



**National Irrigation
Commission Limited**

"Irrigation ... Making the Difference in Agriculture"

Annual Report 2020 - 2021



TABLE OF CONTENTS

VISION	3
MISSION	3
CORE VALUES	3
CORPORATE DATA.....	4
OVERVIEW OF THE NIC	5
MAP OF IRRIGATION DISTRICTS.....	6
MINISTER’S MESSAGE	7
CHAIRMAN’S MESSAGE.....	8
CHIEF EXECUTIVE OFFICER’S MESSAGE	9
BOARD OF DIRECTORS	10
DISTRICT ADVISORY AND MONITORING COMMITTEES.....	12
EXECUTIVE MANAGEMENT TEAM	13
DIRECTORS’ COMPENSATION	14
SENIOR EXECUTIVES’ COMPENSATION.....	16
ADMINISTRATION AND HUMAN RESOURCES DIVISION	18
ENGINEERING AND TECHNICAL SERVICES	26
PUBLIC RELATIONS.....	36
PROJECTS	39
MANAGEMENT INFORMATION SYSTEMS.....	49
COMMERCIAL OPERATIONS.....	50
FINANCE AND CORPORATE PLANNING.....	52
INTERNAL AUDIT	57
FINANCIAL STATEMENTS	58

VISION

To be the regional leader in the provision of world class irrigation services.

MISSION

To meet the needs of our customers by delivering high quality irrigation services driven by competent staff, technology, innovation and collaboration with partners.

CORE VALUES

- Teamwork
- Respect
- Excellence
- Commitment/Customer-Centric
- Knowledge-Driven
- Sustainability

CORPORATE DATA

REGISTERED OFFICE

National Irrigation Commission Limited
Head Office
191 Old Hope Road, Kingston 6
Tel: 876-977-4022/6727 or 876-618-0172
Fax: 876-927-2696
E-mail: nic@cwjamaica.com

THE OPERATION CENTRE

15 Barrett Street, Spanish Town
St. Catherine
Tel: 876-984-0625/5792 or 876-469-1910
Fax: 876-984-0532

DISTRICT OFFICES

St. Catherine Irrigation District

Rio Cobre Office
17 Barrett Street, Spanish Town
St. Catherine
Tel: 876-984-2334 or 876-489-8801
Fax: 876-984-8401

St. Dorothy Office
Bodles, Old Harbour, St. Catherine
Tel: 876-983-2712 or 876-489-8781
Fax: 876-745-2759

Yallahs Irrigation District

Yallahs Office
Yallahs, St. Thomas
Tel: 876-706-3159 or 876-489-8912
Fax: 876-706-3160

Mid-Clarendon Irrigation District

Mid-Clarendon Office
Osbourne Store, May Pen
Clarendon
Tel: 876-987-3140/3259 or 876-469-1909
Fax: 876-987-3139

New Forest Irrigation District

New Forest Office
New Forest P.A., Manchester
Tel: 876-371-0794

St. Elizabeth Irrigation & Drainage District

Hounslow Office
Watchwell P.A., St. Elizabeth
Tel: 876-965-0714 or 876-489-8918
Fax: 876-965-0232

Braco Irrigation District

Braco Office
Duncans, Trelawny
Tel: 876-954-2147 or 876-489-9095
Fax: 876-954-2295

AUDITORS

KPMG
6 Duke Street
Kingston, Jamaica
Tel: 876-922-6640
Fax: 876-922-7198

Attorneys-at-Law

Wentworth Charles and Co.
20 1/2 Duke Street
Kingston, Jamaica
Tel: 876-922-1125 or 876-967-4520
Fax: 876-922-9130

OVERVIEW OF THE NIC

The mandate of the National Irrigation Commission Limited (NIC) in accordance with the Irrigation Act 1949 is:

"...to manage, operate, maintain and expand the existing and future irrigation schemes and systems as may now or hereafter be established by the Government of Jamaica or by any Department or Agency thereof... to fix and collect the rates or charges to be paid... for the use of such water."

Services are provided primarily to agricultural and industrial users in the Eastern, Central and Western Regions as follows:

- Eastern Region:**
- St. Catherine:** Rio Cobre, St. Dorothy, Colbeck and Amity Hall;
 - Portland:** Spring Garden;
 - St. Thomas:** Yallahs, Yallahs IDB and Plantain Garden River.
- Central Region:**
- Clarendon:** Mid-Clarendon and Ebony Park/Spring Plain;
 - Manchester:** New Forest/Duff House
- Western Region:**
- St. Elizabeth:** Hounslow and Pedro Plains (Beacon/Little Park);
Black River Upper & Lower Morass (Drainage Area);
 - St. James:** Seven Rivers;
 - Trelawny:** Braco.

The NIC is governed by a 15-member Board of Directors. The Chief Executive Officer, as the responsible and accounting officer, manages the day-to-day operations of the Agency. The Divisions/Units of the NIC are:

- Administration and Human Resources;
- Legal Services;
- Engineering and Technical Services;
- Public Relations;
- Project Unit;
- Management Information Systems;
- Commercial Operations;
- Finance and Corporate Planning;
- Internal Audit and Strategic Planning Unit.

MAP OF IRRIGATION DISTRICTS

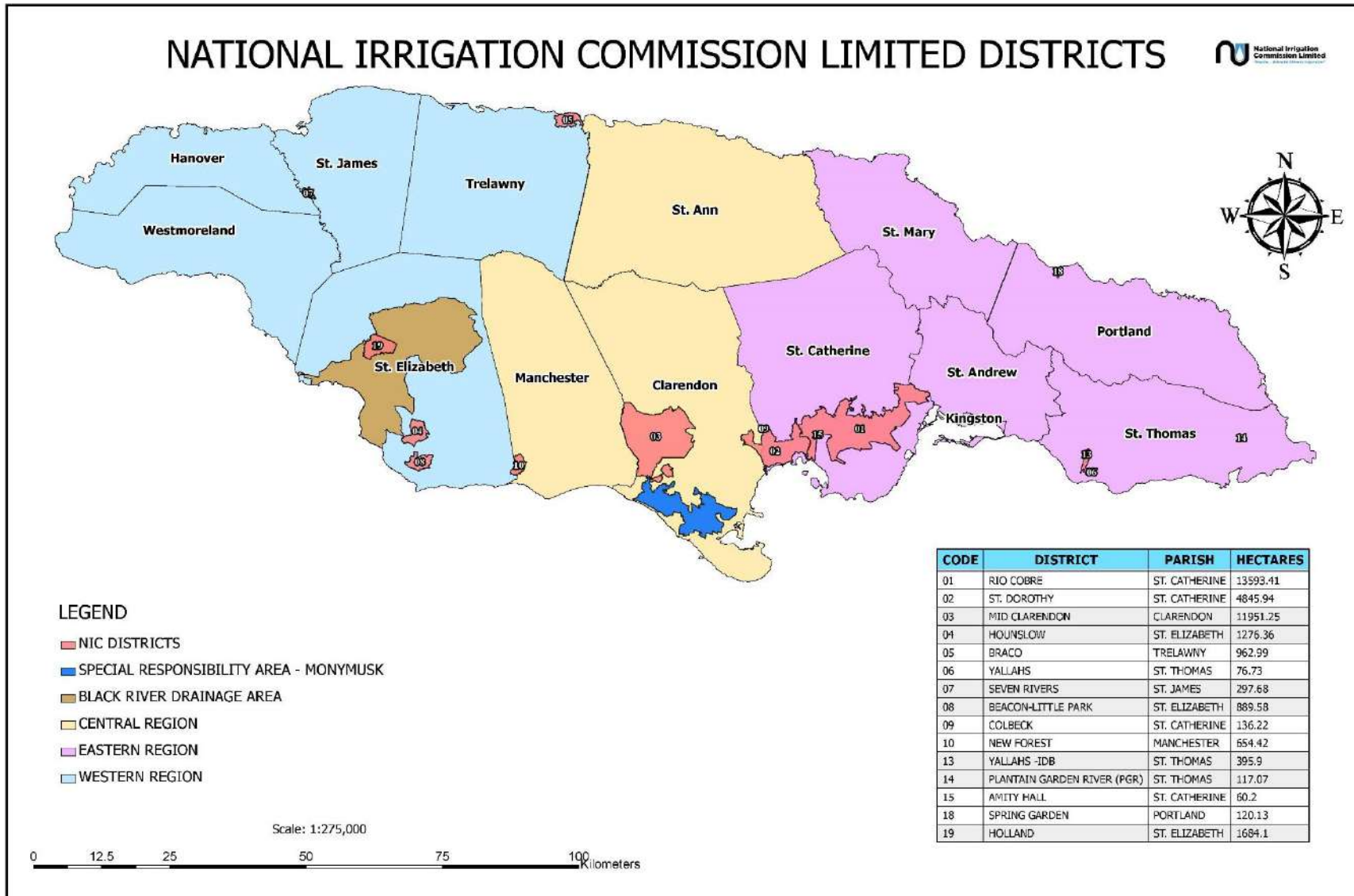


Figure 1: Map of NIC’s irrigation and drainage districts.

MINISTER'S MESSAGE



The Ministry of Agriculture and Fisheries (MoAF), despite being faced with an unprecedented crisis, caused by the global pandemic, Covid-19, remained resolute towards achieving its mandate. Undeterred by the uncertainties, the Government of Jamaica, through the MoAF, achieved its mandated objectives, namely augmenting our food security programmes and reducing our food import bill. Through these initiatives, the Ministry primarily focused on the development of sustainable food systems, while promoting the importance of a lucrative agribusiness sector and streamlining innovative strategies that are geared towards the development of a world-class and efficient agricultural sector.

Furthermore, the National Irrigation Commission Limited (NIC), continues to play an important role in the agricultural sector, by providing world-class irrigation services and closely aligning their operations to those set out by the MoAF mandate. The NIC throughout the Financial Year 2020/2021 completed several initiatives that were targeted towards the expansion and improvement of irrigated agricultural production, among others.

The success towards achieving the targets set out by the Ministry, through the NIC was largely due to collaboration with local and international stakeholders, who provided financial and technical support, on the Essex Valley Agricultural Development Project (EVADP) and the Southern Plain Agricultural Development Project (SPAD). These projects will further increase the number of hectares that are available for agricultural production, with the implementation of cutting-edge technology.

As the administration continues towards the development of the agricultural sector, I am pleased that the agency charged with the responsibility of the supply of irrigation water falls in the capable hands of the Board of Directors, Management and Staff of the NIC.

The Ministry will continue to work with all stakeholders to ensure the consistent supply and expansion of efficient services from NIC for the benefit of all Jamaicans.

Hon. Floyd Green

Minister of Agriculture and Fisheries

CHAIRMAN'S MESSAGE



The Financial year 2020/2021 was attributed with success for the National Irrigation Commission Limited (NIC), despite the adverse challenges faced by the emergence of the global pandemic. The NIC has been instrumental in limiting the concerns at the Board level towards bridging the food security divide that has challenged the agricultural sector over the years. The Commission remained resolute in creating innovative strategies that were tailored to improve customer service delivery of irrigation services to its valued consumers, despite the interruption of its operations exacerbated by the pandemic.

Additionally, the NIC through continued collaboration with local and external stakeholders ensured our irrigation services would be of optimal benefit for all those that are heavily reliant on our services for the production or export of agricultural goods and services.

With the continued push towards the use of renewable energy, the Commission launched the Ebony Park Pump Station Solar Retrofit Project, whilst construction for a new ground-mounted system commenced at Beacon/Little Park in St. Elizabeth. These projects are geared towards the NIC drive to use climate-smart technologies, as well as lowering its electricity pumping cost and moving towards significantly reducing its carbon footprint. Once completed, both projects will more greatly enhance the Commission's capacity to provide irrigation services in a more energy-efficient and cost-effective manner.

The NIC's three major development projects; Southern Plains Agricultural Development Project (SPAD), Essex Valley Agricultural Development Project (EVADP) and the expected launch of the Pedro Plains Agricultural Development Project, aims to expand irrigated agricultural production and development by providing approximately over 5000 hectares of land to farmers within the agricultural sector despite their gender, age or abilities.

The Government of Jamaica is devoted to increasing access to irrigation services to ensure optimal utilization of arable lands and to ensure a competitive, productive and sustainable agricultural sector.

The Board of Directors of the National Irrigation Commission Limited remains committed to ensuring this is achieved through technology, competent staff and partnership with stakeholders.

Nigel Myrie

Chairman

CHIEF EXECUTIVE OFFICER'S MESSAGE



The National Irrigation Commission Limited reaffirms its commitment to the success of the agricultural sector in Jamaica through increased and expanded delivery of world-class irrigation services. The drive to achieve this is guided by consistent collaboration, as well as execution of innovative strategies that closely align with our mandate.

Led by a competent and committed team, the NIC intensified its efforts to ensure that the needs of the valued stakeholders were met, all in keeping with the Ministry's mandate of improving food security and sustainability within the Agricultural sector.

Notwithstanding setbacks caused by the Covid-19 pandemic, the NIC demonstrated the importance of maintaining its mission to meet the needs of customers by the realignment of operational plans and procedures targeted for the Financial Year 2020/2021.

The Commission successfully launched and expedited several automation initiatives that are geared towards the modernization and improvement of our efficiency in providing irrigation services. Through targeted stakeholder analyses and customer engagement surveys, we have completely overhauled our billing and collecting cycles. Once fully implemented those processes will now be completely automated.

Appreciation is given to the Ministry of Agriculture and Fisheries, Board of Directors, Management and Staff for their continued contributions that have made 2020/21 a successful year for the Commission.

Improvements and advancements will continue as the Commission ensures a constant supply of high quality and efficient irrigation services for the benefit of all customers, and by extension Jamaica, through food and job security.

