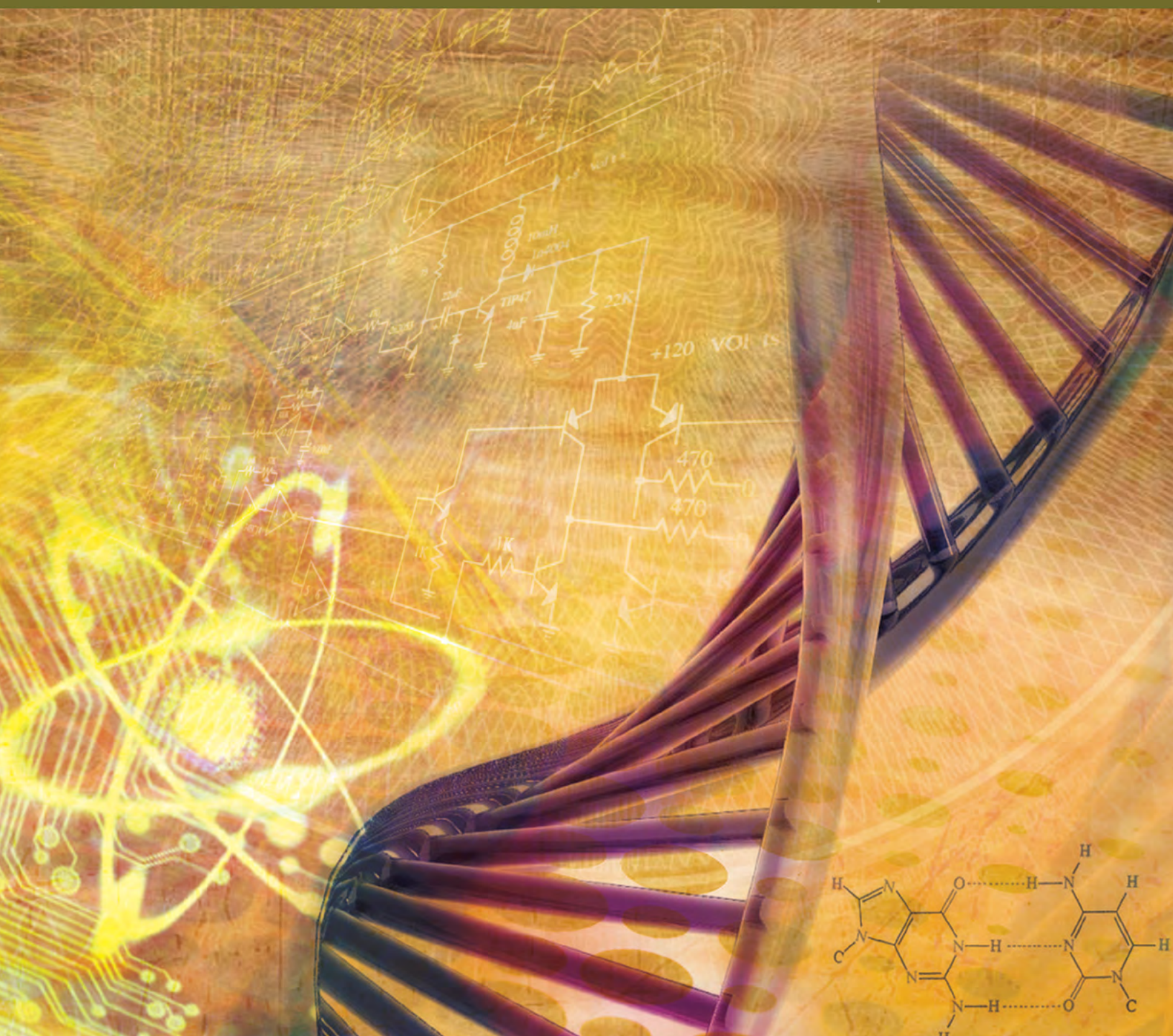




National Institute of Higher Education
(Research, Science and Technology)

Annual Report 2011

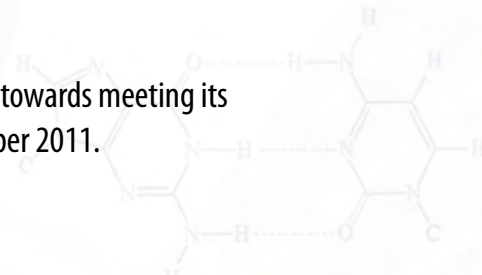




**National Institute of Higher Education
(Research, Science and Technology)**

Annual Report 2011

This report provides an account of the major achievements made by NIHERST towards meeting its strategic objectives for the financial year October 2010 to September 2011.



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Chairman's Statement

Mr. Jwala Rambarran



Annual Report **2011**

The Government of Trinidad and Tobago's development thrust focuses on creating a diversified, competitive and knowledge-based economy. The diversification process requires nurturing the creative and innovative capacity of our citizens, shifting the national mindset away from the traditional economic and employment staples, to the generation of new and sustainable sources of wealth particularly in high value, niche markets. It is also imperative to increase investment in science, technology and innovation (STI), and build human and institutional capacity, which stimulates the non-energy sector, diversifies the depth and range of economic activity and boosts global competitiveness.

The NIHERST Mission

Prior to the appointment of its new Board of Governors in November 2010, NIHERST had been waiting a decade for its role as a key national science and technology organization to be redefined, following its leadership role in setting up COSTAATT and ACTT, which resulted in the transfer of its higher education and accreditation functions to these bodies in 2000 and 2002 respectively. One role that had been articulated and developed in some detail was that of a council for science and technology. However, the plan was shelved following the decision that was taken in 2006 to absorb the institute into The University of Trinidad and Tobago (UTT). This development either reduced or halted the institute's unique and pioneering work to help build national capacity in STI, and particularly its seminal science popularisation programme.

Fortunately, the long hiatus did not translate into a lost decade by any means, due to the trademark resourcefulness of the organisation in pursuing its mandate to foster a national culture of STI. On the contrary, despite the constraints and setbacks, NIHERST was able to expand its efforts into new areas that promote creativity, innovation, entrepreneurship and strategic foresight, and support knowledge-based development. NIHERST's myriad programmes promote widespread literacy and understanding of the role of STI in development, nurturing a society that can uphold and

accelerate scientific and technological advancement in all sectors.

A Visionary Agenda for a New Era

The strengthening, over 30 years, of its distinctive competencies in non-formal science education, research and intelligence gathering, and building strategic regional and international alliances ensured that NIHERST was well poised to support the agenda set by the new Board, in alignment with the development policy framework of the People's Partnership government.

