiti. The perceived risk of investing in Haiti is high. and foreign investors will demand a higher risk premium than for investments in other countries considered less risky. Though Haiti has no sovereign risk rating, other countries rated Caa or lower have a country risk premium of between 11% and 15%, to which an standard equity risk premium of 4.5% would be added, yielding a discount or threshold rate of between 15% and 19%. At these rates, the project cash flows are insufficient to make the project an attractive commercial proposition.

It is probable that as the project proves itself successful, and as Haiti's overall economic situation improves, the risk premium will decline and private investment will flow. This could occur even in the second phase of development of the IP, and various financing scenarios that incorporate this possibility will be presented and discussed in the final report.

If the project is funded with grants and/or soft loans, the project shows a modest 4.37% internal rate of return and a net present value of \$44 million. But if the project is funded by private debt and equity, with an assumed weighted average cost of capital of 15% (this reflects Haiti's higher risk profile as well as a standard equity premium), the project shows a negative return and a negative NPV of about \$444 million. There may be ways to lower the initial capital cost and to bring in private capital in a second development

phase – and some of these options will be explored in the final implementation report but there is no real question that if the project is to be undertaken at all the first development phase, at a minimum, must be funded from public resources, likely to include both donor and Government funds.

The financial analysis and projections are based on estimates for Site #2, near Fort Liberté, which ranked highest in our site screening and selection procedure. Selection of another site could change the projected cost, but only by two to three percent.

## A. Financial Analysis

#### 1. Project Cost

The industrial park project is expected to cost \$279,050,000, inclusive of on-site and offsite infrastructure development and of the construction of factory sheds for occupancy by park tenants. This equates to a total cost of \$1,902,124 per hectare (\$341,457 without buildings but including off-site port improvements). This is consistent with development costs for industrial parks in other parts of the world, though in this case the costs are elevated by the need to build a power plant and wastewater treatment facility, together with certain port and road transport improvements in Cap Haïtien, which together cost approximately \$27.8 million – or nearly 10% of the total development cost. Excluding the buildings, these additional costs amount to over half of the total site development cost.

Though these figures appear high, they are consistent with similar projects in other parts of the world. By way of comparison, a new 300-ha. industrial free zone under development in Poti, Georgia, is expected to cost \$200 million, or more than \$660,000 per hectare, which includes port improvements but not industrial buildings. The 500-hectare Ascendas-Protrade Technology Park in Vietnam is expected to cost \$100 million, or \$200,000 per hectare, though this excludes buildings, power plant, wastewater treatment, and off-site improvements. The 70-hectare Industrial Park Sofia East in Bulgaria will cost an estimated \$80 million, or \$1.14 million per hectare, of which 45 hectares will be leased as serviced land and 25 as "build-to-suit" industrial properties. The Phnom Penh Special Economic Zone in Cambodia is a 360-ha. site similar in many ways to the industrial park in northern Haiti, in that it comprises both a power plant (developed by the private zone developer in joint-venture with a private power producer) and extensive water supply and water treatment facilities. Phase 1 of the project, covering 141 ha. and including the power plant and water and water treatment facilities (but no buildings), has cost a reported \$68 million, or over \$482,000 per hectare.

In Russia, the EBRD is financing development of an 11.5-hectare industrial park near Nizhny Novgorod. The project, which will cost EUR 54.5 million (about \$70 million), will provide about 65,000 sq. m. of leasable warehouse and factory space. The total cost of over \$6 million per hectare and over \$1,000 per leasable sq. m. of covered space, is three times higher than that of the Northern Haiti industrial Park, (\$1.9m per ha. and \$345 per sq. m. of leasable space).

## 2. Financial Analysis Assumptions

In calculating costs and revenues, we have used several core assumptions, which include:

- The analysis does not include costs and revenues of park tenants; it is exclusively an analysis of the park itself as a stand-alone venture;
- Our analysis does not include operating costs and revenues for the power plant; for our purposes we assume it operates on a break-even basis (we may analyze power plant cash flows as part of the scenario analysis in the final report);
- Inflation is excluded. According to the IMF, Haiti's 2009 inflation rate was 0.4%. There is no guarantee that it will remain this low Haiti has experienced periods of much higher inflation but the fundamental financial viability of the project is unlikely to be materially affected by inflation;
- The project operates free of taxes, as per the provisions of industrial park legislation, which exempts park operators and tenants from corporate income taxes and property taxes.
- We do not include the possible cost of housing and large-scale infrastructure projects that may be undertaken and which may have a material effect on the park, but which are not motivated exclusively or even principally by the needs of the park;
- In spite of the relatively high cost of development, the project generates a
  positive financial return at a breakeven monthly rent of \$3.45 per sq. m. which
  is consistent with what other analyses have suggested is an acceptable marketbased rental rate for Haiti;<sup>20</sup>
- 10-year project financing consists entirely of soft loan financing on typical IDB terms of 1% interest. This is based on the assumption that the GoH can obtain, from the IDB and/or other sources, concessional financing on similar terms. Chapter VII contains analysis of other possible financing scenarios, but this analysis is presented to give as complete a picture as possible of total project costs and revenues;
- A smaller facility may be considered, and could be necessary if public funding is unavailable for the full cost and/or if private financing options are considered. Either of these conditions would change the basic premise on which the project is based, and would necessitate additional, detailed analysis. The alternative financing scenarios are presented in Chapter VII, which take into account such possibilities.

<sup>&</sup>lt;sup>20</sup> Nathan Associates, "Bringing HOPE to Haiti's Apparel Industry: Improving Competitiveness Through Value-Chain Analysis," November, 2009.

#### 3. Financial Projections and Calculations

The financial calculations do not include the results from operations of the eventual park tenants. This analysis considers the park itself as an enterprise, and seeks to identify the returns on invested capital.

Calculated over 20 years, the project is expected to show an internal rate of return (IRR) of 2.14% and a net present value (NPV) of \$2.77 million at the breakeven rental rate of \$3.35 per m<sup>2</sup> per month (\$40.20 per year, equivalent to \$3.74 per sq. ft. per year) and is expected to pay back the initial investment in Year 18 (payback period). These revenue and cost streams include revenues from sale of power and the cost of operating the power plant.

\$279 million may be more than donors are willing or able to fund; however, there are ways in which the capital outlay can be reduced. Chapter VII explores alternate financing scenarios, which would reduce the commitment required from the GoH, the IDB, and other donors.

#### Table 20. Assumptions for Financial and Economic Analysis

		Haiti Northern Industrial Park												
		As	sumptions											
						Factory Space r	ented by							
Total Area	150	hectares		Total rented fac	tory space	Anchor Investor	s A & B						-	
Phase 1	75	hectares	Years 0-3	420000	square meters	315000								
Phase 2	75	hectares	Years 4-6	420000	square meters	315000								
	10	neotareo	Teuro + e	420000	oquare metero	010000								
Built Area (Land with	factory buildings)													_
Phase 1	factory buildings)	hactares	70%	Plot coverage r	atio							-	-	-
Phase 2	00	hectares	1070	T lot obverage i										_
		neetares										-	-	_
Development Costs														
On-site Infrastructure	per hectare		\$ 337.000		Power price		e	0.20	por kWb				-	
Off-site Infrastructure			\$ 700,000		Fuel Cost		¢	0.20	per kWh					
Buildings cost	¢ 270	por m2	\$ 1 800,000	por ba built	Operating/finan	cina cost	¢	0.10	per kWh					
Buildings cost	ə 210	permz	\$ 1,890,000	per na. built	Operating/inan	icing cost	Ş	0.05	per kwi					
Total Capital Expendit	huro		\$270.050.000											
Total Capital Experiat	luie		\$275,050,000											
Operating Costs														
0.8 M (includes secur	ity ropair & maintonan	co rubbich c	ollection)	<b>5</b> %	of conital cost									
Administration	ity, repair & maintenand		onection	5/0	of revenues									
Administration				570	orrevenues									
		Veere 1 10												
Discount Pate		10/	20/			hanga Data								
Note: This is based on t	he typical interact rate	In long torm		$\frac{1}{10}$	033-HIGEXC									
the first decade	ne typical interest rate	on long-term	I IDB SOIL IO		- ə1	HIG 40.00								
					l= 61 = 42			00/				-		
Finan alman	E matte	00/	Dalid	4000/	Inflati	on Rate		2%						
Financing:	Equity	0%	Dept	100%										
<b>-</b>	i a u a l fina a alu a			A	0.44.4		•	40.00						
Tenor: 10-year concess	sional financing			Annual rental p	er m2 of factorys	pace	\$	40.20		D. V. UTO				
				\$3.35	per m2 per mor	nth				Per Year HIG				
worker salary per mo		\$ 130		10.1	Expatriate Sala	ry per month			\$4,000	1920000				
Note: Based on \$5 per	day (\$3.09 minimum w	age + piecev	vork bonus)	, 48 nours pe	Local Manager	salary per month			\$600	288000				
-														
Taxes									-					
Corporate income tax		30.0%	of profits		Fiscal Incentive	95	Rate	•••	Duration					
		10.0%			Payroll Tax Exe	emption		0%	15 years	Note: Industrial	Park operators	and developers		
Business license tax		0.2%	of turnover		Income Tax			0%	Years 1-15	receive complet	e exemption fro	m all taxes. Park	tenants receive 1	5-year
Payroll tax		2.0%	of gross salari	es				5%	Year 16	exemption on in	come tax and p	ayroll/health/soci	al security	
Social Security Contribu	utions	6.0%	of gross salari	es				10%	Year 17	taxes)				
Health Insurance Contr	ibutions	3.0%	of gross salari	es				15%	Year 18					
Property Tax		15.0%	of annual renta	al value				20%	Year 19					
Personal income tax		0%	HTG 0-60,000					20%	Year 20					
		10.0%	HTG 60,001-24	0,000				30%	Year 21					
		15.0%	HTG 240,001-4	80,000	VAT exemption	1		0%	lifetime					
		25.0%	HTG 480,001-1	,000,000	Property Tax Ex	cemption		0%	lifetime					
		30.0%	>HTG 1,000,00	0	Social Security	and health		0%	15 years					
Factory hours of operati	on per year	2,496	52 weeks * 6 d	ays * 8 hours										
Average Power Demand	MW			3.0	6.0	9.0		12.0	15.0					