Joseph Gyles, JP

Chief Executive Officer

BOARD OF DIRECTORS



Nigel Myrie
Chairman



Krishan James
Vice Chairman



Dr. Horace Charoo



Dr. Charles Douglas



Adrian Chin



Randel Bellanfante



Harvey D'Aguilar



Amelia Gordon



Andrea Allen



Sharon Williamson



Peter Clarke



**Theresa Turner
Flynn**



Dramaine Jones



Genille Attalla



Davita McLaren



Venice Williams
Corporate Secretary

DISTRICT ADVISORY AND MONITORING COMMITTEES

ST. ELIZABETH

Krishan James - Chairman
John Davis
Orlando Nembhard
Nathan Samuels
Denese Palmer
Aslyn Parchment
Nathan Samuels
Sylton Sibblis
Chandia Walters
Neil Wright

ST. CATHERINE

Theresa Turner Flynn - Chairman
Trevor Garvey
Andre Griffiths
Jennifer Hull
Keith Knight
Carlene Martin
Sydney Roman
Cecil Taylor

MID-CLARENDON

Dr. Horace Charoo - Chairman
Baldwin Atkins
Ralden Bellanfante
Donovan Hinds
Marvin Lawrence
Andrew Lodenquai
Owen Scarlett
Easton Thompson

EXECUTIVE MANAGEMENT TEAM



Joseph Gyles, JP
Chief Executive Officer



Wayne Barrett
Director of Commercial



Rohan Stewart
**Director of Engineering and
Technical Services (Actg.)**



Milton Henry
Project Director



Edgar Watson
**Director of Finance and
Corporate Planning**



Viola Cammock
**Director of Administration
and Human Resources**

DIRECTORS' COMPENSATION

Table 1: Directors' Compensation

Position of Director	Fees (\$)	Motor Vehicle Upkeep/Travelling or Value of Assignment of Motor Vehicle (\$)	Honoraria (\$)	All Other Compensation including Non-Cash Benefits as Applicable (\$)	Total (\$)
Chairman Current: Nigel Myrie	118,350.00	264,852.00	-	-	383,202.00
Deputy Chairman Current: Krishan James	85,600.00	19,782.00	-	-	105,382.00
Chairman Previous: Aubyn Hill	92,500.00		-	-	92,500.00
Deputy Chairman Previous: Dr. Horace Charoo	78,900.00		-	-	78,900.00
Statutory Director Previous: Anthony Masters	93,850.00		-	-	93,850.00
Statutory Director Previous: Jacqueline McKenzie Pink	62,500.00	9,576.00	-	-	72,076.00
Statutory Director Previous: Douglas Cupidon	49,750.00	2,016.00	-	-	51,766.00
Statutory Director Current: Harvey D'Aguilar	96,600.00	45,330.00	-	-	141,930.00
Statutory Director Current: Ralden Ballanfante	70,000.00	22,806.00	-	-	92,806.00

Position of Director	Fees (\$)	Motor Vehicle Upkeep/Travelling or Value of Assignment of Motor Vehicle (\$)	Honoraria (\$)	All Other Compensation including Non-Cash Benefits as Applicable (\$)	Total (\$)
Statutory Director Current: Sharon Williamson	100,800.00	-	-	-	100,800.00
Statutory Director Current: Theresa Turner	69,150.00	18,522.00	-	-	87,672.00
Statutory Director Current: Adrian Chin	30,500.00	-	-	-	30,500.00
Statutory Director Current: Amelia Gordon	30,500.00	-	-	-	30,500.00
Statutory Director Current: Andrea Allen	43,500.00	-	-	-	43,500.00
Statutory Director Current: Charles Douglas	58,400.00	-	-	-	58,400.00
Statutory Director Current: Davita McLaren	30,500.00	-	-	-	30,500.00
Statutory Director Current: Dramaine Jones	30,500.00	-	-	-	30,500.00
Statutory Director Current: Genille Attalla	35,700.00	-	-	-	35,700.00
Statutory Director Current: Peter Clarke	30,500.00	-	-	-	30,500.00
Total A	1,208,100.00	382,884.00	-	-	1,590,984.00

Position of Director	Fees (\$)	Motor Vehicle Upkeep/Travelling or Value of Assignment of Motor Vehicle (\$)	Honoraria (\$)	All Other Compensation including Non-Cash Benefits as Applicable (\$)	Total (\$)
BOARD SUB-COMMITTEE COMPENSATION (B)					
Projects, Energy and Technology Sub-Committee: Horace Buckley, Ministry of Science, Energy and Technology	16,650.00		-	-	16,650.00
Projects, Energy and Technology Sub-Committee: Lancelot White, Sugar Industry Research Institute	16,650.00		-	-	16,650.00
Total B	33,300.00	-	-	-	33,300.00

Total A and B	1,241,400.00	382,884.00	-	-	1,624,284.00
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- Cabinet approved Rupert Williams as a Board member effective June 4, 2018 to June 3, 2020. Unfortunately, he passed away on October 1, 2018 hence he is not accounted for in this year's Directors' Compensation table.
- The figure in the Financial Statements for 'Directors' Expenses' includes Directors' Compensation and other expenses incidental to the directorship such as rental accommodation for Board and Director's Meetings and cell phone bill payments.

SENIOR EXECUTIVES' COMPENSATION

Table 2: Senior Executives' Compensation

Position of Senior Executive	Year	Salary (\$)	Travelling Allowance (Upkeep) (\$)	Acting/Other Allowances (\$)*	Total (\$)
Chief Executive Officer Joseph Gyles	2020/2021	8,072,078	-	3,766,109	11,850,008
Director 1 Finance & Corporate Planning Edgar Watson	2020/2021	5,934,264	1,697,148.00	38,911	7,683,805
Director 2 Commercial Operations Wayne Barrett	2020/2021	6,202,928	1,697,148.00	-	7,902,236
Director 3 Project Director Milton Henry	2020/2021	6,476,224	1,697,148.00	472,424	8,864,696
Director 4 Administration & Human Resources Viola Cammock	2020/2021	5,656,339	1,697,148.00	-	7,353,487
Director 6 Engineering & Technical Services <i>(Acting)</i> Rohan Stewart	2020/2021	4,658,457	1,654,171.70	416,265	7,171,311
TOTAL		37,000,290	8,442,764	4,693,708	50,825,543

*Acting/Other Allowances include any other compensations received outside of standard pay; project premiums and acting allowances.

ADMINISTRATION AND HUMAN RESOURCES DIVISION

Corporate Objectives

- To develop a cadre of professionals through human resource programmes which support and expand staff competencies, and ultimately enhance the sustainable delivery of service to our customers.
- To implement and monitor the administrative systems, procedures and policies of the Commission; to ensure protection of its assets and legal rights and to provide an efficient support system through general office services.

Business Process Improvement

The strategic focus on automating and improving business processes continued through reviews and analyses of current and new processes. Process improvements included:

- (i) 92% implementation of Phases 2 to 4 of the HRPlus Software.
- (ii) Development of the following processes for automation:
 - Inventory, Facilities and Asset Management;
 - Motor Vehicle Maintenance Scheduling;
 - Schedule and Content Management for Training and Development.
- (iii) Digitization of documents in all Departments/Units.

Cost Saving Measures

Cost containment measures were undertaken in collaboration with the Energy Unit to reduce electricity expenses for the offices islandwide. For the financial year 2020/21, energy cost avoidance of \$2.04M was achieved. Cost savings were realised from the following initiatives:

- Building envelope improvement, including insulation, doors and windows to reduce Heating Ventilation and Air Conditioning (HVAC) losses;
- Replacement of conventional lighting fixtures with LED tubes to reduce energy use and heat transfer from bulbs;
- Replacement of standard A/C units with inverter units; and
- Installation of solar window film (tint) to reduce heat transfer from sunlight.

The Division provides oversight for the following:

- Administration and Office/General Services;
- Human Resource Management and Industrial Relations;
- Training and Development;
- Property, Transport and Occupational Safety.

ADMINISTRATION AND OFFICE/GENERAL SERVICES

The provision of office services support continued to ensure a clean work environment, adequate furniture and equipment, and an efficient and reliable bearer service to internal and external customers.

In light of the Covid-19 pandemic, enhanced office sanitization was carried out across the organisation by NIC's First Responders, which include Office and Station Attendants. Regular cleaning activities were implemented for all office locations to mitigate the spread of Coronavirus.

Records Information Management

In November 2020, the Commission commenced the implementation of the Government of Jamaica's Records and Information Management (RIM) Programme. The execution of the Programme activities is ongoing under the guidance of the Jamaica Archives and Records Department (JARD). Successful implementation will achieve digitization of records across the Commission.

HUMAN RESOURCES AND INDUSTRIAL RELATIONS

HRPlus Software

The implementation project for the HRPlus software continued with three (3) additional phases:

Phase 2 – Scanning

•100% completed

Phase 3 – Digital Conversion

•100% completed

Phase 4 – Uploading

•92% completed

Staff Development

- Number of training initiatives conducted - 27
- Specialized training conducted - 5

Table 3: Staff Complement

Gender	Number of Employees	Percentage Representation
Male	136	60%
Female	89	40%
TOTAL	225	100%

Business Process Improvement and Automation

Critical business processes were identified for automation using the HRPlus Software. These include:

- Recruitment and Selection
- On-Boarding
- Performance Management
- Off-Boarding
- Staff Benefits

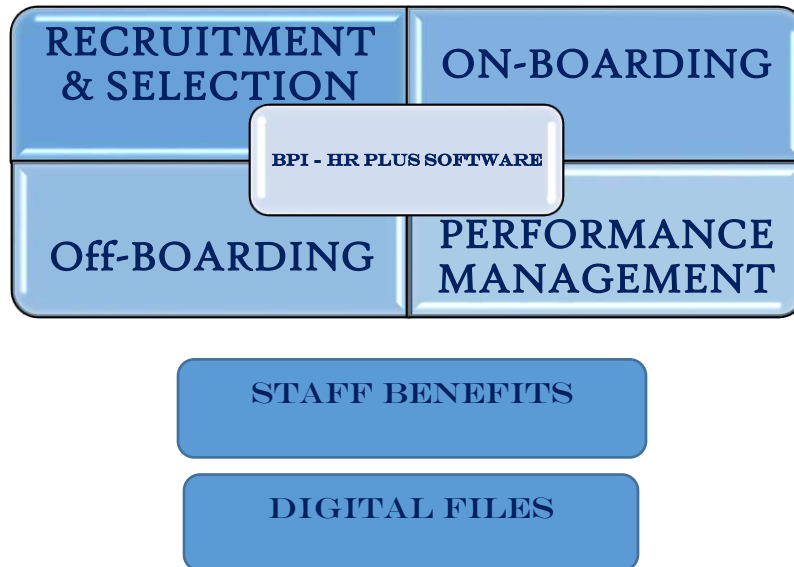


Figure 2: Business Process Improvement

Industrial Relations

The NIC maintained a harmonious relationship with the Unions even as negotiations have continued around wage and fringe benefits for the respective staff groups. Four unions currently represent staff in different categories:

- Jamaica Association of Local Government Officers (JALGO)
- University and Allied Workers Union (UAWU)
- National Workers Union (NWU)
- Bustamante Industrial Trade Union (BITU)

Staff Engagements

- Virtual meetings informing and advising staff on organizational issues/decisions.
- Information sessions advising on Covid-19 updates and measures implemented by the Government.
- Written advisories to staff communicating critical information.

Academic Achievements of Staff and Scholarship Awardees

The Commission celebrated the academic achievements of staff and previous recipients (children of employee, Mr. Michael Thomas) of the annual NIC Scholarship Awards Programme.

STAFF



Mrs. Christine Moore, Executive Secretary, Bachelor of Science Degree in Business Studies, Excelsior Community College.



Ms. Ann-Marie Campbell, Customer Service and Billing Officer, Bachelor of Science Degree in Business Studies, Excelsior Community College.

PREVIOUS SCHOLARSHIP AWARDEES



Dr. Kenyatta Thomas - Bachelor of Medicine, Bachelor of Surgery (MB, BS) University of the West Indies (UWI). Currently employed at May Pen Hospital as a Medical Doctor.



Mr. David Thomas, Bachelor of Science Degree in Economics and Statistics, University of the West Indies (UWI), Class of 2020.



Dr. Michael Thomas, Bachelor of Medicine (MD), University of California, Los Angeles (UCLA), Class of 2020. Currently a Resident in Internal Medicine at Mayo Clinic in Rochester, Minnesota.

TRAINING AND DEVELOPMENT

The Training Unit implemented a number of capacity building programmes for staff despite the restrictions caused by the Covid-19 pandemic and other organizational challenges. These programmes were designed to enhance the productivity and efficiency of the staff.

Employees participated in external courses, workshops and seminars utilizing the online platform instead of face-to-face interactions. The organisation was able to capitalize on the many webinars offered.

Table 4: Analysis of training activities

Quarters	Number of Training Initiatives (Target)	Number of Training Initiatives (Actual)	Percentage of Training Initiatives Achieved	Number of Participants Trained (Target)	Number of Participants Trained* (Actual)	Percentage of Staff Trained
APR. –JUN. 2020	8	4	50%	136	66	49%
JUL. – SEPT. 2020	6	6	100%	94	89	95%
OCT. – DEC. 2020	6	6	100%	97	87	89%
JAN. – MAR. 2021	10	11	110%	100	96	96%
TOTAL	30	27	90%	427	338	79%

**The numbers represent persons who are participants in several programmes.*

Training programmes included:

- International Water Resources Management
- Rainwater Harvesting
- Meter Reading
- Effective Performance Management
- International Financial Reporting Standards
- Disciplinary Procedures
- Workplace Requisition/Purchase Order Online System
- Electronic Procurement (GOJ)
- Behavioural Interviews
- Transitioning to Full Remote Webinars
- Public Speaking
- Safety Training
- Geographic Information System (ESRI)
- Cashiering Module - CRMS

PROPERTY, TRANSPORT AND OCCUPATIONAL SAFETY

Transport - Fleet Vehicles

For the financial year 2020 – 2021, the average savings on the use of petrol for the period is 17.34%. This is a result of cost cutting initiatives on petrol consumption for motor vehicles.