The Board's first task was to guide the formulation of a Strategic Action Plan for 2011-2015. The overarching focus is on building and strengthening national capacity in science and technology, creativity and innovation, and entrepreneurship, with activities falling within the context of development pillar 1 (People Centred Development) and development pillar 5 (Creating a More Diversified, Knowledge-Intensive Economy).

The plan aims to position NIHERST as a world class STI institute and to increase its reach and impact in the national community. The plan was fully endorsed by the Ministry of Science, Technology and Tertiary Education (MSTTE), which recognises the importance of having an institution dedicated to promoting a culture of creativity, innovation and knowledge production, and supporting human resource development as well as the work of other key agencies engaged in research and development (R&D) and science and technology education.

The NIHERST Board of Governors is very pleased to present this report with the highlights of achievements made in the first year of the plan as well as the financial statements. We commend the NIHERST management and staff for their hard work, productivity and commitment that ensured high quality output and timely delivery on the goals laid out for FY 2010/11.

Mr. Jwala Rambarran
Chairman, Board of Governors



President's Review

Mrs. Maureen Manchouck



Annual Report **2011**

A Milestone Year

2010 was truly a turning point for NIHERST in terms of its status, and the recognition by the new administration of the important part the institute plays in fostering a national culture of science, technology, creativity, innovation and entrepreneurship. The year brought a new dispensation as it were, which has empowered the institute to now set an even broader vision for itself and to build on its achievements to date, in order to meet the country's new and evolving development needs in STI. The 2010/11 work programme entailed a continuation and refining of core activities and events, as well as laying the groundwork to enable us to branch out into exciting new avenues in our four strategic areas of focus. These new directions were charted in a 5 year work plan drawn up in January 2011.

Under the plan, our activities in this fiscal year fell within the four interconnected strategic areas, which are:

- advancing the levels of scientific and technological literacy in both children and adults in Trinidad and Tobago through science popularisation;
- fostering a national culture of science, technology, ingenuity and entrepreneurship;
- undertaking research and intelligence gathering in science, technology and innovation and strategic foresight to support economic diversification and country advancement; and
- accelerating development in science, technology and innovation through the building and strengthening of collaborative strategic alliances with local, regional and international partners.

The progress in each of these areas was stellar, including record attendance of 38,000 visitors at our flagship biennial science and technology festival, Sci-TechKnoFest, as well as our facilitating the historic link up at the Caribbean Youth Science Forum with an astronaut on board the International Space Station. The latter led to discussions with NASA on a formal agreement, which will, in the first instance, support the participation by nationals in NASA's international outreach programmes. This will be a first for this region.

But perhaps the most gratifying accomplishment, which was both a reward for and a testimony of NIHERST's very successful and pioneering efforts in science popularisation, was the announcement at Sci-TechKnoFest 2011 by Senator the Hon. Fazal Karim, Minister of Science, Technology and Tertiary Education, that government had committed to the construction of a state-of-the-art national science centre. NIHERST had lobbied for almost two decades for an appropriate space that would be a source of learning and inspiration to all citizens, as the country pushes to develop a knowledge-based economy. A purpose-built science centre will take science popularisation not so much to the next level but to the correct level, where it should have been already.

So this was undoubtedly a year in which we gained much momentum and the achievements show us keeping a steady course towards fulfilling the goals of the strategic plan by 2015.

Mrs. Maureen Manchouk
President

Board of Governors

NIHERST Board of Governors was appointed by the President of the Republic of Trinidad and Tobago in November 2010. The membership of the Board is as follows:

Chairman

Mr. Jwala Rambarran

Deputy Chairman

Prof. Prakash Persad

Members

Mrs. Anisa Allaham-Hosein

Mr. Ralph Campbell

Mr. Cecil Caruth

Mr. Raphael Esdelle

Mr. Brian Juanette

Ms. Parbatie Helen Maharaj

Dr. Rawatee Maharaj-Sharma

Ms. Denice Ramdhan

Mrs. Karen Rosemin

Mr. Andre Thompson

Mrs. Maureen Manchouck (ex officio)



Front row seated left to right: Prof. Prakash Persad (Deputy Chairman), centre Mr. Jwala Rambarran (Chairman) and Mrs. Maureen Manchouck (NIHERST President)

Back row standing from left to right: Mr. Cecil Caruth, Ms. Denice Ramdhan, Mrs. Anisa Allaham-Hosein, Mr. Andre Thompson, Dr. Rawatee Maharaj-Sharma, Ms. Parbatie Helen Maharaj, Dr. Lester Forde (resigned as board member), Mr. Brian Juanette, Mr. Raphael Esdelle and Mrs. Karen Rosemin. Absent from photo: Mr. Ralph Campbell

Setting the Framework

The work undertaken by NIHERST during the 2011 financial year (FY) was guided by NIHERST's 2011-2015 Strategic Plan and the Government of Trinidad and Tobago's policy framework, which has as its focus seven interconnected pillars for sustainable development. The pillars of particular relevance to NIHERST are development pillar 1: People Centred Development, and development pillar 5: Creating a More Diversified, Knowledge-Intensive Economy.

For the October 2010 to September 2011 period, NIHERST's focus was on building and strengthening national capacity in science and technology, creativity and innovation, and entrepreneurship. This was realised through a wide range of programmes that utilise informal and innovative teaching and learning methodologies; increase research and intelligence gathering and data dissemination to specific technical groups; and foster collaborative strategic alliances with national, regional and international agencies.

NIHERST made significant progress in meeting its strategic goals of:

- advancing the levels of scientific and technological literacy in both children and adults in Trinidad and Tobago through science popularisation: **strategic goal 1**
- fostering a national culture of creativity and innovation: **strategic goal 2**
- undertaking strategic research and intelligence gathering in science, technology and innovation to support economic diversification and country advancement: **strategic goal 3**
- promoting science, technology and innovation (STI) through the building of collaborative global relationships: **strategic goal 4**



Strategic Goal 1: Science Popularisation

Science, technology, engineering and mathematics (STEM) education is a top priority for any country seeking to develop a highly trained work force to compete in the job markets and innovation-driven industries of the future. Encouraging more of the population to pursue advanced studies and careers in STEM is imperative and requires new approaches to education that are more engaging and help to develop creative thinking and problem-solving capabilities.

