

NEW IMPLEMENTATION CHALLENGES – A FLEXIBLE SPECIALIZATION PARADIGM

Auliana Poon

I. INTRODUCTION

This paper briefly analyzes the development of the Caribbean economy through the 'Long Wave' perspective. It argues that the first three waves of development bypassed the Caribbean; the fourth wave marginally involved the Caribbean through import substitution and the exploitation of its natural resources; and that the Caribbean cannot afford to miss the fifth wave. A strategy of *flexible* specialization is proposed – a strategy that promises to maximize involvement of the Caribbean in the Fifth Wave.

The essence of flexible specialization is being narrowly specialized and simultaneously having the flexibility to move with the market as demand changes. The strategy of flexible specialization is by nature export oriented – although not exclusively so – and implies an environment of open competition. It argues for the full and complete opening of the sector or segment in question.

Key to the successful implementation of a strategy of flexible specialization are: the selection of focus sectors/niches for development; and the development of the eight key sector-related capabilities:

- education and training;
- management;
- design;
- production ;
- marketing ;
- networking ;
- regulatory environment;
- research and development; and
- supporting institutions.

Also critically important are the development of flexible production capabilities to respond to changing market conditions; and networking locally, regionally and internationally to provide inter- and intra-firm

dynamics and to source materials, information and market intelligence data; and continuous innovations to always stay ahead of the game.

Old Strategies of Development are Obsolete

Import Substitution Industrialization (ISI) and even Export Promotion Industrialization strategies of development are obsolete. ISI has not developed the level of industry, employment, investment and entrepreneurship as promised: many infant industries have simply not grown up; many have gone out of business; many firms born in this era have neither the will nor the capacity to penetrate export markets; and local consumers (the ones who ultimately pay) have generally been loaded with over-priced goods and poor quality.

With its lack of focus and direction, the attempt at export oriented manufacturing has also not enjoyed the levels of success that one might have expected. Many wrongly assumed that one simply had to shift current production into export markets, without regard for what the export markets wanted; what they were willing to pay; where the competition came from; and what was generally needed to compete. Successful export firms tended to be few and far between, the product of extraordinary talent and entrepreneurship and generally not on the level or scope that would lead to any major development of the local economy. In addition, successful exporters found themselves very alone, with the institutions, government policies and training institutions, not in support of them. There has generally been a lack of focus or specialization with respect to the export thrust as well as a general lack of capacity and flexibility to move with the market.

This paper argues for a new approach to development - an approach based on the principles of flexible specialization. The paper will examine the role of the Caribbean in world development, taking a 'long wave' perspective; we will examine the key implications of the Fifth Wave - Information and Communication Technology - for the Caribbean and argue that the Caribbean needs to take a leadership role in this Fifth Wave of development.

The strategy of flexible specialization is elaborated using two examples: one from the manufacturing sector (garments) and one from the services sector (environment).

II. "LONG WAVE" APPROACH TO DEVELOPMENT

The 'long wave' approach is an important tool in analyzing and understanding the development of the world economy as well as the potential role that the Caribbean can play.

This analysis will show that the first three waves of development bypassed the Caribbean; the fourth wave marginally involved the Caribbean through import substitution strategies, and the exploitation of its natural resources; and that the Caribbean cannot afford to miss the fifth wave.

Five waves of development

World development is characterized by five distinct waves of development, where certain industries, countries and key materials predominated. Through these five waves, the world has seen the centers of influence move from Britain, Germany and the USA, to Japan today. The progression of these five waves – their time frames, description, main carrier branches and leading countries, is traced in Table 1 overleaf.

Key to the movement of the world economy through its five successive waves of development is the existence of a particular input or set of inputs which are low cost and available in almost unlimited supplies over long periods and which, moreover, have clear potential for use in many products and process throughout the economic system (Freeman and Perez, 1986). These characteristics held for steam-powered transport in the Victorian boom; low cost steel in the electrical and heavy engineering period; and oil in the last Fordist mass production wave. Today, microelectronics – progenitor of the fifth wave, is the driving force of the world economy.

The First Three Waves of Development bypassed the Caribbean

The first wave of development (the 'industrial revolution' 1770-1840), with Britain in the lead, bypassed the West Indies. At the beginning of the first wave in the 1770s and 1780s, sugar was king and the sugar profits of the West Indies helped to fuel the growth of Britain's industrial revolution. However, at the time, slavery was in place and the industrial revolution largely bypassed the majority of the West Indian population. Slavery was abolished at the ending of this first wave (1834- 1838) in most English-speaking islands.