The target is set at 10% in addition to the achievement of the benchmark year (2014), which exceeded the then target by 7.34%.

The table and graph below illustrate the trend of fuel consumption.

Table 5: Trend of fuel consumption

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	YTD
BUDGET (\$M)	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	22.86
COST (\$M)	1.71	2.20	2.16	1.89	1.64	1.48	1.06	0.98	1.45	1.39	1.28	1.64	18.90
FUEL (Litres)	11,515.26	16,110.64	15,583.29	13,744.88	12,218.31	10,577.80	7,694.07	7,234.16	10,284.29	9,857.59	8,759.87	10,674.38	134,254.54
VARIANCE %	10.41	-15.22	-13.60	0.60	13.72	22.37	44.23	48.41	23.73	26.92	32.81	13.72	17.34

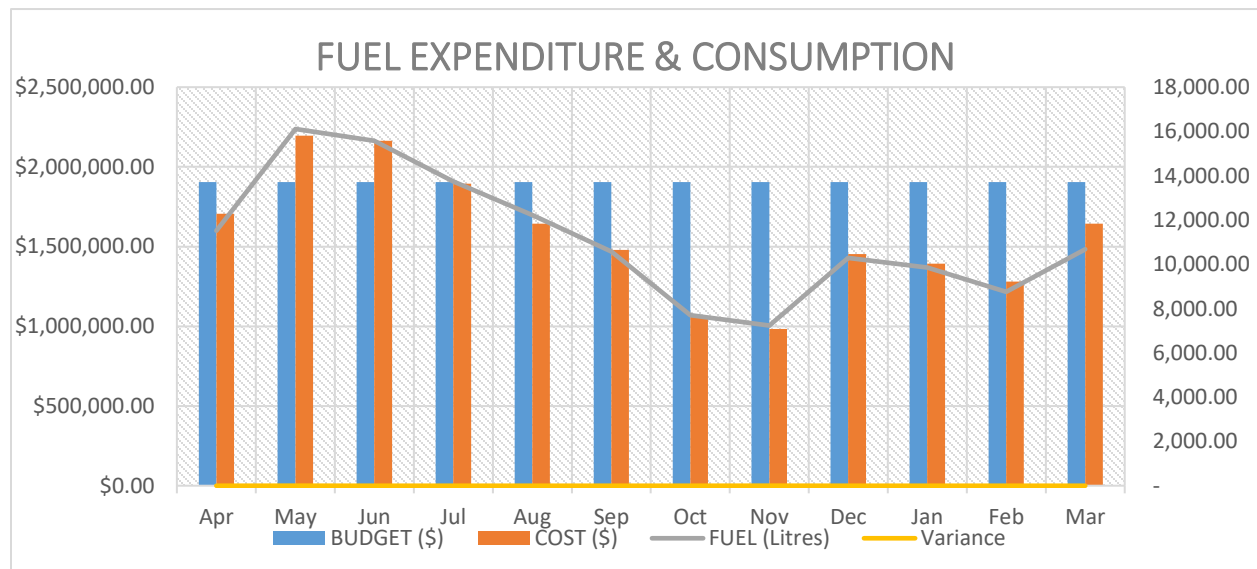


Figure 3: Fuel expenditure and consumption for the year under review.

Vesting Project

The Property and Legal Services Units continued to partner to register NIC’s proprietary interests/rights for properties within declared irrigation schemes. The Commission has received the assistance of the National Land Agency in the vesting of proprietary rights for government owned properties, with focus on the Mid-Clarendon Irrigation Area. Properties were transferred, and duplicate Certificates of Title issued in the Mid-Clarendon Irrigation Area and the Rio Cobre Irrigation Area.

Properties Leased by NIC

For properties leased, there has been a 92% adherence to the payment timelines (see table and graph below). The outstanding lease payments related to deceased lessors. Lease payments must be reasonably withheld and accrued until the NIC is presented with legally approved successor in title for properties.

Table 6: Lease payments for properties

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Target	3	2	4	3	2	4	4	3	3	2	2	5
Actual	3	2	4	2	2	4	4	2	3	2	2	4

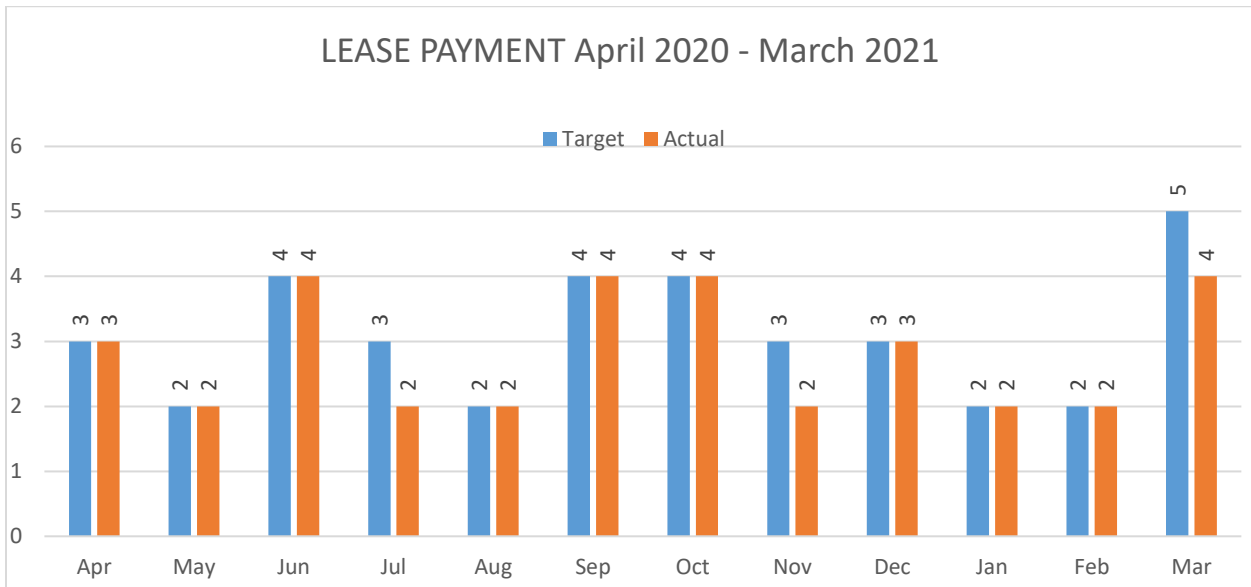


Figure 4: Lease payments for properties

Facility Management

Facility management creates a safe and contemporary facility/workstation and environment. Against that background, the unit has undertaken renovation activities throughout the year to redesign space layout and upgrade office facilities.

Occupational Safety

In response to the Covid-19 pandemic, safety protocols were implemented at the Head Office and District Offices. Initiatives included the acquisition of wall-mounted hand sanitizer dispensers, sanitization equipment and thermometers. Weekly sanitization of offices islandwide and training of relevant staff to assist with the execution of Covid-19 safety protocols were also done.

Amelioration of the general work environment was bolstered by training sessions with staff to ensure compliance with safety policies that mitigate occupational hazards. Seventy-six (76) employees were trained by the Occupational Safety Officer.



Deep sanitization of offices by NIC's First Responder.

ENGINEERING AND TECHNICAL SERVICES

Corporate Objectives

- To improve efficiencies in conveyance and delivery of irrigation water;
- To enhance the quality and reliability of service, as well as designing irrigation systems for the improvement and expansion of irrigated agriculture.

The functions of the Division are to:

- Produce and distribute irrigation water to our customers;
- Develop engineering designs and implement irrigation projects;
- Implement an energy management programme throughout the organisation;
- Repair and maintain NIC's irrigation network as well as to fabricate and install measuring devices and regulatory structures;
- Provide drainage services as stipulated by the Irrigation Act;
- Provide security monitoring across irrigation districts to protect both staff and assets.

ENERGY MANAGEMENT UNIT

Production, Energy Use, Cost and Avoidance

Table 7: Comparison of Water Production, Energy Cost and Use for FY 2020/21 and FY 2019/20

Period	Total Energy Cost	Pumped Production Energy Cost	Total Water Production	Water Production Pumped from Energized Sources	Pump Hours	Production Energy Use	Unit Energy Cost – Energized Sources Only	Unit Energy Cost – Gravity + Pumped	Unit Energy Use
<i>FY</i>	<i>\$M</i>	<i>\$M*</i>	<i>Mm3</i>	<i>Mm3</i>	<i>hrs*</i>	<i>MWh*</i>	<i>\$/m3</i>	<i>\$/m3</i>	<i>kWh/m3</i>
20/21	688.7	656.8	63.9	39.2	128,074	13.7	16.58	10.17	0.21
19/20	510.6	495.3	59.2	29.6	125,538	11.5	16.45	8.37	0.19
Percentage Change	34.9%	32.6%	7.9%	32.4%	2.0%	19.1%	0.79%	21.5%	10.5%

** does not include Holland Estate drainage operations*

Areas with increased water demand included Amity Hall, Yallahs, Hounslow and Mid-Clarendon. The major increase in pumped water production occurred in the Central Region. This was due to an 83% reduction in surface flows which emanated from drought conditions experienced for the four-month period April to July 2020.

Sixty-one percent (61%) of total water production was from energized sources (pumped), compared to fifty percent (50%) in the prior year which resulted in increased energy cost.

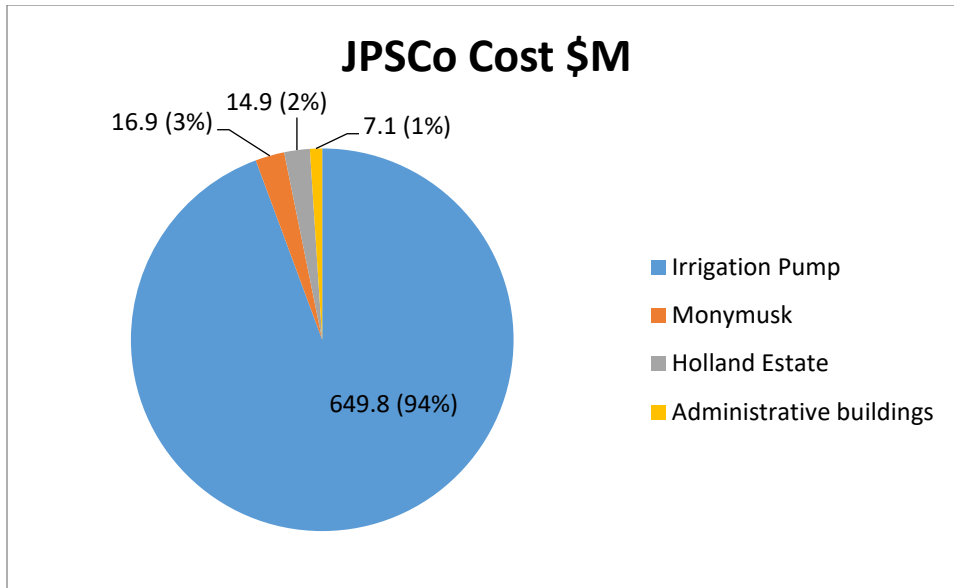


Figure 5: Energy Cost distribution

Energy charges avoided was \$89.5M as a result of initiatives under the Energy Management Programme, which reduced the NIC's energy demand by 5,436 kilo-volt-ampere (kVA) and 973 megawatt hours (MWh). Renewable energy systems accounted for 2.7% of the total energy used while generating 373MWh of the energy avoided.

The Commission reduced its carbon footprint by approximately 775 metric tonnes using renewable energy systems.

Unit Energy Use and Unit Energy Cost for Water Production

A unit energy use of 0.21 kWh/m³ was achieved, which was 5% higher than the target of 0.20 kWh/m³ and 10% higher than the achievement of 0.19 kWh/m³ for the previous financial year. This was primarily due to increased pumping hours to satisfy higher water demands due to drought conditions for the period April – July, as well as a higher ratio of pumped production to gravity fed production from the Rio Cobre and Mid-Clarendon Head Spring systems.

The unit energy cost for water production was \$10.17/m³, which was 123% higher than the target of \$4.57/m³ and 22% higher than the \$8.36/m³ achieved for the previous reporting period. Increases in JPSCo Fuel & IPP (Independent Power Producers) and foreign exchange rates led to a 7% increase in billing, notwithstanding any changes in energy consumption pattern.

The Office of Utilities Regulation's (OUR) approved JPS Rate Schedule 2020, was applied to JPSCo billing from February 2021 onward. This rate schedule included a 51% increase in demand charges and an up to 20% increase in energy rates for some tariffs. It is expected that this new rate schedule will increase the NIC's annual billing by approximately \$78.55M in the upcoming financial year.

Key Performance Indicators

Table 8 below represents the Key Performance Indicators within the Energy Management Unit for the period being reviewed.