Koios Associates – Industrial Park Model in Northern Haiti – HA-T1074 – SN2

					Haiti Northe	rn Industrial Park	(										
					Financial Proje	ctions and Calcul	ations										
	Year	1	2	. 3	4	5	6	7	8	9	10	11	12	13	14	15	16
Capital Expenditure		\$ (46,508,333)	\$ (46,508,333)	\$ (46,508,333)	\$ (46,508,333)	\$ (46,508,333)	\$ (46,508,333)	 									
Rental Income		\$ 5,628,000	\$ 11,256,000	\$ 16,884,000	\$ 22,512,000	\$ 28,140,000	\$ 33,768,000	\$ 33,768,000	\$ 33,768,000	\$ 33,768,000	\$ 33,768,000	\$ 33,768,000	\$ 33,768,000	\$ 33,768,000	\$ 33,768,000	\$ 33,768,000	\$ 33,768,000
Power Plant Revenue			\$ 1,497,600	\$ 2,995,200	\$ 4,492,800	\$ 5,990,400	\$ 7,488,000	\$ 7,488,000	\$ 7,488,000	\$ 7,488,000	\$ 7,488,000	\$ 7,488,000	\$ 7,488,000	\$ 7,488,000	\$ 7,488,000	\$ 7,488,000	\$ 7,488,000
Power Plant Operating C	ost		\$ 1,123,200	\$ 2,246,400	\$ 3,369,600	\$ 4,492,800	\$ 5,616,000	\$ 5,616,000	\$ 5,616,000	\$ 5,616,000	\$ 5,616,000	\$ 5,616,000	\$ 5,616,000	\$ 5,616,000	\$ 5,616,000	\$ 5,616,000	\$ 5,616,000
O & M Cost		\$ 2,325,417	\$ 4,650,833	\$ 6,976,250	\$ 9,301,667	\$ 11,627,083	\$ 13,952,500	\$ 13,952,500	\$ 13,952,500	\$ 13,952,500	\$ 13,952,500	\$ 13,952,500	\$ 13,952,500	\$ 13,952,500	\$ 13,952,500	\$ 13,952,500	\$ 13,952,500
Operating profit/loss		\$ 3,302,583	\$ 6,979,567	\$ 10,282,150	\$ 13,959,133	\$ 17,636,117	\$ 21,313,100	\$ 21,687,500	\$ 21,687,500	\$ 21,687,500	\$ 21,687,500	\$ 21,687,500	\$ 21,687,500	\$ 21,687,500	\$ 21,687,500	\$ 21,687,500	\$ 21,687,500
Administration Cost		\$ 281,400	\$ 562,800	\$ 844,200	\$ 1,125,600	\$ 1,407,000	\$ 1,688,400	\$ 1,688,400	\$ 1,688,400	\$ 1,688,400	\$ 1,688,400	\$ 1,688,400	\$ 1,688,400	\$ 1,688,400	\$ 1,688,400	\$ 1,688,400	\$ 1,688,400
Interest		\$ 465,083	\$ 885,713	\$ 1,261,445	\$ 1,591,829	\$ 1,876,413	\$ 2,114,738	\$ 1,841,258	\$ 1,565,044	\$ 1,286,068	\$ 1,004,302	\$ 719,718	\$ 481,393	\$ 289,789	\$ 145,373	\$ 48,618	ş .
Depreciation	5%	2,325,417	4,650,833	6,976,250	9,301,667	11,627,083	13,952,500	13,952,500	13,952,500	13,952,500	13,952,500	\$ 11,627,083	\$ 9,301,667	\$ 4,650,833	\$ 2,325,417	ş .	ş.
Pre-Tax profit/loss		\$ 230,683	\$ 880,220	\$ 1,200,255	<b>*\$</b> 1,940,038	\$ 2,725,621	\$ 3,557,462	\$ 4,205,342	<b>*</b> \$ 4,481,556	\$ 4,760,532	\$ 5,042,298	\$ 7,652,299	\$ 10,216,040	\$ 15,058,478	\$ 17,528,310	\$ 19,950,482	\$ 19,999,100
Corporate Income Tax	30%	\$ -	ş .	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	ş -	ş -	ş.	ş .	s -	ş -	ş .
EBITDA		\$ 3,021,183	\$ 6,416,767	\$ 9,437,950	\$ 12,833,533	\$ 16,229,117	\$ 19,624,700	\$ 19,999,100	\$ 19,999,100	\$ 19,999,100	\$ 19,999,100	\$ 19,999,100	\$ 19,999,100	\$ 19,999,100	\$ 19,999,100	\$ 19,999,100	\$ 19,999,100
Net Income		\$ 230,683	\$ 880,220	\$ 1,200,255	\$ 1,940,038	\$ 2,725,621	\$ 3,557,462	\$ 4,205,342	\$ 4,481,556	\$ 4,760,532	\$ 5,042,298	\$ 7,652,299	\$ 10,216,040	\$ 15,058,478	\$ 17,528,310	\$ 19,950,482	\$ 19,999,100
Free Cash Flow		\$ (43,952,233)	\$(40,977,280)	\$ (38,331,828)	\$ (35,266,629)	\$ (32,155,629)	\$ (28,998,371)	\$ 18,157,842	\$ 18,434,056	\$ 18,713,032	\$ 18,994,798	\$ 19,279,382	\$ 19,517,707	\$ 19,709,311	\$ 19,853,727	\$ 19,950,482	\$ 19,999,100
Cumulative Cash Flow		\$ (43,952,233)	\$ (84,929,513)	\$(123,261,341)	\$(158,527,970)	\$ (190,683,599)	\$ (219,681,970)	\$ (201,524,129)	\$(183,090,073)	\$(164,377,041)	\$ (145,382,243)	\$(126,102,861)	\$(106,585,154)	\$ (86,875,843)	\$ (67,022,116)	\$(47,071,635)	\$(27,072,535)
Payback Period	Year	18															
IRR = NPV =	2.14% \$2,770,537																

#### Table 21. Haiti Northern Industrial Park Financial Projections and Calculations

Koios Associates – Industrial Park Model in Northern Haiti – HA-T1074 – SN2

## B. Economic and Social Impact Assessment

An economic impact analysis is a way to gauge the expected economic and social effects/benefits of a project on the wider society rather than just the return to investors. These effects can be measured in various ways, incorporating a number of dependent and independent variables. These include:

- Employment
- Income
- Foreign direct investment
- Export and foreign exchange earnings
- Creation and growth of domestic enterprises
- Skills and knowledge transfer
- Increased access to markets
- Increase in Government revenue

Our financial assessment of the industrial park in northern Haiti focused on the development of the site itself and the leasing of factory buildings to garment manufacturing companies. As such, we have not carried out a detailed assessment of the returns to these companies, nor on the specific contributions of their projects to the fiscal and social well-being of Haiti. Our demand assessment did, however, identify the number and kinds of firms likely to locate in the proposed park, and the number of people these firms are likely to employ. From that information, plus data on taxation in Haiti, we are able to make some basic calculations of the effect of the project on Haitian government revenues. The picture is incomplete, since we have not done a full project feasibility study, which would enable to project the revenues and profits of companies operating in the park and their fiscal effects. These certainly would magnify the government revenue effects we have anticipated, largely in the form of corporate income taxes.

#### 1. Economic Model Assumptions

We have made numerous assumptions in preparing the following estimates, which are summarized in Table 2, Haiti Northern Industrial Park: Economic Impact Assessment Model. They include:

**Employment:** Based on estimates by potential investors and other measures, we expect the park to generate about 2,700 temporary construction jobs and nearly 37,000 permanent jobs in the garment and textile factories. The park is expected to reach full employment in 10 years. Of these permanent employees, a relatively high percentage will be expatriates at the outset, though over time this will decline. Over the long term, 90% of the work force is expected to be Haitian laborers; 5% Haitian supervisors and managers, and 5% expatriate technicians and managers.

**Multiplier Effects:** Any project of this kind will have a multiplier effect on employment. Each job directly created by a project will entail the creation of additional employment outside the project through backward linkages with suppliers of goods and services and forward linkages with distributors, resellers, and companies providing a range of postproduction services. The multiplier varies from one industry or sector to another: construction has among the highest employment multipliers, usually more than 2.0, meaning that for every direct job created at least one job is indirectly created. Textile and apparel manufacturing also have high employment multiples, averaging 2.0.

In addition to the employment multiplier, there is an income multiplier: for every job created directly or indirectly by a project, additional income will be generated as those people employed spend their wages on clothing, food, housing, transport, and other goods and services. Textile and apparel manufacturing also have high income multipliers, ranging from about 2.1 for textile manufacturing to 2.6 for garment manufacturing. Taking the midpoint of these two, we arrive at an average multiplier of 2.35.

In addition to these multipliers, for different countries and people of different incomes, consumer spending accounts for a greater or lesser proportion of total income. For Haiti, especially for low-paid industrial workers, an estimated 85% of income goes for consumer spending. For expatriate managers, the number is much lower. The East Asian manufacturers intending to set up in the park will typically house their workers and pay almost all their expenses directly, so these expatriate workers are expected to spend only 10% of their salaries in the Haitian economy.

**Personal Income and Income Taxes:** Based on data from the garment industry in Haiti and worldwide, and other employment and income data for Haiti, it is clear that the few, if any, Haitian production workers or construction workers will earn taxable income. Haiti's tax code exempts the first 60,000 gourdes of income from personal income tax. The expected average daily wage of \$5.00 equates to almost exactly \$1,500, or HTG 60,000 per year. Haitian supervisors and managers will earn more than this, and will pay some taxes, mainly at the lowest 10% level, while the expatriates, earning an average of nearly HTG 2 million annually, will pay account for the vast bulk of personal income taxes generated from the project.

**Other Taxes:** Based on available information on Haiti's investment incentives, we have assumed that the park developer and operator will pay no payroll, income, or property taxes for the project life. Park tenants will benefit from the 15-year exemption on income taxes, property taxes, and payroll taxes, after which they will be subject to a graduated introduction of corporate income tax and an immediate imposition of payroll taxes. Our model does not include corporate income taxes payable, since we have not made any assumptions or projections regarding park tenants' earnings; however, they are likely to be substantial and will contribute significantly to the economic benefit for the country.. Under the Free Zones Law Park, qualifying investors are zero-rated for VAT purposes on their exports, so we have assumed no government revenues from this source. VAT is, however, payable on consumer expenditures. Given the importance of the informal economy, which in Haiti is estimated at around 60% of the total economy, we assume

that only 40% of all consumer expenditures from direct and indirect income attributable to the park and its tenants will be subject to VAT.

