



Project Completion Report

PCR

Project Name: National Irrigation Development Programme

Country: Jamaica

Sector/Subsector: Agriculture

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Acronyms and Abbreviations

ASSP	Agricultural Support Services Program
CLPA	Colbeck Land Purchaser's Association
ESSJ	Economic & Social Survey of Jamaica
FARM	Financial Access for Responsible Members
FFS	Farmer Field School
GoJ	Government of Jamaica
IDB	Inter-American Development Bank
IMF	International Monetary Fund
JAS	Jamaica Agricultural Society
JSLC	Jamaica Survey of Living Conditions
LAMP	Land Administration and Management Program
MIS	Management Information System
MOAF	Ministry of Agriculture and Fisheries
MTF	Medium Term Framework
NIC	National Irrigation Commission
NLA	National Land Agency
NIDP	National Irrigation Development Program
O&M	Operation and Maintenance
PATH	Program of Advancement through Health and Education
PCR	Project Completion Report
PIU	Project Implementation Unit
PPF	Project Preparation Facility
RADA	Rural Agricultural Development Agency
SBA	Stand by Arrangement
WSPSAP	Water Sector Policy Strategy and Action Plan
WUA	Water User Association



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I. Basic Information

BASIC DATA (AMOUNTS IN US\$)

PROJECT NO: JA-0106 **TITLE:** National Irrigation Development Programme - NIDP

Borrower: Government of Jamaica **Date of Board Approval:** 30/06/2004
Executing Agency (EA): National Irrigation Commission **Date of Loan Contract Effectiveness:** 27/05/2005
Date of Eligibility for First Disbursement: 26/05/2006

Loan(s): 1562/OC-JA **Months in Execution**
Sector: Agriculture **From Approval:** 112
From Contract Effectiveness: 100

Lending Instrument: Investment

Disbursement Periods
Original Date of Final Disbursement: 27/05/2010
Current Date of Final Disbursement: 31/10/2013
Cumulative Extension (Months): 41

Loan Amount(s)
Original Amount: US\$16,800,000.00
Current Amount: US\$ 11,801,995.14
Counterpart (original): US\$ 4,200,000.00 (GoJ)
Pari Passu (original): 80%-20%

Poverty Targeted Investment (PTI): Yes **Disbursements (at project close-out)**
Social Equity (SEQ): Yes **Amount to date:** US\$ 11,801,995.14 (100%)
Balance: US\$ 4,998,004.86 (Cancelled)
Counterpart: US\$ 2,637,393.41 (GoJ)
Total: US\$ 14,439,388.51

Environmental Classification: B (R) **Total Project Cost (ORIGINAL):** US\$ 21,000,000.00

Redirectioning:
Has this project:
Received funds from another project? ☐
Sent funds to another project? ☐
N/A ☒

Is Project currently designated on alert: YES

Summary Performance Classifications

DO	<input type="checkbox"/> Highly Probable (HP)	<input type="checkbox"/> Probable (P)	<input checked="" type="checkbox"/> Low Probability(LP)	<input type="checkbox"/> Improbable (I)
IP	<input type="checkbox"/> Highly Satisfactory (HS)	<input type="checkbox"/> Satisfactory (S)	<input checked="" type="checkbox"/> Unsatisfactory (US)	<input type="checkbox"/> Very Unsatisfactory (VU)
SU	<input type="checkbox"/> Highly Probable (HP)	<input type="checkbox"/> Probable (P)	<input checked="" type="checkbox"/> Low Probability (LP)	<input type="checkbox"/> Improbable (I)



II. The Project

A. Project Context

Political. At the time that this project was conceptualized (2003), one of the main constraints to an improved economic performance of Jamaica's agricultural sector was its' vulnerability to drought. Rainfall regime was a major deterrent to increased agricultural productivity, while most of the public irrigation systems needed major rehabilitation works. Of the approximately 90,000 ha that were considered irrigable in Jamaica, almost 36,000 ha had some sort of irrigation infrastructure installed, but only some 25,000 ha were actually irrigated. In 1998 the National Irrigation Development Plan (NIDP) was developed, based on the knowledge that irrigation plays a critical role in lifting agricultural production and productivity.

To implement the plan (NIDP) and achieve its objectives, the GoJ requested financing from both the Caribbean Development Bank (CDB) and the IDB. The three CDB project areas served as pilot investments for the IDB loan. The IDB supported the evaluation and revision of the institutional and policy framework that led to development and approval of a Water Sector Policy Strategy and Action Plan (WSPSAP 2004). This new framework comprised elements related to irrigation which included (i) the definition of a new role for the NIC in view of the progressive establishment of Water User Association (WUAs); (ii) revision of the legal framework to define the legal status of WUAs; (iii) the definition of a clear cost recovery policy, including Operations and Maintenance (O&M) and capital costs.