Table 8: Key Performance Indicators within the Energy Management Unit

Performance Indicator/Output Measures	Target	Actual	Comment
Energy Consumption Avoided (%)	5	7.82	Target achieved
Energy Generated from Renewables (%)	3	3.01	Target achieved
Energy Cost Avoided (%)	10	13.48	Target achieved
Reduction in water loss from energy saving initiatives (%)	10	12.31	Target achieved
Unit Energy Cost (\$/m3)	4.57	10.17	123% above target. *
Unit Energy Use (kWh/m3)	0.2	0.21	5% above target. **
# of Projects Implemented	1	0	200kW Solar Retrofit Project for F3 Little Park Pump Station is currently in the Implementation Stage. Expected completion within Q1 of FY 2021/22.

**The ratio of pumped production (deep wells) vs gravity flow increased by 22%, along with increases in JPSCO fuel & IPP rates and Foreign Exchange rates. The increased use of Renewables as well as other initiatives of the Energy Management Programme will assist to further drive production costs down.*

*** Higher ratio of pumped production vs surface flows due to drought conditions in some months as well as a reduction in agricultural lands served by open canal systems.*

Solar Photovoltaic Projects

Plans to install a 550kW solar photovoltaic system in F3 Little Park Pumping Station in St Elizabeth were scaled down. This was a result of the reduction in available capital funds due to the impact of Covid-19, with the system being downsized to 200kW. A contract for the supply, installation and commissioning of this system was awarded in February 2021. As at March 31, 2021, installation works was 45% complete, with the remaining works to be completed by June 30, 2021. This installed system is expected to generate over 414,000 kWh per annum or 33% of the Station's energy requirement, and reduce the station's annual energy cost by approximately 20% or \$9.0M. When completed, this system will bring the NIC's installed solar capacity to 470kW.

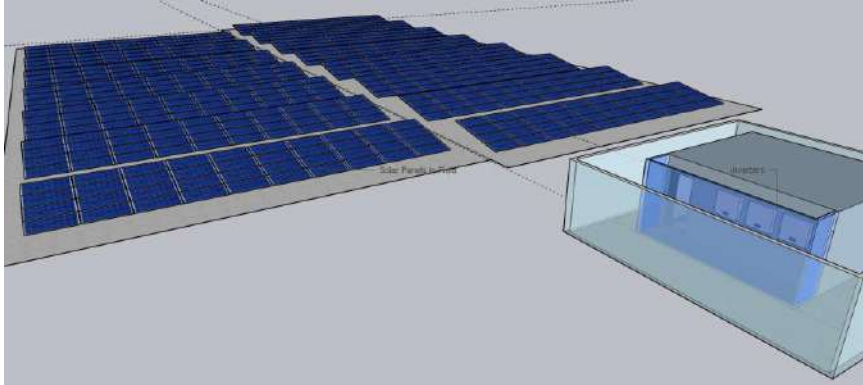


Diagram 1: Proposed layout of solar panels for the 200kW solar system at the F3 Little Park Pump Station

Optimizing Irrigation Water Management to Improve Crop Output and Water Quality Output (IAEA Project)

Agronomic Research

A draft final report had been prepared in collaboration with the Research and Development Division (R&DD) within the Ministry of Agriculture and Fisheries, and included analysis of isotopic data and the effects of reduced irrigation and nutrient quantities on yield quality. The project sponsor, the International Atomic Energy Agency (IAEA), is reviewing this draft report for acceptance. The next steps include farmer dissemination sessions aimed at assisting farmers to optimize on-farm water management and crop output.

Water Quality Improvement

Seventy percent (70%) of the major sources of contamination identified in the results of the water sampling conducted in March 2018 in the Rio Cobre open canal system and the Rio Cobre river basin was addressed. The NIC partnered with the Department of Chemistry at the University of the West Indies (UWI) for water sampling and sample preparation activities. A final water sampling activity to evaluate the effect of these corrective measures was due to take place. However, this was disrupted by the closure of the University of the West Indies and its faculties due to the Covid-19 pandemic. Water sampling within the parish of St. Catherine has been postponed until the relevant authorities deem it safe to complete these field activities.

Investment Grade Energy Audit (IGEA) At 34 NIC Facilities

The NIC, through the Essex Valley Agricultural Development Project (EVADP), was a beneficiary of an Investment Grade Energy Audit at thirty-four (34) of its facilities, including three (3) offices and thirty-one (31) pump stations. The final reports have been received and accepted. Recommendations to improve energy efficiency have been prioritized for implementation and include replacement of inefficient pumps, retrofit of variable frequency drives (VFDs) and the solar PV system.

CIVIL ENGINEERING UNIT

The Eastern and Central Regions were the main beneficiaries of civil works capital improvement for the fiscal year. The projects included restoration of declining infrastructure in the canal system and pipeline replacement. Asbestos Cement (AC) pipes were supplanted with high-pressure Polyvinyl Chloride (PVC) pipeline to stem water loss and improve overall efficiency in conveyance.

Table 9: Activities completed by the Civil Engineering Unit

Activities	Units
Restoration of declining infrastructure	380 metres
Pipeline replacement	867 metres
Renovation work on buildings	5



Upper Old Harbour canal restoration.



Upper Rhymesbury pipeline replacement project.



Thetford pumping station after renovation.

Drainage

Drainage cleaning activities benefitted approximately 600 lot holders and residents in approximately 24 communities in the upper and lower morass areas of Black River, St. Elizabeth. Of the water channels cleaned, 90km were done manually and 11.6km mechanically.



Mitcham canal before being mechanically cleaned.



Mitcham canal after being mechanically cleaned.

Water Production

The department produced a total of 63.61Mm³ for the period under review; this is an increase over the 60.3Mm³ that was produced in the 2019/20 financial year. The overall target for efficiency of volume of water accounted for, compared to the volume produced, is 70%. This was surpassed by 0.5% (see Table 10 and 11 for the performance of the regions and irrigation districts).

The NIC continues to partner with the Water Resources Authority (WRA) by supplying 4Mm³ of water to the artificial aquifer recharge in Innswood, St. Catherine, which, when added to the volume invoiced, equates to 70.5% of the water accounted for.

Table 10: Water produced by regions on the pressurized and canal systems.

Pressurized				Canal		
Regions	Produced (Mm ³)	Invoiced (Mm ³)	Percentage Invoiced	Produced (Mm ³)	Invoiced (Mm ³)	Percentage Invoiced
Eastern	8.19	7.38	90.10	25.23	15.04	59.59
Central	8.42	7.47	88.81	10.98	5.92	53.95
Western	10.79	9.43	87.34	-	-	
Total	27.40	24.28	88.62	36.21	20.96	57.88

Table 11: Summary Production vs. Invoicing by District for the period April 2020-March 2021

SUMMARY PRODUCTION VERSUS INVOICING BY DISTRICT APRIL 2020-March 2021												
Location	Pump Hours	Produced (m3)	Aquifer Recharge & Demo Plot Delivered	Invoiced (m3)	Prepayment	%Age Invoiced	Inv. Target (%)	Energy used (kWh)	JPSco Energy Cost (\$)	Energy Cost (\$/m3) Prod.	JPSco Energy Cost (\$/m3) Inv.	Kwh/m3 produced
Spring Village	10,706.00	1,743,741.30		1,683,534.90		96.5%	90%	65,677.41	3,573,646.78	2.05	2.12	0.04
Sandy Bay	2,194.85	589,810.00		532,618.09		90.3%	90%	217,364.80	11,023,096.68	18.69	20.70	0.37
Thetford	1,986.50	462,350.00		407,539.00	5,980.13	89.4%	90%	137,209.20	6,897,022.56	14.92	16.92	0.30
Bowers	1,559.20	164,492.00		122,469.08		74.5%	90%	54,098.00	3,390,426.55	20.61	27.68	0.33
Bodles #2												
Freetown #1 & #2	7,422.95	3,760,979.00		2,731,264.26		72.6%	70%	505,228.00	24,764,359.19	6.58	9.07	0.13
Grove Farm	0.00	0.00		0.00		#DIV/0!		0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!
TOTAL (ST. DOROTHY)	23,869.50	6,721,372.30		5,477,425.33	5,980.13	81.5%	70%	979,577.41	49,648,551.76	7.39	9.06	0.15
Colbeck	1,367.57	307,700.00		257,268.18	3,680.65	84.8%	90%	116,356.00	6,259,499.49	20.34	24.33	0.38
Innswood	486.00	281,520.10		221,087.60	0.00	78.5%		19,676.40	2,455,427.38	8.72	11.11	
Blocks A & E, Bernard Lodge	15,319.50	2,623,800.00		2,176,519.40	25,425.00	83.9%	90%	627,063.90	25,760,801.44	9.82	11.84	0.24
Blocks B & C-Bernard Lodge	7,696.50	817,439.00		671,092.00	56,045.00	89.0%	90%	198,692.72	9,520,560.15	11.65	14.19	0.24
TOTAL (BLOCKS)	23,016.00	3,441,239.00		2,847,611.40	85,150.65	82.7%		825,756.62	35,281,361.59	10.25		
Amity Hall	1,529.96	250,810.00		227,847.00	0.00	90.8%	90%	59,689.73	3,175,171.51	12.66	13.94	0.24
Plantain Garden River	393.00	26,100.00		23,204.00		88.9%	90%	0.00	0.00	0.00	0.00	0.00
Phillipsfield/Heartease/Norris	4,228.00	1,073,670.00		873,355.00		81.3%	90%	468,954.06	22,342,267.38	20.81	25.58	0.44
Spring Garden	993.77	127,742.20		89,491.00		70.1%		11,315.21	605,020.42	4.74	6.76	
Artificial Aquifer Recharge	0.00		3,988,566					0.00	0.00			
Rio Cobre Open Canal	0.00	21,473,002.26		12,306,439.16		75.9%	70%	0.00	0.00			
Production Invoice		21,473,002.26				0.0%	70%					
TOTAL (EASTERN REGION)	54,404.03	33,421,635.76	3,988,566	22,414,859.45		79.0%	70%	2,450,333.82	116,706,851.73	3.49	5.21	0.07
Monymusk (Heathfield #2, Shallow Pasture #4, Parnassus Blue)	2,034.30	351,728.00		308,426.52		87.7%		59,294.55	7,116,324.75	20.23	23.07	0.17
New Forest/Duff House/Plumwood	12,631.63	2,956,574.50		2,459,922.30	253,796.80	91.8%	90%	2,578,231.20	124,644,718.60	42.16	50.67	0.87
Spring Plain/St. Jago/Ebony Park Deep Well/Jungle West/Harmons Well	7,792.81	3,636,567.00		3,249,987.00	0.00	89.4%	90%	1,124,858.80	59,529,612.83	16.37	18.32	0.31
Vernamfield	3,772.55	1,822,232.99		1,764,020.00		96.8%	90%	763,879.20	35,576,471.91	19.52	20.17	
Mid Clarendon (Pumps)	22,477.09	8,809,276.45					70%	1,882,868.70	100,968,503.45	11.46	17.05	0.21
				5,921,594.32		53.9%						
Mid-Clarendon River		2,345,232.28										
Mid-Clarendon (Old Milk River)	0.00	533,569.12										
SUB-TOTAL (canal system less washout)		10,976,508.53										
TOTAL (CENTRAL REGION)	48,708.38	19,743,611.02		13,703,950.14		69.4%	70%	6,409,132.45	327,835,631.54	16.60	23.92	0.32
TOTAL (CENTRAL REGION) less Monymusk Estate	46,674.08	19,391,883.02		13,395,523.62		69.1%	70%	6,349,837.90	320,719,306.79	16.54	23.94	0.33
Hounslow	75,689.31	6,555,890.00		5,863,251.92	215,074.00	92.7%	90%	2,402,453.60	121,019,919.28	18.46	20.64	0.37
Hounslow Demonstration Plot	0.00		2,765									
Beacon/Little Park	13,789.32	3,643,799.00		2,745,428.00	5,644.00	75.3%	90%	2,101,988.00	83,456,840.68	22.90	30.40	0.58
Braco	2,378.00	558,966.00		551,178.66	15,248.00	101.3%	90%	90,664.80	4,717,721.22	8.44	8.56	0.16
Braco Demonstration Plot	0.00		4,351									
Seven Rivers	0.00	33,634.20		29,753.00		88.5%		0.00	0.00		0.00	0.00
Holland Estate (Drainage)								253,394.40	12,346,899.06			
TOTAL (WESTERN REGION)	91,856.63	10,792,289.20	7,116	9,425,577.58		87.3%	90%	4,848,500.80	221,541,380.24	20.53	23.50	0.45
TOTAL (WESTERN REGION) less Holland Estate	91,856.63	10,792,289.20	7,116.00	9,425,577.58	0.00	87%	90%	4,595,106.40	209,194,481.18	19.38	22.19	0.43
OVERALL including Monymusk & Holland Estates	194,969.04	63,957,535.98		45,544,387.17		71%	70%	13,707,967.07	666,083,863.51	10.41	14.62	0.21
OVERALL less Monymusk & Holland Estates	192,934.74	63,605,807.98		45,235,960.65	0.00	71%	70%	13,395,278.12	646,620,639.70	10.17	14.29	0.21

SECURITY UNIT

There was a need to tackle the illegal abstraction of water, tampering and vandalism of assets. To counter the infringements, several strategies were employed to include patrolling, electronic surveillance systems and engagement of private security companies.

In table 12 below, the number of security incidents are outlined for the three regions:

Table 12: Security incidents analysis for 2019/20 and 2020/21

Region	Security Incidents as at 2019/2020	Security Incidents as at 2020/2021
Eastern	17	19
Central	39	26
Western	1	1
Total	57	46

The total incidents, when compared to the prior year, reflect a 19.3% reduction (from 57 to 46 cases) resulting from increased monitoring and patrolling in areas. High levels of illegal abstraction accounted for approximately 80% of incidents across the regions. Picture 12 below, provides an example of the illegal activity in the Central Region.