#### Table 22: Economic Impact Assessment Model

						Haiti No	orthern Indu	ustrial Park					
						Economic 3	Impact Asse	essment Mod	del				
	Year		1 2	3	4	5	6	7	8	9	10	11	12
Gross Capital Expenditure		\$ (46,508,33	3) \$(46,508,333)	\$ (46,508,333)	\$ (46,508,333)	\$ (46,508,333)	\$ (46,508,333)						
Employment Tenant Factories			3680	7360	11040	14720	18400	22080	25760	29440	33120	36800	36800
Local labor			2944	5888	8832	12512	15640	19872	23184	26496	29808	33120	33120
Local management/supervisors			0	0	110	294	368	662	515	883	994	1104	1472
Expatriate			736	1472	2098	1914	2392	1546	2061	2061	2318	2576	2208
Construction Jobs	10	4	5 930	1395	1860	2325	2791						
(Estimate 10 jobs per \$million capex)													
Gross Employment Income		\$ 725,53	\$ 40,646,170	\$ 80,566,810	\$ 115,983,130	\$ 114,216,730	\$ 142,589,530	\$ 110,683,930	\$ 139,520,410	\$ 147,336,730	\$ 165,663,130	\$ 183,989,530	\$168,975,130
Employment Multiplier	2.00												
Direct + Indirect Employment		9:	0 9220	17511	25801	34091	42381	44160	51520	58880	66240	73600	73600
Income Multiplier	2.35												
Direct + Indirect Income		\$ 1,704,99	\$ \$ 95,518,500	\$ 189,332,004	\$ 272,560,356	\$ 268,409,316	\$ 335,085,396	\$ 260,107,236	\$ 327,872,964	\$ 346,241,316	\$ 389,308,356	\$ 432,375,396	\$397,091,556
Total Consumer Expenditure		\$1,278,74	7 \$71,638,875	\$141,999,003	\$204,420,267	\$201,306,987	\$251,314,047	\$195,080,427	\$245,904,723	\$259,680,987	\$291,981,267	\$324,281,547	\$297,818,667
Taxes													
Corporate Income Tax		\$-	\$ -	\$-	\$ -	\$-	\$ -	\$-	\$-	\$-	\$ -	\$-	\$ -
Payroll Tax		\$-	\$ -	\$-	\$ -	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$ -
Social Security & Health Taxes		\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$ -
Property Tax		\$-	\$-	\$-	\$ -	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$ -
Personal Income Tax			0 \$ 13,432,000	\$ 26,864,000	\$ 38,350,752	\$ 35,108,672	\$ 43,885,840	\$ 28,624,512	\$ 37,934,176	\$ 38,166,016	\$ 42,936,768	\$ 47,707,520	\$ 41,223,360
VAT	10.0%	\$127,87	5 \$7,163,887	\$14,199,900	\$20,442,027	\$20,130,699	\$25,131,405	\$19,508,043	\$24,590,472	\$25,968,099	\$29,198,127	\$32,428,155	\$29,781,867
TOTAL TAXES		\$ 127,87	5 \$ 20,595,887	\$ 41,063,900	\$ 58,792,779	\$ 55,239,371	\$ 69,017,245	\$ 48,132,555	\$ 62,524,648	\$ 64,134,115	\$ 72,134,895	\$ 80,135,675	\$ 71,005,227
Net Cost/Benefit to GoH		\$ (46,380,45	9) \$(25,912,446)	\$ (5,444,433)	\$ 12,284,445	\$ 8,731,037	\$ 22,508,911	\$ 48,132,555	\$ 62,524,648	\$ 64,134,115	\$ 72,134,895	\$ 80,135,675	\$ 71,005,227
Net Return to GoH	\$803,035,171												
Economic Rate of Return	30.65%												
1020000	720000	¢19.250.0	0										
288000	25200	\$630.0	0 D	-									
200000	20200	4000.0	-	1								1	

Koios Associates – Industrial Park Model in Northern Haiti – HA-T1074 – SN2

#### 2. Economic Impacts

The economic and social impact of the project is expected to be highly positive. We expect the park to generate about 2,700 temporary construction jobs and nearly 37,000 permanent jobs in the garment and textile factories. The park is expected to reach full employment in 10 years. Of these permanent employees, a relatively high percentage will be expatriates at the outset, though over time this will decline. Over the long term, 90% of the work force is expected to be Haitian laborers; 5% Haitian supervisors and managers, and 5% expatriate technicians and managers. Given an average Haitian family size of seven, the 37,000 Haitian employees will provide support for more than 250,000 people.

Industrial projects typically produce substantial multiplier effects on both employment and income, and these multipliers in the textile, garment, and construction sectors are especially high. Our calculations use an average employment multiplier of 2.0, meaning that for every direct job created as a result of the project, another job is created elsewhere in the economy, mainly as a result of procurement by park tenants and spending by park employees. We have used a composite income multiplier of 2.35, meaning that for every dollar in salary received by employees in the park another \$1.35 will be generated as that money is spent and re-spent.

The employment multiplier means that the park will create direct and indirect employment of around 75,000, and that these employees will provide support for over 500,000 people.

Direct salaries paid to park employees, based on prevailing industry wage rates, will reach \$150 million per year, the vast bulk of it paid to Haitians. With the multiplier effect, employment in the park will provide over \$360 million in annual income for Haitians, equivalent to around 5% of GDP.

These employees will pay taxes. Apart from expatriate employees and Haitian management and supervisory staff, few of them will pay personal income tax, since the income threshold for complete tax exemption is HTG 60,000, roughly the annual salary for a garment worker. But the taxes paid by expatriates and by more highly-paid Haitians will be substantial, peaking at \$47 million a year and then declining to about \$35 million a year as the proportion of expatriates declines.

The expenditures by park employees at all income levels will attract VAT, even if a substantial proportion of their transactions occur within the informal economy. These expenditures may provide as much as \$11 million in annual VAT receipts to the Treasury. The net fiscal impact will therefore rise to over \$70 million once the capital expenditures have been completed.

The park is expected, therefore, to generate an economic rate of return (essentially the return on government's investment) of 30.65% and a net present value of \$803 million.

Concern has been expressed in many circles about the possible strains an industrial park could place on public services that are already stretched beyond capacity. Such effects could occur if the park does encourage migration to the north from other parts of the country, though our working assumption has been that most employees in the park will come from neighboring communities and urban areas. In-migration, to the extent that it occurs, will result from many factors, including government macroeconomic and social policies, of which the industrial park is only one small component. If the central government allocates an adequate portion of the incremental taxes raised as a direct result of the park, it will finance initiatives that will mitigate any negative effects and also contribute to wider social and economic benefits.

Other economic impacts include total income generated for employees of the project and their families. With an average family size of seven, the 36,800 people expected to be employed permanently in the park, together with the 2,700 people employed on a shorter-term basis in park construction, could provide support for as many as 275,000 people in the region. When the employment multiplier of 2.0 is applied, at peak employment the park will provide support for more than 500,000 people.

Longer-term positive economic effects will come from the manufacturers in the park itself. As they move into higher value-added production, they will raise the productivity and skills level of Haitian workers. Some portion of those productivity gains will go into higher worker salaries and higher personal income tax revenues. The park will attract substantial additional investment by the tenants as they set up production facilities. Based on the plans of some potential investors, these could amount to several hundred million dollars, nearly as much as the cost of the park itself. Haiti's export revenues will increase and its balance of trade improve.

#### 3. Social Impacts

Social impacts are much harder to quantify. Much will depend on social policies adopted by Government as part of its overall plan to develop the northern region, but the positive social effects of nearly 80,000 jobs, with attendant skills development, are clear. In the early chapters of this report we have repeatedly mentioned clustering effects, which are based on the development of forward and backward linkages with SMEs. SMEs of this kind in many countries tend to be established by former employees of garment factories, who decide to become entrepreneurs. This contributes to a dynamic employment picture: rather than people getting and keeping jobs for life with the large factories, some will leave to start their own businesses to compete and collaborate with their former employers and other companies in the area. In many countries the larger companies have even helped finance the creation of these new enterprises, and the same is possible in Haiti. These phenomena, economic and commercial in their motivation, but with important social effects, will contribute to the development of a sustainable industry anchored in the region, which will provide opportunities for employment, entrepreneurship, and skills development for a long time to come.

## VI. The Legal, Regulatory, and Institutional Environment

## A. Overview

Establishment of the right management and regulatory systems and structures for the proposed industrial park is essential. As a rule, management of the park should be separate from regulation; otherwise, conflicts of interest are certain to ensue. There are several ways this separation of regulation from operation can be achieved, but it is preferable, to the extent possible, to do so within the framework of existing legislation and institutions.

Haiti has several overlapping laws and decrees that govern the establishment, operation, and governance of free zones and industrial parks, and several overlapping institutions that administer and regulate them. The differences among the different zone and park regimes and incentive packages are unclear, and in many ways there seem to be few, if any, substantive differences. This lack of clarity has, arguably, prevented the development of more industrial parks and free zones and could, if it continues, prevent Haiti from achieving its full industrial and export potential, especially with respect to current preferential market access agreements for garments and selected other products.

Certain features of these legal instruments themselves may also impede rapid industrial development of the kind industrial parks and free zones are specifically intended to promote. The World Bank/IFC Investment Climate Advisory Service is currently helping the Government of Haiti (GoH) to develop new legislation and, potentially, new or substantially transformed institutions that would unify the disparate park and zone regimes into a new Special Economic Zones (SEZ) system. SEZs closely resemble Free Zones, but can offer greater flexibility to private developers, operators, and tenants to engage in a wide range of productive activities, some of which may be incompatible with a pure industrial park or FZ model. This may be of only secondary importance to the current initiative to build an industrial park in the north, but since many other public and private zones projects are in various stages of planning or development, there is a strong argument to create, in the medium term, a unified system of regulation, governance, and oversight that will apply to existing and future zones alike. Final adoption and implementation of this framework, however, is likely to take too long to apply to the industrial park project in its critical approval and inception stages, though oversight responsibility could be transferred to new structures once they have been put in place.

The assumption by the GoH and the IDB, and the instructions given to Koios Associates, specify a "state-owned IP management model" under which the park management will provide "a turn key lease option for industrial space that will allow private firms to mitigate risks." The model further assumes that the GoH will fund the basic infrastructure costs related to the industrial park (IP). Given the high perceived risk in Haiti, as well as many innate characteristics of the global garment industry discussed in Sections II and III, these assumptions make sense. Garment manufacturers themselves seek to reduce

their risk by minimizing their own capital expenditure, while private IP developers may find it difficult in the near term to find private investors willing to assume the risks of a long-term investment in a real estate project.

These considerations indicate a need to balance public and private risk, taking account of the probability that the balance will shift over time, as well as of potential government and donor budget constraints. Our recommendations in this section are, however, based largely on extensive discussions with potential investors in garment production facilities in the new IP, which have given strong indications as to their minimum infrastructure requirements, without which they are unlikely to lease space in the park. The results of these discussions are, of course, tempered with the Koios team's experience of similar developments in other countries and knowledge of what kinds of facilities manufacturers can obtain in these countries.