Table 1 - INFORMATION TECHNOLOGY LEADS THE FIFTH WAVE

Character	WAVES				
	First	Second	Third	Fourth	Fifth
Time frame	1770s and 1780s - 1830s and 1840	1830s and 1840s - 1880s 1890s	1880s and 1890s - 1930s and 1940s	1930s and 1940s - 1980s - 1990s	1980s and 1990s - 2040s and 2050?
Description	Early mechanization	Steam power and railway	electrical and heavy engineering	Fordist mass production	Information and communication technology
Main carrier branches	Textiles Textile machinery Iron-working Trunk canals Turnpike roads	Steam engines Steam Ships Machine tools Railways World shipping	Electrical engineering Electrical machinery Heavy armaments Steel ships Synthetic dye stuffs Electrical supply	Automobiles, trucks tractors, tanks aircrafts Motorized warfare Process plant Synthetic materials Petrochemicals Highways, airports Consumer durables	Computers, software Electrical capital goods Robotics Telecommunications equipment Optical fibres Digital communication networks Services, tourism
Key factors	Cotton	Coal	Steel	Oil	Microelectronics
Leading countries	Britain	Britain	Britain	USA	Japan

Source: Freeman and Perez (1988); Caribbean Futures (1991).

The second wave – coal and transport (1830-1890), also led by Britain, bypassed the West Indies. This was the era of the rise of the free peasantry in the Caribbean and the very early beginnings of colonial government of the free peoples and the beginning of Indian indentureship. The focus of the colonial government at the time was on the development of institutions and infrastructure and preparation of the former colonies for self-government. Production continued to be largely 'muscovado-biased', wherein the Caribbean existed to "import what it consumed and export what it produced". Production was based on primary, low value exports such as sugar, coffee, cocoa, citrus, bananas. All manufacturing activities took place in Britain – the mother country. It was commonplace to find that

the West Indies, a producer of cocoa and sugar, imported chocolates for local consumption.

The third wave (1880s to 1940s) also bypassed the Caribbean. This period was marked by migration of the local population to work in the Northern countries with some settling in the UK and USA. Laborers were also enticed away to build the Panama Canal, and some islands became locations of USA army bases (for example Trinidad). Possibilities for the oil and bauxite sectors in Trinidad and Jamaica, respectively, were beginning to be explored. Labor leaders began to be heard and the movement toward self-government was in train.

The Caribbean played a marginal role in the fourth wave

The Caribbean really began to play a role in the global economy during the fourth wave – an involvement that was primarily natural resource-based - from the development of the tourist industry in the 1960s, to the development and exploration of oil and mineral resources (oil in Trinidad, bauxite in Jamaica and gold in Guyana).

Some manufacturing activity, mainly in food processing, garments, assembly (automobiles in Trinidad) and light manufacturing industries (furniture, footwear and leather goods) began to be developed. The production focus in the manufacturing sector was mainly on the domestic market – substituting and sometimes replacing imported items. Many of the companies took advantage of protected markets and generous tax incentives and many multinational subsidiaries and brand names were utilized.

Despite the manufacturing thrust for the domestic market, the real dependence of the Caribbean was on export sectors (oil in Trinidad, bauxite in Jamaica and increasingly tourism in Barbados, Jamaica, Tobago and the OECS islands). Rather than wean the economy away from its dependence on foreign exchange (importing what it consumes and exporting what it produces), the manufacturing sector continues to be a larger consumer of foreign exchange, as all inputs would usually have to be imported – for example, parts for assembly of appliances and motor vehicles, fabrics for garment manufacture, machinery, rods, etc.. With foreign exchange as the lifeblood of Caribbean economies, it was not long before the import substitution strategies began to run into difficulties.

It is, therefore, not surprising to find today that for the most successful exporters the potential to earn foreign exchange was a main factor in their decision to export. In addition, many of the key foreign exchange-consuming activities – mainly distributive trades and

completely-knocked-down assembly operations – are shifting considerable resources into foreign exchange-earning sectors (principally tourism). Consider that the two most dynamic tourism entrepreneurs in the Caribbean tourism industry (John Issa and Butch Stewart) were mainly involved in the distribution of automobiles and appliances in Jamaica. Even the large Neal and Massy conglomerate (assembling cars was once one of its main activities) is placing its bets on tourism.