Water being stolen at the main canal in Clarendon

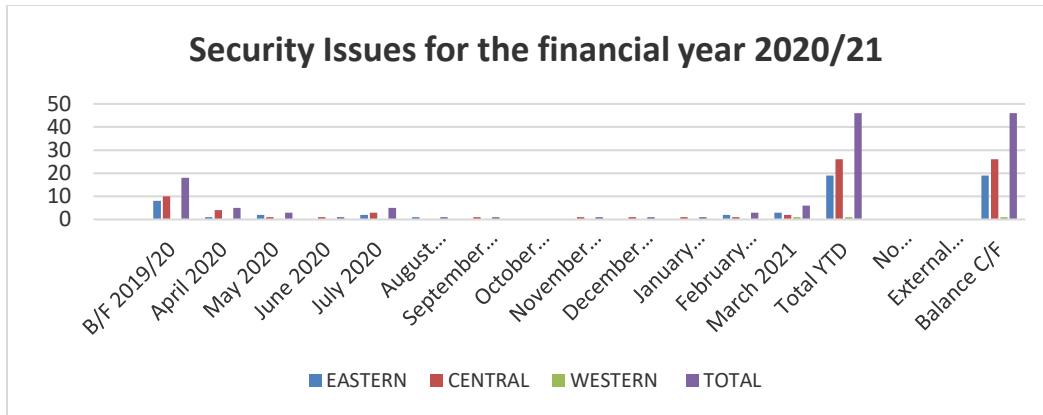


Figure 6: Security incidents by region per month

Rigorous squatting prevention is being undertaken to deter and remove persons who have moved on to the Commission’s canal reservation, with a total of fifty-four (54) notices to quit served on occupants during the reporting period. Electronic surveillance systems continue to be used to aid the Security Unit in protecting the Commission’s high value property.

ELECTRICAL/MECHANICAL UNITS

The Electrical/Mechanical Unit conducted remedial works to include repairs, fabrications and installations of pumps, motors, Variable Frequency Drives (VFDs), heavy equipment, measuring devices and conveyance infrastructure.

The timely and periodic execution of a scheduled Preventative Maintenance (PM) Programme has proven to be a critical tool in managing the pumping equipment portfolio. There were four PM quarterly cycles scheduled and successfully completed, resulting in a 25% reduction in downtime.

Table 13: Number of activities completed by the Electrical/Mechanical Unit

Maintenance and Improvement Activities	Number Completed
Pumps repaired	3
New pumps installed	2
Variable Frequency Drives installed	3
Premium efficiency motors installed	4
Complete pumping units installed	2
Generator installed	1

The Workshop is a linchpin of the Operations Unit, providing fabrication of components to facilitate customers’ connections, as well as water measurement and regulation. It also enables repairs being made to irrigation infrastructure as well as fabrication and welding services on buildings to improve safety and hospitality. The workshop also conducts mechanical repairs and routine maintenance of motor vehicles, heavy equipment and machinery.

PUBLIC RELATIONS

Corporate Objectives

To:

- Inform and educate the public about the scope of work and achievements of the NIC;
- Use information and communication as avenues for closer interaction with farmers and other water users;
- Maintain a consistent flow of information regarding the NIC to all stakeholders and target groups, so as to promote the services of the NIC;
- Work with segments of the print and electronic media to assist the NIC in reaching the wider public;
- Collaborate with all Divisions/Units in order to glean relevant information to enhance communication flow internally and externally.

The aim of the Public Relations plan, in collaboration with the Ministry of Agriculture and Fisheries, is to increase NIC's publicity to all stakeholders. The focus for the review period was to increase internal and external dissemination of information, despite the Covid-19 pandemic which greatly hindered face-to-face engagements. The Unit improved its virtual presence through frequent interactions via traditional, social and new media.

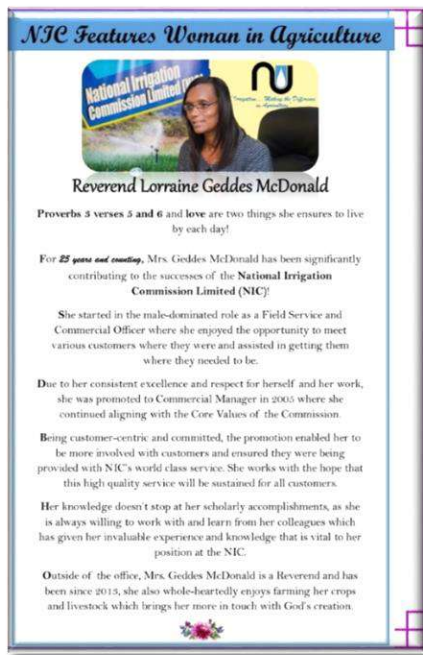
The Unit participated in the following events and engagements:

- Face-to-Face
 - World Soil Day
 - Southern Plains Agricultural Development (SPAD) Project: launch video shoot and Official Launch
 - Essex Valley Agricultural Development Project (EVADP) Handing-Over Ceremony
 - Ebony Park Pump Station Solar Retrofit Commissioning
- Virtual
 - Traditional Media features:
 - Power 106FM (Agriculture Here and Now; Farm Talk)
 - CVM Television (Career and Academia-Lifestyle and Entertainment segment)
 - RJR 94FM (AgroBuzz)
 - Kool 97FM (Kool Classifieds)
 - Features of globally observed days on social and new media platforms, in The Gleaner, the Daily Observer and The Agriculturalist newspapers (Jamaica Agricultural Society 125th Anniversary, Jamaica Wells 50th Anniversary, Eat Jamaica Day and Month, World Food Day 2020, Jamaica 4-H Clubs 80th Anniversary and World Water Day 2021).
- Customer Engagements
 - Face-to-face at Hounslow, St. Elizabeth
 - Virtually for Clarendon Park, Ebony Park & Spring Plain, Clarendon.

The photographs below are highlights of events and features that the NIC hosted or participated in.



The Most Hon. Andrew Holness, Prime Minister of Jamaica (left), in conversation with (from second left) Minister without Portfolio in the Ministry of Economic Growth and Job Creation and former Chairman of the NIC, Senator the Hon. Aubyn Hill; Minister of Agriculture and Fisheries, Hon. Floyd Green; and British High Commissioner to Jamaica, His Excellency Asif Ahmad, at the launch of the SPAD Project held on December 10, 2020.



International Women's Day was commemorated showcasing the NIC's Commercial Manager, Mrs. Lorraine Geddes McDonald.



Minister of Agriculture and Fisheries, Hon. Floyd Green (right), alongside Mr. Joseph Gyles, CEO of the NIC and Mr. Troy Chambers, Project Manager of the EVADP, showcasing the new backhoe handed over by the EVADP team to the NIC.



From right: Minister of Agriculture and Fisheries, Hon. Floyd Green; Mr. Lothan Cousins, Member of Parliament for South-Western Clarendon; Mr. Dermon Spence, Permanent Secretary, MoAF; Mr. Damian Lyn, Managing Director, Alternative Power Sources Limited; Mr. Nigel Myrie, Chairman of the NIC; Mr. Joseph Gyles, CEO of the NIC, commissioning the NIC's Ebony Park Pump Station Solar Retrofit Project.

PROJECTS

Corporate Objectives

- To increase the area under irrigated agriculture;
- To improve existing irrigation schemes in Jamaica, in alliance with the strategic goals of the NIC and the related policies of the Government of Jamaica.

Responsibilities

- Identification and assessment of project areas throughout the agricultural belt;
- Project preparation, from concept to approval;
- Identification of project funding sources and assistance with completing applications;
- Project delivery.

Overview

The Project Unit (PU) continued the monitoring, development and execution programme for nine (9) key projects. These projects are aimed at increasing the area under irrigated agriculture in order to improve both farmer income and agricultural growth across the country.

- (i) Four (4) major projects being implemented and monitored by NIC are outlined in Table 14. These projects are at different stages of execution with a total estimated implementation cost of US\$239.88 million. It is expected that when completed, the projects will impact irrigated agriculture development on 5,900ha of land, serving 5,000 farmers.
- (ii) The remaining five (5) projects are being developed in order to continue expansion of the irrigated agriculture sector, including the Updated National Irrigation Development Plan (NIDP).

Continued implementation work was negatively impacted by the Covid-19 pandemic, which limited fieldwork, farmer interaction, and required travel by international consultants on the South St. Catherine and Clarendon Agricultural Development Project (SCCADP). The PU instituted mitigation measures including virtual meetings and increased technical support by local consultants where possible.

Table 14: Estimated cost and implementation status of projects being executed

Project No.	Project Title	Estimated Cost US\$M	Funding Source & Gross Area Impacted	Status	Executing Partners
1.	Essex Valley Agricultural Development Project (EVADP)	\$41.70 (£35.6)	UK-CIF 1,067ha	13% project implementation executed. The project completion date is June 2023.	*MoAF, NIC, **AIC
2.	South St. Catherine and Clarendon Agricultural Development Project (SCCADP)	\$1.04 (£0.97)	UK-CIF 795ha	90% completion of the Final Design Studies (FDS) covering 795ha. The outputs from SCCADP will be implemented under the Southern Plains Agricultural Development (SPAD) Project.	MoAF, NIC
3.	Southern Plains Agricultural Development (SPAD) Project	\$20.78 (£17.13)	UK-CIF/GOJ 795ha	5% of project executed. The project completion date is June 30, 2023. Two of three wells drilled.	MoAF, NIC, AIC
4.	Pedro Plains Agricultural Development Project utilizing Black River Flows	\$176.5	Govt. of France through a Grant FASEP 4,100ha	Feasibility Studies and Preliminary Engineering Designs were completed by the French Firm Societe du Canal de Provence (SCP). The NIC commenced execution of key elements of the Financing and Construction preparatory phase.	MoAF, NIC, AIC

*Ministry of Agriculture and Fisheries (MoAF)

**Agro-Investment Corporation (AIC)

Essex Valley Agricultural Development Project (EVADP)

The Essex Valley Agricultural Development Project builds on previous irrigation and agricultural development projects, and is comprised of 700 acres of arable land in the key communities of Comma Pen, Lititz and Sea Air. The aim of the project, which targets youth, women and persons with disabilities, is ***"enhanced production and productivity of farmers in Essex Valley in a socially inclusive, gender equitable and climate sensitive manner."***

For the year under review, the following achievements were attained:

- One (1) additional well was drilled, and to date a total of four (4) productive wells were approved by the Water Resources Authority. One (1) additional well is under appeal by the NIC for abstraction licence, and if approved, this will provide a total of 1,563m³/h or 94% of the water requirement;
- The Irrigation designs were completed, and two contracts were sent out to tender- Supply of Pipes, Fittings and Appurtenances & Installation of Pipelines and Rehabilitation of Roads and Drainage Infrastructure;
- A Backhoe was acquired for implementation activities;
- Schematic designs of the Administrative and Global Gap buildings were 90% completed;
- The Tariff Study was completed;
- Signed contract for the Gender-Responsive Economic Inclusion of Vulnerable Groups in Agriculture and Organisational Strengthening Consultancy.

As we move into the next financial year, implementation activities will commence with alacrity. Key elements include irrigation system installation activities; building construction - processing facility, administrative building, Produce Handling Facility (PHF) and Food, Safety and Sanitation (FSS) structures. There will also be more community engagement activities and hands-on farmer training activities.



EVADP Meeting held with farmers pre and during Covid-19.



Permanent Secretary Dermon Spence alongside members of the EVADP team at the Sea Air South well site.

South St. Catherine and Clarendon Agricultural Development Project (SCCADP)

Feasibility and Design Studies (FDS)

Preliminary designs for Parnassus in Clarendon and Bridge Pen/Amity Hall in St. Catherine - road, drainage, canal take-off works, reservoir, pump houses. The work is being undertaken by RINA SpA of Italy along with their local partners Environmental Solutions Limited (ESL). The following milestones have so far been achieved:

1. Climate Vulnerability & Risk Assessment (CVRA) Report - delivered and accepted
2. Preliminary Engineering Design Report (PEDR) - delivered and accepted
3. Draft Detailed Design Report (DDDR) – delivered and accepted
4. Environmental & Social Assessment (ESIA) Report - delivered and accepted
5. Final Detailed Design Report (FDDR) – delivered and under review

The completed final designs are expected to be delivered in May 2201, which will enable the SPAD Project to ramp up its program of procurement and implementation of the SCCADP outputs.

