

# Skill Development, Productivity Improvement and the Impact of HEART Trust-NTA in Jamaica

*Tom McArdle*

## 1. INTRODUCTION

This paper analyses the relationship between skills and productivity in Jamaica within the context of recent ILO findings of the relationship between skill levels of the workforce, productivity, and employment and job creation. It begins by discussing the sources of a long standing productivity problem in Jamaica and in the Caribbean region, of which low education and skill levels is but one prominent cause among others, and analyses the education and skills problem. The national policy framework for productivity and a variety of institutions and activities are discussed, including the relatively new National Productivity Centre, established with assistance of the ILO. The paper then focuses on Jamaica's national training institution, The HEART Trust-National Training Agency and its role in productivity and competitiveness. This agency has transformed from a traditional state provider of mostly low-level vocational training to the disadvantaged to fill jobs that had not been materialising in the 1980s and 1990s, to a comprehensive workforce development system in an economy that has begun to pick up steam. This workforce development system, serving both young people making the transition from school to work, as well as working adults, is recently

\* **Tom McArdle** is Senior Director, Planning & Project Development, HEART Trust-National Training Agency, Jamaica, and the Immediate Past President of the International Vocational Education and Training Association (IVETA), and has consulted with the World Bank, ILO and the German Agency for Technical Cooperation (GTZ) in the area of vocational training.

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operating in an environment in which jobs are beginning to grow, and increased demands for specific skill sets are being specified by employers and stakeholders. The agency's role in productivity and competitiveness has been recognized by an increasing number of firms partnering with the organisation to train, upgrade and certify workers. The agency also continues close involvement with government initiatives in poverty alleviation, social protection, tourism promotion, improving early childhood care provisions, and technology.

The paper examines HEART's impact on productivity in Jamaica reviewing the literature and available data on both productivity and HEART activities, and discusses growth potential via proxy variables in the amount of training, expenditures, employment creation and foreign investment. Several cases of successful partnership in productivity enhancing ventures and lessons learned are discussed.

What HEART has done in Jamaica has had a significant impact upon the English speaking Caribbean. Agencies with a similar orientation have emerged in Barbados and in Trinidad and Tobago that together (along with representation from the Organisation of Eastern Caribbean States (OECS) formed the Caribbean Association of National Training Agencies or CANTA. This association has lobbied the Caribbean Community (CARICOM) to adopt over 100 occupational standards that are being used as the basis for a regional qualification framework and mutual recognition that can enable and strengthen the free movement of skilled labour called for by the implementation of the Caribbean Single Market and Economy (CSME). HEART has also been working closely with OECS member countries including St. Lucia, St. Vincent & the Grenadines, and Grenada who are adopting the standards-driven, competency-based model that HEART has promoted in a number of ways in different kinds of institutions and programmes.

## **2. THE PRODUCTIVITY GAP IN JAMAICA AND THE CARIBBEAN**

It has been established that Jamaica, the wider Caribbean region, and the Latin America and Caribbean region in general, suffers from a productivity problem. This is documented fairly extensively by the World Bank for the LAC region and Caribbean (e.g. de Ferranti *et al*, 2003; World Bank 2003, 2005). This analysis attributes the "productivity gap" primarily to the re-

gion's failure to keep pace with adoption of new technologies in its production processes and slow skill upgrading. Issues of weaknesses in basic education systems, the capacity and economic relevance of tertiary education provisions, physical infrastructure and macroeconomic policies and problems are also analyzed as contributing factors.

An extensive analysis of the productivity deficit in Jamaica was conducted by Downs (2003) who also focuses on the educational deficits, but also the labour relations climate, the migration of skilled labour, the regulatory climate, crime, real effective exchange rates and labour costs, and the barriers to doing business as contributing factors. A recent analysis by Blavy of the International Monetary Fund (IMF) (2006) analyses the disparity between relatively high amount of recent investments, including foreign direct investments and the surprisingly low growth in the economy, and shows the contribution of high levels of public debt to the productivity deficit in Jamaica. The work describes high levels of investment in mature and safe industries, but low public investment due to the heavy debt overhang, lack of diversification and growth concentrated in "enclave sectors" (tourism and mining), along with rapid growth of the informal economy. The challenge is how to make investments more productive (see also James *at al* as well).

Using the Penn World Tables (Version 6.2), Jamaica's labour productivity performance (Real GDP per worker) was assessed for the period 1960-2003 by Douglas of the Jamaica Productivity Centre for the National Development Plan's section on the labour market, productivity and competitiveness. For purposes of comparison Barbados, Dominican Republic, Trinidad and Tobago, Canada, United States and Singapore were included in the assessment. The results of the analysis are summarized in Table 1. Douglas found that:

"On average, over the 44 year period, output per Jamaican worker grew at 0.2 % per annum. This is in contrast to average annual growth rates of 4.0, 3.8, 3.5, 2.7, 2.1, 2.0, 1.8, 1.4, and 1.2 % for Malaysia, Ireland, Singapore, Mauritius, Dominican Republic, Trinidad and Tobago, United States, Canada, and Barbados, respectively."

As can be observed from Table 1, Jamaica's best decade in terms of output per worker was the 1960s when annual average growth rates of 2.3 percent was recorded. Over the last 14 years (1990-2003) Jamaica recorded the lowest average labour productivity growth in the group of only 0.04 % per annum. This compares unfavourably to Trinidad and Tobago (4.5 %), Singa-

pore (3.2 %), Canada (1.5 %), the Dominican Republic (2.5 %) and USA (1.7 %).

Labour productivity using the international prices (\$I) for the period 2000 – 2003 averaged \$9,080 per worker for Jamaica, compared with Barbados at \$28,302, Trinidad and Tobago at \$33,768, and the U.S. at \$67,087 (see Table 2). The data show Jamaica continuing on a low productivity growth path since 2000.

**Table 1**  
**Annual Average Labour Productivity Growth Rates: Selected Countries**

Period	Barbados	Canada	Dominican Republic	Jamaica	Singapore	Trinidad & Tobago	United States
1961-2003	1.2	1.4	2.1	0.2	3.5	2.0	1.8
1961-1969	5.0	2.3	1.2	2.3	3.5	4.0	3.0
1970-1979	1.2	0.9	3.3	-1.2	4.5	2.1	1.1
1980-1989	0.2	1.0	1.3	0.0	3.1	-3.4	1.6
1990-1999	-0.7	1.3	2.6	0.2	4.4	2.0	2.0
2000-2003	-0.16	2.03	2.06	-0.40	-0.05	10.74	0.93
<b>1990-2003</b>	<b>-0.57</b>	<b>1.52</b>	<b>2.45</b>	<b>0.04</b>	<b>3.16</b>	<b>4.53</b>	<b>1.70</b>

Source: Jamaica Productivity Centre.

**Table 2**  
**Real GDP Per Worker (International Prices \$I) 2000-2003**

Year	Barbados	Canada	Dominican Republic	Ireland	Jamaica	Trinidad & Tobago	United States
<b>2000</b>	\$29,178	\$49,816	\$15,009	\$59,103	\$9,073	\$33,102	\$67,079
<b>2001</b>	\$28,012	\$50,082	\$15,591	\$61,618	\$9,131	\$32,076	\$66,616
<b>2002</b>	\$27,827	\$51,152	\$16,273	\$63,842	\$9,090	\$30,097	\$66,788
<b>2003</b>	\$28,191	\$51,796	\$15,572	\$65,925	\$9,025	\$39,797	\$67,865
<b>Promedio</b>	<b>\$28,302</b>	<b>\$50,712</b>	<b>\$15,611</b>	<b>\$62,622</b>	<b>\$9,080</b>	<b>\$33,768</b>	<b>\$67,087</b>
<b>Cambio</b>	<b>-\$987</b>	<b>\$1,980</b>	<b>\$563</b>	<b>\$6,821</b>	<b>-\$48</b>	<b>\$6,696</b>	<b>\$787</b>
<b>(%)</b>	<b>-0.2</b>	<b>2.0</b>	<b>2.1</b>	<b>4.4</b>	<b>-0.4</b>	<b>10.7</b>	<b>0.9</b>

Source: Compiled from Alan Heston, Robert Summers and Bettina Aten, Penn World Table Version 6.2, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, September 2006.

Average annual labour productivity growth for eight sectors of the economy over the period 1990-2004 is summarized in Table 3 for the sub-periods 1990-1999 and 2000-2004. For the 10-year period 1990-1999, five sectors recorded positive annual average growth in output per worker while four showed decline. For the succeeding five years (2000-2004), average annual growth in labour productivity actually slowed in all sectors relative to the previous period.

Total factor productivity calculations by the Jamaica Productivity Centre covering the period 1973-2005 show that, on average, growth in output is driven largely by growth in capital input (2.67 % per annum), labour input (1.58 % per annum) and TFP (-1.74 % per annum). This negative TFP growth for Jamaica has been observed in several other studies. This could be attributed to several factors including lack of synergies as well as absence of technical progress and innovation.

James, *et al* (2003) studied private and social returns to tertiary education in Jamaica and provide evidence that the productivity problem shows up most clearly in “labour productivity growth that is too low in sectors that use import capacity intensively and *import* productivity growth that is too low in sectors that are capital-intensive.” They cite the need to develop the domestic capital sector, with a particular focus on tertiary education with greater labour market relevance, and they cite the kind of standards-driven and competency based training offered by Jamaica’s HEART Trust-National Training Agency as a part of the solution to increasing productivity.

**Table 3**  
**Average Annual Sectoral Labour Productivity Growth Rates (%)**

Sectors	1990-1999	2000-2004
Agriculture, Forestry & Fishing	5.49	-3.49
Mining & Quarrying	8.58	2.34
Manufacturing	4.07	3.39
Electricity, Gas & Water	4.02	3.21
Transport, Storage & Communication	1.26	-1.23
Construction & Installation	-4.18	-3.41
Finance, Insurance, Real Estate & Business Services	-0.31	-0.36
Distributive Trades, Hotels & Restaurants	-0.2	-2.46

Source: Calculated by JPC from STATIN Data.

The authors note that the fundamental solution of this problem is the development of the domestic capital sector of Jamaica. The most important segment of this capital sector produces knowledge generally, and tertiary education in particular, with supporting political and social institutions.

Later work by these same authors reinforces the effects of HEART training investments and is discussed below.