NIHERST's science popularisation activities are non-formal educational experiences designed to bring science alive and make it more comprehensible. The aim is to engender in the lay citizenry greater interest, awareness and understanding of scientific and technological knowledge and issues, and particularly, to capture the hearts and minds of the young. The institute also offers programmes targeting both teachers and students that directly relate to the science curriculum and support the teaching and learning of science and mathematics in primary and secondary schools.



For FY 2011, NIHERST continued to raise the levels of scientific and technological literacy in both children and adults in Trinidad and Tobago through myriad science popularisation activities specially focussed on showing the relevance of science and on nurturing technological creativity and innovation.

Over 76,000 people benefited from these on-site and off-site programmes of the National Science Centre (NSC). This included general and themed-science visits to NSC, which attracted approximately 22,000 children and adults, or almost 30% of the persons engaged in NIHERST's science popularisation activities for the year.

Sci-TechKnoFest (STKF)

The most notable contributor to NIHERST's success in science popularisation for the FY 2011 was the science and technology festival, Sci-TechKnoFest (STKF), which is held biennially.

In 2011, the festival was staged for 14 days in May at the NSC. The theme, "iCreate ilnnovate iSustain", drew public attention to three interlocking aspects of development that now determine the prosperity and well-being of every country, advanced or developing. Over 30 agencies in the public and private sectors and civil society partnered with NIHERST to put on interactive exhibits and demonstrations on this theme.



Attendance at the festival accounted for over 50% of the persons participating in NIHERST's science popularisation programmes - that is, over 38,000 visitors. This surpassed average projected attendance by 17%.

The impact of this festival has also increased over the years, with 94% of the visitors in a 5% sample survey for 2011 reporting that the experience had increased their knowledge of science and technology, and 87% stating that they were encouraged to be more creative and innovative.

Caribbean Youth Science Forum

The Caribbean Youth Science Forum (CYSF) is an annual, regional science forum which serves as a unique and enriching platform for inspiring and mentoring the next generation of scientists and leaders for advanced studies and careers in STI. Celebrating its 10th anniversary in 2011, the forum was held in August at The University of the West Indies' St. Augustine campus. In attendance were 200 plus lower sixth form science students from Barbados, Grenada, St Lucia, Jamaica, and Trinidad and Tobago, who took part in a week of intensive educational, social and cultural activities.



During the forum, 12 students made history by being the first persons in the region to direct questions to a NASA astronaut on board the International Space Station (ISS). This historic live hook-up was arranged by Trinidad-born aerospace engineer, Camille Alleyne, Assistant Program Scientist, ISS, based at the NASA-Johnson Space Center in Houston, Texas, USA. Ms. Alleyne was the feature speaker at the opening ceremony for CYSF 2011.



Other science popularisation programmes held over the year, which are designed for smaller groupings and heightened impact, included vacation camps, clubs (Science, Astronomy, Robotics), competitions, workshops, road shows and outreach programmes. Details on some of these NSC programmes are provided in Table 1 below.

NSC Activity	Participants	Description
Science Whizz Competition 2010 themed: "Illustrate, Investigate, Innovate"	137	This annual competition, hosted in partnership with NGC, challenges secondary school students to demonstrate their knowledge and skills in math and science, or their abilities in scientific investigation, design and innovation. Launched in Sept 2010. See Appendix I for details on winners.
Science Club	118	Offers hands-on science activities which link the sciences to the arts for children aged 9 to 17. The club aims to encourage students to pursue studies in the sciences. Club membership increased by 19 within the period.
Vacation Science Camps	259	The 2011 camp programme was restructured from one-day to one-week camps, which allowed for more in-depth learning. 4 cycles of the camps were held and 3 new computer-based camps were introduced over the Jul-Aug 2011 period. The camps offered participants a student-centered, high quality, hands-on experience of science and technology.
Science Road Show	2,367	During the Oct - Nov 2010 period, primary students from nine (9) schools in the Carenage, Point Cumana and Morvant areas benefited from science demonstrations and exhibits.
Outreach Programmes	8,108	NSC participated in 6 external events over the period Oct 2010 to Sept 2011, the largest being the Tobago Science Expo on the theme: "Entertainment, Adventure, Amusement and Art", with approx. 7,000 attendees.

Table 1: Science popularisation activities undertaken: October 2010 – September 2011

Science popularisation through print and electronic media

The **Science Communications Unit** aims to promote science through the print and electronic media. This unit has developed several documentaries that have been popularly aired on local television channels. In FY 2011, the second edition in the Natural Wonders of the Caribbean video series was produced and the following electronic materials were developed:

- a DVD on climate change, which features games, simulations, quizzes and information to educate students 13-15 years old on the causes and impacts of climate change on Caribbean SIDS and measures for mitigation and adaptation; and
- an animation video on oil spills.

Strategic Goal 2: Fostering a Culture of Creativity and Innovation

Fostering a national culture of creativity and innovation is a complex and long term development task requiring a multifaceted approach that will more fully engage the national community and people of all ages and walks of life. The programmes of the Innovation Unit of NIHERST aimed particularly at inspiring and developing innovative capacity include:

- experiential activities, through the Robomania (Robotic Lab) and Creative Design Lab at the National Science Centre (NSC), to develop the creative, innovative and entrepreneurial ('technopreneurship') abilities of children and adults;
- the Gen Y project, developed in collaboration with Ian Ivey of NEXT Corporation, provides support for Gen Y members (the 14-28 years age group), and especially persons at risk, to become more networked, entrepreneurial, and forward-looking in order to make a positive contribution to society;
- an awards scheme that recognises and rewards nationals for their outstanding achievements in STI. The scheme also enables NIHERST to document, through an ongoing series of publications, the accomplishments of these scientists, raising their visibility within the wider community, and presenting them as positive role models for our youth, and aspiring scientists in particular. This is indispensable in developing a culture that values the contribution and legacy of its scientists; and
- Community-Centred Design and Innovation (COMDESI), a complementary project, established by NIHERST in partnership with The Heroes Foundation, aims to develop secondary school students' skills in innovative problem-solving to meet real community needs. Students in Forms 2-4 acquire a working knowledge of the innovation process with particular focus on idea generation, design conception and prototype development.



The Robotic and Creative Design Labs

Although creativity and innovation underpin all the work programmes of NIHERST, given its national importance to people-centred development and our country's advancement, the institute pays special attention to this area through the Robotic and the Creative Design Labs of the Innovation Unit. Consistent with the approach taken by the NSC, the Labs delivered a wide range of activities including camps, workshops, road shows, outreach activities and themed-visits/rotations, to develop a creative and innovative mindset amongst nationals.