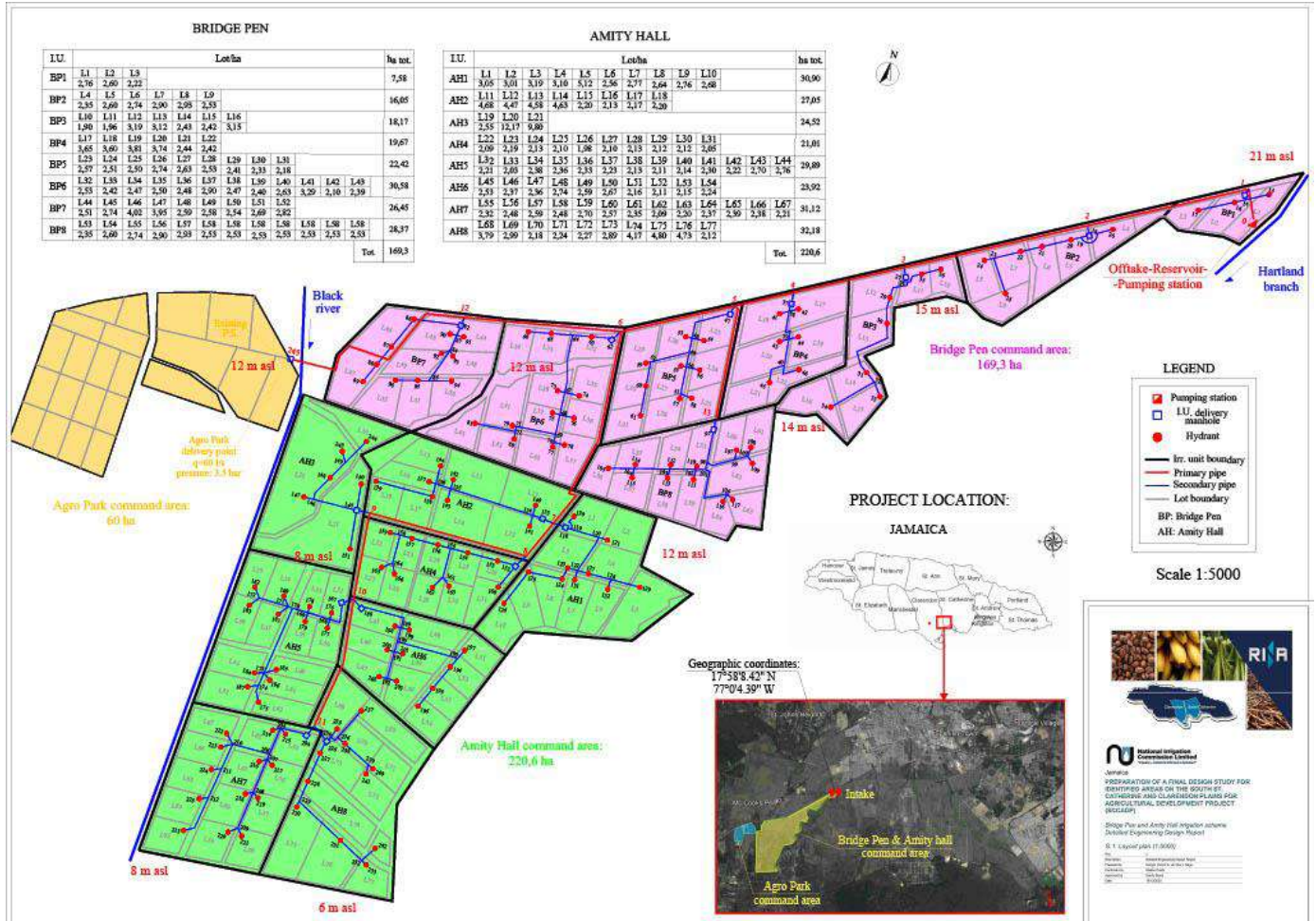


Diagram 2: Bridge Pen and Amity Hall layout

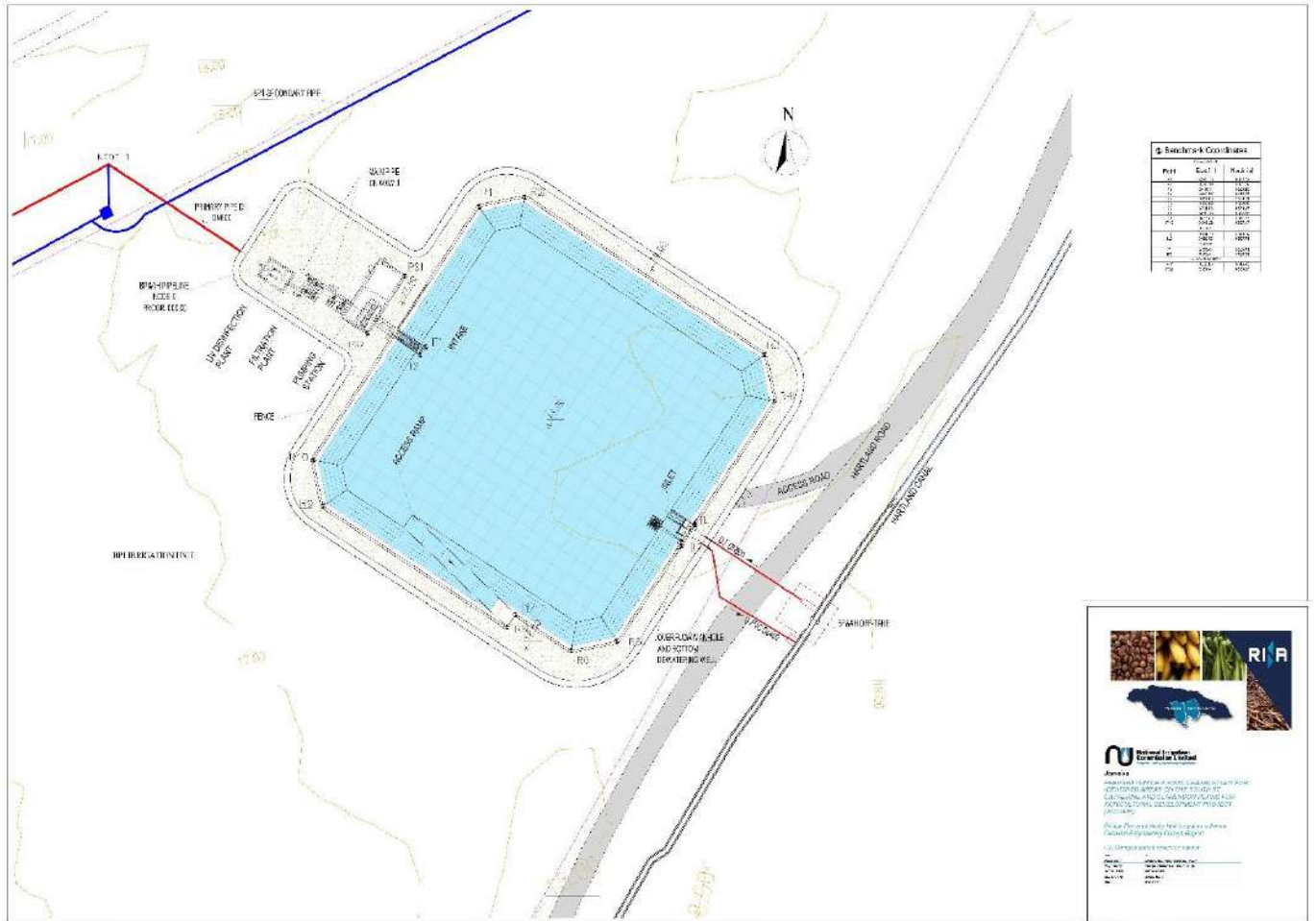


Diagram 3: Bridge Pen and Amity Hall – Compensation Reservoir Layout

Southern Plains Agricultural Development (SPAD) Project

This project which targets youth, women and persons with disabilities, has main components including:

- Improved Irrigation System incorporating climate resilience measures;
- Climate resilient roads, drainage and flood protection systems;
- Engineering and construction services for supervision of infrastructure and works;
- Supply of goods and equipment, including vehicles, office and Geographic Information System (GIS) equipment, irrigation security and monitoring, and control of systems;
- Equipment and inputs to eligible small-scale farmers under the Matching Grant Scheme (MGS);
- Capacity-building, including training and advisory services to project stakeholders to improve compliance with Global-GAP and Climate Smart Agriculture (CSA).

The SPAD Project was officially launched during a virtual event on December 10, 2020.

A key focus was the engagement of stakeholders in Parnassus, Clarendon, where the project is supporting AIC to regularise twenty-six (26) informal farmers. Several meetings involving AIC representatives and the project team were held with the farmers during the year. Additionally, the farmers benefitted from presentations made by both the Marketing Consultant and Agri-Business Development Specialist.

The well drilling contract for three production wells in Parnassus, Clarendon, was signed with Hood Daniel Well Company and drilling work commenced on June 2, 2020. Drilling activities were off schedule due to delays in receiving the Banker’s Guarantee from the contractor, and the loss of a drill bit at well #11R during the month of July 2020.

Table 15: Status of wells being drilled for the SPAD Project

Well Site	Drilling Status	Yield achieved	Remarks
Windsor Lodge #3R	Completed	400 m ³ /hr	Satisfied design expectation
Windsor Lodge #8R	Completed	613 m ³ /hr	Satisfied design expectation
Windsor Lodge #11R	Commenced	Tbd*	80% completed

**Tbd – To be determined*



Yield testing of the well - Windsor Lodge 8R Well (SPAD)



SPAD meeting with farmers and stakeholders during Covid-19

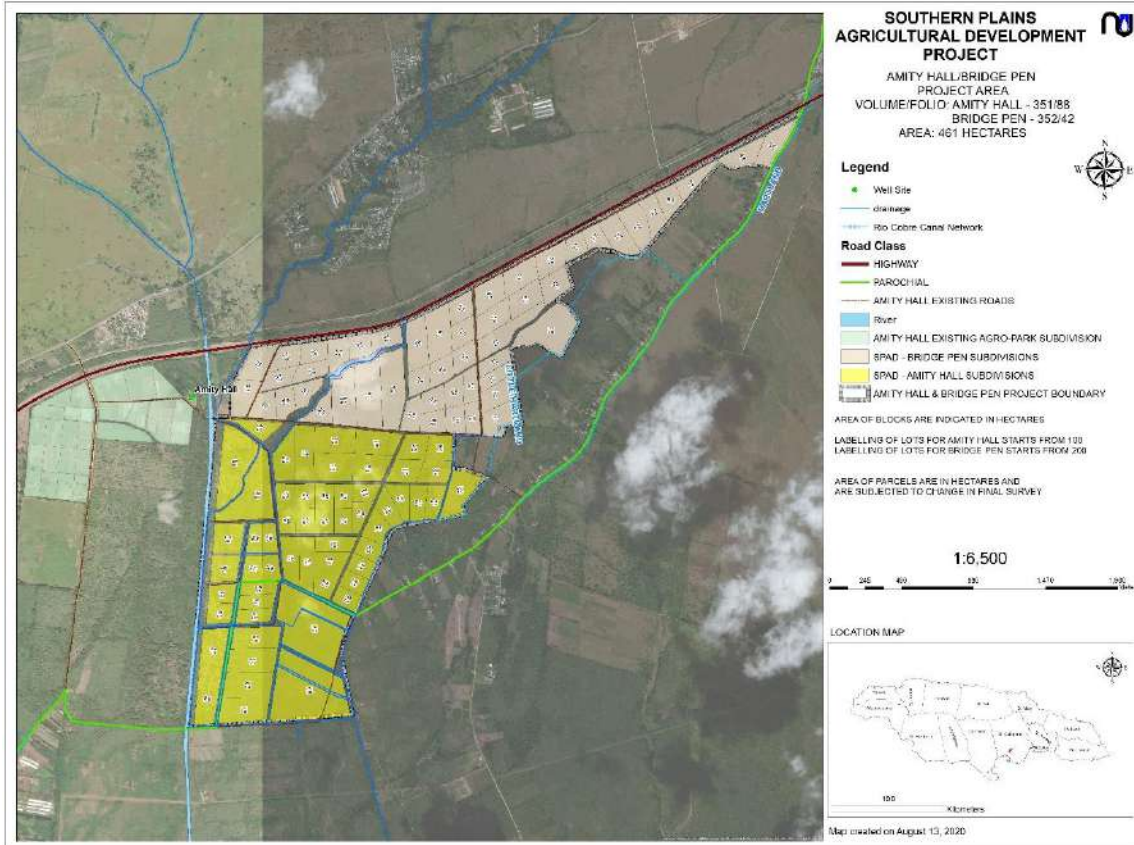


Diagram 4: Map of Bridge Pen/Amity Hall, St. Catherine showing proposed Field Layout

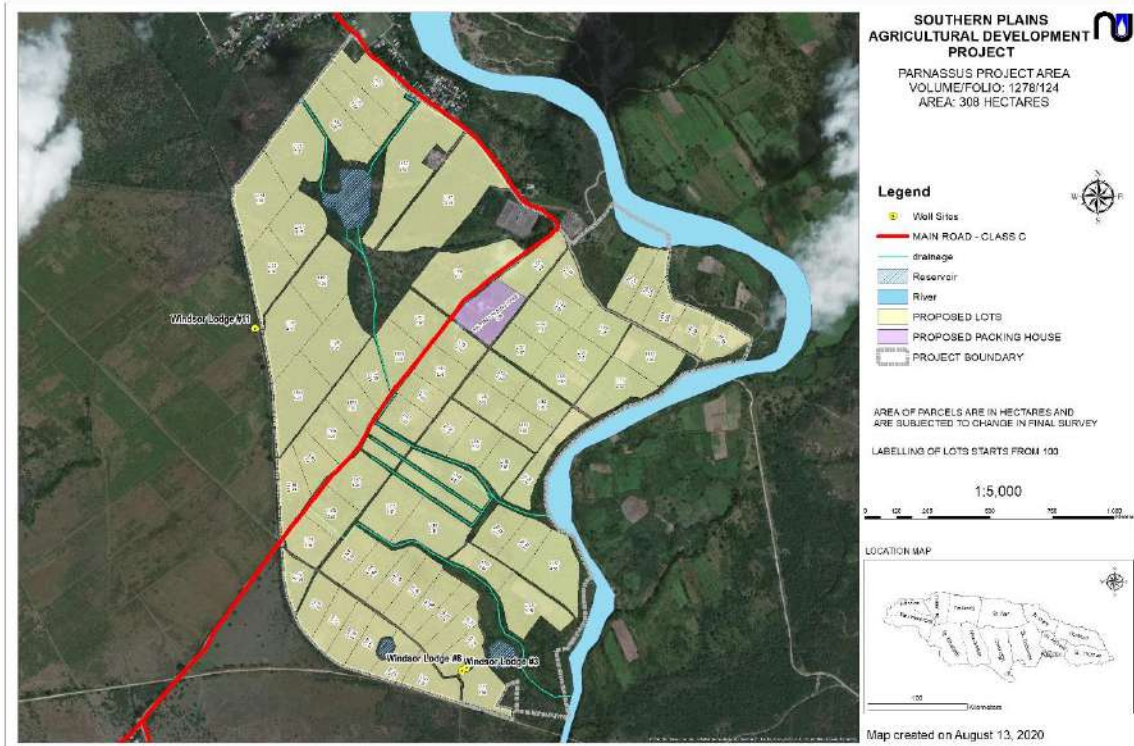


Diagram 5: Map of Parnassus Clarendon showing proposed Field Layout

Pedro Plains Irrigation Expansion

This project seeks to expand irrigated agriculture development on the Pedro Plains in St. Elizabeth by supplementing ground water sources with flows from the Black River. The project objectives include:

- Distribution of water via a pipeline network and four (4) reservoirs at different elevations to serve approximately 4,000 farmers on 4,103 hectares (ha) of land;
- Expansion of irrigated agricultural development to include communities such as Flagaman and Southfield;
- Provide flows to satisfy the growing tourism demand in the area, as well as mitigate any risk of saline intrusion in groundwater sources.