The point of this discussion is the idea that while education and skill levels are identified within all the research as a significant factor in the productivity problem facing Jamaica, this is clearly not the only factor. Thus, improving the education and skill levels is not sufficient in and of itself, to correct the productivity problems. Education and skills improvements need to be seen as a necessary but not a sufficient condition to cause productivity improvement.

In particular, the existing research calls attention to the following:

- At the macroeconomic level, the large debt overhang deprives both the public and the private sector of investment capital as government borrowing restricts the amount of credit and maintains high interest rates. This depresses capital investment in machinery, equipment and technology, and contributes to investment in safe but mature sectors with lower risks and lower rewards.
- The impact of high crime on productivity is to increase cost and reduce competitiveness. The estimated cost penalty of crime and additional security measures is two to three percent.
- Jamaica has difficulty achieving productivity growth through acquiring new imported technology. Much of what it imports is replacement, and maintenance of production equipment and technology (both a skills and management issue) appears to be a significant problem. The role of frequent hurricanes in recent years and resultant damages is cited in this area as well.
- The labour relations climate in some sectors appears to work against skills recognition, and repeated calls for productivity-linked compensation schemes have not penetrated into many of the firms.

### 3. QUALIFICATIONS OF THE WORKFORCE

A primary problem of the Jamaican productivity issue is the weak educational base and low level of formal qualifications (both academic and vocational) among the work force.

While Jamaica has achieved full primary enrolment, it continues to suffer from quality problems at the public primary level. The language barrier presented by the differences between Jamaican *patois* (the language most Jamaicans learn to speak) and Standard English poses an educational challenge not yet overcome, and the consequent weak literacy foundations this establishes appear to undermine the primary education (Education Research Center, 1999).

These problems persist into the secondary system. While coverage is incomplete and approximately 12% of students still exit school after grade nine, of the 88% remaining only 11-12 percent leave school with meaningful academic qualifications. Secondary school achievement in Jamaica is measured using the Caribbean Secondary Education Certificate (CSEC) examinations administered by the regional Caribbean Examination Council (CXC). These are subject-specific exams offered in 35 different subject areas including academic and technical and vocational subjects. Only 77% of grade 11 completers sit one or more exams, while 23% do not sit any exams. Only about 12% of the cohort passes the 3-4 subjects viewed as acceptable; matriculation to tertiary education requires four to five passes including English, mathematics and a science.

An international comparison of the average years of schooling of adults is revealing as shown in Table 4. While Jamaica is only 0.4 years less on average than Barbados, most would agree that the education programme in Barbados is more effective than the Jamaican programme as shown by CSEC results, where Barbados achieves much more favourable results.

**Table 4. Average years of schooling of adults**

Country	Average Years
Barbados (2000)	8.7
Trinidad and Tobago (2000)	7.8
Jamaica (2001)	8.3
Dominican Republic (2000)	4.9

Source: World Bank, World Development Indicators, 2004, Jamaica Census, 2001.

The data on first time job seekers from 2006 show that 62.4% of first time seekers have no training, and 52% have no academic qualifications (STATIN, 2007).

Data on years of education in Table 5 of the workforce show 7.3% has only a primary or All Age School education, and 91.6% has secondary education, but almost 30% have only lower secondary education (grade 9), and Table 6 shows that almost 70% of all those exposed to lower or upper secondary did not pass any exams.

**Table 5**  
**Labour Force, Employment and Unemployment**  
**by Years and Type of Schooling or Education**

Level of Education	Years of Schooling	Grade	Labour Force	% Distribution	Employed	Empl. Rate	Unemployed	Unempl. Rate
None	0		3,975	0.3	3,529	88.8	446	11.2
Primary Education	1	1	822	0.1	762	92.7	60	7.3
	2	2	2,475	0.2	2,228	90.0	247	10.0
	3	3	3,948	0.3	3,633	92.0	315	8.0
	4	4	5,781	0.5	5,675	98.2	106	1.8
	5	5	8,800	0.7	8,406	95.5	394	4.5
	6 & Over*	6-9	63,876	5.2	60,379	94.5	3,497	5.5
	Sub-Total		89,677	7.3	84,612	94.4	5,065	5.6
Secondary Education	1	7	20,261	1.7	18,761	92.6	1,500	7.4
	2	8	54,127	4.4	49,429	91.3	4,698	8.7
	3	9	364,401	29.7	331,118	90.9	33,283	9.1
	4	10	71,576	5.8	60,641	84.7	10,935	15.3
	5	11	589,728	48.1	514,581	87.3	75,147	12.7
	6	12	11,477	0.9	10,711	93.3	766	6.7
	7 o más	13	11,006	0.9	10,450	94.9	556	5.1
	<b>Sub-Total</b>		<b>1,122,576</b>	<b>91.6</b>	<b>995,691</b>	<b>88.7</b>	<b>126,885</b>	<b>11.3</b>
<b>Not Stated</b>			<b>13,447</b>	<b>1.1</b>				
<b>April's 2006 L.F. Total</b>			<b>1,225,700</b>					

\* "& Over" refers to the grade 7-9 programme in former "All Age Schools".

Source: Data from Labour Force Survey analysed by HEART Trust-NTA.

**Table 6**  
**Secondary Education Beneficiaries by Exams Passed**

Exam Passed	Secondary Education (Column %)									Total
	ninguno	1 year	2 years	3 years	4 years	5 years	6 years	7 years & over	not stated	
none	99.2	97.4	96.5	95.7	88.7	49.9	13.4		44.5	70.8
CXC basic, JSC 5 SSC, 3 <sup>rd</sup> JL	0.1	0.5	1.3	1.2	2.1	3.8	6.9			2.4
CXC Gen, GCE 'O' 1-2			0.2	0.2	1.6	6.2	2.6	1.7		3.1
CXC Gen, GCE 'O' 3-4	0.1		0.2	0.2	1.3	8.7	2.9		0.3	4.3
CXC Gen, GCE 'O' 5+			0.2		0.6	6.9	12.9	3.2		3.4
GCE 'A' 1-2, CAPE 1-2						0.2	0.6	4.3		0.2
CAPE/GCE 'A' 3+						0.1	3.9	8.3		0.1
Degree		0.6	1.0	0.5	1.5	11.8	56.1	77.3	3.0	7.2
Other			0.4	0.9	2.0	3.5	0.7	5.2	1.1	2.1
Not stated	0.6	1.6	0.1	1.3	2.3	8.7			51.1	6.3
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>99.9706</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Row %</b>	<b>7.1</b>	<b>1.6</b>	<b>4.3</b>	<b>29.1</b>	<b>5.7</b>	<b>47.2</b>	<b>0.9</b>	<b>0.9</b>	<b>3.1</b>	<b>100.0</b>

Source: Data from Labour Force Survey analysed by HEART Trust-NTA.

The data on training received by the workforce is poses certain problems; even despite the efforts of HEART and the tertiary system. As of 2006, 75.4% of the workforce reports it has received no training, or 945,200 of the total of 1,253,075 members of the workforce (STATIN, 2007). Conversely, 23.2% of the workforce says it has received training. This contrasts to the approximately 42% of the employed workforce who are in what would usually be considered skilled jobs in the labour market data (STATIN, 2007).

Despite HEART itself having trained 338,654 individuals between 1982 and March of 2007 (See Appendix 1), only 290,725 individuals report receiving training in the most recent labour market surveys, including 180,675 who received some kind of vocational or on-the-job training (14.4%) and 110,050 (8.7%) who received professional training, as shown in Table 7. The post secondary and tertiary education and training provisions produced 250,854 semi-skilled and skilled workers, technicians and professionals over the past five years alone (see Table 8). It is likely that a portion of those trained by HEART later went on to pursue a diploma or degree and are therefore reporting at that level, but it still appears that there is a discrepancy between

the numbers reported being formally trained by providers and the number reporting receiving training in the labour force data. Migration may certainly be a factor, with over 20 thousand migrating annually. It may be that individuals do not report earlier training that does not appear to them to be relevant to the job they now hold, or it may be measurement error, or all of these. Nonetheless, this figure of about 75% of the workforce being untrained has persisted for many years.

The steady increase in the output of skilled workers is shown graphically in Figure 1.

**Table 7**  
**Labour Force by Training Received (Average 2006)**

Vocational without certificate	17,700	1.4%
Vocational with certificate	106,725	8.5%
Professional without Degree or Diploma	5,150	0.4%
Professional with Degree or Diploma	104,900	8.4%
Apprenticeship	1,425	0.1%
On-the-job training	54,825	4.4%
Total Trained	290,725	
None	945,200	75.4%
Not stated	17,150	1.4%
TOTAL	1,253,075	100%

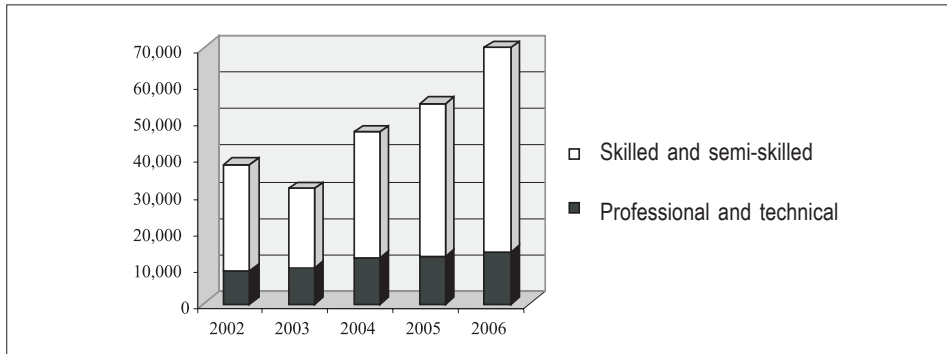
Source: STATIN, 2007.

**Table 8**  
**Skilled & Semi Skilled & Professional & Technical Outputs 2002-2006**

OUTPUT	2002	2003	2004	2005	2006
Professional & Technical	8,968	9,709	12,623	12,913	14,300
Skilled & Semi Skilled	28,874	21,738	34,267	41,804	55,638
TOTAL	39,844	33,450	48,894	56,722	71,944

Source: Planning Institute of Jamaica, Economic and Social Surveys, 2003-2007.