The Revised Draft Water Sector Policy (February 2014) updates the previous 2004 version in support of the objectives contained in the Vision 2030 Jamaica – National Development Plan's Medium Term Framework (2012-2015) and development in the water sector since 2004.

Economic. During the period 2003-2008 Agriculture represented on average 5.0% of Jamaica's Gross Domestic Product (GDP) (ESSJ 2008). The economy was affected by serious long-term problems: high interest rates; increased foreign competition; a pressured exchange rate; a sizable merchandise trade deficit; large-scale unemployment; and a growing internal debt, the result of government bailouts to ailing sectors of the economy (ESSJ, 2008). In 2004, the government faced the difficult prospect of having to achieve fiscal discipline in order to maintain debt payments while simultaneously attacking a serious and growing crime problem. In addition to social and economic hardships, on September 10, 2004 Jamaica was hit hard by Hurricane Ivan. All sectors of the economy were badly affected; the southern parishes that are the breadbasket of the country suffered a double blow, as crops were also damaged during the passage of Hurricane Charley less than a month before. By 2005 there were protests over price increases, such as utilities and public transportation. The economy continued its downward spiral in the ensuing years with public finances worsening and reduction of public sector debt much less than anticipated. There were fourteen consecutive quarters of negative growth from 2007-2010 before positive real GDP growth of 1.51 per cent was recorded in 2011. The period also saw increases in total public debt, unemployment and poverty and in 2010 the GOJ and the IMF approved a 27 month Stand-By-Arrangement (SBA) to undertake fiscal consolidation, reduce the debt to GDP ratio, strengthen fiscal accountability and discipline, undertake reforms of the financial sector and encourage economic growth. The IMF SBA was suspended in 2011 and expired in May 2012 without fully achieving the program targets. Subsequently, a new program with the IMF which supports the objectives of the Government's Medium Term Economic Program was brokered. (Vision 2030 Jamaica MTF 2012-2015).

Presently, the overarching policy of the government with respect to the agricultural sector is to increase the agricultural gross domestic product (GDP) as it offers the potential to help Jamaica out of the economic crisis.

Social. According to the Jamaica Survey of Living Conditions (JSLC 2008), the poverty rate increased 17.6 in 2010 up from 12.3 per cent in 2008, with the highest prevalence in rural areas. The Government embarked on the reform of the social protection system aimed at protecting the vulnerable whilst consolidating existing programs such as the Program of Advancement through Health and Education (PATH) that improve benefits, and widening the scope and reach of social assistance efficiently and cost- effectively. (Vision 2030 Jamaica MTF 2012-2015).

Project Description

The Sociological Survey of February 2003, conducted during the NIDP Feasibility Study focused on three areas: Yallahs, New Forrest/Duff House and Colbeck. The subsequent development of these three irrigation schemes was considered integral to the promotion of agricultural growth and farmer prosperity. This steered the preparation of a loan proposal document (JA0106) in 2003-4 by the IDB which was signed by the GoJ and IDB in May 2005. The relevance of the project was to expand on the pilot investments in irrigated agriculture co-funded by the CDB and to provide a number of structural pilot activities pertaining to the implementation of the overall National Water Sector Policy of 1999 and the WSPSAP (2004). Total estimated cost of the NIDP including financial costs was US\$21 million. The IDB would finance US\$16.8 million (80%) and local counterpart (GoJ) US\$4.2 million (20%). The Bank would recognize up to US\$1.76 million (8.4%) in farmers' contribution. This farmers' contribution related to (i) on-farm investments (US\$1.7million) and (ii) the share for the technical assistance (US\$60,000).

i. Development Objective

The Purpose of the program was *"to increase high payoff agriculture and farmers' income in the program area, and therefore contribute to increase of the national agricultural area under improved policy framework and irrigation management practices."* The main indicator of successful NIDP completion was *"the increment in irrigated area from 500 has to approximately 1,700 has benefiting about 1000 farmers with increase in yields and cropping intensity."*

ii. Components

The NIDP had four components, besides the provisions for the operation of the Program Implementation Unit (PIU):

1) Institutional Strengthening of the NIC (US\$0.95 million)

The activities of Component 1 would strengthen the institutional framework and capacity for irrigation management in Jamaica. The NIC would be reorganized to progressively focus on planning, monitoring and regulating the irrigation sector. Five outputs were to be achieved: (i) NIC business strategy developed and company reorganized; (ii) Management of Information Systems (MIS) strengthened; (iii) Accounting systems strengthened; (iv) Billing systems strengthened; and (v) Operations strengthened.

2) Promotion and Formation of WUAs (US\$1.69 million)

Component 2 comprised support for (i) the establishment of a WUA Support and Regulation Unit within the PIU; and (ii) the formation and consolidation process of WUAs in all NIDP irrigation systems, i.e. Yallahs, Colbeck, New Forest, Essex Valley and Saint Dorothy. In each of these systems, a specific Action Plan would be implemented.