In the fourth 'mass production' wave (1940s to 1990s), Caribbean islands made considerable strides in self-government and some islands gained independence in the 1960s. The University of the West Indies was established and has achieved a high standard of excellence and many nationals received higher-level training at top British and other institutions. There has been a considerable focus on primary and secondary education, with the Caribbean region achieving one of the highest rates of literacy among the developing world. Considerable strides have been made on the social front in the areas of housing and medical care.

The 1970s also witnessed a period of nationalization of banks and other industries – for example, the hotel sector in Jamaica – and the development of state enterprises (national gas companies, and petrochemicals, bauxite, tourism). Trinidad was fortunate to possess oil resources and benefited considerably from the four-fold increase in the price of oil in the 1973-74 period.

Still, the fourth Fordist mass production wave largely bypassed the Caribbean. There was peripheral involvement in this wave, mainly along the lines of import substitution and assembly type industries which were mainly subsidiaries of multinational corporations – corporations that were leading the fourth wave in their own countries. A comparative assessment of the role played by the Caribbean and the strategies pursued through the four waves of world development and opportunities for the future is provided in Table 2.

Today, it is increasingly clear that Import Substituting Industrialization has not 'delivered the goods'. The growing instability of many of the currencies and of the region, the brain drain, the fall in the basic standards of living, the growing austerity measures imposed by the International Monetary Fund (IMF), the World Bank (IBRD) and other lending institutions, growing unemployment and poverty are testimony to this failure.

At the time (the 1950s to the 1970s), the Caribbean had very little choice but to become marginally associated with the fourth wave. It was

Table 2 - THE OLD AND NEW 'BEST PRACTICE' COMPARED

Characteristics	Mass production	Flexible production
Production concept	Mass production	Flexibility, specialization
Products	Limited range of standardized products Mass markets	Product variety and specialization 'Niche' markets, customization
Style of operation	Standardized routines and procedures 'There is one best way' Single top-down line of command	Flexible systems/adequate procedures 'A better way can always be found' Widespread delegation of decision-making
Manning and training	Labor as a variable cost Market provides most trained personnel People to fit fixed positions	Labor as human capital Much in-house training and re-training Variable posts, adaptable people
Equipment and investment	Dedicated equipment Each plant anticipates demand growth Strive for economies of scale	Adaptable/programmable flexible equipment Organic growth closely following demand Choice of combination of economies of scale and economies of scope
Production programming	Stocks held 'just in case' Tolerance on quality and rejects	Stocks delivered 'just in time' Strive for 'zero defects' and 'zero rejects'
Markets and customers	Manufacturers dominate retailers Producers dominate users Mass advertising	Retailers dominate Producers and users have two-way relations Firm rather than product advertising
Competitive strategy	Full capacity utilization Cost cutting and over-production Stockpiling and markdowns	Innovation Diversification Market segmentation

Source: Freeman and Perez (1986); UNDP/UNIDO (1987); Poon (1990).

simply 'common sense' to follow the ISI model of development, as did Latin America and other parts of the developing world. The Caribbean at the time had little choice but to respond to the global outreach of multinational corporations – to set up joint ventures and other branch plant subsidiaries of international organizations. Today, the Caribbean certainly has a choice!

Today, circumstances have considerably changed. A new paradigm is beginning to take shape – a paradigm of information technology, flexibility, specialization and focused production; a paradigm that is consumer-driven; a paradigm based on skills and knowledge-intensive

production; a paradigm based on networks; a paradigm that promises newcomers and small size enterprises special advantages.

The fifth wave opens new vistas for the Caribbean

The fifth wave – the wave of the future – will take the global economy from the 1980s well into the next millennium. The fifth wave is driven by Information and Communication Technologies (ICT). It is critically important that the Caribbean does not miss this wave.

The fifth long wave is traced from the 1980s and 1990s and could last well into the 2030s and 2040s. It is as yet too early to tell when this wave will end or what will be the character of this wave. Historically, however, these waves tend to last between forty and sixty years. This fifth wave, is also known as the 'Information. Age'. It is marked by the rapid diffusion of microelectronics, computer and communication technologies throughout every country, industry, office, home, and life on the whole.

The fifth ICT wave is brought about because of a number of limitations of the old mass production paradigm. Such are: the diseconomies of scale and inflexibility of dedicated and assembly line and process plant which could now be partially overcome by flexible manufacturing systems; 'networking' and 'economies of scope'; limitations on energy and materials intensity are now partially overcome by electronic control systems and components; limitations of hierarchical departmentalization are overcome by 'systemation'; 'networking' and integration of design; production and marketing.