It was not possible during the limited time of the Koios engagement to undertake a full and expert review of all pertinent legislation, nor of the main governing institutions involved and their staff, structure, and procedures. Nevertheless, it is possible to assess the general effects of these laws and the effectiveness of these organizations in the context of the near-term planned development of the new industrial park.

## B. The Roles of the Public and Private Sectors

Though it has little in common with countries such as Afghanistan, Sierra Leone or Timor-Leste, Haiti is often classified with them as a "conflict affected country." Up to a certain point the designation makes sense. Haiti, having suffered a long period of political turmoil and economic decline and comparative isolation, followed by an enormous natural disaster, in some ways does resemble a country emerging from a war. It is important to remember that even before the earthquake, Haiti's economic crisis was considered severe. The physical damage and social dislocation caused by the earthquake have heightened Haiti's resemblance to countries starting to emerge from protracted armed conflict.

These points are important, because Haiti, like more conventional conflict-affected countries, is largely shut off from international capital markets and technically cannot borrow even from international donors. Haiti's sovereign debt is unrated, and in the present circumstances it is hard to imagine substantial inward flows of private foreign direct investment in projects such as industrial parks. Though there has bee significant private capital invested in infrastructure projects in Haiti, little, if any, has come from foreign sources. E-Power, for example, is an independent power producer (IPP), which has launched a project to build a 30 MW diesel power plant in Port au Prince with financing from IFC and FMO (the Netherlands' development finance organization) as well as from two Haitian banks. Sogener, the other main independent power producer, is backed by Jean Vorbe Group, a Haitian company that owns one of the country's largest construction companies. Recent research by Koios Associates has identified at least 10 private industrial park projects seeking capital, mainly from donors, since at present there is no sign that international private investors yet have an appetite for projects of this kind,

while domestic private capital is insufficient for their requirements. (The CODEVI Free Zone in Ouanaminthe, which is wholly funded by private capital, is a special case unlikely to be replicated elsewhere).

This, above almost any other consideration, is the reason for which the GoH intends to develop a public industrial park in the north and is also considering development of a second public park in the Port au Prince area. According to one member of the CTMO-HOPE Commission, Government "cannot wait" for private capital to be mobilized.

This is a common situation for countries in Haiti's position. In the absence of sufficient interest by private investors, the public sector – Government and donors – need to take the lead in developing and funding an IP project. At the same time, some private sector involvement is highly desirable even in the early stages of development, and private sector involvement should increase over time.

An unpublished guide to development of special economic zones in conflict-affected countries, prepared by the IFC, states that, "in the early stages of the post-conflict period, commercial risk will likely exceed the capacity of the private sector. In practice, this means the...government will directly fund **project design**, **construction** and early **operation** of the SEZ, often with donor support. This approach...also mitigates the risk of conflict of interest inherent in the government playing both regulatory and operational roles."<sup>21</sup>

Figure 15 illustrates the notion graphically. It is important to note that even in the early stages of development, private companies do most of the actual work, while government bodies play more of a coordinating role with respect to project development and oversight, as well as financing.

<sup>&</sup>lt;sup>21</sup> IFC 2009, SEZ Practitioners Guide (unpublished)




This phased approach can translate into a range of potential PPP models for development and operation, as illustrated in Figure 16.





Source: IFC

The development and operation of the northern industrial park should, therefore, begin towards the left side of the spectrum, though not necessarily with the "traditional" form of public sector development, under which a public agency would undertake project design, hire a private contractor to build the park, and then operate the park itself. Though agencies such as IEAT in Thailand initially adhered to this kind of model, it is questionable whether any public agency in Haiti has the in-house design and project management capacity to do this. Instead, some form of public ownership in which the functional responsibilities are contracted out to private entities – e.g., Design-Build-Operate and/or Build-Operate-Transfer – would allow the GoH greater flexibility to transition to a more active private sector role in a second or third phase of IP development via a concession arrangement, which might ultimately lead to partial privatization.

This model would allow the public sector to take the lead in the first development phase, when private capital is unavailable, but to encourage sharing of risk with private developers and operators in subsequent phases, once the concept has proven itself and the potential returns to private capital are more apparent.

# C. The Role of the Industrial Park Authority

The model described above would typically require a public agency, acting on behalf of the State, which would own the land, contract with private sector partners, regulate operations of the IP and activities within the IP, and facilitate the operations of the IP and its tenants. Such a body, even if it is wholly owned and governed by the public sector, should have the legal status of a corporation, permitting it to own and sell property, enter into contracts, and initiate and participate in legal proceedings within the judiciary system. The responsibilities of this entity would include:

- Draft terms of reference and scopes of work for private contractors, developers, operators, and other service providers;
- Select service providers in accordance with recognized international procurement standards;
- Draft and execute contracts;
- Establish and apply in accordance with applicable laws regulations and procedures for the operation of an industrial park, including:
- Approval of tenant applications
- Worker protection and safety
- Environmental protection
- Issuance of residence and work permits for expatriate staff
- Control of entry and exit of goods into and from the park in accordance with duty and tax privileges granted by law
- Monitoring compliance with conditions for award of fiscal incentives
- Mediate and arbitrate disputes between IP tenants and operators;
- Coordinate and mobilize public and private financing for IP development and expansion;
- Approve, in accordance with contract provisions, applications for rent or service charge increases.

The governance of this entity could be entirely from the public sector, or it could include private sector stakeholders. There are successful examples of both configurations. In some countries, in addition to an overall IP authority, a separate – and subordinate – authority may be created for each park. This is can be especially important in countries in which sub-national levels of government such as provincial or municipal authorities wield considerable power.

In Egypt, for example, municipal authorities and, to some extent, the governorate (similar to provincial) authorities have sweeping powers over land use and allocation, granting of building permits and certificates of occupancy. The Egyptian Government is adopting a new form of governance in which each "investment zone" will have its own governing council, under the overall supervision of the national authority for investment zones, on which the private operator is represented together with representatives of both national and local authorities, in order to secure the participation of all relevant governing bodies and help ensure that local solutions can be devised and implemented rapidly. Turkey has a similar governance system for its special economic zones program. In a program run and managed purely by Government, this kind of structure may be unnecessary, but as private sector participation in an IP project increases, this kind of stakeholder-based governance becomes more important.

#### Box 5. Governance of Egypt's Industrial Investment Zones

Having decided not to authorize creation of any new Free Zones, the Egyptian Government has created a new program of "Investment Zones," which resemble industrial parks except that they may accommodate a much wider range of economic activities, which could include tourism, education, health, and business services. The IZ program is under the authority of GAFI (the General Authority for Free Zones and Investment), which operates the existing Free Zones and also serves as the country's investment promotion and facilitation agency. Rather than exercising sole regulatory responsibility for the IZ program, GAFI acts as the coordinator and champion of IZs, without usurping the powers of other regulatory bodies. The IZ law states, "a committee at [GAFI] shall be formed to study applications for approval to establish a zone the membership thereof includes representatives of general agencies relevant to the main activities to be pursued in the zone, in addition to representatives of the Ministry of Finance and the Governorate where the zone is located." The law also requires the Committee to seek the approvals of the agencies relevant to activities to be undertaken in the zone. The law also requires GAFI to constitute a Board of Directors for each IZ, with membership including representatives of each of the agencies "relevant to the main activity or activities authorized to be practiced in the zone, the Governorate where the zone is located, the Ministry of Finance, and one or more representatives of the agencies authorized for development in the zone, in addition to the investors therein." The Board of Directors for each zone "shall be responsible for setting the general standards, regulations, and rules for investment in the zones, and for granting licenses in accordance with the provisions of the laws applicable in...Egypt and for approving establishment of projects."

The purpose of including these various entities in an IZ Board is to give them an interest in the success of the zone for which they are responsible, as well as for the IZ program as a whole. By joining in deliberations over matters for which they have primary responsibility under the laws of Egypt, these various bodies are likely to adopt a more collaborative approach, in contrast to the confrontation that has sometimes characterized their interactions.

The active cooperation of Customs authorities is a critical element of success in any IP regime that involves duty exemptions and similar privileges. There are examples from around the world of Free Zone and SEZ programs that have achieved only limited success, in large part due to obstruction by the Customs service. This has so far not occurred in Haiti, and by all accounts the working relationship with Customs at both SONAPI's PIM and the CODEVI Free Zone is successful. Adoption of some of Egypt's IZ regulatory mechanisms for IPs in Haiti could help ensure the success of the northern industrial park and any future park developments.

*Source:* Krakoff, C., "Investment Zones Development Strategy Report Prepared for The General Authority for Investment & Free Zones (GAFI)," International Finance Corporation, November 2009.

## D. The Legal Context

The principal laws that currently govern industrial parks and free zones, under which a new IP would be constituted, at least until and unless new legislation is enacted, are:

The Free Zone Law (Loi portant sur les Zones Franches) of August 2002;

**Industrial Park Law** (Loi du 19 juillet 1974 instituant sur le territoire de la République d'Haïti, à proximité des Ports et Aéroports, des zones cloturées dénommées Parcs Industriels, dotées de facilités propres à leur fonctionnement) with accompanying regulations instituted through Procès-Verbal #14 of 15 October 1974;

**Decree establishing SONAPI as a corporate entity** (Décret du 22 octobre 1981 créant un Organisme Autonome de droit public à caractère industriel et commercial dénommé Société Nationale des Parcs Industriels ŜONAPI);

Two other decrees from October 1969 creating an industrial park regime under the authority of the Société d'Equipement Nationale (transferred to SONAPI by the Decree of October 22, 1981);

**The Investment Law** (Loi portant sur le Code des Investissements, modifiant le Décret du 30 octobre 1989 relatif au Code des Investissements) of November 2002;

**The CFI Decree** (Décret portant la création du Centre De Facilitation des Investissements) of January 2006.

Establishment of the proposed new industrial park, especially in the context of a new legal and regulatory framework, would also have to refer to other important legislation, including the Tax Code, the Commercial Code, trade and customs legislation, environmental laws, land use and planning laws and ordinances, building codes, utilities and telecommunications laws, labor law, immigration law, and tourism laws. The preamble to the Law on Free Zones, for example, refers to more than 20 articles of the 1987 Constitution and to 26 other laws and decrees.

#### 1. The Law on Free Zones

The Law on Free Zones is a comprehensive law that addresses all of the key elements of a Free Zone program, largely in ways that conform to internationally accepted practice. The Free Zone Law has the great merit of being able to accommodate a wide range of industrial, commercial, service, logistics, tourism, educational, and health activities in ways similar to an SEZ. Other positive elements include designation of sales from the national customs territory into a free zone as exports zero-rated for VAT purposes.