**Figure 1**  
**Output of skilled personnel 2000-2006**



Source: ESSJ, 2003, 2005, 2007

Table 9 shows that individuals with **no** training are more likely to be employed than those with vocational training, with or without Vocational certificates, as they occupy low skill positions that persons with more qualifications won't accept. The presence of a pool of trained and certified but unemployed individuals is also a cause for concern; the rate of unemployment of 16.4% for individuals with vocational certification is rather high, higher than the national unemployment average of 10.3% for 2006 (STATIN, 2007).

**Table 9**  
**Unemployment by Training Received (Average 2006)**

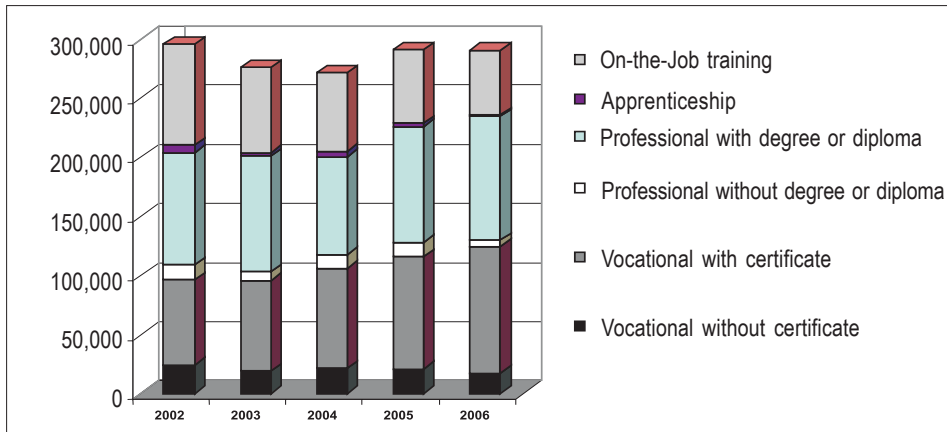
Vocational w/o certificate	4,450	25.1%
Vocational w certificate	17,450	16.4%
Professional w/o Degree or Diploma	425	8.3%
Professional w Degree or Diploma	4,050	8.4%
Apprenticeship	125	8.8%
On-the-job training	3,850	7.0%
None	98,025	10.4%
Not stated	1025	6.0%
<b>TOTAL</b>	<b>129,400</b>	<b>10.3%</b>

Source: STATIN, 2007.

There is also a contraction in individuals reporting on-the-job training and apprenticeship as shown in Figure 2, and the number reporting voca-

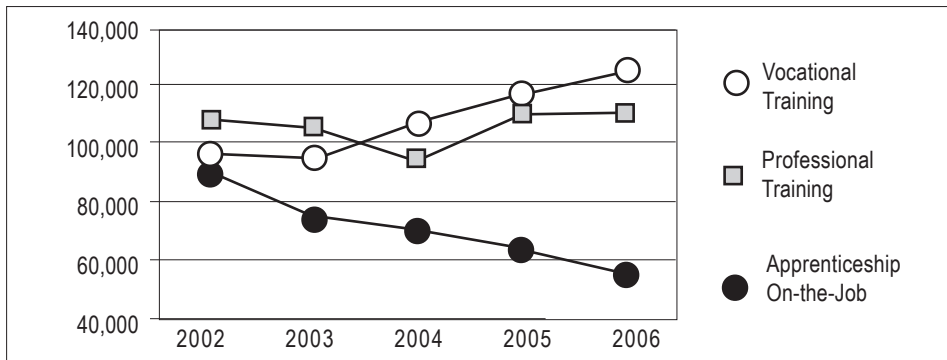
tional certification does not correspond with the figures on HEART outputs considering how these have grown. Figure 3 illustrates the fall in those receiving on-the-job and apprenticeship training reported in the labour force data. Although participation in traditional apprenticeship has declined, there is a steady output of traineeships that the labour force data do not seem to reflect.

**Figure 2**  
**Trained Workforce by Type of Training 2002-2006**



Source: STATIN, the Labour Force 2002, 2004, 2006.

**Figure 3**  
**Labour Force by Type of Training 2002-2006**



Source: STATIN, the Labour Force 2002, 2004, 2006.

**Table 10**  
**Occupations, Levels of Training and Earnings, Jamaica Census 2001**

Position	Occupation	Employed						
		Percent of Total	Mean Annual Wage	Average Years of Schooling	Certification			
					None	CXC /GCE	Certif. /Dip.	Degree
1	Farmer - Mixed Crop Grower	10.9	114,707	7.8	94.0	3.5	0.3	0.1
2	Domestic Worker – Helper	4.7	144,167	8.5	88.9	7.9	0.3	0.0
3	Building Trade – Mason/Bricklayer	3.4	282,385	9.1	88.3	7.3	0.2	0.0
4	Driver - Car, Taxi, Van	3.1	289,202	9.4	78.1	15.9	0.8	0.0
5	Sales Person – Demonstrator	3.0	229,180	10.2	56.6	35.0	3.3	0.3
6	Sales Person - Market, Street Stall	2.7	188,080	8.9	85.9	10.0	0.3	0.1
7	General Manager - Wholesale/retail	2.7	257,941	9.4	73.6	17.2	2.7	1.3
8	Protective Services – Security Guards	2.3	253,158	9.8	68.0	22.6	2.1	0.4
9	Cook	2.2	222,921	9.6	69.1	20.9	2.3	0.4
10	Mechanic - Motor Vehicles	2.0	284,318	10.0	70.3	20.0	2.1	0.6
11	Textile Worker - Tailor, Dressmaker	2.0	179,691	9.7	72.8	20.2	1.2	0.1
12	Waiter/Waitress Bartender	1.9	204,297	10.0	68.0	25.6	1.1	.
13	Hairdressers/Barbers/Beauticians	1.7	211,580	10.2	60.5	28.2	3.3	0.1
14	Building Trade - Carpenter/Joiner	1.6	271,845	9.4	84.9	11.1	0.2	.
15	Construction Labourer - Building, Road, Dam, Grave Etc	1.5	248,400	8.9	86.7	7.5	0.6	0.4
16	Clerk – Secretarial	1.5	379,675	12.1	7.1	51.3	28.2	4.5
17	Clerk - Cashier/Ticket	1.5	241,561	10.8	36.4	49.2	7.6	0.9
18	Vendor - Street, Non-Food	1.4	204,260	9.0	85.7	10.3	0.6	0.1
19	Agricultural Labourer - Farm Hand	1.4	148,074	8.1	90.9	7.1	0.2	0.0
20	Farmer - Field Crops/Vegetables	1.3	93,584	8.0	93.6	3.6	0.2	0.1
21	Sweeper - Street/Park etc.	1.3	164,226	8.4	91.7	5.1	0.0	0.3
22	Business Professions - Accountant/Auditor	1.3	783,003	13.2	2.7	32.9	29.4	28.8
23	Vendor - Street, Food	1.2	170,155	8.8	86.5	9.8	0.6	0.1
24	Teacher - Primary Education	1.2	423,969	13.4	2.8	21.4	58.1	13.1
25	Domestic Worker - Helper in Office, Restaurant etc	1.1	175,330	9.1	80.3	14.6	0.6	0.2
26	Driver - Heavy Truck etc.	1.0	334,686	9.4	74.2	18.2	1.1	0.2
27	Metal Worker – Welder	1.0	268,755	9.9	74.2	17.2	0.8	0.0
28	Building Finisher - Electrician	1.0	311,367	10.4	55.6	30.8	4.6	0.7
29	Teacher - Secondary without Degree	0.9	391,810	13.5	2.9	23.2	54.8	14.0
30	Wood Worker – Cabinet Maker/Carver	0.9	281,644	9.6	81.3	13.0	1.0	0.0
31	Protective Services – Police Officer	0.9	489,576	10.9	23.1	55.8	8.1	1.6
32	Building Caretaker	0.9	168,733	9.0	85.9	7.7	0.7	0.2
33	Labourer in Manufacturing Operation	0.9	193,416	9.4	76.3	17.0	1.1	0.0
34	Housekeeper (incl Warden Butler etc.)	0.8	198,552	9.9	70.0	22.5	1.2	0.2
35	Fishery Worker – Fishermen	0.8	255,803	8.5	94.3	2.9	0.2	0.2
36	Agent/Representative - Technical/ Commercial Sales	0.8	448,028	11.3	22.7	49.4	14.7	4.9
37	General Manager – Other	0.7	913,593	11.9	18.9	30.1	20.6	20.1
38	Farmer - Horticulture & Nursery Plants	0.7	176,092	8.0	93.7	3.1	1.2	0.
39	Driver – Bus	0.7	308,476	9.7	67.2	23.3	2.7	0.0
40	Mechanic - Electrical/Electronic Fitter/Repairer	0.6	342,171	10.5	49.3	35.0	7.3	0.8

Source: James *et al*, 2006, Heart Trust/NTA document.

In Table 10, the average years of schooling and the kind of educational certification attained is shown from the 2001 census for the top 40 occupations. The reader should note that the four largest occupations of mixed crop farmers, domestic workers, masons/bricklayers and drivers include 94%, 89%, 88% and 78% respectively with no qualifications. These large categories of workers accounted for 22.1% of the labour force. So there is a concentration of poorly qualified workers in large occupational groupings requiring low levels of skill. Only 7% of secretaries report no qualifications, while 23% of police report no qualifications. In the traditional vocational areas, 49% of electrical and electronic mechanics, 56% of electricians, 70% of auto mechanics, 74% of welders, and 85% of carpenters have no certification or qualification. This suggests there is great scope for worker certification programmes in Jamaica through the type of unitized approach enabled by the NQF.

#### **4. GOVERNMENT POLICIES ON PRODUCTIVITY**

There is no formally adopted policy within the Jamaican government about productivity, so the policy or policies can only be inferred from the activities of productivity-related institutions, organisations, government programmes, and the institutional arrangements of co-operation that attempt to influence productivity. This section discusses the Jamaica Productivity Centre, the National Development Plan activities of 2007, the National Industrial Policy of 1996, reviews some findings about training activities within firms, the long term vision and mission of HEART Trust/NTA, and discusses a variety of arrangements and agreements between institutions and organisations that intend to impact productivity and competitiveness.

