

MINISTRY PAPER NO.: _____

**PERFORMANCE OF THE SCIENTIFIC RESEARCH COUNCIL FOR THE
2006/2007 FINANCIAL YEAR AND FOCUS FOR THE 2007/2008 FINANCIAL
YEAR**

1.0 Purpose of Ministry Paper

The main purpose of this Ministry Paper is to inform Parliament and the public about the performance of the Scientific Research Council (SRC) during the 2006/2007 Financial Year and its main focus for the 2007/2008 Financial Year.

2.0 Mission

The Mission of the SRC is to serve the productive sector, policy makers and the general public to enable sustainable development in Jamaica by:

- providing quality scientific and technological solutions (product/process research and development, policy advice, technology transfer)
- popularising science and technology through strategic alliances
- being customer-focused, with innovative, competent and responsive teams.

3.0 Role and Functions of the SRC

The SRC was established by an Act of Parliament in 1960, with subsequent modifications to operating procedures.

Overall, the Agency seeks to contribute to economic growth by broadening the industrial base in a manner that focuses on the use of local resources. The SRC also provides technical support to existing industries to enhance their performance in increasingly competitive domestic and international markets. To that end, the Council is involved in:

- (a) development of new and improved marketable Jamaican value-added products
- (b) Commercialisation and subsequent sale of products and technologies based on local raw materials, with the objective of reducing risks to entrepreneurs
- (c) provision of Science & Technology (S&T) information
- (d) provision of technical support, training, and transfer of technology to the agro-industrial sector

- (e) provision of technical support, training and advice for the management and optimisation of waste in several sectors, including tourism
- (f) increasing public awareness of the relevance of science and technology to national development
- (g) introduction of advanced agricultural technologies to enhance productivity in selected sectors
- (h) economic management of important local resources in a sustainable manner; through partnership with local communities
- (i) facilitating and encouraging the development of a national innovation system
- (j) policy, planning, implementation and management through national projects and committees of Government agencies.

4.0 Priority Policy Issues

Based on the National Industrial Policy (Cluster 3) and the National Science and Technology Policy, the SRC is mandated to support the agro-industrial sector in ensuring food security, strengthening export potential and improving quality of life.

5.0 Highlights of Performance for Financial Year 2006/2007

The following outlines the achievements of the SRC in meeting its priorities for the Financial Year 2006/2007.

5.1 Increased Client Productivity and Product Quality

- a. Continued training of individuals as well as local and regional micro, small and medium-sized (MSME) enterprises in various aspects of food technology and safety, wastewater management and biotechnology. Special emphasis was placed on addressing the quality issues in the juice and roots beverages sub-sector:
 - i. Over twenty five (25) persons from MSME's were trained in "good manufacturing practices", "hazard analysis and critical control point (HACCP) awareness", and "strategic marketing". These are certified training programmes developed and conducted under the PSDP-funded Consortia Business Development Services Project.
 - ii. Over sixty (60) persons from the private sector and potential entrepreneurs completed training in the certified training programmes "tissue culture", "meat processing", "operation and maintenance of "wastewater treatment systems", "biogas technology", "jams and jellies" and "canning".

- b. The Council provided consultancy services, technical assistance and advice to customers in product and process development; food processing technologies, waste management, biotechnology, and natural products, as agreed with customers:
 - i. Over sixty (60) feasibility studies for anaerobic wastewater treatment systems were completed over the period
 - ii. Seven (7) anaerobic wastewater treatment systems were constructed over the period
 - iii. Consultancy services were provided to six (6) new clients in wastewater treatment
 - iv. Technical assistance was offered for the production of over one thousand five hundred (1,500) plantlets for clients. The plant species included sweet potato and ginger
 - v. Schedule process activities were completed for five (5) products for two (2) clients and vent schedule was conducted at three (3) food processing companies;
 - vi. Consultancy services, technical assistance and advice were delivered to fifty seven (57) clients in several areas of food processing including suitable equipment and facilities for bottling coconut water, canning and chips manufacture, milling, solar drying, preservatives and juice processing;
- c. The Council continued to provide analytical services, technical assistance and consultancy/advice in chemistry and microbiology, to over thirty (30) external clients in the areas of water/wastewater and food. Some three thousand eight hundred and seventy three (3,873) samples were analysed.