Most articles in the law are clear regarding their intent. The Law, crucially, allows both private and mixed public-private zone development and ownership, and its definition of a

"mixed" zone includes "public investments managed by a private entity," <sup>22</sup> but does not allow zones to be operated or managed by the State. Private sector is thus assured, and should go a long way to preventing unequal treatment of private versus public facilities.

As in many countries a law must be passed to designate a free zone or SEZ, which can take months or even years. In view of the urgent need for Haiti to rebuild the country's productive capacity and to take advantage of the HELP Act, Presidential authority as given under Chapter V of the existing Law on Free Zones may be an acceptable option.

The Law on Free Zones specifies the role of the customs authorities – Administration Générale des Douanes (AGD) – but not of other government bodies. There is no mention of any kind of one-stop shop or other facilitation offered to Free Zone enterprises for company formation, licensing, tax registration, labor affairs, work and residence permits, and other required formalities. Often, such services are among the most valuable a Free Zone administration can provide, since investors can often be stuck for a long time in a complex governmental regulatory system they cannot easily navigate.

The Law on Free Zones requires much more customs control and inspection of activities within a Free Zone than is necessary. The law seems to require, or at least allow, the AGD to carry out detailed inspection and measurement of industrial processes and use and movement of raw materials and equipment within a zone to ensure that such goods are not used for purposes other than those authorized by an enterprise operating license. If a Free Zone is surrounded by a wall or fence, with a single point for entry and exit of goods under the control of a dedicated customs post (which the Law on Free Zones in any case requires) the possibility of diversion or leakage of materials, equipment, and finished products into the domestic customs territory is minimal. The small risks do not come close to justifying the cost and inconvenience of the more stringent and intrusive measures given in the current Law.

Article 61 of the Law on Free Zones grants zone operators the right and responsibility to provide essential services to zone tenants, either directly or by contracting with other local or international service providers. This is generally take to mean that an IPP could be developed in a Free Zone, which would be able to sell power directly to tenants rather than having to sell to EdH, which would itself then distribute electricity.<sup>23</sup> An IPP presumably would be granted the same fiscal incentives and customs exemptions as other zone tenants or operators.

<sup>&</sup>lt;sup>22</sup> "Les zones franches mixtes sont celles dont la création et la gestion participent d'une double initiative publique et privée : investissements en partenariat, investissements publics gérés par une entité privée habilité, etc.," Republic of Haiti, "Loi Portant sur les Zones Franches," July 24, 2002

<sup>&</sup>lt;sup>23</sup> "Les services vitaux, tels, eau, électricité, et télécommunication, sont fournis par le promoteur, soit directement, soit indirectement à travers des arrangements avec les fournisseurs locaux ou étrangers." Article 61, Loi Portant sur les Zones Franches, *op.cit*.

#### 2. Industrial Park Laws

The July 1974 Industrial Park Law is the principal legal instrument defining and governing industrial parks in Haiti. The subsequent October 1981 SONAPI Decree replaced the Société d'Equipement National (SEN), which was defined as an independent State Organization, with SONAPI, an autonomous public corporation with independent legal and financial status.

The law defines industrial parks as "fenced work zones endowed with the facilities necessary for their operation in the best conditions."<sup>24</sup>

SONAPI itself defines an industrial park as "a space planned with respect to the needs for industrial development and the needs expressed by potential investors. Its purpose it to provide investors with land containing all the elements necessary for the implantation and operation of industrial facilities; in particular, energy, water, sewerage, roads, telecommunications, and buildings in move-in condition, as well as a full package of support services."<sup>25</sup> This definition comes from a January 2010 SONAPI document on the strategy for development of industrial parks throughout Haiti, but it is not clear to what extent this definition has a firm legal basis.

The question is important. SONAPI's definition would appear to allow the creation of IPPs in an industrial park, which could provide electricity to the park and its tenants independently of EdH, but whether this definition could withstand a legal challenge by EdH is open to question. In practice, SONAPI's interpretation seems to prevail, and SONAPI itself has launched a project to develop a power plant within the PIM IP in Port au Prince, which will supply electricity directly to PIM tenants. According to SONAPI, the project is intended to help industrial tenants avoid the negative effects of the irregularity of EdH supply and significantly reduce their production costs, which are inflated by the need for daily use of their own generators."<sup>26</sup>

The 1974 Law most closely resembles an Export Processing Zone (EPZ) law. It defines an industrial park as a fenced zone close to a port or airport with facilities necessary for its proper operation. It restricts operation in industrial parks to "new industrial enterprises" that import raw materials unavailable in Haiti to produce goods with a domestic value added of at least 33% for import substitution or for export. The law provides full duty and tax exemptions on exports from industrial parks, provided all raw materials are imported. For those products that use materials sourced in Haiti, an

<sup>&</sup>lt;sup>24</sup> "Il est institué dans le pays et à proximité des Ports et Aéroports des zones de travail clôturées, dotées de facilités propres à leur fonctionnement dans les meilleures conditions, dénommées PARCS INDUSTRIELS," Article 1, Decree of 8 October 1969.

<sup>&</sup>lt;sup>25</sup> "Un espace planifié en fonction des besoins de développement industriel et des besoins exprimés par les investisseurs potentiels. Il consiste à mettre à la disposition des investisseurs des lots dotés de tous les équipements nécessaires pour l'installation et le fonctionnement des unités industrielles, en particulier: l'énergie, l'eau, l'assainissement, les voiries et les télécommunications, des bâtiments intelligents prêts à l'emploi, ainsi qu'un ensemble de services d'accompagnement," *Programme d'implantation d'espaces industriels dans différentes régions de la République d'Haïti,* SONAPI, January 2010.

<sup>&</sup>lt;sup>26</sup> "Etablissement d'une centrale électrique au PIM," <u>http://www.sonapi.ht/projets.html</u>

applicable export tax is assessed, though the export tax was subsequently abolished. This and other provisions of the Industrial Park Law illustrate the degree to which linkages between companies in the industrial parks and companies outside the Industrial Park are discouraged.

Neither the 1974 Law, nor its accompanying regulations, provides much detail on the mechanisms for setting up new Industrial Parks. The 1974 Law established SONAPI as an autonomous organization under the control of SEN and endowed it with wide-ranging powers to develop industrial parks and to set all conditions for admission and operation of companies setting up in the parks. These powers, however, are restricted to land that SEN has put at the disposal of SONAPI.

The 1981 decree establishing SONAPI as an independent public corporation transferred all land and other assets belonging to SEN to the new SONAPI, but gave scant indication how public land would thenceforth be transferred to SONAPI's control. SONAPI, however, does have the power to buy or lease land, so could buy the designated industrial park site from the GoH for a minimal consideration, or be allocated the land directly without charge. In any case, the 1981 decree states that SONAPI's "Conseil d'Administration" or Board of Directors, is granted "the most extensive powers, within the framework of existing laws and Government's economic policies, to undertake all measures likely to contribute to the establishment and development of industrial parks in Haiti." This clause could also be invoked in support of the right of IP operators to build or commission IPPs in their parks.

As is common in EPZ regimes, the Industrial Park Law stipulates rigorous control of the utilization and movement of goods and raw materials within the Park, though in practice, according to operators in the SONAPI industrial park, these conditions have been relaxed substantially.

## E. Institutional Framework

# 1. Conseil National des Zones Franches (CNZF) and Direction des Zones Franches (DZF)

The Law on Free Zones creates an inter-ministerial commission known as the Conseil National des Zones Franches (CNZF), endowed with responsibility for the establishment and regulation of free zones. It also creates a new section in the Ministry of Commerce and Industry, called the Direction des Zones Franches (DZF), which serves as the technical secretariat of the CNZF. The DFZ receives, analyzes, and recommends approval or rejection of Free Zone applications as its main function, but also has a vague investment facilitation mandate with regards to companies that wish to be based in a Free Zone. This mandate is phrased as to "participate in receiving potential investors and accompanying them in their various steps [of applying for necessary business registration, operating licenses, and additional approvals]," but it has no authority on its own to process any such documentation on behalf of investors. Subsequent to forming a

recommendation on Free Zone approvals, the DFZ is authorized to monitor, control, and report to the CNZF on the functioning of Free Zone projects once they are operational.

As a Department of the Ministry of Commerce and Industry, the DZF has no independent legal status and, hence, no ability to enter into contracts, retain fees and other revenues, manage and invest its own funds, or determine its own internal policies and procedures. It is run entirely as a part of the Haitian Civil Service, subject to normal government hiring and salary conditions, and with no direct private sector involvement.

International experience suggests that a different structure, comprised of an autonomous public company with independent legal status and governed by a Board of Directors, would be better. Civil service bureaucracies tend to have a difficult time adopting a commercial orientation to their approach and find attracting the kind of skilled staff needed for effective operations challenging. In addition, a corporatized entity can enter into contracts, own land, become fully or partly self-financing, and make its own decisions on use of resources, none of which a government department can do. Finally, an autonomous corporation, even if it is 100% state-owned, is less likely than a government department to become captive to politics and to make decisions based on personal and political criteria rather than economic and commercial ones.

## 2. SONAPI

SONAPI has many of the attributes described in the previous paragraph. Its status as an autonomous public corporation, with the ability to enter into contracts and to own, buy, and sell, property, would make it well suited to act as the executing agency for the new industrial park. The various laws pertaining to SONAPI and industrial parks specifically designate SONAPI as the entity responsible for development of industrial parks in Haiti, and also gives it the ability to

There are, however, questions as to SONAPI's capacity to undertake development of additional industrial parks, given that it has not developed any new industrial infrastructure within the past 20 years. SONAPI has limited staff and technical resources, and is likely to require outside technical assistance if it is to act as the agency responsible for the new park.

Even with appropriate technical assistance and other support, SONAPI itself may not have the ability to manage a complex new project on its own. The involvement of private companies in the development and management of the park is all but indispensable. A best-practice configuration would be for SONAPI to act as the contracting party on behalf of the State, soliciting, selecting, and overseeing the activities of private development and management contractors, under the regulatory oversight of the DZF and the CNZF.

#### 3. Industrial Park or Free Zone?

There are few substantive differences between the legal framework for Free Zones and that for Industrial Parks. Both regimes allow for a state-owned facility under private management. Both appear to allow the operation of independent power producers within parks or zones, which can provide electricity to tenants without the involvement of EdH (the Free Zone Law does so explicitly, while industrial park legislation seems to do so implicitly). Perhaps most critically, the Free Zones Law allows any industrial park that meets certain basic conditions to obtain Free Zone status.<sup>27</sup> These conditions are: 1) a clearly delimited and fenced area; 2) facilitation of Customs operation and control; 3) industrial activities oriented mainly towards export.