##### **Jamaica Productivity Centre**

With assistance and support from the ILO going back to 1999, in 2003 the government of Jamaica set up the Jamaica Productivity Centre (JPC) as a tripartite organisation comprising representation from the Ministry of Labour and Social Security, the Jamaica Employers Federation (JEF), and the Jamaica Confederation of Trade Unions (JCTU). The operation is funded

entirely by the Ministry of Labour. The Centre's mandate is "to stimulate a high level of national awareness of the concept of productivity and inculcate a productivity-sensitive culture in Jamaica through advocacy, knowledge generation and dissemination, and provision of technical assistance services." The Centre's activities consist of four main programmes:

- Public Education and Sensitization
- Building and Enhancing Productivity Competencies
- Productivity Advisory Services
- Productivity Measurement and Benchmarking

The JPC is actively working with the Enterprise Based Training (EBT) section of HEART to measure productivity impacts of training interventions in firms by training six staff members in a productivity measurement methodology. In addition, the two agencies are partnering on the upcoming National Productivity Week scheduled for September 2007.

A core role of the Centre is to galvanize the gains of the public education and sensitization program by seeking to ensure the development and strengthening of productivity-related competencies and abilities at a national level. Education and Training are the avenues through which this will be pursued.

The Centre will also intend to facilitate the design and delivery of training programmes, especially "train the trainer" programmes to enable firms to diagnose productivity and competitiveness gaps and design and implement solutions. Further, the intention is to influence the secondary and tertiary curricula to promote a productivity consciousness, and to collaborate with existing trainers and educators to provide competence building training and educational programs.

The Productivity Advisory Services of the Centre will also "provide productivity tools and training (computer models, software programs, data, industry benchmarks, productivity indices, best practices, reports, distance learning materials, self-learning kits, seminars and workshops, etc.) to private and public enterprises, organizations (public and private) and industries that will enhance their capacities to initiate and sustain productivity growth." (Website).

According to the Executive Director of the Centre, Dr. Charles Douglas, the activities of the Centre, in addition to the training in productivity measurement and management for HEART, include the following highlights:

The JPC has developed a consistent data series which it has used to measure productivity at several levels:

1. Whole economy – partial factor productivity (e.g., labour, capital, energy, material, and service), total factor productivity (TFP), unit labour cost, etc
2. Sectoral Level - partial factor productivity (e.g., labour, capital, energy, material, and service), total factor productivity (TFP), unit labour cost, etc
3. Industry Level (goods-producing and services providing)
4. Firm Level - partial factor productivity (e.g., labour, capital, energy, material, and service), total factor productivity (TFP), multifactor productivity (MFP), unit labour cost, etc.)
5. In addition, JPC is currently testing an analytical model which it hopes will have widespread application at the firm level. Other models are being developed aimed at services sectors such as healthcare, education, law enforcement, etc.
  - Worked with ten companies and organisations on productivity measurement and improvement.
  - Published 19 articles on productivity and engaged in 19 interviews in the media.
  - Formed alliances with the University of the West Indies, HEART Trust, Jamaica Exporters Association, Private Sector Organisation of Jamaica, Planning Institute of Jamaica, Statistical Institute, and other organisations.

The Jamaica Productivity Centre has established important linkages with both private sector firms and government and non-government institutions. The Centre works closely with the Ministry of Labour and its departments, the Planning Institute of Jamaica, HEART, the private sector organisation (PSOJ), Jamaica Employers Federation (JEF), Jamaica Trade and Invest (JTI), National Youth Service, National Insurance Scheme, trade unions, the Jamaica Council for Persons with Disabilities. Although the agency is youthful, it is already having an impact in terms of public awareness about productivity and competitiveness, productivity measurement and management, and performance linked compensation schemes.

## **National Development Plan**

In early 2007 the Office of the Prime Minister (OPM) and the Planning Institute of Jamaica (PIOJ) initiated a National Development Plan 2030. This ambitious project aims to establish a coordinated plan involving over 30 discrete sectoral plans including a plan for training and workforce development, and a plan for the labour market, productivity and competitiveness. The first draft of nearly all the plans is now completed. These plans call for (among other things) the following (so far):

- Developing a programme of productivity management.
- Creation of incentives for enterprise development, innovation and performance
- Adoption of a national qualification framework by all providers of education and training.
- Improving career development services for both students and workers.
- Increasing cooperative training programmes between educational institutions and firms.
- Improving labour market information.

The plan for the labour market, productivity and competitiveness makes no mention of productivity-linked compensation schemes, long a favourite of the promoters of labour market reform and productivity improvement.

## **National Industrial Policy (NIP)**

In 1996, “The National Industrial Policy - A Strategic Plan for Economic Growth and Development” was presented through Parliament to the nation. The four essential components of the Policy are:

- Macroeconomic Policy
- Industrial Strategy
- Social Policy
- Environmental Policy

The Policy sets specific targets for economic growth and includes a targeted set of strategic clusters for development including information technology, entertainment and sports, light manufacturing and agro and food

processing. An integral part of the Policy is a Social Partnership which sets out agreements by the three social partners-government, labour and employers with regard to a number of areas of economic organization. Implementation of the policy, however, was only partial. The government did stimulate development of the information technology sector, and has made some inroads in the sports arena with World Cup Cricket held in 2007, but light manufacturing and agricultural and food processing have not gotten much attention. Notwithstanding this, the latter two economic clusters have grown, but not to the extent envisioned or timetabled by the NIP. An important new investment coming into production is the new ethanol plant using sugar cane, based on a public-private partnership.

### **HEART Trust-NTA and the Productivity Question**

The HEART Trust-National Training Agency has become an increasingly important stimulus to productivity improvement. The agency has put in place a comprehensive workforce development system with the following features:

- A new National Qualification Framework (NQF) based on a standards-driven, competency-based (or outcomes-based) approach to education and training with five levels corresponding to levels of employment from semi-skilled to professional.
- Over 400 qualifications available within the framework.
- The unit competencies (standards) can be used by firms as a human resource development and HR management tool to identify the skills employees need, fill gaps in learning skills, use the NQF as a reference in considerations of wages, develop succession plans, and generally, as a productivity enhancement tool.
- A network of 28 training institutions serving 42,580, over 100 community-based training programmes serving 13,143 and work-based training in the form of traineeship-4,579, traditional apprenticeship for 423 and workforce development programmes in firms for 18,793 (all figures for 2006-07 ending in March 2007).
- Training programmes for instructors, assessors and trainers.
- Availability of over 1,400 assessors trained to assess the units within the various qualifications.

- A Quality Assurance system to monitor assessments and to accredit programmes offered under the framework.
- A Special Incentive Programme (SIP) aimed at firms to take up the NQF and partner with the agency to get workers assessed and certified within the framework. This programme reduces the cost to firms of participating in worker certification, provides instructional material, provides assessors and instructors as necessary, and finances costs associated with firms becoming Recognized Training Organisations by the NCTVET including assistance to complete accreditation documentation and training of in-firm assessors.
- Financing for the Beyond Project that trains young entrepreneurs and offers business incubation services and support.
- Financing for projects aimed at the technical high schools and the technical and vocational offerings in secondary schools to upgrade the offerings, rationalise the offerings, and to bring them within the NCTVET framework.
- Financing of programmes offered at community colleges and by private post-secondary providers.
- Memoranda of Agreement and Memoranda of Understanding with a variety of partner organisations and stakeholders including the Jamaica Employers Federation, the Jamaica Hotel & Tourist Association, the CHASE Foundation (for early childhood training), the ICT4D Project (Information and Communications Technology for Development), and International Education Collaborative Foundation in information technology access, and partnerships with two major bauxite companies-all aimed at improving access to training and certification. The agency participates in 35 formal partnership arrangements.
- Workforce development programmes in cooperation with firms with 11,276 enrolled in EBT at July 2007 serving 417 firms, and 17,038 enrolled for the fiscal-year-to-date this year. A total of 18,793 were enrolled for all of 2006-07 ending in March 2007. This is the most important productivity initiative of the agency and has grown rapidly since its introduction in 2000 with 41 firms. The programme identifies training and performance gaps and shapes training programmes using the unit competencies (or standards) and a work-based training approach along with instructors and instructional material supplied by the Trust.

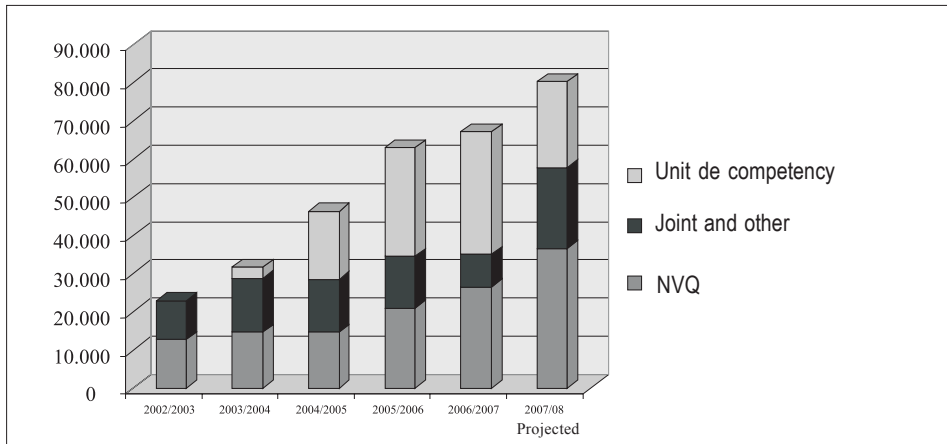
HEART has also clearly identified the link between skills, investment, job creation and productivity. The Vision Statement reads as follows:

**“A Jamaican workforce, trained and certified to international standards, stimulating employment-creating investments, contributing to the improved productivity, competitiveness and prosperity of individuals, enterprises, and the nation.”**

This vision has led HEART in the direction of setting a long term target of certifying one-half the employed workforce (about one-fourth of the workforce currently hold some form of qualification or certification. In 2004 an analysis was conducted showing that this appeared feasible by about 2010, if certification included the many working individuals acquiring unit competencies and not a complete qualification. This analysis was re-run in October 2006 using a more narrow definition of certification and this showed that it would take until 2012 to certify the approximately 400 thousand individuals needed to reach the target. Newer labour market data, however, is showing more rapid growth of the labour market and employment than the analyses took into account. There is also the question of how many participants in HEART’s programmes might be prone to double counting, as many participants continue pursuing training and tertiary education over time and the data are not clear on this factor. Regardless of these problems, HEART and NCTVET now count over 100 thousand participants per year as shown in figure 4 with about 80 thousand certifications within an annual period (in a labour market of about one million 250 thousand), so there should be a quite noticeable increase in the data on workforce qualifications.