The two fundamental driving forces of the this fifth wave are the technologies on the supply side – rapid advances in technology, widespread applicability and declining costs – and the consumers on the demand side – more sophisticated consumers, with more income and effectively demanding more choice and better quality.

The main carrier branches of this wave are computers, electronic capital goods, software, telecommunications equipment, optical fibers, robotics, flexible manufacturing systems, ceramics, data banks, information services, digital communications network and satellites. Other sectors growing rapidly from a small base are third generation biotechnology products and processes, space activities and fine chemicals (see Table I).

The organization of firms in this second wave and the related forms of cooperation and competition are networks of large and small firms based increasingly on computer networks and close cooperation in technology, quality control, training, investment planning and production

planning ('just-in-time' rather than 'just-in-case'), and similar structures offering internal capital markets.

Meaningful Participation In the Fifth Wave

The fifth wave - the Information Age - is driven by ICI. It is critically important that the Caribbean does not miss this wave.

The Caribbean can play a dynamic role in the fifth wave. To do so, the vision of the Information Age must be taken on board, its full implications must be grasped, and resources must be regionally harnessed – both at public and private sector levels – in developing and implementing appropriate "flexible specialization strategies".

The Information Age brings with it a number of critical implications – implications which must be carefully considered in determining the future direction of the region. Some of the key implications are drawn out below.

III. TECHNOLOGY APPLICATION IS KEY

One of the key considerations in preparing the Caribbean for the Information Age is that the technology for information manipulation and communication of all forms are already well-developed and readily available. Prices are falling and are expected to fall even further. The production of hardware is becoming less and less significant in the value creation process (just look at the price of computers today).

Today, microelectronics are cheap and widely available. So pervasive are microelectronics applications that no society, home or office will escape its impact. Microelectronics are at the core of computers, computer numerically controlled machine tools, robotics, computer-aided design, telecommunications infrastructure, telephones, videos, games, toys, data processing, space missiles and myriad other applications. Computers are increasingly becoming a way of life – a tool for enhancing productivity in all sectors of the economy, a generator of new goods and services and a creator of new leisure pursuits.

The key to value creation in the information age – the fifth wave – is the use and application of these computers and communication technologies to generate new and enhanced services across all sectors.

This means that excessive focus on the development of physical goods, for example, trying to produce the computer, must be shifted. Strategies for the widespread diffusion and application of information technologies to enhance the productivity of the agriculture and manufacturing sectors as well as the public sector, must be developed and

implemented. Support services such as software, systems development and enhancements will be necessary both to facilitate the application of computers to products, processes and services as well as to generate export services in their own right.

For the Caribbean, the implications of the new computer and communications wave for the Caribbean are clear:

- (a) Focus efforts on applying and using the technologies; and
- (b) Develop the human resources to carry out and develop new applications.

This strategy of "applying the technology" veers sharply from the old import substitution focus which would lead the Caribbean to import machinery, equipment and completely knocked down parts to manufacture or assemble computers locally.

IV. SERVICES BECOME MORE IMPORTANT

Services take on a larger share of the value creation process in all industries and everywhere. The ideal information-intensive production organization now links design, management, production and marketing into one integrated system – a process of systemation. Firms organized on this new basis, whether in the computer industry such as IBM, in the clothing industry, such as Benetton or in the tourism industry, such as Sandals and Superclubs, can produce a flexible and rapidly changing mix of products and services.

The strategic focus of successful companies, therefore, is no longer based on production alone. Competitive advantage is based on taking the correct "make or buy" decisions and networking intelligently with other producers and service companies.

Services account for an increased proportion of the value of any product. Services are no alternative to manufacturing industries but are more and more becoming a necessary complement to any successful product.

In a world of atomized markets and the resulting demand for more flexibility, the service of getting the right product to the right person at the right time is at least as valuable as the product itself. For example, in the Jamaica banana producer's subsidiary in Wales, which produces fresh-pressed orange juice and fresh-sliced mangoes, the transportation of the fresh juice daily to customers all over the UK is as important as 'manufacturing' the juice itself. Providing services is critical to the success of any product.