The choice, therefore, is largely one of institutional, rather than legal, arrangements. SONAPI, as a corporate body able to own property, enter into contracts, and manage its own finances (including, crucially, the ability to retain operating surpluses for its own use), has a status and structure far more appropriate than that of any other existing institution for the expansion and operation of an industrial park program in Haiti.

SONAPI may lack some of the capacity it will need to perform this function successfully. A program of training, capacity building, and organizational restructuring – most likely funded by donors is both necessary and feasible. In the near and medium term, SONAPI can also collaborate with the UTE – Unité Technique d'Exécution – in the Ministry of Economy and Finance (MEF). The UTE is the unit within the MEF responsible for project implementation, which is coordinating GoH involvement in infrastructure projects financed by donors, including the IDB. UTE is directly involved in helping SONAPI undertake its current expansion program, and has played a key role in drafting tender documents and in selecting and managing contractors. The IDB intends to increase its technical assistance to the UTE, placing two or three international experts in the unit to assist with projects of especial importance, including the northern industrial park.

This configuration appears far more workable, and scalable, than involving the DZF in the management and/or oversight of the park.

## 4. Separation of Regulation from Management

International best practice in many areas of infrastructure development and operation involves a high level of separation between the management and the supervision/regulation of an undertaking. In the course of the economic liberalization many countries have undertaken during the past several decades, this principle has

<sup>&</sup>lt;sup>27</sup> "Les parcs industriels, les entreprises qui s'y trouvent localisées et les entreprises franches disséminées à travers la République d'Haïti ont la possibilité d'obtenir le statut de zone franche moyennant la satisfaction des conditions suivantes :

<sup>-</sup> espace clairement délimité et entièrement clôturé ;

<sup>-</sup> facilitation du contrôle douanier ;

<sup>-</sup> activités tournées essentiellement vers l'exportation et la réexportation."

Article 73, Free Zones Law of 2002.

become firmly entrenched, while there are many cautionary examples of failures where it has not been observed. Private participation in operation of public utilities and services, including electricity, water, transport, telecommunications, and industrial parks has accentuated the need to remove state service providers from regulation of the sectors in which they participate. In the early days of liberalization it was common for incumbent state-owned telecommunications operators, for example, to regulate the entry of new operators into the market, often fixing conditions of entry, service requirements, and pricing. Naturally, liberalization under this framework was partial at best, and in most countries was soon abandoned in favor of a more neutral and independent system of regulation.

In the case of industrial parks, special economic zones, and free zones, many organizations that once developed and operated such facilities were transformed into regulatory and facilitation bodies as private enterprises came to play a dominant role. In Thailand, for example, the Industrial Estates Authority (IEAT) developed and continues to manage 12 industrial estates, while another 26 are privately owned and operated. It has been nearly 15 years, however, since IEAT itself developed an estate, so although it does retain operating responsibility for a number of zones its main function has shifted to the regulation and facilitation of private industrial estate development.

Similarly, the Philippine Economic Zones Authority (PEZA) developed and operates only six out of nearly 200 economic zones that it supervises and regulates.

SONAPI is likely to continue to operate the PIM for some time to come, though its management is exploring options for converting it to some form of joint public-private ownership by allowing tenants to acquire shares in a new operating company. SONAPI has expressed its intention for any future industrial parks in which it becomes involved to be privately managed, so the organization's transition from an operating to a facilitating and regulatory function is nearly complete.

SONAPI, in collaboration with UTE, is therefore well suited to act as Government's agent in the development of the northern industrial park and any similar developments that take place in future. Its complete functions and responsibilities in the context of overall industrial park development may need to be defined further, and may take account of the possible introduction of new Special Economic Zone legislation being developed by the IFC. In the context of the northern industrial park, however, its main functions should be:

- Establishing standards for park development and operation;
- Development of tender documents, selection of park developers / operators, and monitoring of works (in concert with UTE);
- Coordinating park support functions, especially with respect to essential government services, of which Customs is the most important, but which also includes labor regulation, adherence to building codes, work and residence permits, fire and safety protection, environmental protection, etc. SONAPI would not perform these regulatory functions itself, but would facilitate and coordinate

the operations of the responsible national and sub-national authorities (including local or Département administrations);

- Reporting to relevant national government bodies on performance of park operators and tenants (including collection of industrial statistics from park tenants);
- Applying any sanctions or penalties on operators or tenants in accordance with existing law.

Contracting mechanisms described above, starting with relatively simple forms of management contracting but moving in the direction of concessions or other kinds of more equal partnership and sharing of risks and rewards, should be adopted. There are numerous model RFPs and contracts that can be adapted to Haiti's specific economic, social, and legal context in the course of project implementation. Some of these options are discussed further in Chapter VII.

#### 5. Investment Incentives

Under the 2002 amendments to the Investment Code, almost all industrial, service, artisanal, agricultural, and export-oriented enterprises in any location are eligible to receive a 15-year exemption from corporate income taxes, followed by a progressive phase in over five years until, from year 21 onwards, income taxes are assessed on all corporate profits. Almost all companies qualify for a complete exemption from duties and taxes on imported equipment for the life of the project, while export-oriented enterprises are also exempted from duties and taxes on imported raw materials and packaging, as well as from payroll taxes and the 10% turnover tax.

Substantial research indicates that fiscal investment incentives in the form of tax holidays are at most a marginal factor in investment decisions. This may suggest that Haiti's incentive regime could be considered overly generous, but given the administrative and infrastructure difficulties and costs investors face (especially relative to the comparatively easier, lower-cost, and equally generous set of investment incentives available in the Dominican Republic), revision of the incentives regime is not recommended in the short-to medium-term.

# VII. Project Implementation

Chapter VI of this report has outlined some of the basic principles for public sector development of IPs and for the rapid transition from public to private sector leadership of project development and operation. It also identified a potential management and regulatory structure, based on lessons from international practices, and justified the selection of that structure in both theoretical and practical terms.

This chapter seeks to translate a set of guidelines and recommendations into a set of concrete actions, which can constitute a road map and action plan, which Government and its development partners can use to develop and open a functioning industrial park in northern Haiti within 24 months.

# A. Project Development and Operation

#### 1. Contracting

The previous chapter outlines ways in which the project can be structured so as to maximize private sector participation and allow a relatively seamless transition from a development and operation model dominated by public institutions to one in which private companies play a leading role. Chapter VI also makes the case for development and management of the park to be contracted to a private company or companies.

The simplest and most effective method of contracting with private developers and operators in Phase 1 is to solicit proposals for a design-build contract, and for a management contract to operate the park, but to allow the firm selected for the design-build phase to submit a proposal for the operating phase as well. There is no inherent conflict of interest, especially if the two procurements are conducted separately.

A design-build contract has several advantages over "traditional" contracting, in which the design and the build stages are contracted separately (or, as in many cases, the design is performed by the client). In the traditional model, all design elements are established in advance, so selection of the building contractor is based solely on price. This is appropriate for construction project where technical specifications can be established precisely in advance, but it can limit the possibilities for innovation.

Traditional contracting tends to require more direct involvement by the client, who acts in some sense as a "maître d'oeuvre" or project manager, as well as the "maître d'ouvrage," or project owner/client. This would to stretch the capacity of existing institutions in Haiti, especially since neither SONAPI nor UTE has the capacity to carry out detailed design itself, thus necessitating a separate design contract. In that configuration, the RFP for construction could not be issued until the design work is complete, so the entire process could take considerably longer. Given the pressure to complete the project as quickly as possible, the faster approach of a design-build contract is preferable.

As Chapter VII makes clear, the park will also need to be managed by a private operator. Some of the parties likely to bid for the design-build contract are likely to have an interest in operating the park as well. Numerous groups, including Economic Zones World, the international arm of the Jebel Ali Free Zone Authority (JAFZA) in Dubai; the Ras al Khaima Investment Authority in the UAE; Jurong International of Singapore; and, Tianjin Economic Development Area of China are industrial park and economic zone developers and operators in their home countries, which have set up international arms to build and operate industrial parks in other countries. Other large groups, including Korean firms Hyundai Corporation, Korea Land Corporation (a South Korean government-owned firm), and Daewoo Engineering and Construction, have built and operated industrial parks outside Korea. Given the strong interest Korean textile and garment manufacturers have expressed in the northern industrial park, it is likely that some of these groups may be interested in bidding for both the design-build and the operating contracts.

One option may be to issue a single solicitation for both the design-build and the operating components, and allow bidders to submit proposals for either or both.

A two-step procurement process, comprising pre-qualification followed by submission of technical and cost proposals in accordance with established IDB practices, will be essential.

There are numerous model RFPs and contracts for arrangements of this kind, but they are useful as guidelines only; each RFP must reflect actual investment and operating conditions in Haiti.

It may be premature to discuss precise contracting options for Phase 2 development, in which some form of public-private partnership is encouraged. Much will depend on the success of Phase 1, and the extent to which the first two or three years of the park's operation, and the overall evolution of Haiti's macroeconomic situation, will have increased private investors' propensity to share the risk with the public sector. As discussed in Chapter VI, there is a wide spectrum or continuum of potential configurations. The important things to stress here are:

- There are no legal impediments to, and there is considerable precedent for, PPPs in Haiti;
- Transition from a management contract to some form of PPP presents few operational difficulties, provided there is proper oversight and regulation and an effective mechanism for resolving disputes (which may need to be developed and/or reinforced before transition to a PPP occurs).

## 2. Regulation, Oversight and Coordination

Though the design, construction and management will be carried out by private companies – initially as contractors and, eventually, as partners – the role of state institutions will remain critical throughout the life of the project. As indicated in Chapter

VI, SONAPI should become the regulator, with the responsibilities outlined in Chapter VI, Section C. The existing laws pertaining to industrial parks in Haiti, and to SONAPI in particular, already prescribe such a role for SONAPI, indicating that no substantive changes to existing law are required for it to assume these responsibilities. A detailed legal review of SONAPI's charter and other legal texts relative to investment, industrial development, and industrial parks, should be conducted, however, to avoid any potential conflicts between SONAPI and other public authorities. SONAPI will also need assistance in developing new IP regulations and operating procedures, and in developing the capacity to fulfill its expanded functions.

## **B. Project Financing**

The financial analysis presented in Chapter V sought to evaluate the financial viability of the entire project: a 150-hectare industrial park, developed in two phases of 75 hectares over six years, including both on-site and off-site infrastructure (including an 18 MW power plant and improvements to the Cap Haïtien port) and factory buildings on the entire site (120 ha. of the 150 total, the rest reserved for common areas, power plant, water treatment, and administrative buildings).