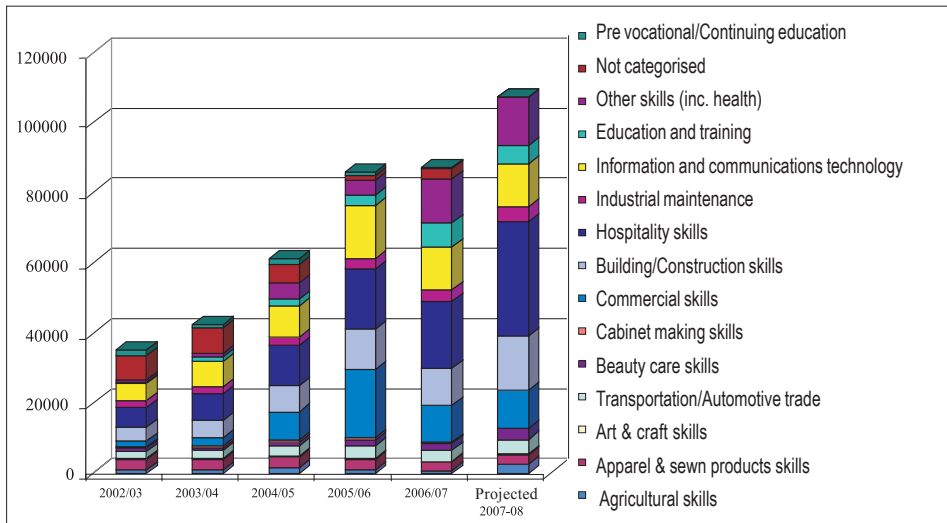
This level of participation reflects the large increase in capacity that is related to both growth in income from the three percent payroll levy that supports the agency, and the introduction of its new framework for training, assessment and certification in 2003. By the year 2002 the agency had reached a plateau of slowing growth at about 35 thousand participants per year. As shown in Figure 5, growth started increasing greatly after the new framework was introduced, with a current projection of 107 thousand participants in the current fiscal year.

**Figure 4**  
**HEART Certifications 2002-2006/2007 and projected 2007/2008**



Source: Compiled from HEART Trust-NTA Annual Operational Reports

**Figure 5**  
**HEART enrolment by sector 2002-2006/2007 and projected 2007-2008**



Source: Compiled from HEART Trust-NTA Statistical Summaries.

## **Training in Firms**

In 2003, the World Bank commissioned a study in Jamaican firms that found:

- Over 90% of firms provide training
- 84% of firms report sending workers on short courses
- 80% send employees to conferences and seminars
- 38% support long-term formal training
- 27.5% report providing apprenticeship training (whether formal or not)

(Source: Market Research Services, Ltd., World Bank, 2003)

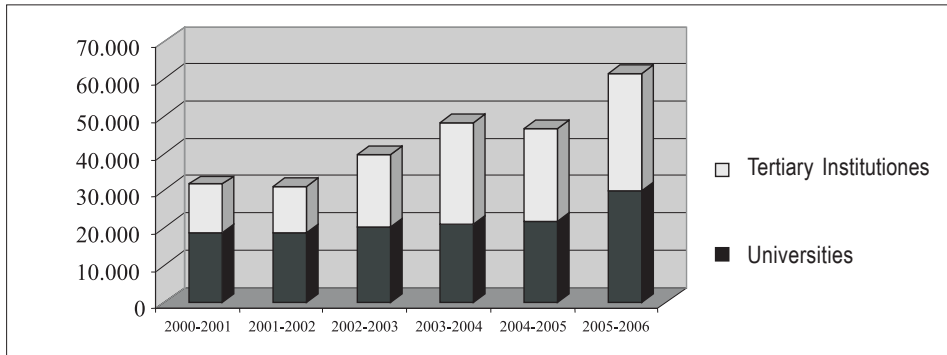
However, most of the literature on training in firms in the region suggests that the better educated mid and upper level workers receive most of the training, and that it is not necessarily aimed at lower levels of employment where a major portion of the productivity problem exists, and where gaps in basic education are most apparent.

## **Expansion of Tertiary Education**

Jamaica has seen a significant increase in education and training opportunities at the post secondary and tertiary level. In addition to the expansion in HEART, the number of tertiary institutions has increased with the addition of the University College of the Caribbean with campuses in Kingston and Montego Bay, expansion of the Northern Caribbean University (formerly West Indies College), increasing enrolments at UTECH and UWI, and the establishment of additional smaller institutions such as Crowne Institute of Professional Studies offering British City & Guilds certifications, the newly formed International University of the Caribbean, and offshore educational institutions including Nova Southeastern University, and University of New Orleans. Expansion of tertiary provisions is illustrated in Figure 6.

The Planning Institute of Jamaica shows a total of 61,619 enrolled in 2006, up from 31,701 in the year 2000, and James (2004) noted the number of persons with tertiary education in the population has more than doubled since 1990.

**Figure 6**  
**Enrolments in tertiary institutions and universities**  
**2000-2001 - 2006-2007**



Source: Economic and Social Survey 2001, 2003, 2005, 2007.

## Conclusions on Productivity Policy

While there is no formally adopted government policy on productivity, the policy inferred from government activity is to promote and contribute to productivity improvement through:

- Via the JPC: Promotion of productivity awareness to firms, government and non-government organisations, schools and the general public, and
- Providing technical assistance and training to manage and measure productivity, improve performance management in enterprises and government organisations, and to promote the use of compensation schemes that link pay to productivity.
- Increasing the qualification profile of the workforce with policies that have promoted an expansion of post secondary and tertiary education and training programmes.

There is still disagreement on performance linked wage schemes, as well as the question of flexibility in terms of weekend work and scheduling of workers.

## 5. HEART TRUST-NTA AND PRODUCTIVITY IMPROVEMENT

This section reviews evidence about HEART's economic and social impact and reports on training participation and expenditures, investments, and job creation.

Although there has not been a great deal of research into productivity and the training programmes offered by HEART Trust-NTA, return on investment research contracted by the agency from 2004-2006 using census data from 2001 (James, et al 2003, 2006), however, does show positive results for HEART compared to other educational offerings and specifically measures productivity effects as part of the social rate of return. These studies used traditional Mincerian analytic techniques modified to take the large non-wage sector into account, consistent with Sir Arthur Lewis's analysis of Caribbean economies. It is important to note that the data set included 2001 census data and predates HEART's recent expansion.

Private Returns, the part referring to what an individual gains from the education and training, show first of all, that at the lowest level of training, Level One, HEART training compensates for the weak secondary education profile that a preponderance of learners bring to HEART and makes them comparable to higher achieving secondary graduates. For the years of schooling, the private rates for HEART TVET are about 11.8%, compared to 6.9% for investment in the secondary years of education, and the same as the rate for secondary completers who have passed four CXC CSEC examinations. For Level 3 training the rate of return is 15.73% just for the years and 15.7% for obtaining the certification, i.e., 31.43% overall. The non-HEART Certificate / Diploma yields a much lower rate of 12.73%. A person with an Associate Degree who then takes a HEART occupational programme at Level 1 or higher will earn an overall rate of return of 19.94%. The comparable non-HEART Associate Degree yields an average rate of return 13.05%. Clearly the level of education achievement combines with the training to produce higher returns. A stronger secondary education profile combines with training to produce higher returns, and a Diploma or Degree combined with HEART makes earning higher still (and all higher than the education alone).

Second, the industry in which HEART training takes place matters. The following sectors have a significant differential impact on wage levels:

- **High Returns-** Construction (36%), Tourism (26%), Business services (22.8%), Clothing (21.1%)

- **Lower Returns** –Agriculture (both automotive services and bus driving); Transport; Miscellaneous Personal Services; Other Repairs

Finally, the highest private returns go to investment in quality, i.e., in the ability to achieve certification.

Social returns, referring to benefits that accrue to the wider society are even more interesting. Using quantile regression estimates, the research shows investment in HEART occupational training substantially **reduces** income inequality, while all other education investment tends to increase inequality. The reason for this is that HEART is very well self-targeted to the poor, with approximately half of its beneficiaries being from poor households. The findings also show that HEART training is the only kind of education activity in which the probability of achieving certification is not closely tied to income level. Poorer students do almost as well as wealthier ones. Considering that HEART training reaches a broad spectrum of society and achieves high self-targeting of the poor these data are compelling reasons to appreciate HEART TVET as a poverty reduction strategy.

**Crime Reduction:** Noted in the productivity analysis as a contributing factor to productivity problems, the research finds that the more HEART graduates in a parish, the lower the crime rate. A one percent increase in the rate of crime (as measured by the percentage of households who are victims of crime during the year) will cost a 6.6% decline in the average wage. HEART education helps to mitigate these effects, especially through the income equity channel. Reduction of income inequality by 1 index point will reduce the rate of crime by 3.7%, thereby reducing the negative effects of crime.

HEART training brings large social benefits to the parishes and to Jamaica as a whole. A 1-year increase in the average number of years of schooling through HEART training has a high impact on productivity in the parishes, especially in the non-wage sector, and in the economy as a whole. This is also evidence that HEART helps both workers and firms invest in other collaborative capital, takes advantage of technological change, and raises productivity and earnings. The estimates are as follows:

- The external rate of return to primary education is 21.6%.
- The external rate of return to Grade 9 secondary education is 22.09%.
- The external rate of return to HEART remedial education is 22.09%.
- The external rate of return to Grade 11 education is 21.2%.

- The external rate of return to HEART Level 1 training is comparable at 20.7%
- The external rate of return to Heart Level 2 training 19.1%.
- The external rate of return to Heart Level 3 training is 16.8%.
- The external rate of return to Heart Level 4 is 15.5%.
- The external rate of return to Heart Level 5 is 13.2%. Since this is slightly smaller than the corresponding private rate of return of 13.5%, it indicates a moderate level of signalling for this level of training.