Pure manufacturing, therefore, is becoming increasingly obsolete. It is the linkage of design, production and marketing that is increasingly important. Case studies of successful Caribbean exporters, as part of a study for the West Indian Commission in 1991, revealed unambiguously that the control of their marketing was a large determinant of their success. Take the example of Sandals and Superclubs, the local holiday chains in Jamaica which have their established marketing offices in the USA and have sales forces (one to two dozens strong each) that work throughout the North American market, selling and educating and distributing their Jamaican vacations. It is not surprising that these companies achieve over 90% hotel occupancy year round and possibly realize some of the highest net rates in the whole industry.

For the Caribbean, therefore, the issue is not one of focusing on manufacturing or services. There is no choice to be made. Both are critically important. The key imperatives of this development for the policy environment are to:

- create the conditions necessary for these services and manufacturing to be developed and integrated; and
- focus on the development of the services sector.

V. THE KEY TO EXPORT SUCCESS IS COMPETITIVE ADVANTAGE

Comparative advantage in production is increasingly obsolete. Comparative advantages are no longer natural, but increasingly man-made, bought on by the mastery of science and technology. As the cost of production accounts for a smaller and smaller proportion the value of a product, comparative advantage is decreasing in importance. In addition, technology is changing so rapidly that comparative advantage may be here today and gone tomorrow.

Strategies pursued by the companies concerned may be more important determinants of where production should take place than factor prices; for example, cheap labor. Benetton provides an example of this. While most European retailers buy textiles in the Far East to achieve low prices, Benetton pursues a strategy of quick response to market demand and produces all products in Europe to achieve extremely short lead times. The Benetton advantage is not a cost advantage but a market and distribution advantage, based on satisfying changes in consumer demand as closely and quickly as possible.

Increasing Importance of Global Networking

Wealth creation is based on entrepreneurial activity. To be successful in global markets the entrepreneur must be able to acquire and use the best resources available globally. As activities become more and more specialized, global networking becomes increasingly important. Through global networks, it is possible to obtain access to attractive markets, up-to-date technology, and information vital to the success of products.

The extent to which Caribbean entrepreneurs build links to their key export markets not only determines the competitive performance of the product or service they offer, but also the price they may be able to achieve and the value being created in the region. Global networking requires capital mobility. To gain access to markets it may be necessary to acquire or establish subsidiaries dealing directly with clients in the export markets.

Use Tourism to overcome entry barriers

Tourism needs to be used as the driving force of Caribbean economies in order to overcome production, entry and marketing barriers; given that the tourism industry brings a market (about 20 million strong), and a negative image of the Caribbean is one of the barriers to entry in non-traditional markets (for example software, fashion, etc). The tourism industry can be creatively used to overcome these constraints. Tourism can:

- provide access to markets/brings a ready market to the product;
- provide the possibility of influencing taste patterns;
- provide an important ground for product launch and testing; and
- provide a ready basis for market research and market intelligence information.

The systematic utilization of tourism as an axial service will yield tremendous benefits to the region, far beyond the tourism industry.

The Caribbean has to over-invest in human resources

The key to unlocking the opportunities which the information age brings is people – highly skilled and trained people who can identify opportunities, produce new or improved goods and services and who can gather, process, store, retrieve and apply information at all levels of the productive system. The single most important determinant of competitive advantage in this new information age is the skills level of the population.

VI. THE FLEXIBLE SPECIALIZATION PARADIGM

The strategy of flexible specialization takes full cognizance of the development of the world economy and the implications of the fifth wave. It proposes a framework of development that can secure not only participation in the world economy, but very importantly, ensures a leadership role in the fifth wave. In what follows, we will define the concept of flexible specialization, identify its key success factors and finally compare it with the old 'best practice' of mass production.

Flexible Specialization Defined

The essence of flexible specialization is being narrowly focused or specialized and simultaneously having the flexibility to move with the market as demand changes.

Specialization involves the identification of clear areas of specialization or niches within a particular sector. Specialization refers to the niches within a sector rather than the sector itself. Gainful choice of areas of specialization is critically important to the success of flexible specialization strategies.

Flexibility is another key ingredient in the flexible specialization strategy. Many aspects of flexibility are important: flexibility to move with the market; flexibility to change as demand changes; flexibility to produce a wide range of products within the target area; flexibility to fill customer orders in a short time; flexibility to respond to the market 'just-in-time' rather than 'just-in-case'; flexibility through the use of general purpose, adaptable machinery; and flexibility through design, management, marketing, distribution and retailing strategies.