For FY 2011, approximately 16,600 children and adults took part in hands-on activities in robotics, electronics, creativity, innovation and 'technopreneurship' (the business of innovation). This included over 5,000 children and adults who were exposed to robotics, renewable energy, AutoCAD and CAM during rotations at STKF 2011. Amongst the new exhibits featured at STKF 2011 were Robomania's latest attractions - driving, flying, dancing and football playing robots; exhibits on alternative and renewable energy; new exhibits for the "Go Creative" exhibition featuring four exhibits on nanotechnology; and the *Sustainable Dance Floor*, which was a captivating demonstration on the conversion of kinetic energy to electricity.

A breakdown of other activities undertaken by the Innovation Unit during the period October 2010 to September 2011 is provided in Table 2 below.

Innovation & Invention Unit Activity	Participants	Description
Vacation Camps	464	4 camps for age groups 5-7 (Funology), 8-12 (Explorer), 12-17 (Robotics and Young Inventors) were held during the 2011 July/August vacation at the NSC, Port-of-Spain, San Fernando, Debe and Tobago. With the exception of the Funology camp (for 5-7yrs) which had 45% of boys, all other camps had more than 50 % of males present with Young Inventors (for 9-16 yrs) having the highest % of males (82%).
Workshops	293	With the support of the THA, some 293 Forms 3 students from all 10 secondary schools in the sister isle participated in one-day workshops held on robotics (167 students) and renewable energy (126) in February 2011.
Road Shows	701	During the Oct - Nov 2010 period, primary students (Stds. 2-5) from nine (9) schools in the Carenage, Point Cumana and Morvant areas benefited from Road Shows on robotics, in which the Robomania exhibit was displayed.
Outreach Programmes	6899	NIHERST participated in 4 external events, the largest being the Tobago Science Expo with over 7,000 children and adults visiting the NIHERST booth. The institute's interactive booth highlighting Renewable Energy and Robotics was a popular display for visitors aged 11 years and up. Tobago's Channel 5 covered the display and visitors' response as a special feature for their weekly programme on Tobago.

Table 2: Activities undertaken to foster creativity and innovation: October 2010 – September 2011

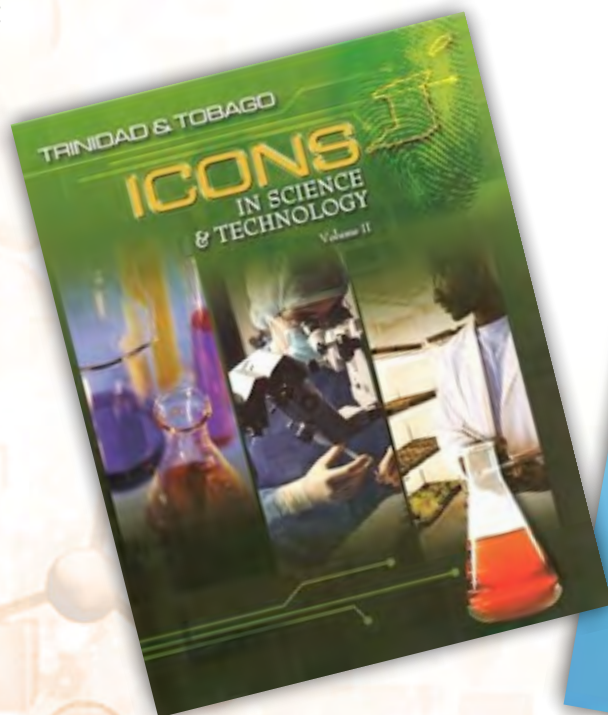
Gen Y project

Ian Ivey of NEXT Corporation developed and implemented for NIHERST this initiative which, over the year:

- provided continuing support to the operation of the AmCham Business Incubator and the on-going mentoring of the first two candidates;
- hosted a number of Y-Vision workshops for different audiences including Tabaquite Secondary School students (Feb 2011), the Youth Business Trust of Trinidad (YBTT) participants (Jun 2011), Heroes Foundation members, and YTEPP members;
- conducted, in collaboration with the Toco Foundation, several Y-Vision and Wired workshops (Aug 2011);
- produced a simplified electronic format for all the Wired (empowering Gen Y through ICT skills) and Y-Vision (empowering youth to develop 'Personal Vision 2020') modules to cater for persons with literacy challenges, as well as to reduce the production and duplication costs for end users;
- integrated the Y-Vision modules into the NINA young entrepreneurs programme for female secondary school students run by Akosua Dardaine-Edwards. Also in discussion is the integration of the Y-Vision and Wired modules into the programmes of YTEPP and the Ministry of Labour and Small and Micro-Enterprise Development; and
- endorsed the adoption of the Wired modules in the outreach activities of the UWI Computer Society.

STI Awards Scheme

The following two publications featuring icons in STI were printed and distributed to schools, libraries and diplomatic missions:



1. **Trinidad & Tobago Icons in Science and Technology, Vol. 2.** This is the 5th publication in the icons in science, technology and innovation (STI) series. It features 29 outstanding local scientists, engineers and innovators. 3,400 copies were printed and distributed to schools and libraries. Some of the icons are featured on the websites of other bodies including the Robert R. Taylor Network in the USA and in a recent publication by the Butler Institute on T&T's 100 icons.
2. **Caribbean Women in Science and their Careers.** The publication, printed in early August, showcases the achievements of our women in STI and provides career information to inspire and guide students interested in pursuing similar career paths.

COMDESI

Twenty-five (25) students from five secondary schools participated in the second cycle of this project over the period 2010/2011. They focussed on the particular problems or needs of the elderly, the hearing impaired and autistic children, working with two homes for the aged and the Autistic Society of Trinidad and Tobago. Some of the prototypes and solutions created included: a device that pregnant deaf mothers can use to feel their babies' heartbeats during ultrasound examinations; a modified, adjustable wheelchair to assist elderly persons to sit more comfortably at tables; and a playroom for autistic children, designed to either calm or stimulate them as needed.



Strategic Goal 3: Research & Intelligence Gathering

NIHERST made significant strides in the area of research and intelligence gathering to support economic diversification. This was exemplified through the following two work programmes - the S&T statistical research undertaken by the S&T Statistics Unit to inform S&T policy formulation and planning; and the institute's pioneering efforts in foresight studies and supporting activities to seed new high-value added products and businesses and strengthen business development in key sectors and niches.

S&T Statistical Research

NIHERST has the only dedicated regional capability for collecting S&T statistics for the benefit of policy analysts, researchers, educators, entrepreneurs and decision-makers and also contributing to international and hemispheric databases. Since 1996, 25 surveys and publications have been completed, covering topics or sectors such environmental awareness and practices; public perception of science; innovation in the local manufacturing sector; the performance of students in science and mathematics; and surveys of science and engineering graduates.