The total cost of this development is estimated at about \$279 million, which is far more than the IDB and the Haitian Government, even with the participation of other donors, can underwrite. Koios Associates has therefore explored alternate financing scenarios, which would reduce the initial cost to the GoH and its donor partners, while leaving greater scope for future private investment in Phase 2 and beyond. By that time the initial development should have proven itself successful, Haiti's overall economic and political situation will have improved, and private investors and developers will have more interest in sharing the risks and rewards of future development phases.

We explore three alternate financing scenarios here, which represent some of the likeliest among many potential project development and financing structures. The first alternate scenario assumes that the GoH and IDB, potentially with additional donor funding sources, build out the first phase of 75 ha, including on-site infrastructure and factory buildings. The power plant, though a space for it is reserved in the park plan, would be financed separately – a reasonable assumption in view of U.S. Government statements that it is prepared to fund it – so its estimated capital cost of \$18 million is excluded from the financial projections. This scenario would pay back the initial capital investment of \$129.7 million in 17 years and generate a 20-year IRR of 2.00% and an NPV of \$4.856 at a break-even factory rental of \$3.40 per sq. ft. per year, or \$36.57 per sq.m.

Scenario 2 assumes that the GoH and IDB and other public/donor funding sources will develop all on-site infrastructure for both phases of development, but will construct buildings only on the 75 hectares in Phase 1, leaving Phase 2 building construction to be funded by IP tenants or by other private investors and developers. This would raise the total project cost (exclusive of the power plant and port improvements) to \$146 million, and would increase the payback period to 18 years. The 20-year IRR would be 2.00% and

the NPV \$771 at a breakeven building rental of  $3.19 \text{ per m}^2 \text{ per month}$ , and with a rental of serviced land to the Phase 2 developer of  $2.00 \text{ per m}^2 \text{ per month}$  (comparable to existing rates for serviced land in Haiti).

Neither of these scenarios produces a rate of return capable of attracting private investors. Even if rents for factory sheds were to rise to something approaching \$3.50 to \$4.00 per  $m^2$  per month, the returns would be far below private investors' threshold rates – on the order of 5.0% to 7.0%. Both require financing at concessional rates or pure grant funding to just to break even.

Scenario 3 shows the anticipated results for a private developer, assuming that public funds finance the development of Phase 1 infrastructure and buildings, as well as the power plant and wastewater treatment facility. This scenario would then involve the developer leasing unserviced land from the owner (the GoH), installing on-site infrastructure (roads, electrical and water connections, etc.) and constructing factory buildings. Assuming 75% debt and 25% equity financing, and a borrowing rate of 15.00%, this scenario generates an IRR of 34.37% and an NPV of \$16.18 million for the private developer, with a payback period of 7 years, assuming a factory rental rate of \$3.50 per square foot, or \$37.66 per square meter. At a higher rate, such as the \$3.85 per sq. ft. in the base case, the IRR could reach 50% and the NPV more than \$24 million.

The analysis of these different scenarios suggests the appropriate model of government and private financing, under which public and donor funds finance Phase 1 development, including the power plant, the wastewater treatment facility, and all off-site infrastructure, while all subsequent development of on-site infrastructure and buildings is funded by private sources.

In the initial stages, with a high perception of risk and high initial capital costs owing to the lack of essential infrastructure such as power generation, public financing at very low or zero interest rates is the only answer if the project is to proceed. But, assuming the project proves itself successful in Phase 1, and if Haiti's political and economic performance over the next three years inspires confidence, private investors can undertake subsequent development phases profitably. These investors will certainly demand a substantial risk premium for assuming Haitian risk - we have assumed a 15% financing cost, but the project could be viable at rates as high as 18% - but these premiums should fall as Haiti's economy improves and its political stability inspires greater confidence, and as industrial park tenants produce substantial and visible financial and economic benefits.

#### Table 23. Alternate Financing Scenario 1

Assumptions: Public/donor financing of Phase 1, 75 ha. Power plant financed as separate project, not included in projections. Port expansions also excluded. Grant (0%) financing.

Results: Year 17 payback/break-even; 20-year IRR 2.00%, 20-year NPV \$4,856 (annual factory rent per sq. ft. = \$3.40)

					Haiti Northe	rn Industrial Par	k					
					Financial Project	ctions and Calcu	lations					
					Alternate	Financing Scena	ario 1					
	Year	1	2	3	4	5	6	7	8	9	10	11
Capital Expenditure		\$ (43,225,000)	\$ (43,225,000)	\$ (43,225,000)								
Rental Income		\$ 5,119,464	\$ 10,238,928	\$ 15,358,392	\$ 15,358,392	\$ 15,358,392	\$ 15,358,392	\$ 15,358,392	\$ 15,358,392	\$ 15,358,392	\$ 15,358,392	\$ 15,358,392
O & M Cost		\$ 2,161,250	\$ 4,322,500	\$ 6,483,750	\$ 6,483,750	\$ 6,483,750	\$ 6,483,750	\$ 6,483,750	\$ 6,483,750	\$ 6,483,750	\$ 6,483,750	\$ 6,483,750
Operating profit/loss		\$ 2,958,214	\$ 5,916,428	\$ 8,874,642	\$ 8,874,642	\$ 8,874,642	\$ 8,874,642	\$ 8,874,642	\$ 8,874,642	\$ 8,874,642	\$ 8,874,642	\$ 8,874,642
Administration Cost		\$ 255,973	\$ 511,946	\$ 767,920	\$ 767,920	\$ 767,920	\$ 767,920	\$ 767,920	\$ 767,920	\$ 767,920	\$ 767,920	\$ 767,920
Interest		\$-	\$ -	\$ -	\$-	\$-	\$ -	\$ -	\$ -	\$ -	\$-	\$ -
Depreciation	5%	2,161,250	4,322,500	6,483,750	6,483,750	6,483,750	6,483,750	6,483,750	6,483,750	6,483,750	6,483,750	\$ 4,322,500
Pre-Tax profit/loss		<b>*</b> \$ 540,991	<b>*</b> \$ 1,081,982	\$ 1,622,972	\$ 1,622,972	\$ 1,622,972	\$ 1,622,972	\$ 1,622,972	\$ 1,622,972	\$ 1,622,972	\$ 1,622,972	\$ 3,784,222
Corporate Income Tax	30%	ş -	\$-	\$-	ş -	\$-	\$ -	\$-	\$ -	\$-	\$-	\$ -
EBITDA		\$ 2,702,241	\$ 5,404,482	\$ 8,106,722	\$ 8,106,722	\$ 8,106,722	\$ 8,106,722	\$ 8,106,722	\$ 8,106,722	\$ 8,106,722	\$ 8,106,722	\$ 8,106,722
Net Income		\$ 540,991	\$ 1,081,982	\$ 1,622,972	\$ 1,622,972	\$ 1,622,972	\$ 1,622,972	\$ 1,622,972	\$ 1,622,972	\$ 1,622,972	\$ 1,622,972	\$ 3,784,222
Free Cash Flow		\$ (40,522,759)	\$ (37,820,518)	\$ (35,118,278)	\$ 8,106,722	\$ 8,106,722	\$ 8,106,722	\$ 8,106,722	\$ 8,106,722	\$ 8,106,722	\$ 8,106,722	\$ 8,106,722
Cumulative Net Returns		\$ (40,522,759)	\$ (78,343,278)	\$ (113,461,555)	\$ (105,354,833)	\$ (97,248,110)	\$ (89,141,388)	\$ (81,034,666)	\$ (72,927,943)	\$(64,821,221)	\$ (56,714,498)	\$(48,607,776)
Payback Period	Year	17										
20-year IRR =	2.00%											
20-year NPV =	\$4,856											

**Table 24. Alternate Financing Scenario 2**: Assumptions: Public/donor grant financing of infrastructure and buildings for Phase 1, 75 ha., and of infrastructure for Phase 2. Power plant is excluded. Phase 2 serviced land rented to developer at \$2 per m<sup>2</sup> per year. Rental for Phase 1 buildings reduced to \$3.19 per m<sup>2</sup> per month.

Haiti Northern Industrial Park **Financial Projections and Calculations** Alternate Financing Scenario 2 Year 2 3 4 5 6 8 9 10 11 12 1 7 **Capital Expenditure** \$ (48,650,000) \$ (48,650,000) \$ (48,650,000) **Rental Income** \$ 5,353,824 \$ 10,707,648 \$ 16,061,472 \$ 16,561,472 \$ 17,061,472 \$ 17,56 O & M Cost \$ 2,432,500 \$ 4,865,000 \$ 7,297,500 \$ 7,29 Operating profit/loss \$ 2,921,324 \$ 5,842,648 \$ 8,763,972 \$ 9,263,972 \$ 9,763,972 \$ 10,263,9 Administration Cost \$ 267.691 \$ 535.382 \$ 803.074 \$ 828.074 \$ 853.074 \$ 878.074 \$ 878.074 \$ 878.074 \$ 878.074 \$ 878.074 \$ 878.074 \$ 878.074 Interest \$ \$ \$ \$ \$ \$ S . \$ ---. -. \$ . . \$ . s . ŝ 7.297.500 7.297.500 7.297.500 7.297.500 7.297.500 7,297,500 \$ 4,865,000 \$ 2,432,500 Depreciation 5% 2.432.500 4.865.000 7.297.500 7.297.500 Pre-Tax profit/loss rs -221,133 \$ 442,266 \$ 663.398 \$ 1.138.398 \$ 1.613.398 \$ 2.088.398 \$ 2.088.398 \$ 2.088.398 \$ 2.088.398 \$ 2.088.398 \$ 2.088.398 \$ 4.520.898 \$ 4.520.898 \$ 6.953.398 **Corporate Income Tax** 30% \$ \$ . \$ . Ŝ ŝ -Ŝ . Ŝ . \$ . Ŝ . Ŝ ŝ . Ŝ EBITDA \$ 2,653,633 \$ 5,307,266 \$ 7,960,898 \$ 8,435,898 \$ 8,910,898 \$ 9,385,898 \$ 9,38 Net Income 663,398 \$ 1,138,398 \$ 1,613,398 \$ 2,088,398 \$ 2.088.398 \$ 2.088.398 \$ 2.088.398 \$ 2.088.398 \$ 4.520.898 \$ 6.953.398 \$ 221.133 \$ 442.266 \$ Free Cash Flow \$ (45,996,367) \$ (43,342,734) \$ (40,689,102) \$ 8,435,898 \$ 8,910,898 \$ 9,385,9 \$ (45,996,367) \$ (89,339,102) \$ (130,028,203) \$ (121,592,305) \$ (112,681,406) \$ (103,295,508) \$ (93,909,610) \$ (84,523,711) \$ (75,137,813) \$ (65,751,914) \$ (56,366,016) \$ (46,980,118) \$ (103,295,508) \$ (93,909,610) \$ (84,523,711) \$ (75,137,813) \$ (65,751,914) \$ (56,366,016) \$ (46,980,118) \$ (103,295,508) \$ (93,909,610) \$ (84,523,711) \$ (75,137,813) \$ (65,751,914) \$ (56,366,016) \$ (46,980,118) \$ (103,295,508) \$ (93,909,610) \$ (103,295,508) \$ ( **Cumulative Net Returns** Payback Period Year 18 20-year IRR = 2.00% 20-year NPV = \$771