The strategy of flexible specialization is by nature export oriented, although not exclusively so, and implies an environment of open competition. It argues for the full and complete opening of the sector or segment in question.

Key Success Factors

Key to the success of this strategy is the development of capabilities in all activities related to the sector of specialization and linking these activities in a focused manner to the sector in focus. Such related activities include:

- education and training;
- management;
- design ;

- production;
- marketing;
- networking ;
- regulatory environment;
- research and development; and
- supporting institutions.

The importance of simultaneously developing capabilities in these ten areas is not to be under-estimated. It is the current practice in the Caribbean that all of these activities that are supposed to support and dynamize the production process are currently disjoint sets. Education and training institutions do not support the productive sectors – the tourism sector, for example, is one of the most naturally competitive and yet it is the weakest link in the UWI system. Research and development activities are generic at best and is ill-focused, not at all in line with the needs of the productive sectors.

Coordinated public and private sector actions are critical to the implementation of this strategy of flexible specialization. The exact details of the strategy will have to be worked out through a consultative process involving the public sector, the private sector, non-governmental organizations, schools, and other experts and interested bodies. Each focus area will possibly need a lead agency – the exact form and structure of which will have to be detailed through the consultative process. This lead agency will have to provide the vision and stamina to coordinate, achieve and sustain the focus.

Key to the successful implementation of strategy of flexible specialization are: the selection of focus sectors/niches for development; the development of the eight key sector-related capabilities (e.g. in marketing, production, research and development) ; the development of flexible production capabilities to respond to changing market conditions and; networking locally, regionally and internationally to provide inter and intra firm dynamics to source materials, information and market intelligence data; and continuous innovations to stay always ahead of the game. Thus, the focused flexibility strategy is based on the following key principles:

1. Close collaboration between the public and private sectors;
2. Careful selection of focus areas;
3. Activation of the eight key production fronts;

4. Networking;
5. Implementation of flexible production ; and
6. Continuous innovation.

Mass Production and Flexible Specialization Compared

It is interesting to briefly compare the old mass production practices with that of flexible production. Flexible production practices differ sharply from the old established principles of mass production.

There are key differences in the production for flexible specialization and that of mass production. For example, in the areas of: technology used, work process and skills, payment systems, organization and management markets and customers, suppliers and competitive strategies.

Flexible specialization is driven by new information technologies, e.g. Flexible Manufacturing Systems (FMS), Computer-Aided Design/Computer-Aided Manufacture (CAD/CAM, Computers, Robotics, etc.). Flexible production practices are characterized by new managerial and organizational principles of scope economies, system gains, synergies, product differentiation, short production runs, customization, niche markets and design-intensity. Mass production concentrates on a limited range of standardized products while flexible specialization relies on product variety, specialization and niche markets. Mass production processes are energy-intensive, while those of flexible specialization are energy-saving and information-intensive. The markets and customers of mass production are different from that of flexible production as there is now domination of retailing and greater attention to the consumer.

Focus and flexibility go hand in hand. They veer sharply from the old import substitution strategies based on mass production, where limited ranges of cars and other consumer durables ensured that consumers had no choice but to 'take it or leave it'. Manufacturers dominated retailers. Producers dominated consumers and price governed competition.

Flexible production practices are characterized by new managerial and organizational principles of scope economies, system gains, synergies, product differentiation, short production runs, customization, niche markets and design- intensity. Mass production concentrates on a limited range of standardized products while flexible specialization relies on product variety, specialization and niche markets. Mass production processes are energy-intensive, while that of flexible specialization is energy-saving and information-intensive. The markets and customers of mass production are different from those of flexible production as there is now domination of retailing and greater attention to the consumer.

The competitive strategies of mass production are also different from that of flexible production – competition in mass production is through full capacity utilization, cost cutting, over production, stock piling and mark downs. Under flexible production, one competes through innovation, diversification and the building of competitive advantages.

As far as possible, old production should be rationalized and phased out to make way for the new. New technologies for computer aided design, for example, should form an integral component of the new production focus.

VII. FLEXIBLE SPECIALIZATION - TWO EXAMPLES

In what follows, we will provide two examples of flexible specialization – one from the manufacturing sector (the garment industry) and one from the services sector (environment).

Garments

If Trinidad or Jamaica or Barbados decide to focus on the garment industry, a strategy of flexible specialization would first involve the identification of a particular focus, specialization or niche within the sector. When one considers the natural and competitive advantages of the Caribbean and the fact that there is a natural export market of tourists – more than 20 million tourists visit the region! – a focus on high fashion leisure (warm weather) garments for international and domestic market might be appropriate.