5.2 Product Development:

- a. Formulations for twelve (12) new food products were completed for clients as requested
- b. One hundred and six (106) nutritional facts panels were generated for clients as requested
- c. Technology packages were completed for five (5) food products including two (2) under the PSDP Capacity Building Project
- d. Provided technology training specific to the development of two (2) food products for clients from the Commonwealth of Dominica. This exercise was funded by the Caribbean Development Bank (CDB)
- e. Completed protocols for extraction, characterization and standardization of ginger and turmeric

- f. Continued developmental activities for the standardization of active ingredients in local plants to support development of a local nutraceutical industry
- g. Completed formulation of one (1) sweet potato-based product
- h. Developed conservation protocols for plants already established and for the initiation and multiplication of six select economically important plant species
- i. Trained staff in conservation procedures for plants
- j. Purchased and commissioned an extruder for production of extruded food-based products including nutritional snacks
- k. Trained two pilot plant operators and a product development specialist to operate the extruder.

5.3 Promotion and Sale of Technologies

- a. The Council continued its drive in promotion and utilization of environmentally friendly, energy-generating, anaerobic waste treatment technology.
- b. Promotion and sale of technologies, services and S&T information packages of the SRC, as follows:
 - i. Some four (4) food formulations were sold
 - ii. A semi-automatic juice bottling line NB: CHECK ON THIS "JUICE LINE" was purchased under the PSDP-funded Capacity Building Project. This will be commissioned in the next financial (2007/2008) year to facilitate increased production of Jamaican 'roots' and juice products by MSME's. In addition, work commenced on the refurbishing of the Food Pilot Plant
 - iii. Work continued on the tissue culture facility for inner city communities in Eastern Kingston. A lease agreement was signed for the acquisition an unused section of the facilities at the Port Royal Community Centre. In addition some renovation work commenced
 - iv. A Proposal was presented to another client for establishing a tissue culture facility. In addition, assistance was provided to the Christiana Potato Growers Association for the development of a tissue culture facility. This facility is now functional.
- c. Patent applications for the air water lift system and for impoundment for impoundment research were completed and submitted.
- d. Implementation of projects under various bi-national agreements and memoranda of understanding with institutions such as Bureau of Standards, Jamaica (BSJ), JMA, RADA, UWI and UTech:
 - i. The Council continued its collaboration with BSJ to determine and assist clients with quality problems:

1. Retorts were inspected for twenty two (22) factories and the inspection reports submitted to the Bureau of Standards
 2. Five members of staff were trained as ISO 9001:2000 and ISO14000:2004 internal auditors and trainers.
- e. Plantlets were supplied to the Hope Gardens Development Group based on demand.

5.4 Sensitization Programme

The SRC persisted in its efforts at continued sensitization about the about the national, regional and global importance of Sof S&T. This was effected through a number of initiatives:

- a. Carrying-out of community-focused S&T popularization activities. Nineteen (19) seminars/workshops and presentations were done, facilitated in part by the re-establishment of an outpost programme in central Jamaica. Presentations were made at primary, secondary and tertiary level institutions including Seaview Primary, St. Catherine High, the University of Technology (UTECH) and the Norman Manley Law School. In addition, presentations were also made to professional groupings including school principals and the Small Business Association.
- b. Mounting of fourteen (14) external and twelve (12) internal public exhibitions
- c. Sensitisation of students and teachers to the Caribbean Energy Information Systems (CEIS) Update and other support information, particularly through the SRC's column in the CEIS Update "Energy for Young Minds", which carried articles useful as reference material for the CXC and CAPE syllabuses. The sensitization exercise was also done through the following programmes: science fair in Mandeville, Manchester; health fair at Comma Pen, St. Elizabeth; the roving exhibition at Sandy Bay, St James; career fair in Montego Bay, St. James and Career Seminar at UTECH , St. Andrew
- d. Continued support of the primary and secondary schools' science curricula through the activities of the Schools' Science and Technology Societies (SSTS's), and the staging of science fairs/exhibitions, camps, and regional poster and speaker's- fora competitions.
- e. Publication of eight (8) documents including Jamaica Journal on Science and Technology, Energy Ministers Bulletin, S&T Accession List, and S&T Education Bulletin. Development, update and or maintenance of five (5) databases on patents, skills banks, science teachers, nutraceuticals and natural product.
- f. Successful completion of Sof S&T Month activities which included the successful staging of the 20th Annual Conference on S&T.
- g. Facilitation of proper functioning of the Inventors & Innovators Association, established in 1999 with the main objective of fostering development and commercialization of local inventions and innovations.

5.5 Programmes to enhance SRC as Efficient and Effective organization

- a. Implementation of a programme towards certification of the Quality Management System of the SRC by SRC by July 2007. This included completion of documentation, training of seventeen (17) internal quality auditors, awareness sessions for staff and completion of a gap audit and a system audit
- b. Implementation of the approved reclassification programme, performance appraisal system and incentive programme
- c. Completion of a one hundred and fifty (150) page impact study examining the impacts of the annual national S&T conference, and the outpost and schools' science and technology societies programmes.