**Migration:** Since Jamaica is prone to high migration, estimated at 80 percent of tertiary graduates, and many millions of US dollars per year, the productivity foregone is an important consideration. The authors note:

*“A 1% increase in migration (as measured by the percentage of households with at least one person migrating during the year) initially costs a 2% decrease in the average wage. However, current investment to raise the average number of years of schooling by 1 year offsets these migration costs by generating a 2.03% productivity growth effect. This may occur because HEART TVET directly enables better adoption or adaptation of technologies while allowing lower-end skills to be more attractive to the foreign market, migrate and thus slow the growth of population and the number of claimants on income. Conversely, a 1-year decrease in migration will directly increase the average wage by 2%. This would add to the productivity-increasing effects of education even when filtered through migration. The dominant factor that limits migration is the growth of the average productivity of the non-wage sector and the size of the non-wage sector itself. HEART education is the primary mechanism by which the economy promotes such productivity growth.”*

**Other Social Benefits of HEART and TVET:** Of great importance as well is the evidence that more TVET through HEART leads to moderated family size, reduced vulnerability, and higher security of living conditions for the family of the HEART graduate. In many cases, the results generated by, say, HEART Level 1 occupational training are better than those generated by Grade 11 education, with respect to both the average level of living and the security margin achieved. Further, HEART TVET education perpetuates its benefits into retirement and defies the traditional well-behaved age-earnings profile by being “bi-modal,” i.e., by achieving the highest benefits during the years of peak entrepreneurial energy in the mid-40s and again maintaining or raising income during retirement years. Because of this tendency to promote business involvement, HEART education is likely to per-

petuate its benefits into the next generation. One reason for this is that, like all educated parents, HEART parents will send their children to school. However, another and perhaps more important reason from a development perspective is that, unlike most other forms of education in Jamaica, the occupational specificity and entrepreneurial focus of HEART TVET support the accumulation of HEART TVET education in the form of physical business assets that can be passed directly from one generation to the other.

Investment to raise the average level of education by 1 year in Jamaica generates an average net social rate of return (private plus external), i.e., a rate of productivity growth, of about 26.7%. The same investment in the non-wage sector nets a social rate of return of 40%. In this context, the **wage** varies with productivity and hence with the accumulation of the capital that generates the external benefits.

The overall indication is what matters, and this seems to be that capitalist employment does not provide a substantial attraction to persons in the subsistence sector who receive HEART occupational training, and movement will most likely only be triggered by substantially better offers than are now indicated by the data. It is worth repeating that this finding is consistent with findings that HEART education narrows income inequality. Here, the data seems to clarify that a significant reason for this is its effect in raising the earnings productivity of self-employed persons.

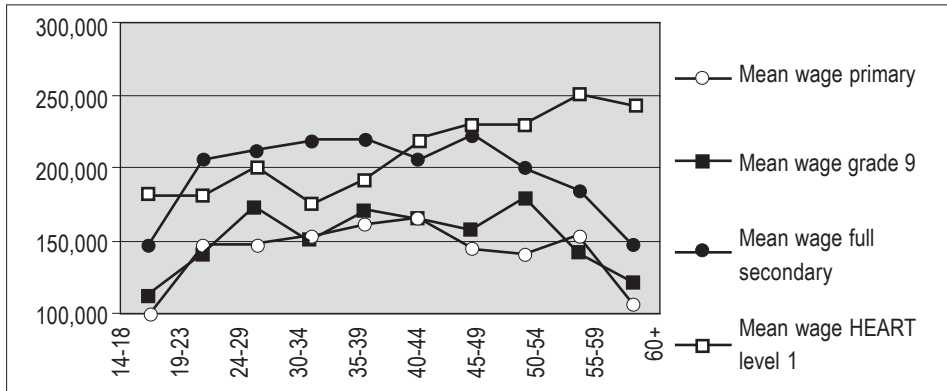
## **6. PROXY INDICATORS FOR POSSIBLE PRODUCTIVITY IMPROVEMENT**

This section examines some potential proxy indicators that signal likely productivity effects if the Indicators are favourable. The amount of investment in training, job creation, and foreign direct investment is examined.

### **Investment in Training by HEART Trust-NTA**

The growth in participation in HEART has been achieved without much of an increase in expenditure when inflation is corrected. Table 11 shows the amounts in current and constant Jamaican dollars over the past six years, and this is displayed graphically in Figure 8. Expenditure in real terms increased by 22.4% over the period at an average annual rate of 4.3%; this is considerably higher than the growth rate of the economy.

**Figure 7**  
**Age-Income Profiles for Non-Wage Sector**



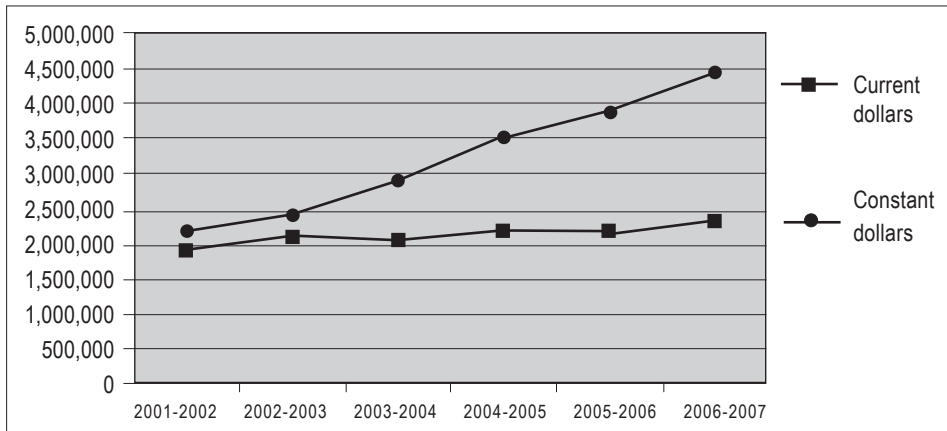
Source: James, et al, 2006.

**Table 11. Investments in Training (Ja\$)**

HEART Expenditure	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
At current dollars	2,174,744	2,404,125	2,890,422	3,500,489	3,874,743	4,438,102
At constant dollars	1,907,670	2,108,882	2,035,508	2,174,217	2,164,661	2,335,843
% Change		10.5%	-3.5%	6.8%	-0.4%	7.9%

Source: Economic and Social Survey 2001, 2003, 2005, 2007.

**Figure 8**  
**Training expenditure of HEART 2001-2007**



Source: HEART Trust-NTA Annual Reports and Annual Training Reports.

## Job Creation

Between 2000 and 2006, total employment grew by 20.4% with especially strong growth in 2002 (10.2%) and 2006 (6.3%) and an average annual growth of 2.8%, a better rate than growth in the overall economy during the period, but the data available can not be said to show a relationship between productivity growth and employment creation at this point. This growth is shown in Table 12.

**Table 12. Total Employment 2000-2006**

	2000	2001	2002	2003	2004	2005	2006
Total Employment '000	933.5	939.4	1,036.8	1,054.1	1,055.2	1,056.9	1,123.7
Male '000	552.4	554.8	602.2	611.7	610.9	611.4	646.8
Female '000	381.1	384.7	434.6	442.4	444.3	445.6	476.9
% change		0.6%	10.4%	1.7%	0.1%	0.2%	6.3%

Source: Economic & Social Survey-Jamaica.

## Foreign Direct Investment in Jamaica

Jamaica has been enjoying relatively robust amounts of Foreign Direct Investment (FDI) as shown in Table 13. This FDI is concentrated in mining for bauxite, telecommunications, and in hotels. Significant new investments are continuing in the tourism hotel sector with 12 new hotels opening and the creation of at least 16,000 new jobs directly.

**Table 13 . FDI in Jamaica 1997-2005 (US\$m)**

Country	1997	1998	1999	2000	2001	2002	2003	2004	2005
Jamaica	203	369	524	468	614	481	721	602	601

Source: World Bank World Development Indicators & UNCTAD.

The total value of FDI stock has also climbed rapidly from US\$790 million in 2003 to 6,335m in 2005 as shown in Table 14, and continuing upward since that time.

**Table 14. FDI Stock in Jamaica 2003-2005 (US\$m)**

FDI stock (US\$m)	2003	2004	2005
Jamaica	790	3,317	6,335

Source: Source: World Bank World Development Indicators & UNCTAD.

The investment climate also includes the following salient points:

- 17th place ranking as a destination for foreign direct investment (World Investment Report), which has made Jamaica the Caribbean's investment mecca.
- A US\$3.5 billion portfolio of projects covering tourism, mining, ICT, manufacturing, infrastructure and educational services. This does not include a number of capital large investments, required for the energy sector but are currently at the planning stage.
- 12th place in terms of technology transfer from foreign direct investment (World Investment Report).
- 10th place in ease of regulations in doing business (The World Bank).

The data on what HEART is doing in terms of expansion and provision of services to existing workers and firms, expansion of tertiary education and the proxy variables of HEART investment in training, job creation, FDI and the FDI stock, all bode well for the Jamaican economy. The increase in education and skills should assist productivity improvement and competitiveness and attract jobs. The challenge is the need to diversify investments, for the education and training system to respond aggressively to the large investments in upscale hotels, and to create the infrastructure and services that will need to be put in place to make the investments successful.

It should be noted that there are a large number of local investments occurring too. Jamaica's port at Kingston has undergone steady expansion, one airport expansion was completed and the airport in Kingston is nearly complete, there is a new highway being built on the north coast to service the growing tourism areas, an ethanol plant has opened in Clarendon parish, one of the largest resort developments involves considerable local investment, the largest operator in the call centre business is a Jamaican national, fish and seafood farms are increasing, and local agriculture is seeing investment in new technologies including hydroponics.

## 7. BEST PRACTICES IN THE HEART TRUST-NTA EXPERIENCE & LESSONS LEARNT

### Emergence of Enterprise Based Training

The Enterprise Based Training department operates a traditional apprenticeship programme, a traineeship programme and workforce development programmes. Traineeship has grown moderately over the past few years and apprenticeships have actually declined significantly. Most of the growth in participation in HEART Enterprise Based Training programmes is because of the large increase in workforce development programmes conducted in cooperation with firms, and in terms of a contribution to productivity improvement is likely the most important development for the agency in the past five years. From its inception in 2000-01 working with forty firms, last year services were provided to 417 firms and 18,793 worker-participants. For the four months of the current fiscal year 17,038 have been enrolled year-to-date already. Table 15 shows the growth in overall enrolments and those for enterprise based training which grew by 302% during the period, while participation of firms in different types of training grew by 69%.