A strategy of flexible specialization would necessitate the coordinated and synergistic development of complementary value-creating activities, such as: design, training, research and development, production, marketing, management, market intelligence and global sourcing capabilities.

Government policies supporting the focus will need to aim at full duty-free importation of materials and equipment; encouragement of training of designers at home and abroad (not limit scholarships to areas of study not available locally, but to encourage training in the focused areas, whether training is available locally or not); negotiate duty-free access to international markets; allowing work permits for visiting designers; develop schools of design in collaboration with the private sector; encourage internships and tax breaks for companies which hire interns; encourage exchange programs with schools and institutions abroad; establish regional qualification standards; encourage free movement of labor, capital and goods among Caribbean countries.

In the area of market intelligence, there is need for close monitoring of information on international design trends, international designers and sources of supply, price and quality of materials and machinery, market research on incoming tourists, new fabric and garment retail concepts, all Caribbean fashion designers located internationally, databases on major competitors, and export opportunities in overseas markets.

In the area of marketing, the tourism industry can be used as a main vehicle for exports; there is need to create regional brands and designer name; participate in major trade fairs and international fashion events; establish regional distribution outlets in convenient visitor locations; work with tourism promotion agencies to feature local items of leisure fashion wear, which could form part of country and regional advertising campaigns; link fashion with music and carnival; market not just garments, but an entire experience, a look, a way of life (this could involve wooden, leather and shell jewelry which could complement the 'look'). All of these activities can be carried out in a coordinated manner to service the entire industry. As an example of innovative marketing in the tourism industry, the all-inclusive concept, "where all the good things in life are free", can be used to sell leisure wear to visitors. In this concept, a client could pay one all-inclusive-price for a week holiday, which includes room, all food, beverage, liquor, cigarettes, sports, entertainment; gratuities ... and clothes.

In the area of production, this could be organized along many lines – the details of which will need to be worked out at the firm level. As the Italy example has shown, it is possible to involve small craft producers both sub-contracting with larger companies or exploring sub-niches, for example high fashion swim wear for the extra-fat females.

Environment

The environmental services sector provides an excellent example of how the "focused flexibility" strategy can work. Here, some examples of the types of coordinated activities which will be involved on the eight key production fronts identified above (for example production, market intelligence and regulatory framework), will be given.

VIII. PRODUCTION ACTIVITIES IN THE ENVIRONMENTAL SECTOR

The environment is mainly viewed as a problem and has not been identified as an industry or a viable area of production. The development of an environmental focus is not simply the development of an industry to recycle paper. It goes far deeper than this and involves an entire system of wealth-creating activities - from production to regulation.

Since it is not usual to consider the environment as an industry in which commercial "production" activities can take place, it is useful to identify some of the "products" which can be produced as part of the region's focus on environmental production. Such include:

- recycled products such as paper, tin, glass, etc. ;
- organically-grown agriculture produce;
- eco-tourism services and facilities;
- development of spas, stress management techniques and alternative medicine;
- development and promotion of natural drugs and healing methods ;
- international conventions, seminar, meetings on the environment;
- environmental Impact Assessments for companies and countries;
- environmentally-related consultancy services ;
- management of National Parks and Protected areas;
- export of "know how" of environmental conservation;
- the development and management of interpretation centers;
- environmental research programs and other training for export;
- audio visual programs on the environment;
- accommodation and facilitation of visiting professors & researchers; and
- the identification, packaging, marketing and distribution of state of the art environmental technology, products and services

These are just examples of some of the ways in which caring for the environment can be an economically profitable venture. To have full impact, it is important that many of these productive activities take place simultaneously and across the region.

The whole idea of spawning an environmental industry, apart from the obvious concern for the environment, is to deal with the region's problems head-on, develop solutions and export these solutions to the rest of the world.

Focusing on building an environmental capability in the Caribbean is of vital importance. All is not well with the region's tourism industry as environmental problems are beginning to threaten its very existence. The building of an environmental industry on the back of the tourism industry can be a key strategy for export success.

Research, Development, Design and Experimentation for the Environmental Sector

In the area of research, development, design and experimentation, the activities related to the environmental sector could include the study and design of new waste disposal techniques and products, research on new materials, chemicals and other harmful agents, recycling technology, experimentation with different environmentally-friendly building designs and construction materials, organic fertilizers, environmental impact assessments, marine biology and other academic research experimentation with plants for medicinal purposes, etc..