Results: Year 18 payback/break-even; 20-year IRR 2.00%, 20-year NPV \$771

Koios Associates – Industrial Park Model in Northern Haiti – HA-T1074 – SN2

**Table 25. Alternate Financing Scenario 3 - Public Financing of Phase 1; Private Financing of Phase 2 Infrastructure and Buildings** Assumptions: Public/donor financing of infrastructure and buildings for Phase 1, 75 ha. and for power plant, wastewater treatment plant, and offsite infrastructure. In phase 2, incremental on-site infrastructure development and building construction are financed by private sources. Unserviced land in Phase 2 leased to developer at \$0.25 per m<sup>2</sup> per year. 5-year project financing at 15.00%, 75% debt, 25% equity. Results: NPV at 15.0% = \$16.18 million, IRR = 34.37%, Payback = 7 years (at \$3.50 per sq.ft. per year factory rental)

						Haiti Northern Industrial Park						
						Private Sector Financing Phase 2 Infrastructure and			Buildings			
		Year	1	2	3	4	5	6	7	8	9	10
CAPITAL COST												
Infrastructure on-site			\$ (4,761,391)	\$ (4,761,391)	\$ (4,761,391)							
Buildings			\$(37,660,000)	\$(37,660,000)	\$(37,660,000)							
Capital Cost TOTAL			\$(42,421,391)	\$(42,421,391)	\$(42,421,391)							
Capital cost per sq. m site						1						
Capital cost per sq. m leasable space	ce		\$ 303	\$ 303	\$ 303							
Operating cost percentage of capex		5.00%	\$ 2,121,070	\$ 4.242.139	\$ 6.363.209	\$ 6.363,209	\$ 6,363,209	\$ 6.363.209	\$ 6.363.209	\$ 6.363.209	\$ 6,363,209	\$ 6.363,209
Land rental per sq. m. per year		\$ 0.25	\$ 187,500	\$ 187,500	\$ 187,500	\$ 187,500	\$ 187,500	\$ 187,500	\$ 187,500	\$ 187,500	\$ 187,500	\$ 187,500
Rental Income per sg. m. per vr.		\$ 37.66	\$ 5,272,400	\$ 10,544,800	\$ 15,817,200	\$ 15,817,200	\$ 15,817,200	\$ 15,817,200	\$ 15,817,200	\$ 15,817,200	\$ 15,817,200	\$ 15,817,200
\$3.50	ner sa ft	• • • • • • • •	• 0,212,400	• 10,011,000	• 10,017,200	• 10,011,200	• 10,011,200	• 10,011,200	• 10,017,200	<b>v</b> 10,011,200	• 10,011,200	+ 10,017,200
Operating profit	per squa		\$ 2,963,830	\$ 6,115,161	\$ 9,266,491	\$ 9,266,491	\$ 9,266,491	\$ 9,266,491	\$ 9,266,491	\$ 9,266,491	\$ 9,266,491	\$ 9,266,491
Administrative Cost		5.00%	\$ 263,620	\$ 527,240	\$ 790,860	\$ 790,860	\$ 790,860	\$ 790,860	\$ 790,860	\$ 790,860	\$ 790,860	\$ 790,860
ERITDA			\$ 2700.210	\$ 5 597 021	\$ 9.475.621	\$ 9,475,621	\$ 9,475,621	\$ 9.475.624	\$ 9.475.621	\$ \$ 475.624	\$ \$ 475.621	\$ 9.475.631
Taxes			\$ 2,700,210	\$ 3,307,321	\$ 0,473,031	\$ 0,470,001	\$ 0,475,051	\$ 0,473,031	\$ 0,475,051	\$ 0,473,031	\$ 0,473,031	\$ 0,470,001
Depreciation		5.00%	\$ 2 121 070	\$ 4 242 139	\$ 6363 209	\$ 6 363 209	\$ 6363 209	\$ 6363209	\$ 6363 209	\$ 6 363 209	\$ 6363 209	\$ 6363209
Interest		15.00%	\$ 4,772,406	\$ 8,836,991	\$ 12,087,580	\$ 9,629,668	\$ 6,803,068	\$ 3,552,480	\$ 1,237,985	\$ -	\$ -	\$ -
Net Income			\$ (4,193,266)	\$ (7,491,209)	\$ (9,975,157)	\$ (7,517,245)	\$ (4,690,646)	\$ (1,440,057)	\$ 874,437	\$ 2,112,423	\$ 2,112,423	\$ 2,112,423
Add back depreciation			\$ 2,121,070	\$ 4,242,139	\$ 6,363,209	\$ 6,363,209	\$ 6,363,209	\$ 6,363,209	\$ 6,363,209	\$ 6,363,209	\$ 6,363,209	\$ 6,363,209
Net free cash flow			\$ (2,072,196)	\$ (3,249,070)	\$ (3,611,948)	\$ (1,154,036)	\$ 1,672,563	\$ 4,923,152	\$ 7,237,646	\$ 8,475,631	\$ 8,475,631	\$ 8,475,631
Cumulative cash flow			\$ (2,072,196)	\$ (5,321,266)	\$ (8,933,214)	\$(10,087,251)	\$ (8,414,688)	\$ (3,491,536)	\$ 3,746,110	\$ 12,221,741	\$ 20,697,373	\$ 29,173,004
Payback Period		Year	7									
IRR =	34.37%											
NPV =	\$16,177,063											

The recommended approach to financing the development of the northern industrial park is a combination of Scenarios 1 and 3, as shown in the above financial models. In Phase 1, the GoH and its donor partners would finance the development of all on-site and offsite infrastructure for that phase, including the wastewater treatment facility and the power plant. In Phase 2, private developers, having mobilized their own capital, would extend the on-site infrastructure such as roads, street lighting, electricity distribution, and water and sewerage networks, and construct factory buildings for lease to tenants. The private developer would pay a nominal lease of 2 per m<sup>2</sup> per annum to rent the unserviced land from the State. At a 15% cost of capital and 75% debt financing, this would generate an attractive return for a private developer and investor, and the project could still be viable at interest rates of up to as much as 18%. It is, however, impossible to predict the risk premium investors will require for financing construction in Haiti in three to four years' time. If the future risk premium results in rates at or above this level, some form of government-backed guarantees may be required to bring rates to levels that can increase the viability of the project. Sources could include Exim Bank and OPIC for U.S. investors, and other national or multilateral sources of commercial and/or political risk insurance and guarantees.

Construction and operation of the power plant could be contracted separately or bundled into the Phase 1 on-site development; the decision will depend very much on which company is ultimately contracted to develop the park. Hyundai Corporation, for example, cited as a potential park developer, is also a world leader in power plant construction and has been contracted to build the E-Power 30 MW power plant in Port au Prince. Other potential developers could themselves subcontract to specialized power plant constructors and operators. The most appropriate and probable options are likely to emerge in preliminary discussions with potential IP developers and operators, and could be incorporated in prequalification and tender documents.

## C. Implementation Plan and Schedule

Table 28 shows the different tasks required for implementation of the northern IP project, together with indications of expected duration/completion dates, estimated costs, and responsibility. International experience shows that, without well-defined allocation of responsibility for different tasks and actions and a system of accountability, a strategy can rarely be implemented successfully. The GoH should therefore designate a Ministry to take primary responsibility for implementation of the program. The chosen Ministry should, in turn, create an inter-governmental working group, reporting to and/or chaired by the Minister, to direct implementation. This working group should comprise representatives of all relevant Ministries and agencies, including the Ministries of Finance, Commerce, Labor, Environment, and Public Works, as well as the Direction Générale des Doaunes, the Direction Générale des Impôts, SONAPI. It could also include private sector representation (ADIH, for example), and representatives of local authorities in the area of the park (arrondissements and communes).

Activity	Expected Start	Expected	Responsibility	
Adding	Date	Completion Date		
Final Site Selection	01/07/2010	14/10/2010	Ministry of Finance	
Establish working	15/10/2010	31/10/2010	Primature/MOF	
group/steering committee				
Issue Decree creating the	15/10/2010	30/11/2010	GoH/Présidence	
park				
Environmental and Social	15/10/2010	15/01/2011	IDB	
Impact Assessment				
Preparation/issuance of	01/12/2010	30/01/2011	IDB/UTE	
Solicitation for Prequalification				
of Developers & Operators				
Pre-selection of Developers &	15/02/2011	28/02/2011	IDB/UTE	
Operators				
Preparation/issuance of RFP	15/01/2011	28/02/2011	IDB/UTE	
for Development & Operating				
Contract(s)				
Evaluation of Bids & Contract	15/04/2011	30/04/2011	IDB/UTE	
Award(s)				
Develop Financing Plan and	15/10/2010	30/04/2011	IDB/Ministry of	
	04/04/0044	04/05/0044	Finance	
Solicitation & Selection of IP	01/04/2011	31/05/2011	IDB/Steering	
Marketing Coordinator	04/05/0044		Committee	
Preparation & Implementation	31/05/2011	ongoing	IDB	
of IP Marketing Plan	04/05/0044	04/07/0044		
Develop Capacity Building &	01/05/2011	31/07/2011	IDB/SONAPI	
SONADI				
Droft SONARI Operating	01/05/2011	21/07/2011	IDB/SONA DI/Stooring	
Procedures Manual	01/05/2011	31/07/2011	IDB/SONAFI/Steering	
Create and activate Northern	01/08/2011	31/10/2011		
IP Coordination Committee	01/00/2011	51/10/2011	Committee	
Undertake Can Haïtien port	01/01/2011	31/08/2011	Steering Committee	
improvements	01/01/2011	01/00/2011	SONAPL donors	
IP and Power Plant	01/05/2011	31/03/2013	UTE SONAPI	
Construction	01/00/2011	01/00/2010	Contractors	
Park Soft Opening		01/03/2012		
Official Park Opening		01/06/2012		

Table 26. Implementation Plan and Schedule for Northern IP Development