67.0 Priority Projects/Programmes for Financial Year 2007/2008

7.16.1 Customer productivity is increased and the quality of their goods and services improved through the provision of S&T solutions

- a. Cleaner production technologies are implemented in select companies increasing productivity levels
- b. At least five (5) other contract agreements with clients are satisfactorily completed
- c. EMS model established at SRC by March 2008
- d. Delivery of accredited training programmes to the productive sector and potential MSME's according to marketing strategy and needs. Training programmes may include tissue culture, meat processing, operation and maintenance of wastewater treatment systems, biogas technology, jams and jellies, and canning
- e. Impact assessments completed on selected training interventions of SRC
- f. Initiation of a regional HACCP consultancy service
- g. Provision of consultancy services, technical assistance and advice to customers in product and process development, food processing technologies, waste management, biotechnology, and natural products

- h. Provision of analytical services, technical assistance and consultancy/advice in chemistry and microbiology, to clients in the areas of water/wastewater and food technologies
- i. Continued collaboration with Bureau of Standards Jamaica (BSJ) to determine client needs and assist clients with quality problems. Collaborative work programme with the Bureau of Standards Jamaica for Financial Year 2007/2008 developed by June 2007 and implemented
- j. Implementation of projects under various bi-national agreements and memoranda of understanding with other institutions such as JMA, RADA, UWI and Utech.

6.2

7.2 Satisfying Customer Demands through Development of New Products

- a. Contract research and development for the productive sector. Customer contracts for the development of at least two (2) new products finalized and implemented satisfactorily, increasing customer revenue
- b. At least two (2) cooperation agreements and or action plans developed by March 2008 and implemented as agreed with select local R&D institutions
- c. Draft of marketing strategy completed by September 2007 re alignment of SRC to deliver service in provision of certificates of analysis for natural products from selected plants
- d. Certificate of analysis services for at least two (2) plants, offered by December 2007.
- e. In-house product research and development to stimulate economic activities in the productive sector:
 - 1. Development of protocols for at least two (2) new food products to meet needs and or demands of select target markets
 - 2. Project proposal relating to the roots industry submitted to funding agencies by March 2008.
- f. Conservation of gene bank:
 - 1. Completion of conservation protocols for at least two (2) additional plants and all documentation done by March 2008
 - 2. Initiation of coffee gene bank -at least two (2) new cultivars - by March 2008
 - 3. Initiation of at least four (4) new plants into culture (gene bank) by March 2008

- g. Developmental activities towards the standardization of active ingredients in other local plants towards development of a nutraceutical industry in Jamaica:
 - 1. Implementation of approved National Health Fund (NHF) project
- h. Provision of analytical services (chemical and microbiological) to the agro-processing and manufacturing sectors as well as private individuals, as requested
 - 1. All requests for chemical and microbiological analyses satisfied in a timely manner, meeting customer requirements
 - 2. Low Acid Canned Foods project implemented as planned
- i. Implementation of the approved International Atomic Energy Agency (IAEA) project which focuses on strengthening the nation's plant diagnostic competencies and the development of protocols for improved varieties of select economically important crops suitable for large and small farms, utilizing mutation breeding techniques
- j. At least two (2) project proposals prepared by September 2007 under the regional Energy Consultancy Services programme and at least one (1) contract finalised by March 2008
- k. At least forty five (45) client requests for S&T information satisfied by the packaging or repackaging of information.

7.36.3

Increased Utilization of technologies in Productive Sector

- a. Strengthening of the technical competencies and techno-intelligence capabilities of SRC regarding new technologies in biotechnology, wastewater, food processing and natural products development
- b. At least one (1) technology package (Techpak) sold to the productive sector by March 2008
- c. Solar drying technology for farming community improved and transferred by March 2008
- d. Low cost transfer of tissue culture technology to communities completed by March 2008
- e. Technology in air water lift (AWL) system and Impoundment Project transferred to the aquaculture sub-sector by March 2008
- g. Promotion and sale of technologies, services and S&T information packages of the SRC
- h. Provision of services to MSME's in the utilization of a semi-automatic juice line for the production of Jamaican 'roots' and juice products