**Table 15**  
**HEART Enrolment by Kind of Training**

PROGRAMME	2002/2003	2003/2004	2004/2005	2005/2006	2006/07
IBT	20,828	25,346	35,672	46,521	42,580
EBT	5,919	6,259	10,256	19,730	23,795
CBT	5,766	6,605	7,673	10,189	11,512
VTDI	1,403	2,979	3,804	3,754	3,687
MOEYC & SDC	1,333	1,301	3,635	3,901	3,131
Team Jamaica	-	-	-	1,759	2,332
<b>Total</b>	<b>35,249</b>	<b>42,490</b>	<b>61,040</b>	<b>85,854</b>	<b>87,037</b>

### Highlights of EBT Workforce Development Programmes

The Enterprise Based Training department has grown quickly, with training provided on a cooperative basis to 2,163 firms last year. Of the total number of firms 1,746 provide traineeships and apprenticeships, the remain-

ing 417 are mainly new partners participating in workforce development programmes conducted in the firms. The new programme is impacting employee competence, morale and motivation. Although no actual research has been conducted on productivity improvement as such, testimonial evidence has begun to accumulate about a variety of effect and cost savings.

- ***Alpart Apprenticeship Programme***

This is a project that began in 1999 to assist this bauxite processing plant to develop succession mechanisms for its ageing workforce, where about two-thirds were reaching retirement and training had not been in place to refresh the workforce. Alpart supplies both classroom and practical instruction with HEART partnering in recruiting, monitoring, assessment services, and supply of instructional materials. Over 130 apprentices have been enrolled for training of which 65 have completed, nearly all employed to the company in industrial maintenance, instrumentation & controls, air conditioning & refrigeration, etc.. The company receives a rebate on a portion of the training levy it pays in to HEART for supplying both practical and theory components. This lowers the cost of the training to the company by about one-half, while increasing both the education and skill profile of the workforce and enabling an improved competitive posture in a very competitive, price sensitive industry. The training leads to the kind of high skill-high wage the population wants.

- ***Jamalco Bauxite Construction Project***

In 2004 HEART was approached by Jamalco, another bauxite company, to assist in creating a supply of workers for the expansion of the plant, a

**Table16**  
**HEART-EBT Participation of Firms 2002-03 – 2006-07**

	Active Firms 2002-2003	Active Firms 2003-2004	Active Firms 2004-2005	Active Firms 2005-2006	Active Firms 2006-2007
SL-TOP	1,150	1,250	1,113	1,455	1,620
Apprenticeship	131	123	169	165	126
Workforce Development Programmes	55	55	n.a.	298	417
<b>Total</b>	<b>1,281</b>	<b>1,373</b>	<b>1,282</b>	<b>1,918</b>	<b>2,163</b>

Source: HEART Trust-NTA Statistical Report.

US\$600m investment. A detailed specification was provided by the company of the quantity of persons needed with various industrial construction skill sets. Jamalco turned over a training facility to HEART to serve a nearby bauxite community, while HEART partnered with two additional private training providers and used its National Tool and Engineering Institute and Portmore (construction) Academy to produce a large volume of highly skilled level four welders, pipe fitters, riggers and millwrights. Although the construction project is actually on hold pending resolution of additional energy supplies to the plant, the workers have been absorbed by various bauxite companies, the ports expansion project, Caribbean Cement Company, the hotel expansion, and some overseas employers. This is again an example of creating highly skilled workers for high wage jobs, attractive to any number of investment projects now operating.

- ***Caribbean Cement Company***

In this two-phase project, HEART's EBT department supplies instructional personnel and material to upgrade existing maintenance workers in concert with the purchase of a new kiln projected to triple the plant's capacity. Trained and upgraded level 1 mechanical maintenance fitters and level 1 and 2 maintenance operators will enable the plant to reduce maintenance costs that were previously out-sourced, thus directly improving productivity.

### **Special Incentive Programme (SIP)**

The first Special Incentive Programme (SIP) was approved in May 2004, implemented in 2005 and modified in May 2006 and again in March 2007 to make it more flexible. The programme aims to promote the participation of firms in the new National Qualification Framework by providing financing on a reimbursement basis to qualifying participating firms. Current objectives of the programme are:

1. To provide assessment, training and certification services in collaboration with contributing firms for 960 workers, and to certify 800 workers during the period (approximately Ja\$19.25m).
2. To develop up to 250 assessors in the firms (approximately Ja\$3.75m).
3. To develop up to five firms as Approved Training Organizations (ATOs) (approximately Ja\$2.0m).

Challenges encountered in implementing the programme have included the tendency of firms to focus on competency units important to them rather than showing a consistent commitment to a full NVQ qualification, while some have problems showing the tax compliance necessary to participate. Adjustments made have included a recognition that some units typically required by HEART, especially entrepreneurship and computing, will not be required within firms unless appropriate, and generally customising training proposals to the particular needs of firms rather than categorical financing (e.g. a Level 2 NVQ) that was in place at first.

### **CHASE Fund Partnership**

The CHASE Fund (Culture, Health, Arts, Sport and Education) was set up along foundation lines to redistribute a portion of lottery earnings to benefit key social services. In education the Fund concentrates on early childhood and supports upgrades to child care institutions including a partnership with HEART Trust-NTA to train and certify existing workers to Level 2. The HEART Trust and CHASE share the cost of the training and reduced the cost to learners from about US\$200 to about US\$50, and this relatively low paid group benefits greatly. An earlier partnership with UNICEF and the Ministry of Education resulted in the certification of over 4,000 early childhood practitioners at Level 1. This project has trained over three thousand since 2005 and will reach about 4,500 upon conclusion, bringing a higher level of service and professionalism to the early childhood provisions, with an expected increase in the productivity of learning at the primary school level.

### **Runaway Bay-Culinary Institute of America Partnership**

In 2002 HEART implemented a partnership with the Culinary Institute of America (CIA) to produce mid-level and executive chefs for the rapidly expanding hospitality sector. Prior to this, the preponderance of executive chefs were imported and granted work permits. The programme operates in Jamaica with a one-year residency at CIA in America. Now a cadre of Jamaican chefs is gradually taking up these positions that previously went to expatriates, driving down travel, accommodation, administration and salary costs for chefs in the hotels, and increasing the Jamaican brand identity of

the cuisine with a focus on Jamaican and Caribbean cuisine, also now being incorporated into the CIA's curriculum in the United States.

### **The HEART Log Frame Planning & Performance Monitoring Process**

In 2001, HEART implemented a more structured approach to strategic and annual operational planning and performance monitoring using the Logical Framework methodology, well known in project development. HEART has trained its staff to plan using the approach and has trained over 35 facilitators with 16 active facilitators that service both HEART divisions and other public sector entities including the Jamaica Foundation for Life-long Learning, Inland Revenue Department, projects conducted with the Ministry of Education and other entities. The process introduces indicators and measures that are refined over time that assist management in achieving important objectives and the organisational mission. This has been important to the success of HEART and to the organisations that have acquired the methodology.

Further, use of the methodology allows HEART management to tie performance to compensation by providing a Performance Incentive of to 15% of base salary for the achievement of objectives at the organizational, departmental and individual level of performance. The scheme gives all workers a stake in achieving the mission each year, usually stated as the total number of certified workers produced.

### **Lessons Learnt from the HEART Experience**

The HEART experience over the past five years, and especially since it introduced the unit competency framework, suggests that increasing access and participation is possible without great increases in expenditure. Growth was enabled by increasing participation in on-the-job training by 302%, in institution based training by 104%, and in community based programmes by nearly 100%. The additional capacities are all lower cost alternatives than HEART's typical institution-based training. The institutional growth involves establishing satellites to existing institutions, hiring mostly part-time instructors and using existing administrative support. The EBT programmes are much lower cost to begin with as there is no venue to support and in-kind services are provided by firms. The community based training is also lower

than a HEART institution as they are operated by community entities with a lower cost structure than HEART operated programmes.

Second, partnership is the way forward. As HEART developed a reputation for initiative and for achieving results, it began to attract more and more partners, and the partners bring assets to the table that also increase access and participation.

Third, flexibility is important. Large organisations like HEART and NCTVET often tend toward rigidity, an inward focus and inflexibility. Especially in times of low economic growth, there is the problem that investors and firms, usually the key stakeholders, are not really driving the agency. There has been a continuous challenge to remain flexible without sacrificing standards and accountability. Since 2002, increasing demands have been placed upon the agency by firms and employer groups for HEART to provide timely solutions relating to investment and job creation. In order to respond, HEART must frequently look beyond what it expected and find innovative ways to meet stakeholder needs.

Fourth, planning, organization, management and human resource development are critical. The organization must be constantly fine tuning objectives, indicators, measurements and information systems, while evolving the organization structure and culture, optimizing staff performance, and providing development opportunities for staff members.

## **8. THE CSME, CANTA, AND THE CARIBBEAN VOCATIONAL QUALIFICATION**

The Caribbean Single Market and Economy (CSME) is designed to represent a single economic space where people, goods, services and capital can move freely. The *Free Movement of Skilled Persons* provisions of the agreements arises from an agreed CARICOM policy that was originally separate but related to the original Protocol II of the Revised Treaty of Chaguaramas, originally signed in 2001 and revised in 2006. The agreed policy, called The Caribbean Community (CARICOM) Free Movement of Persons Act, is now enacted legislation in all the CSME Member States. It provides for the free movement of certain categories of skilled labour, but according to the policy there is to be eventual free movement of all persons, originally by 2008, but now by 2009. Under this legislation, persons within this skilled category can

qualify for Skills Certificates (which allow for the free movement across the region). A primary purpose of the provisions is to counteract migration and local labour shortages through free movement of labour.

At the eighteenth Inter-Sessional CARICOM Heads of Government Conference in February 2007, it was agreed that “artisans” would not be immediately granted free movement status from January (as was originally envisaged), but would rather be granted free movement by mid-2007. The free movement of artisans will be facilitated through the award of Caribbean Vocational Qualifications (CVQ) based on industrial occupational standards. The conference also agreed that the free movement of domestic workers and hospitality workers could be facilitated in a similar manner to the free movement of artisans and that their cases would be considered after the CVQ model is launched. This new agreement reflects the work of the Caribbean Association of National Training Agencies with Jamaica, Barbados and Trinidad & Tobago being the prime movers. Together, the training bodies in these three countries have established standards-driven, competency based training frameworks that are generally similar. A Regional Qualification Framework blending vocational and tertiary qualifications has been accepted in principle, although it may require further refinement.