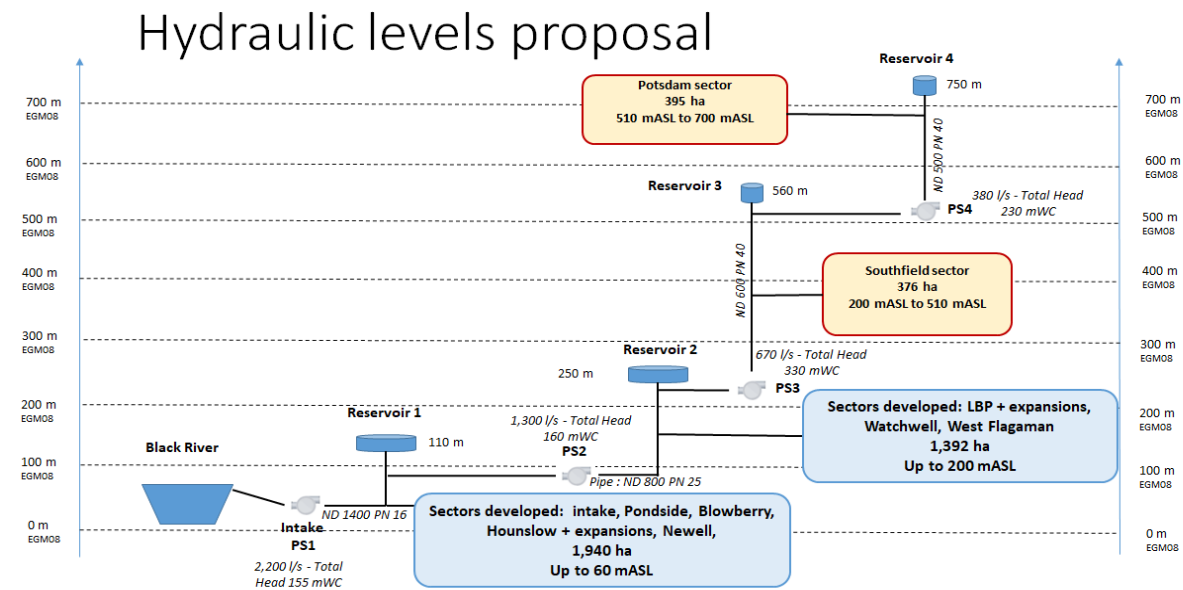


Figure 7: Schematic layout showing intake, reservoir elevation and areas be served

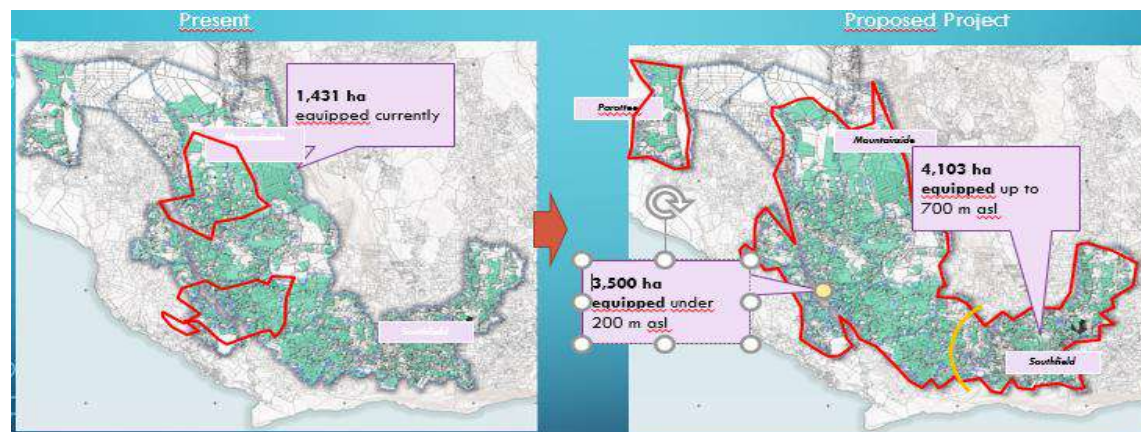


Diagram 6: Impacted project boundaries

The intended beneficiaries have expressed strong support for the project. From a sample of 342 stakeholders in the area, 96% expressed approval for the project as outlined below.

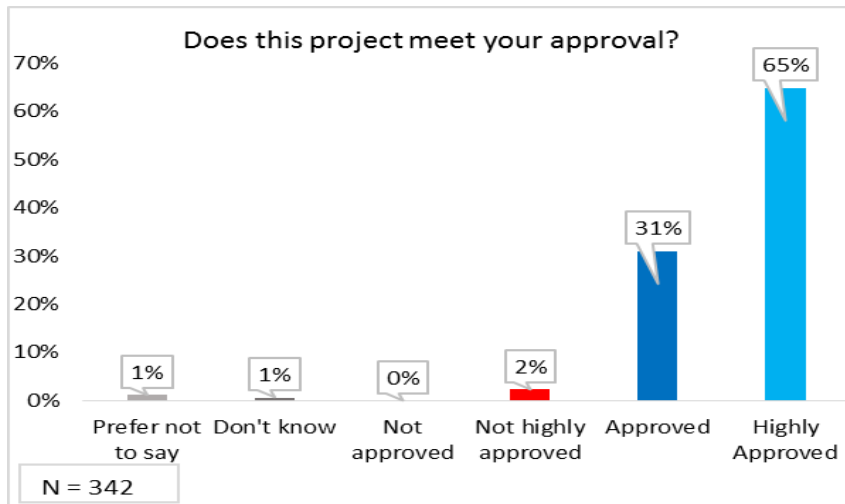


Figure 8: Percentage of stakeholder approval for the Pedro Plains Irrigation Expansion project

The NIC proposes that the final engineering designs and project construction should be executed in four (4) phases as outlined in table 16:

Table 16: Proposed phases of project execution

Project Phase	Key Deliverables	Estimated Time (yrs.)	Remarks
0	<ul style="list-style-type: none"> Project proposal finalization Land tenure acquisition Customer and cadastral information 	1.5	GOJ activities
1	Final engineering designs and funding approval	1	Some development funding options being explored
2	Infrastructure installation and commissioning	3.5	
3	Technical assistance (farmers, NIC)	2	

The NIC focused on the surveys required to finalize the main pipeline route and acquire easements, as well as assessment of the parcels required for the intake, solar site and reservoirs. Accomplishments include:

- Survey of 20.96 km of the trunk main route;
- Survey and valuation for the proposed intake and solar sites;
- Further review of the most suitable parcels for reservoirs and pump stations;
- For the preliminary design phase, SCP developed preliminary designs to include an intake from the Black River at Lacovia.

PROJECTS BEING DEVELOPED

There are five (5) major projects across the island for future implementation including an updating of the National Irrigation Development Plan (NIDP). Table 17 below is a summary of these projects.

Table 17: Projects currently under development

	PROJECT	PARISH	STATUS	HECTARES (NET)	# OF FARMERS	PROJECT PERIOD (YEARS)	ESTIMATED COSTS (\$M)
1.	Updated National Irrigation Development Plan(NIDP)	All parishes	The Food and Agriculture Organization (FAO) has been requested by Caribbean Development Bank (CDB) to review existing documentation and present a proposal for completing the plan. CDB's approval of FAO's proposal for procurement services.	TBD	TBD	1	US\$0.8
2.	Yallahs West	St. Thomas	The Project Concept Note was approved for further development by Public Investment Management Secretariat (PIMSEC). The hydrogeological assessment is to be completed by WRA. Project development and application for funding for Core hole drilling and well designs.	162.5	120	3.5	J\$365
3.	Hinds Town	St. Ann	The water resource assessment completed indicating adequate groundwater availability. Project Concept Note submitted to PIMSEC for approval expected by April 30, 2021. Project development and application for funding for feasibility study.	809	230	5	J\$4,312
4.	Lucky Hill	St. Mary	Water resource assessment completed, indicating adequate surface sources. Project Concept Note drafted for submission to PIMSEC. Submission of Project Concept to PIMSEC for approval.	623	95	5	J\$1,183
5.	Lennox & Low Leyton	Portland	WRA desk study completed. Preliminary subdivision of lots prepared accepted by RADA. Farmers' meetings, site visits and information gathering for project concept development.	98	60	3	J\$282

- Next step(s) of each developing project.

MANAGEMENT INFORMATION SYSTEMS

Corporate Objectives

- To use Information and Communication Technology (ICT) to enable improvements in the NIC's business processes;
- To provide support services to achieve corporate goals.

Major functions include:

- Ensuring efficient systems administration;
- Developing and implementing Information Technology (IT) infrastructure;
- Administering the operations of IT systems and software; and
- Maintaining Geographic Information Systems (GIS).

Table 18: Achievements

Plans 2020 -2021	Achievements
Automation of Procedures	<ul style="list-style-type: none"> • Automation of the procurement procedures; • Automation of Ramp Water Sales process at four (4) locations; • Upgrade of Customer Relationship Management System (CRMS); • Deployment of twelve (12) new SharePoint Apps to support Field Operations
Maintenance and support of the infrastructure to host corporate digital library to improve document management.	<ul style="list-style-type: none"> • Configuration of five (5) additional Microsoft SharePoint Digital Libraries, for a total of twenty-three (23), to serve Departments and Units.
Improvements to the in-house hosted Voice Over Internet Protocol (VOIP) PBX systems	<ul style="list-style-type: none"> • Deployment of forty (40) additional IP phones across District Offices
Software maintenance of mission critical applications	<ul style="list-style-type: none"> • Maintenance of Software Agreements for seven (7) mission critical business applications
Expansion of the capabilities for staff to access resources and work from any location with no IT security breaches reported	<ul style="list-style-type: none"> • Deployment of additional mobile computers and smart devices • Upgrade of Email Server and Webmail capabilities • Expansion of VPN access to all relevant users • Administer IT-related training
Continue the integration of GIS in operational procedures to support decision making	<ul style="list-style-type: none"> • Deployment of mobile data collection apps on Smart Devices

COMMERCIAL OPERATIONS

Corporate Objectives

- To expand the customer base;
- To maximize collection of revenue; and
- To ensure continued customer satisfaction.

Customer Service

As part of our continued efforts to improve service levels and to respond to the needs of our customers, the following initiatives were employed:

- Electronic bank payment options for customers;
- Short Message Service (SMS) to communicate with customers;
- Virtual Engagement Forums with customers;
- Electronic delivery of invoices to customers; and
- A major upgrade of the Customer Relationship Management System (CRMS) for a more efficient billing process and customer service.

Customer Profile

As at March 31, 2021, the number of active customers was 2,838 utilizing 8,246ha and 152 suspended customers with a service area of 574ha. There were 2,950 agricultural, 33 industrial and 7 domestic customers.

A total of 200 hundred new applications for water were processed for a corresponding 1,200ha.

Water Sales

The Commission supplied 45.3Mm³ of water during the year, with 81% distributed to large and small farmers, and the balance to industrial and domestic users.

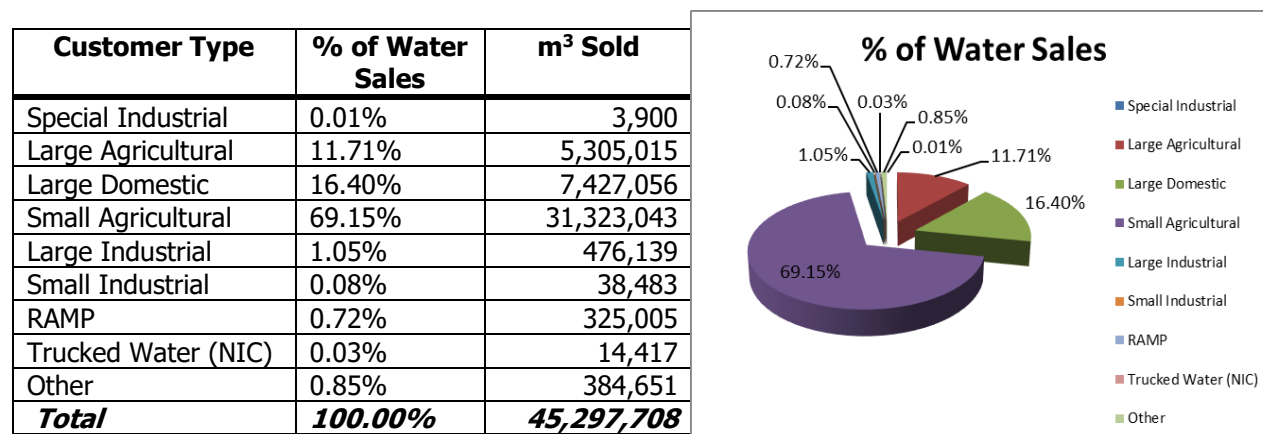


Figure 9: NIC's Customer Base

Newly Established Irrigation Facilities

A new irrigation scheme was established at Spring Garden in Portland and a ramp was installed at Holland Estate in St. Elizabeth. The new scheme has 7 new customers on a corresponding 75.5ha thus far.