7.4.6.4 Continual Sensitization on National/Regional/Global Value of S&T

- a. Collaborations and alliances in support of sensitization/dissemination of information:
 1. Collaborations with the following organisations and institutions: OAS; ASTJ; JCDC; MIN ED.; MIN. AGRIC; RADA; BSJ; SDC; JSST; Research Consortium
 2. At least fifteen (15) seminars including career seminars and presentations on science, technology and innovation to schools and other target groups successfully completed and documented
 3. S&T quiz, poster and other competitions successfully staged
 4. At least three (3) science fairs staged in collaboration with JPSCo.
 5. S&T summer camps held in four (4) locations for primary school-aged children
 6. Assistance provided to Inventors/Innovators Association with meetings held at least twice for the year; development of at least one (1) prototype; annual exposition mobilizing at least sixty (60) entries and successful staging of the Innovation Awards of MITEC
 7. WINISIS or other library-related Workshop held at least once for the year

8. Summer attachment programme for at least six (6) science teachers successfully implemented and documented

b.

Publications:

1. At least two (2) Techpaks are prepared
2. At least two (2) occasional papers & one "S&T Proceedings" published
3. At least six (6) issues of Energy Ministers Bulletin published
4. 2007 Volume of JJST published by December 2007
5. At least four (4) issues of CEIS Update published
6. At least four (4) issues of the S&T Accession list published
7. At least two (2) S&T bulletins published and distributed to schools

c. Databases:

1. Skills bank database increased by twenty percent (20%) and promoted by March 2008
2. Information on at least two (2) endemic plants added to the natural products database
3. Science teachers database increased by twenty five percent (25%) and promoted
4. Information on at least ten (10) new patents relevant to Jamaica inputted to the patent database
5. Information on at least four (4) nutraceutical products inputted to the general SRC catalogue database
6. At least twenty (20) new journals/books/e-publications acquired or received for the year

d. Collaboration with regional and international agencies (for implementation of regional energy-based projects), and with eighteen (18) regional countries to inform and sensitise various target groups, including energy ministers, on energy-related information

1. Monthly calendar of regional energy events developed and posted on CEIS website.
2. Annual CEIS regional programme activities satisfactorily implemented
3. Energy-related project components satisfactorily implemented as per contract with CREDP.
4. Sensitization programme in energy for schools implemented and assessed throughout the region as outlined in project document

e. Community focused S&T popularization activities:

1. Annual schedule of the approved outpost programme finalized by June 2007 and implemented accordingly
2. At least four (4) public fora held in conjunction with Marketech Ltd. in select communities/target groups by March 2008

3. Profiles on at least four (4) targeted communities, including information on their needs, developed by March 2008
 4. Programme for the Montego Bay outpost developed and implemented accordingly
 5. The Montego Bay outpost staffed by September 2007 with National Youth Service (NYS) worker.
- f. S&T Month
1. 21st Science, Technology and Innovation (STI) conference successfully held in November 2007
 2. At least six (6) other scheduled S&T month activities aimed at the popularization of S&T successfully implemented
- g. Special Projects:
1. Data on the production of tissue cultured plantlets as a revenue-earning school/community project, targeting Rio Cobre Juvenile Boys Home and other schools, collected and collated by March 2008
 2. Base data on performance in science and mathematics for at least three (3) representative schools from each region collected and analysed
 3. Impact of the essay and poster competition determined by March 2008

7.56.5 The SRC Team –Efficient/Effective

- a. Promote culture and improve organizational structure to better respond to customer needs. A programme/system to inculcate new desired culture developed by June 2007 and implemented as scheduled
- b. Corporate and operational plans, divisional deliverables, and staff objectives established objectives established and implemented as scheduled.
- c. Performance of staff and divisions appraised divisions appraised using an appropriate measurement system.
- d. Training plan documented for relevant staff members and training effected according to approved plan, in line with needed competencies and performance requirements
- e. Infrastructure, safety systems and maintenance programmes implemented as planned
- f. Certified Quality Management System in place by March 2008
- g. Analytical laboratories accredited by March 2008
- h. HACCP system of the Food Pilot Plant certified by March 2008.

76.0 Budgetary Allocation

The actual expenditure for Financial Year 2006/2007 and approved expenditure for Financial Year 2007/2008 are presented in Table 6.1 below.

Table 6.1: Actual Expenditure (2006/2007) and Approved Expenditure (2007/2008)

Categories of Expenditure	Actual Expenditure (2006/2007) (\$'000)	Proposed Budget (2007/2008) (\$'000)
Compensation of employees	153,759	164,607
Travel expenses and subsistence	19,851	18,398
Rental of property, machinery, equipment	487	360
Public utility services	11,848	5,487
Grants and contributions	650	350
Purchases of other goods and services	39,995	21,462
Equipment (capital goods)	3,700	9,499
Total	230,290	220,163

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