During the 2010/2011 period, seven surveys were conducted and the results of three important studies printed. These were:

- the Survey on the Utilisation of Information Technology by Households, 2009;
- the Survey of Innovation in the Chemical and Non-Metallic Products Industry, 2009; and
- the Survey of Innovation in the Tourism Sector, 2009.

Although the publications had not yet been printed for the other conducted surveys at the time of this report, data were also captured and analysed for the surveys of:

- Innovation in the Publishing, Printing and Paper Converter Industry, 2010;
- Science in Secondary Schools, 2011; and
- S&T Indicators, 2005-2009.

The S&T Statistics Unit's specialised capacity to collect and analyze data and information on STI indicators has proven particularly valuable to NIHERST's role in the provision of policy advice and prescriptions to the Ministry of Science, Technology and Tertiary Education (MSTTE). Additionally, the NIHERST S&T Statistical Research webpage received an average of over 16,000 hits a month.

Strategic Foresight

NIHERST was responsible in 2005 for the introduction and promotion of foresight and technology mapping to support strategic planning, research, and intelligence gathering and dissemination in science, technology and innovation



in priority areas in Trinidad and Tobago and the region, and especially the development of a more diversified, knowledge-intensive economy. In this area, NIHERST has worked in partnership with foresight expert consultant and programme facilitator, Mr. Ian Ivey of NEXT Corporation. This pioneering work has continued to have an impact on entrepreneurs and stakeholders in academia and government. In particular, during the FY 2011:

- 3 quarterly sector foresight reports covering 5 key sectors -Biotechnology & Agriculture; Health & Wellness; Fashion; Manufacturing and Renewable Energy - were completed and 3 related workshops were held, which had in attendance over 100 participants.
- Several innovation seminars and workshops were designed and facilitated by Mr. Ivey for commercial clients of the BDC's Instil Innovation programme.
- Presentations on sector foresighting and innovation were made at five regional seminars organised by the Ministry of Planning, Social Transformation and Gender Affairs.
- A substantial contribution was made to the development of a National Business Incubation Policy for the Ministry of Labour and Small and Micro-Enterprise Development.
- NIHERST facilitated the continued operation of www.ttfi.net, the electronic community of interest in foresight, growth and innovation, with membership of over 550 members and average website hits of over 10,000 hits a month.



Strategic Goal 4: Building Strategic Global Alliances

Central to NIHERST's mission to promote and advance STI in Trinidad and Tobago is the building and strengthening of collaborative/synergistic alliances with national, regional and international agencies. Such partnerships, particularly with global centres of excellence, help to build national capability and accelerate progress in key areas.

Over the years, NIHERST has established and maintained linkages with a number of specialized regional and international research, science and technology institutions. In particular, through the work of its International Projects Unit, the institute has initiated, implemented and managed collaborative STI projects sponsored by external agencies such as the Organization of American States (OAS), UNESCO, the UN Perrez Guerro Trust Fund, and the CTA ACP. The unit also supports the operations of the Caribbean Council for Science and Technology (CCST) and the Global Water Partnership-Caribbean (GWP-C) whose secretariats are hosted by NIHERST.

In the FY 2011, the Institute partnered with:

- the Caribbean Council of Science and Technology (CCST) and the Technical Centre for Agricultural and Rural Cooperation – ACP/EU (CTA), to present on the status of S&T foresight and innovation mapping in the Caribbean at the 2nd ACP Forum on Research for Sustainable Development in Brussels in October 2010. As a result, an additional 12 Caribbean countries joined the Caribbean Research Innovation and Entrepreneurship Network.
- CCST, CTA ACP-EU, CARDI, UWI and the Trinidad & Tobago Film Company to launch the Caribbean Science and Agriculture Film and Video Competition in August 2010, which received a total of 39 competition entries from Jamaica, Barbados, St. Kitts & Nevis, St. Lucia, Haiti, Grenada, Suriname, and Trinidad and Tobago. Under this project, a 3-day video and animation training workshop was conducted for 60 youth entrants from 8 Caribbean countries in December 2010.



Partners for Progress

The following local, regional and international agencies and organisations collaborated with NIHERST over the year, as sponsors of major initiatives and/or exhibitors and facilitators at key events. Many are longstanding partners who have embraced the NIHERST mission and add great value to our programmes and activities for the public.

Caribbean Council for Science and Technology (CCST)
Embassy of the United States of America
Global Water Partnership-Caribbean (GWP-C)
Ministry of Education
Ministry of Science, Technology and Tertiary Education
Technical Centre for Agricultural and Rural Cooperation – ACP/EU (CTA)
The Heroes Foundation
The National Gas Company of Trinidad and Tobago (NGC)
The University of the West Indies (UWI)
The University of Trinidad and Tobago (UTT)
Tobago House of Assembly
Trinidad and Tobago Amateur Radio League (TTARL)

Sci-TechKnoFest: Exhibitors & Trainers

Bead Cafe TT
BGTT
Blind Welfare Association
Environmental Management Authority (EMA)
Embassy of Japan
Full Circle Animation Studio
Fusion Farms Ltd
Genesis Foundation
Global Water Partnership- Caribbean (GWP-C)
Institute of Marine Affairs (IMA)
Trinidad and Tobago Meteorological Service (Met Office)
Metal Industries Company Limited (MIC)
Michele Farah
Ministry of Arts and Multiculturalism
Ministry of Energy and Energy Affairs
Ministry of Food Production, Land and Marine Affairs
Ministry of Science, Technology and Tertiary Education
Ministry of Tourism

National Quarries Company Limited
Office of Disaster Preparedness and Management (ODPM)
Pan Trinbago
Pearson Caribbean
Seismic Research Centre (SRC)
Sugarcane Feeds Centre
Trinidad and Tobago Electricity Commission (T&TEC)
The Intellectual Property Office of Trinidad and Tobago
The National Gas Company of Trinidad and Tobago (NGC)
Training and Logistics Limited
Trini Eco Warriors
Trinidad and Tobago Police Service
The University of the West Indies (UWI)
The University of Trinidad and Tobago (UTT)
Water and Sewerage Authority of Trinidad and Tobago (WASA)

Platinum Sponsors:

bpTT
Jusamco
The National Gas Company of Trinidad and Tobago (NGC)

School Sponsors:

PTSC
Education Division, THA

Prize Sponsors:

bMobile	Cascadia Hotel & Conference Centre
Caribbean Coffee House	Dimes 100% Fruit Juices
Erin Meat Packers Ltd	Flavorite Foods Ltd
HADCO Ltd	Holiday Snacks Ltd
KFC	KC Confectionary
Lat Chiu Preservatives	Lipton
Malabar Farms Food Services Ltd	MILO
N & A Marketing	NESTUM
Regal Roti Mix	Ramsaran's Dairy Products
SACHA Cosmetics	SUBWAY
Tea Time Biscuits	Universal Foods Ltd
VEMCO Ltd	

Recent Publications and Videos

Publications (2009-2011)

2011

Innovation in the Publishing, Printing & Paper Converter Industry, 2010

National Institute of Higher Education, Research, Science and Technology. Port of Spain: NIHERST, September 2011

Caribbean Women in Science and Their Careers

National Institute of Higher Education, Research, Science and Technology. Port of Spain: NIHERST, August 2011

NIHERST Children's Science Magazine: Issue 6: Iggy at the Village Olympics

July 2011

Survey of Innovation in the Tourism Sector, 2009

National Institute of Higher Education, Research, Science and Technology. Port of Spain: NIHERST, July 2011

2010

Survey of Innovation in the Chemical and Non-metallic Products Industry, 2009

National Institute of Higher Education, Research, Science and Technology. Port of Spain: NIHERST, September 2010

Survey on the Utilisation of Information Technology by Households, 2009

National Institute of Higher Education, Research, Science and Technology. Port of Spain: NIHERST, June 2010

Caribbean Icons in Science, Technology and Innovation: Volume 2

Caribbean Council for Science and Technology. - Port of Spain: NIHERST, 2010

Publications (2009-2011) cont'd

2009

Best-Bet Investment Cases

NEXT Corporation, National Institute of Higher Education Research Science and Technology - Port of Spain [Trinidad and Tobago]: NIHERST, February 2009

Survey of Environmental Awareness and Practices, 2008

National Institute of Higher Education Research Science and Technology. - Port of Spain [Trinidad and Tobago]: NIHERST, May 2009

The Contribution of Local Chinese to Science, Technology and Innovation

National Institute of Higher Education Research Science and Technology. - Port of Spain [Trinidad and Tobago]: NIHERST, August 2009

Trinidad & Tobago Icons in Science and Technology: Volume 2

National Institute of Higher Education Research Science and Technology. - Port of Spain: NIHERST, 2009

Survey of Graduates of Technical Institutions, 2008

National Institute of Higher Education, Research, Science and Technology. Port of Spain: NIHERST, December 2009

Measurement Fun: Linear Measure; Infants Year 1, Teacher's Guide

National Institute of Higher Education Research Science and Technology - Port of Spain [Trinidad and Tobago]: NIHERST, November 2009

Measurement Fun: Linear Measure; Infants Year 1, Student Workbook

National Institute of Higher Education Research Science and Technology - Port of Spain [Trinidad and Tobago]: NIHERST, November 2009

Measurement Fun: Time; Infants Year 1, Teacher's Guide

National Institute of Higher Education Research Science and Technology - Port of Spain [Trinidad and Tobago]: NIHERST, November 2009

Measurement Fun: Time; Infants Year 1, Student Workbook

National Institute of Higher Education Research Science and Technology - Port of Spain [Trinidad and Tobago]: NIHERST, November 2009

Measurement Fun: Area; Infants Year 1, Teacher's Guide

National Institute of Higher Education Research Science and Technology - Port of Spain [Trinidad and Tobago]: NIHERST, November 2009

Publications (2009-2011) cont'd

2009 cont'd

Measurement Fun: Area; Infants Year 1, Student Workbook

National Institute of Higher Education Research Science and Technology - Port of Spain [Trinidad and Tobago]: NIHERST, November 2009

Measurement Fun: Mass; Infants Year 2, Teacher's Guide

National Institute of Higher Education Research Science and Technology - Port of Spain [Trinidad and Tobago]: NIHERST, November 2009

Measurement Fun: Mass; Infants Year 2, Student Workbook

National Institute of Higher Education Research Science and Technology - Port of Spain [Trinidad and Tobago]: NIHERST, November 2009

Measurement Fun: Volume; Infants Year 2, Teacher's Guide

National Institute of Higher Education Research Science and Technology - Port of Spain [Trinidad and Tobago]: NIHERST, November 2009

Measurement Fun: Volume; Infants Year 2, Student Workbook

National Institute of Higher Education Research Science and Technology - Port of Spain [Trinidad and Tobago]: NIHERST, November 2009

Statistics: Wise Choices; Infants 1, Teacher's Guide

National Institute of Higher Education Research Science and Technology - Port of Spain [Trinidad and Tobago]: NIHERST, November 2009

Statistics: Wise Choices; Infants 1, Student Workbook

National Institute of Higher Education Research Science and Technology - Port of Spain [Trinidad and Tobago]: NIHERST, November 2009

Statistics: Wise Choices; Infants 2, Teacher's Guide

National Institute of Higher Education Research Science and Technology - Port of Spain [Trinidad and Tobago]: NIHERST, November 2009

Statistics: Wise Choices; Infants 2, Student Workbook

National Institute of Higher Education Research Science and Technology - Port of Spain [Trinidad and Tobago]: NIHERST, November 2009

The GeoChip Board: A Multi-purpose Teaching Aid; Infants to Standard 5, Teacher's Guide

National Institute of Higher Education Research Science and Technology - Port of Spain [Trinidad and Tobago]: NIHERST, November 2009

Videos (2009-2011)

2010

- **Disaster Awareness** (3 features): "Floods" "Forest Fires" "Landslides"

2009

- **Science For All** (3 features): "Amazing Coconuts" "Cocoa in the Sun" "Creative Clay"
- **Science For All: Understanding Volcanoes**
- **Climate Change (3 features):** "The Basics" "The Impacts" "Taking Action"



Financial Report 2011

The Financial Statements for the years ended December 31, 2010 and 2011 have been submitted for audit to the Auditor General's Department.