Regional accreditation bodies are also planned to assess qualifications for equivalency, complementary to the free movement of persons. To this end, so far the Member States have concluded the Agreement on Accreditation for Education in Medical and other Health Professions. No decisions have been taken on a regional accreditation body for vocational and technical qualifications.

Jamaica received authorization from CARICOM in June 2007 to award the CVQ and intends to make its first awards in October, the first country making such awards in the region.

Jamaica, through both HEART and NCTVET, has been actively assisting St. Vincent & the Grenadines, St. Lucia, St. Kitts and Nevis, and Grenada, all members of the Organisation of Eastern Caribbean States (OECS) to incorporate the use of competency based education and training into programmes in schools and post secondary training programmes. HEART has also worked closely with Trinidad & Tobago and Barbados, and introduced other CARICOM countries to the framework including the Bahamas, Turks and Caicos, the Cayman Islands, and Antigua & Barbuda.

## 9. SOME CONCLUSIONS AND IMPLICATIONS

If the ILO is correct about a “virtuous circle” of productivity and employment growth, although the Jamaican experience up to the beginning of the new century is not at all favourable, there are important signs that some of the conditions for improved productivity and competitiveness are coming into being. The significant increases in access to post secondary training, tertiary education, training in firms, a new route to high school equivalency through the HISEP programme (developed by HEART and in pilot with the Jamaica Foundation for Lifelong Learning), gradual improvement in the performance of high schools in CSEC exams, and an increasing recognition among the public of the critical importance of education, training, certification and qualification, suggest Jamaica is doing a great deal to address the education and skills deficit. A large remaining challenge, however, is widespread low literacy within the workforce, and insufficient remedial opportunities for both school leavers and existing workers.

And while training has expanded, there is still a need to connect pre-employment training better with training and human resource development activities in firms, and to link all of this within a NQF that is understood and accepted by a population mostly familiar with traditional tertiary qualifications.

HEART’s long term goal of certifying half the workforce sounds ambitious, but look at what the agency did to expand access without a huge infusion of new financing. It often pays to think big. It is not clear how this is achievable given the measurements that come from the labour force survey, which do not match up well against output statistics of education and training providers and deserve a closer inspection.

Related to HEART’s expansion is the need to continue offering an increasing proportion of higher level training. While Level 2 (skilled) training has increased greatly, the offerings at Levels 3 and 4 are still insufficient to produce the high skill-high wage workforce Jamaica will ultimately require to service luxury hotels, provide ICT services with higher value added, to compete in bauxite, and to move agriculture forward.

There is a need for better management of productivity initiatives and the use of indicators and measurements along with a methodology at the firm level and sector level to measure productivity gains that relate to specific activities. It is expected that the Jamaica Productivity Centre can have

an important impact here. HEART has a commitment to adopt their methodologies and apply them in its Workforce Development Programmes with firms. The return on investment research commissioned by HEART is interesting, even provocative, but needs more data from more trained persons entering the sample frame, and alternative approaches that study outcomes for learners who have participated beyond the tracer studies conducted not too long after a learner has exited a programme.

The other factors that have been contributing to the productivity problem described in the first part of this paper will also need to be addressed. The large public debt, weak absorption of technologies and low innovation, the problem of hurricanes in recent years that requires equipment replacement rather than investments in new technologies, the crime and violence – all of these problems are difficult. The new investments in tourism will dramatically affect the north coast, and infrastructure is an issue as well as availability of human resources, as a fair amount of internal migration is expected, so housing, water and sanitation, transport, education and health services will need to respond to make these investments productive.

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## ACRONYMS AND ABBREVIATIONS

ATO	Accredited Training Organization
CANTA	Caribbean Association of National Training Agencies
CARICOM	Caribbean Community
CBT	Community Based Training
CIA	Culinary Institute of America
COHSOD	Council for Human and Social Development
CSEC	Caribbean Secondary Education Certificate
CSME	Caribbean Single Market and Economy
CVQ	Caribbean Vocational Qualifications
CXC	Caribbean Examination Council
EBT	Enterprise Based Training
ESSJ	Economic and Social Survey of Jamaica
HEART/NTA	Human Employment and Resource Training Trust / National Training Agency
ICT	Information and Communication Technology
IMF	International Monetary Fund
ILO	International Labour Organization
JCTU	Joint Confederation of Trade Unions
JEF	Jamaica Employers Federation
JTI	Jamaica Trade & Invest (formerly Jampro)
LAC	Latin America and the Caribbean
MLSS	Ministry of Labour and Social Security
MOEY	Ministry of Education and Youth
NCTVET	National Council on Technical and Vocational Education and Training
NCU	Northern Caribbean University
NGO	Non-Governmental Organization
NIP	National Industrial Policy
NQF	National Qualification Framework
NTA	National Training Agency
NVQ	National Vocational Qualifications
OECS	Organization of Eastern Caribbean States
OPM	Office of the Prime Minister
PIOJ	Planning Institute of Jamaica
SDC	Social Development Commission
SIP	Special Incentive Programme
STATIN	Statistical Institute of Jamaica
TVET	Technical and Vocational Education and Training
UNICEF	United Nations Children's Fund
UTECH	University of Technology
UWI	University of the West Indies
VET	Vocational Education and Training
VTC	Vocational Training Centre
VTDI	Vocational Training Development Institute

**Appendix 1**  
**HEART TRUST/NTA Completions/Outputs since Inception**  
**Academic Years 1982/83 to 1993/94 & Fiscal Years 1994/95 to 2006/07**

BROAD SKILL AREAS	Academic Years 1982/1983 - 1993/1994												Sub-total 1982 1994
	1982 1983	1983 1984	1984 1985	1985 1986	1986 1987	1987 1988	1988 1989	1989 1990	1990 1991	1991 1992	1992 1993	1993 1994	
Agricultural Skills	745	0	46			93	53	69	117	88	119	155	1485
Apparel & Sewn Products Skills	254	433	481	2612	4499	4585	2814	1297	1649	1587	801	1002	22014
Art & Craft Skills									0	0	820	511	1331
Transportation & Automotive Skills											215	208	423
Beauty Care Service Skills		19	43	46	48	48	50	49	57	62	131	170	723
Cabinet Making Skills (see notation 3)	-	-	-	-	-	-	-	-	-	-	-	-	
Commercial Skills			102	257	305	224	750	522	548	478	679	755	4620
Building Construction Skills	1291	587	425	385	429	358	353	369	398	286	844	875	6600
Education & Training Skills	-	-	-	-	-	-	-	-	-	-	-	-	
Hospitality Skills					88	146	198	177	241	263	409	654	2176
Industrial Machine & Appliance Maintenance /Repair								20	18	35	25	143	370
Information & Communication Technology Skills							431	396	354	393	375	347	2296
Other Skills (Maritime, Spray Painter, Music, Graphic Artist, Printing /Book Binding, Bus Driving Skills.)										48	15	38	101
<b>TOTAL for all Skill Prog.</b>	<b>2290</b>	<b>1039</b>	<b>1097</b>	<b>3300</b>	<b>5369</b>	<b>5454</b>	<b>4669</b>	<b>2897</b>	<b>3399</b>	<b>3230</b>	<b>4551</b>	<b>4844</b>	<b>42139</b>
SL-TOP (On-The-Job) - See notation 4	87	635	1145	2074	1081	2877	1849	2231	2174	2212	2441	1850	20656
Workforce Development Programme (formerly WIP) (See notation 5) VTDI (See notation 6)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	500	250	750
Pre-Vocational/Continued Education Programme	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	700	1240	1940
Marginal Institutions	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Social Development Centres (See notation 7)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Solidarity Programme (See notation 8)			917	1517	1319	1710	-	-	-	-	-	-	5463
<b>TOTAL for all HEART Prog.</b>	<b>2377</b>	<b>1674</b>	<b>3159</b>	<b>6891</b>	<b>7769</b>	<b>10041</b>	<b>6518</b>	<b>5128</b>	<b>5573</b>	<b>5442</b>	<b>8192</b>	<b>8184</b>	<b>70948</b>

**Appendix 1: HEART TRUST/NTA Completions/Outputs since Inception  
Academic Years 1982/83 to 1993/94 & Fiscal Years 1994/95 to 2006/07  
(continued)**

1994 1995	1995 1996	1996 1997	Fiscal Years 1994/1995 - 2006/2007										TOTALS	
			1997 1998	1998 1999	1999 2000	2000 2001	2001 2002	2002 2003	2003 2004	2004 2005	2005 2006	2006 2007	Sub total 1994/2007	TOTAL 1982/2007
132	101	325	278	347	412	611	635	426	564	1034	593	491	5949	7434
1032	1568	1182	2543	3451	3326	2125	1305	1632	1639	1961	1916	1801	25481	47495
235	74	264	384	283	276	267	201	328	206	176	258	108	3060	4391
124	295	364	419	558	719	572	1178	1082	950	1545	2393	2330	12529	12952
60	162	173	402	288	227	333	211	465	458	744	1277	1224	6024	6747
30	97	105	153	179	224	255	1115	264	218	248	541	115	3544	3544
795	1196	1229	1016	927	1137	975	67	917	1260	5735	10942	2935	29131	33751
790	1014	1120	1061	1232	1555	1607	1299	1656	2033	3971	8457	5816	31611	38211
--	-	-	-	-	-	-	91	517	934	1501	2836	5879	5879	
649	842	972	1469	1904	1997	2518	1676	2673	4392	7136	10788	11242	48258	50434
162	187	298	288	462	593	595	1082	1010	1164	1424	1605	1076	9946	10316
401	360	421	734	864	1590	1845	2692	2903	4401	5494	11593	6928	40226	42522
25	88	87	138	228	407	961	47	248	720	2625	3023	5175	13772	13873
4435	5984	6540	8885	10723	12463	12664	11508	13695	18522	33027	54887	42077	235410	277549
102	347	481	669	1126	1124	1280	1236	1285	1259	1175	-	-	10084	30740
	-	403	552	412	687	598	570						3222	3222
666	517	811	718	561	1121	984	696						6074	6824
399	313	202	1154	1252	1103	1181	773	1215	955	968	757	147	10419	12359
n/a	n/a	n/a	-	-	19	251	187	150	208	55	200	949	2019	2019
n/a	n/a	n/a	190	36	252								478	478
--	-	-	-	-	-	-	-	-	-	-	-	-		5463
5602	7161	8034	12019	14250	16494	17047	14998	16915	20944	35225	55844	43173	267706	338654