FINANCE AND CORPORATE PLANNING

Corporate Objectives

- To continue the development of financial management systems;
- To provide accurate, reliable, timely and relevant information for decision-making;
- To ensure the financial resources are optimally developed; and
- To drive service delivery.

Financial Summary

The Commission recorded a deficit of Ninety-One Million Five Hundred Two Thousand Eighty-Eight Dollars (\$91,502,088) for Financial Year 2020/2021.

This represents an increase in loss of \$33.81M relative to the previous year’s deficit of \$57.69M.

Revenue

Total Income for Year 2020/2021 was \$1.98B, an increase of \$40.67M compared to the previous year’s income figure of \$1.93B. The growth in revenue was due primarily to increases in water sales (\$22.83M) and in GOJ subsidy to farmers (\$7.67M).

Table 19: Revenue Summary for the year 2020/2021

Revenue Items	Actual YTD	Budget YTD	Difference	Actual %
Interest (\$M)	0.19	0.19	0.00	0.0%
Other Income (\$M)	24.02	15.44	8.58	1.2%
Drainage Fees (\$M)	1.24	1.24	-	0.1%
Water Sales (\$M)	599.38	570.76	28.62	30.3%
GOJ Subvention (\$M)	1350.52	1406.00	(55.48)	68.4%
Total	1,975.35	1,993.63	(18.28)	100.0%

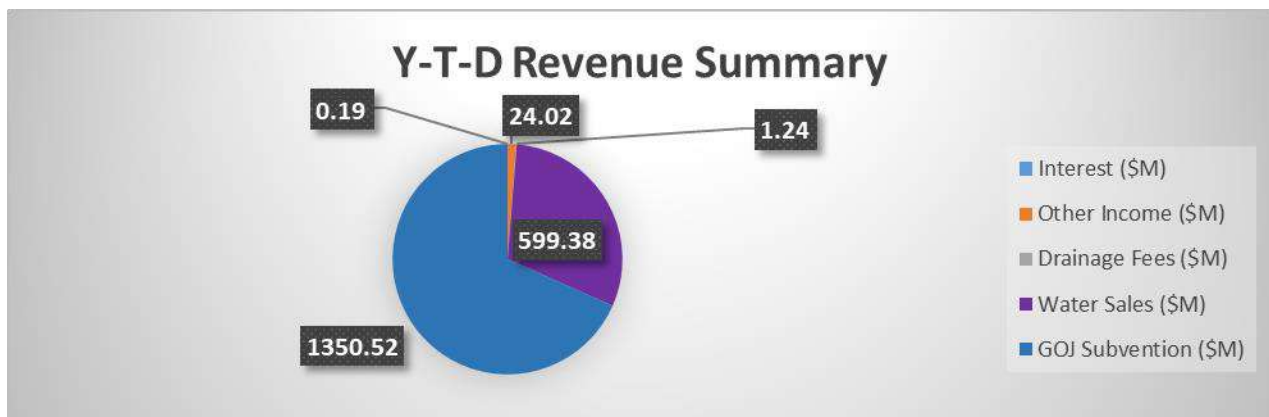


Figure 10: Revenue summary

GOJ Subsidy

Government of Jamaica (GOJ) subsidy amounted to \$1.35B or 68.4% of total revenue. This was below the budgeted figure of \$1.41B by \$0.06B.

Water Sales & Drainage Fees

Revenue from water sales and drainage fees for the period was \$600.62M, an increase of \$22.83M over the previous year's figure of \$577.80M.

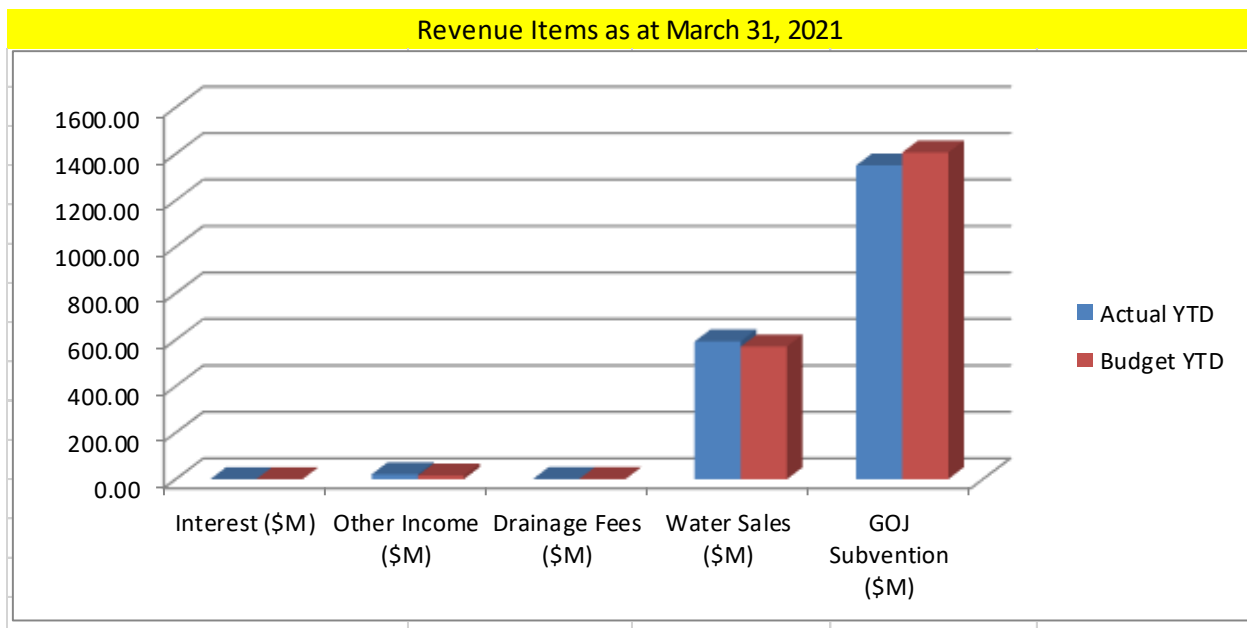


Figure 11: Budgeted vs. actual revenue from water sales and drainage fees

Income from Drainage Operations

Revenue remained constant at \$1.24M. The Commission continued to carry out its mandate under the Drainage Act by undertaking major drainage works in the Upper and Lower Black River Morass region in St. Elizabeth.

Operating Expenditure

Total expenses for the year amounted to \$2.05B, an increase of \$160M over the previous year's figure of \$1.89B.

Operating costs amounted to \$1.59B, an increase of \$151M or 10.5% compared to the previous year's figure of \$1.44B. The major contributing factor was the electricity pumping cost which increased from \$510.77M to \$655.17M, an increase of \$144.40M or 28.3%.

The Commission recognizes 'cost of energy' as a major threat to its operations and has devised a number of short, medium and long-term initiatives to keep its seventy-three (73) pumps operational.

These include:

- JPSCo Tariff Management to benefit from lower energy rates where possible;
- Power Factor Correction to reduce kVA demands;
- Installation of Variable Frequency Drives (VFDs);
- Replacement of inefficient motors with premium efficiency units;
- Use of renewable energy technology to reduce reliance on JPSCo.

During the financial year, the Commission directly experienced the challenges faced by the global economy with the advent of Covid-19. These included:

- Reduction of the NIC's Capital Budget by \$173M or 69.2%;
- Reduction of the NIC's approved Recurrent Budget by \$47.36M or 2.4%.

Notwithstanding the many challenges, the Commission was still able to maintain an effective and reliable service to its clientele. This included the acquisition of two (2) new water trucks to augment service delivery to the farmers in South St. Elizabeth.

At the end of March 2021, Accounts Payable and accrued charges increased from \$354.53M in the previous year to \$495.26M.

Total Assets increased by \$280M, from \$1.61B to \$1.89B. This was due primarily to Government of Jamaica Project Advances in respect of capital restoration/rehabilitation in Clarendon and Southern St. Catherine. In partnership with the Bodles Research Station, work commenced on its irrigation and domestic water distribution network which had an allocation of \$82.57M.

Rehabilitation of the NIC's Infrastructure

During Fiscal Year 2020/2021, \$66M was allocated for the Rehabilitation of Irrigation Infrastructure Component.

Rehabilitation works were undertaken on the conveyance infrastructure of the canal network in the parishes of St. Catherine and Clarendon, representing approximately 47% of the allocated sum.

Table 20: Rehabilitation of Conveyance Infrastructure

Activities	Costs
Upper Old Harbour Main Canal Restoration (Point 1400M - 1900M)	\$12,855,526.24

Activities	Costs
Upper and Lower Rhymesbury Pipeline Replacement Project - Pressurised Conversion	\$9,119,708.12
Replacement Turbine - Free Town #2 Deep Well Relift Pump Station	\$9,174,439.90

Energy Efficiency

The Commission continues to use technological innovations to ensure the overall efficiency of operations.

Table 21: Solar Photovoltaic Systems

Activities	Expenditure to date
Solar Retrofit Project - Beacon/Little Park	\$12,764,076.00
Premium Efficiency Motors - Rhymesbury/ Ebony Park Deep Wells	\$7,020,894.31

Process Improvement and Reporting Systems

The following processes were improved/implemented:

- Electronic Suppliers Payments (E-Banking Transactions);
- Real-time receipt update of Customers Accounts;
- Electronic Receipts System;
- Workplace Requisition/Purchase Order System.

PROCUREMENT UNIT

The Procurement Unit provided critical support to the management of the Recurrent Budget of \$1.94M and the Rehabilitation and Maintenance Infrastructure budget of \$66M.

Some of the major procurement activities for the year include:

1. Supply & delivery of five (5) Premium Efficiency Motors;
2. Replacement turbine pump installed & commissioned at Free Town #2 Deep Well Relief Pump Station;
3. Supply & delivery of two (2) 17,000 litre-capacity water trucks to increase existing fleet, allowing the NIC to target potential customers in areas not being served by irrigation systems;
4. Procurement of PVC pipes & assorted fittings for Clarendon Upper & Lower Rhymesbury Pipeline Replacement Project;
5. Supply, installation & commissioning of replacement variable frequency drive for the Bowers Pump Station;
6. Installation & commissioning of 200kW Solar Photovoltaic (PV) System for Little Park/F3 Pump Station.

Table 22: NIC's Five-Year Statistics from 2016/2017 to 2020/2021

National Irrigation Commission Limited					
Five year Statistics					
SIGNIFICANT METRICS	\$'000	\$'000	\$'000	\$'000	\$'000
	2020/2021	2019/2020	2018/2019	2017/2018	2016/2017
Shareholders' Equity	558,919	650,421	708,112	600,944	515,828
% Inc/(dec.) compared to prior year	-14.07%	-8.15%	17.83%	16.50%	0.64%
Total Assets	1,887,809	1,608,999	1,599,359	1,315,186	1,252,242
% Inc/(dec.) compared to prior year	17.33%	0.60%	21.61%	5.03%	-0.92%
PROFIT & LOSS ACCOUNT					
Operating Revenue	1,951,142	1,920,651	1,806,309	1,568,249	1,417,802
(%Dec)/% Inc. compared to prior year	1.59%	6.33%	15.18%	10.61%	-5.58%
Accumulated Surplus	150,789	242,291	299,982	192,715	107,599
(% Decr.)/% Inc. compared to prior year	-37.77%	-19.23%	55.66%	79.10%	3.09%
IMPORTANT RATIOS					
Admin. Exps. as a % of Total Cost	22.52%	23.82%	27.35%	24.91%	25.97%
Operating Exp. as a % of Total Cost	77.48%	76.18%	72.65%	75.09%	74.03%
Electricity Exp. as a % of Total Cost	31.90%	27.02%	25.85%	26.79%	26.94%
Electricity Exps. as a % of Operating Cost	41.17%	35.47%	35.58%	35.68%	36.40%
Rates/Water Sales as a % of Total Cost	29.24%	30.57%	35.33%	30.23%	36.28%
Rates/Water Sales as a % of Operating Cost	37.74%	40.13%	48.63%	41.19%	49.02%
Total GOJ Subsidy as a % of Total Cost	65.76%	71.04%	74.13%	70.65%	61.15%
Total GOJ Subsidy as a % of Operating Cost	84.87%	93.26%	102.04%	94.04%	82.60%

INTERNAL AUDIT

Corporate Objectives

- To conduct independent systematic reviews, assessing the risks and evaluating the controls designed to address those risks, thus providing management with the assurance that its operations are being conducted effectively, efficiently and economically;
- To establish systematic, disciplined approaches to evaluate and improve the effectiveness of risk management, controls and governance processes.

Internal Audit functions give valuable insight on the NIC's operations to the Board of Directors.

Ten (10) of the eleven (11) audits were executed for the assigned period according to the Audit Plan. The areas reviewed were:

- Operations;
- Finance;
- Commercial Operations;
- Human Resources;
- Projects.

The internal control processes were reviewed to evaluate the adequacy and effectiveness of the controls. The associated risks were assessed to determine the impact on the processes and to identify mitigating factors to keep the risks at an acceptable level. The compliance with the applicable statutes, regulations and guidelines were appraised. The reports, which detailed the findings as well as recommendations to address the issues identified, were prepared as required and submitted to the Audit Committee of the Board of Directors.

FINANCIAL STATEMENTS