Annual Report **2011**

NATIONAL INSTITUTE OF HIGHER EDUCATION (Research, Science & Technology)

BALANCE SHEET AS AT DECEMBER 31, 2011

	<u>NOTES</u>	<u>2011</u> \$	<u>2010</u> \$
<u>FIXED ASSETS</u>	5	2,820,327	5,177,411
<u>CURRENT ASSETS</u>			
Fixed Deposit		2,421,817	2,385,981
Interest Receivable		10,206	24,359
VAT Receivable		2,208,911	962,642
Debtors		1,044,253	1,421,087
Prepayments		257,721	338,214
Suspense			
Cash at Bank		11,429,648	12,097,397
Cash in Hand		8,000	8,000
		<hr/>	<hr/>
		17,380,556	17,237,680
<u>LESS</u>			
<u>CURRENT LIABILITIES</u>			
Accrued Expenses		237,456	1,043,932
Suspense		59,538	59,538
Creditors		806,770	930,584
Deferred Income	6	14,346,395	14,541,204
		<hr/>	<hr/>
		15,450,159	16,575,258
<u>NET CURRENT ASSETS</u>		<hr/>	<hr/>
		1,930,397	662,422
<u>TOTAL ASSETS LESS TOTAL LIABILITIES</u>		<hr/>	<hr/>
		4,750,724	5,839,833
<u>FINANCED BY:</u>			
Reserve Balance at Beginning of the year		5,839,833	7,523,777
(Deficit)/Surplus for year		(703,719)	(1,683,944)
Prior Year Adjustments		-385,390	0
		<hr/>	<hr/>
		4,750,724	5,839,833
		<hr/>	<hr/>

President _____

Accountant _____

The accompanying notes form an integral part of these Financial Statements.

NATIONAL INSTITUTE OF HIGHER EDUCATION (Research, Science & Technology)

INCOME AND EXPENDITURE ACCOUNT

FOR THE YEAR ENDED DECEMBER 31, 2011

<u>INCOME</u>	<u>NOTES</u>	<u>2011</u> \$	<u>2010</u> \$
Government Grants		29,106,841	23,998,274
Interest Income		36,248	122,859
Miscellaneous Receipts		1,807,512	788,807
		30,950,601	24,909,940
<u>EXPENDITURE</u>			
Personnel Expenditure		6,366,022	5,204,427
Goods and Services	7	20,059,394	16,459,581
Audit Fees		120,000	40,000
Pension & Gratuities		1,443,670	1,141,209
Health Plan Contributions		91,241	97,537
Board Fees		611,700	105,292
Loss on Disposal		5,696	0
Minor Equipment Purchases		136,496	15,687
Depreciation Charge:			
Equipment and Machinery		803,122	1,622,963
Furniture and Fittings		65,585	65,437
Motor Vehicles		80,092	80,092
Exhibits		1,871,302	1,761,659
		31,654,320	26,593,884
Surplus (Deficit) for year		(703,719)	(1,683,944)

The accompanying notes form an integral part of these Financial Statements.

NATIONAL INSTITUTE OF HIGHER EDUCATION (Research, Science & Technology)

STATEMENT OF CASH FLOWS

FOR THE YEAR ENDED DECEMBER 31, 2011

	<u>2011</u>	<u>2010</u>
	\$	\$
<u>OPERATING ACTIVITIES</u>		
(Deficit)/Surplus	(703,719)	(1,683,944)
Adjustments:		
Disposal of Assets	5,695	0
Depreciation	2,820,101	3,530,151
Decrease in Deferred income	(194,809)	(1,064,569)
Sub Total	1,927,268	781,638
Decrease in Accrued Expenses	(806,476)	321,251
Increase in Creditors	(123,814)	25,766
Sub Total	(930,290)	347,017
Increase in Vat Receivable	(1,246,269)	460,961
Increase in Receivables - Interest	14,153	12,737
Increase in Debtors	376,834	(6,121)
Decrease in Prepayments	80,493	(81,966)
Decrease in Suspense	0	0
Sub Total	(774,789)	385,611
CASH PROVIDED BY OPERATING ACTIVITIES	<u>222,189</u>	<u>1,514,266</u>
 <u>INVESTING ACTIVITIES</u>		
Purchase of Fixed Assets	(468,712)	(1,167,238)
Increase in Fixed Deposit	(35,836)	(53,091)
CASH PROVIDED USED IN INVESTING ACTIVITIES	<u>(504,548)</u>	<u>(1,220,329)</u>
 <u>FINANCING ACTIVITIES</u>		
Loans	0	0
Repayment of loans for year	0	0
CASH PROVIDED USED IN FINANCING ACTIVITIES	<u>0</u>	<u>0</u>
 Net Increase/(Decrease) in Cash/Cash Equivalents	(282,359)	293,937
Prior Year Adjustments	(385,390)	0
Cash and Cash Equivalents at the beginning of the year	12,105,397	11,811,460
 CASH AND CASH EQUIVALENTS AT END OF YEAR	<u><u>11,437,648</u></u>	<u><u>12,105,397</u></u>
 CASH AND CASH EQUIVALENTS/ REPRESENTED BY		
Cash at Bank	11,429,648	12,097,397
Cash in Hand	8,000	8,000
	<u><u>11,437,648</u></u>	<u><u>12,105,397</u></u>

The accompanying notes form an integral part of these Financial Statements.

NATIONAL INSTITUTE OF HIGHER EDUCATION (Research, Science & Technology)

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED DECEMBER 31, 2011

1. INCORPORATION AND ACTIVITIES

The National Institute of Higher Education (Research, Science and Technology) (NIHERST) is a Statutory Authority incorporated by Act of Parliament No. 20 which was assented to on June 28, 1984. The institute's mission is to help build Trinidad and Tobago's capacity in science, technology and innovation (STI), as the basis for the development of a more sustainable, diversified, knowledge-driven economy. NIHERST's work is focussed in four core areas: non-formal and formal science education to increase literacy, awareness and engagement; research and intelligence gathering to inform policy and guide investment; fostering greater creativity, inventiveness and entrepreneurship across all sectors; and establishing stronger global partnerships to accelerate advancement in STI, particularly in priority areas for development.

2. REPORTING CURRENCY

These financial statements are expressed in Trinidad and Tobago currency.

3. SIGNIFICANT ACCOUNTING POLICIES*A. Accounting Convention*

The financial statements of the institute have been prepared under the historical cost convention. The institute's accounting policies conform with International Financial Reporting Standards.

*B. The institute's year end is December 31st.**C. Government Grants, Contributions and Donations*

The institute's operations are funded in the main by Government Grants on the basis of an annual budget approved by the Government of Trinidad and Tobago. Contribution/Donations are received from Companies/Organisations to assist with the expenses for a particular event/activity undertaken by the institute.