Market Intelligence and Networking for the Environmental Services Sector

For environmental industries, activities in this area will involve the monitoring of environmental trends, laws, new products and services, environmental policies of company and country policies, the environment experiences of other countries. It will also involve global networking in the sharing of ideas and country experiences at conferences, trade fairs and visiting researchers; identifying, negotiating and acquiring appropriate technologies and accessing the results of research internationally. Specialist libraries and data bases, universities networking with one another, and an entire information network involving all bodies involved or related in some way to the environment focus will also need to be developed.

Marketing the Environment

Marketing activities are also important in the areas of regional tourism advertising and building the image of the region as an "eco-zone". It is not only important to carry out state of the art measures in environmental conservation. To reap the full market opportunities, the local population, the region and the world have to know about it. For example, how many people in Belize, the region or internationally know that Belize has the only jaguar reserve in the world and that nearly 40% of its entire land mass is protected. Embassies and trade missions abroad, among other agencies, have to be used as effective organs for disseminating this and other information internationally.

Public awareness campaigns on ecological issues and environmental conservation are of critical importance to the success of an environmental sector in the region. The environmental industry also offers key

opportunities in environmentally-related films, media productions, books, magazines, etc., for export internationally.

In Europe today, with many consumers environmentally-aware, recycled products (and products with a recycled content) have a marketing advantage over non- environmentally-friendly ones.

With an environmental focus of the region, the entire Caribbean can have a competitive advantage and unique positioning in the global economy. The environmental sector is perhaps the only sector of "production" in which natural comparative advantages will have some marketability. But the whole idea of fostering an environmental industry is to complement the static natural resource advantages of the region (for example, tourism) with man-made innovations and, where appropriate, technologies.

The Caribbean, positioned as an eco-zone, and complemented by a rich culture and a tolerant and flexible way of life, can become the place on earth where one will want to live, work, play and be. Imagine the economic impact that this positioning will have in the areas of tourism, financial services (real estate), etc..

Training for the Environment

Education and training of environmental specialists in all areas are necessary. Training and awareness programs in schools are also necessary. There is also the need to develop and enhance specialist institutions such as the Institute of Marine Affairs in Trinidad and Tobago. It is not that the focused environment strategy necessarily requires new companies or institutions to make it work. It involves a shift of focus of current agencies, activation of the regional population to back the initiative and the identification and development of a lead body with the vision to coordinate, achieve and sustain the focus.

Regulatory Framework for the Environmental Services Sector

The regulatory framework for the fostering of an environmental focus involves the development of tax and other incentives to encourage recycling firms in paper and other industries and to encourage other firms to adopt production technologies which are most environmentally-friendly, but which may be more costly; the phasing out of environmentally destructive industries; the development of environmental standards and laws; the development of natural parks and other protected zones; the promotion of eco-tourism; the development of a system of policing parks and protected areas; imposition of fines for environmentally hazardous practices; develop incentives for companies to maintain and beautify the

environment; the development of natural history museums, marine parks, identification and protection of rare bird and plant life, and above all, lead by example. Government departments, for example, can be encouraged to use recycled paper and take other actions which are consistent with the environmental focus.

References

- Caribbean Futures (1991), *Tourism as an Axial Product. Potential for Linkage and Development Services*. Report for the West Indian Commission.
- Freeman, C., ed., (1984), *Long Waves in the World Economy*. London: Frances Pinter.
- Freeman, C. and C. Perez. (1986), 'The Diffusion of Technical Innovation and Changes in the Techno-economic Paradigm.' Paper presented at the Conference on Innovation Diffusion, 17-22 March. Venice.
- Freeman, C. and C. Perez. (1988), 'Structural Crisis of Adjustment: Business Cycles and Investment Behaviour'. In Dosi, G. Dosi et. al. (eds.), *Technical Change and Economic Theory*. London: Francis Pinter.
- Poon, A (1993), *Tourism, Technology and Competitive Strategies*. CAB International. Oxford: Wellingford.
- Poon, A. (1990), 'Flexible Specialization and Small Size: The Case of Caribbean Tourism.' *World Development*, Vol. 18 No. 1.
- UNDP/UNIDO (1987), *Cyprus Industrial Strategy*, Vol. 1 and Overview and Executive Summary (New York: UN).