D. Fixed Assets and Depreciation

All Fixed Assets are recorded at cost. Depreciation is provided at rates estimated to write off fixed assets over their expected useful lives. For each category of fixed asset the rates per annum used are as follows:

<i>Furniture and Fittings</i>	- 10 years 10% per annum
<i>Equipment and Machinery</i>	- 3 years 33 1/3% per annum
<i>Motor Vehicles</i>	- 4 years 25% per annum
<i>Exhibits</i>	- 4 years 25% per annum

4. EMPLOYEE RETIREMENT BENEFITS

Certain employees of the institute are members of the NIHERST Pension Fund Plan. The Plan is a defined plan, the assets of which are held separately from those of the institute, in an independently, trustee-administered fund.

NATIONAL INSTITUTE OF HIGHER EDUCATION (Research, Science & Technology)

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED DECEMBER 31, 2011

5. FIXED ASSETS SCHEDULE 2011

	<u>Equipment</u>	<u>Furniture & Fittings</u>	<u>Motor Vehicles</u>	<u>Exhibits</u>	<u>TOTAL</u>
	\$	\$	\$	\$	\$
COST:					
B/F 2011 At beginning of the year	10,914,244	1,046,371	408,471	12,468,306	24,837,392
Acquisitions 2011	318,675	81,843	0	68,194	468,712
Disposals/Adjustments	(733,681)	0	0	0	(733,681)
	<u>10,499,238</u>	<u>1,128,214</u>	<u>408,471</u>	<u>12,536,500</u>	<u>24,572,423</u>
Accumulated Depreciation:					
B/F 2011 At beginning of the year	9,557,529	693,995	281,823	9,126,634	19,659,981
Disposals/Adjustments	(727,986)	0	0	0	(727,986)
2011 Charge	803,122	65,585	80,092	1,871,302	2,820,101
	<u>9,632,665</u>	<u>759,580</u>	<u>361,915</u>	<u>10,997,936</u>	<u>21,752,096</u>
NET BOOK VALUE AT 2011 DECEMBER 31	<u>866,573</u>	<u>368,634</u>	<u>46,556</u>	<u>1,538,564</u>	<u>2,820,327</u>
NET BOOK VALUE AT 2010 DECEMBER 31	<u>1,356,715</u>	<u>352,376</u>	<u>126,648</u>	<u>3,341,672</u>	<u>5,177,411</u>

NATIONAL INSTITUTE OF HIGHER EDUCATION (Research, Science & Technology)

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED DECEMBER 31, 2011

6. DEFERRED INCOME

	<u>2011</u>	<u>2010</u>
	\$	\$
I) Cash Donations		
Balance as at January 1, 2011	14,468,690	15,513,910
Increases for the year 2011*	6,486,718	2,219,211
Decreases for the year 2011**	<u>(6,662,178)</u>	<u>(3,264,431)</u>
Sub-Total	14,293,230	14,468,690
II) Non Cash Donations		
Balance as at January 1, 2011	72,514	91,863
Less Decreases for the year 2011	0	0
Increases for the year 2011*	0	0
Less Depreciation for the year 2011	(19,349)	(19,349)
Sub-Total	<u>53,165</u>	<u>72,514</u>
Total Deferred Income	<u><u>14,346,395</u></u>	<u><u>14,541,204</u></u>

* Included in the Increases is Public Sector Investment Programme (PSIP) funding totalling \$6,253,000. Funding was provided in the main for the following activities: (a) Sci-Tekhnofest (b) Development of a Innovation System (Young Innovators and Inventors Award) and c) President's awards for Excellence in Science and Technology.

** Included in the Decreases is Public Sector Investment Programme (PSIP) expenses totalling \$5,980,243. Other funds shown in the deferred income account were received from various Organisations to sponsor specific projects. Expenses incurred on these projects are applied directly to the sponsored funds.

NATIONAL INSTITUTE OF HIGHER EDUCATION (Research, Science & Technology)

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED DECEMBER 31, 2011

7. GOODS AND SERVICES

	<u>2011</u>	<u>2010</u>
	\$	\$
Travelling	792,893	430,328
Uniforms	50,020	65,642
Electricity	541,162	522,008
Telephone	633,499	632,874
Water and Sewerage	39,430	14,020
Rent/Lease-Office Accommodation	3,428,706	3,231,752
Rent/Lease-Vehicles & Equipment	338,227	395,657
Office Stationery and Supplies	394,348	354,281
Books and Periodicals	90,969	80,823
Materials and Supplies	225,954	172,399
Maintenance of Vehicles	99,134	115,271
Repairs and Maintenance-Equipment	160,980	158,142
Contract Employment	6,270,288	4,866,880
Training	302,653	337,973
Repairs & Maintenance-Buildings	889,033	518,000
Short Term Employment	949,820	599,338
Fees	272,432	76,385
Official Overseas Travel	301,183	5,651
Other Contracted Services	964,741	1,012,308
Janitorial Services	275,589	121,711
Security Services	683,792	638,813
Postage	7,118	48,185
Insurance	217,118	229,494
Promotions, Publicity & Printing	858,095	633,810
Hosting of Conferences & Seminars	1,355,076	1,208,778
Employee Assistant Programme	37,134	29,058
Total Goods and Services	<u>20,179,394</u>	<u>16,499,581</u>

APPENDIX I

2010 Science Whizz Competition Winners

Innovate Category		PRIZE WINNERS
JUNIORS	1st Prize	"Pink All Star" team – St. Joseph's Convent, St. Joseph
	2nd Prize	"Viper" team – Holy Cross College
	3rd Prize	"Maximum Destruction" team – Holy Cross College
	Special Prize	"Evo Coaster" team – Holy Cross College
SENIORS	1st Prize	"Thriller" team – Holy Cross College
	2nd Prize	"Martian Waltz" team – St. Joseph's Convent, St. Joseph
	3rd Prize	"Marked for Death" – Holy Cross College
	Special Prize	Goodwood High School, Tobago

Investigate Category		PRIZE WINNERS
SENIORS	Special Prize	Precious St. Clair – El Dorado East Secondary School
	Special Prize	Kelsey Johnson – Goodwood High School, Tobago

APPENDIX I

2010 Science Whizz Competition Winners cont'd

Illustrate Category		PRIZE WINNERS
JUNIORS	1st Prize	Mackadis Smith – Holy Cross College
	2nd Prize	Daniel Martinez – Brazil High School
	3rd Prize	Wesley Bailey – El Dorado East Secondary School
SENIORS	Special Prizes	Scott Olton - Holy Cross College Anthony O’Kieff - Holy Cross College James Knox - Holy Cross College
	Special Prize	Hematee Sookdeo – Brazil High School

Contact Information

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