3) Farmers Technical Assistance and Training (US\$1.17 million)

Component 3 sought to support farmers' economic activities by training them in the correct use of relevant agricultural and marketing techniques to properly manage their natural and financial resources under irrigated conditions, and therefore, enhance the performance of their agricultural businesses.

4) Irrigation Infrastructure (US\$10.61 million)

Component 4 funded (i) the construction and/or rehabilitation of five irrigation projects (US\$9.31million) and (ii) the pre-investment costs of the NIDP (US\$1.3million). The irrigation infrastructure included wells, pump houses, power supply, pipe networks, pumping equipment, and on-farm systems in five irrigation areas: Yallahs, Colbeck, New Forest/Duff House, Essex Valley, and Saint Dorothy. It was estimated that these systems would increase irrigated land in the program area from 500ha to 1700ha and benefit 1,000 farmers. The pre-investment included feasibility studies and final designs for Essex Valley and St. Dorothy as well as the rehabilitation plans for two major irrigation systems (Mid-Clarendon and Rio Cobre). Additionally, the NIDP included the funding of the incremental costs of NIC to support the PIU (US\$0.93 million), the related engineering and supervision costs for infrastructure (US\$1.64 million), and the reimbursement of a Project Preparation Facility (PPF), (US\$0.5 million) used during program preparation.



III. Results

A. Outcomes

ACHIEVEMENT OF DEVELOPMENT OBJECTIVES (DO)			
Development Objective(s) (Purpose)			
<p>1. To increase high payoff agriculture and farmers income in the program’s area – indicated hectares are cultivated with high payoff products (i.e thyme, escallion, sweet pepper; tomatoes, cucumber, broccoli, mango and watermelon).</p> <p>Classification: LP</p>			
<u>Key Planned Outcome Indicators</u>		<u>Outcomes Achieved</u>	
<p>1.1 Increment in irrigated area from 500 ha to approximately 1,700 ha</p> <p><u>Baseline</u> <u>Intermediate</u> <u>End of Project</u> 500ha (2005); 800ha (2008); 1,700ha (2010)</p> <p>1.2 Increase in crop yields (ton/ha) from the present to the first crop cycle under irrigation and maintained afterward:</p> <p>(i) Vegetables increase by 25%</p> <p>(ii) Condiments increase by 25%</p> <p>(iii) Cucurbits increase by 60%</p> <p>1.3 Increase in cropping intensity (1ha) from the present to the first crop cycle under irrigation and maintained afterwards:</p> <p>(i) Yallahs from 1.7 to 2.7.</p> <p>(ii) N. Forest, from 1.1 to 1.8.</p> <p>1.4 Increase in net income/ha:</p> <p>(i) N. Forest: 40% from 1st crop to 3rd crop and maintained afterwards.</p> <p>(ii) Yallahs: 70% 1st crop to 3rd crop and maintained afterwards.</p> <p>Colbeck: 18% from 1st crop to 3rd crop and maintained afterwards.</p>		<p>1.1 Irrigation Infrastructure was installed in 656ha increasing the total irrigated lands in the program area from the baseline of 500ha to a total of 1,156ha after numerous delays. The Colbeck irrigation system (110ha) was commissioned in 2011, New Forrest/Duff House (398ha) was commissioned in March 2013 and Yallahs (Phase 1-148 ha) in January 2013. Yallahs Phase 2 has not yet been implemented. The Feasibility Study for Essex Valley was completed in November 2012. St Dorothy was not pursued as it was discovered that land use in the designated area had changed.</p> <p>None of the planned outcomes described in 1.2; 1.3; and 1.4 have been achieved. A special 11 month project extension granted in November 2011 to affect a Consolidated Action Plan (CAP) which would provide training/ demonstrations to catalyze irrigated agriculture, suffered from a major 8 month delay in the signing of a contract between the NIC and the RADA for its implementation. This resulted in only three and a half months being available for CAP implementation before Program end in October 2012.</p>	
Summary Development Objective(s) Classification (DO):			
[] Highly Probable (HP)		[] Probable (P)	[✓] Low Probability (LP)
			[] Improbable (I)

Country Strategy.

At the time of the signing of the project document in 2005, the Bank's Country Strategy stated "Successful participation in the global economy through enhanced international competitiveness, trade facilitation and related measures should therefore be a central aim of the Inter-American Development Bank's support strategy for Jamaica, particularly at a time when the country is facing the rapid erosion of trade preferences long enjoyed by its exporters in major world markets." The NIDP was designed to equip Jamaica for enhanced international competitiveness in Agriculture.¹

The latest IDB Country Strategy for Jamaica indicates that Jamaica is still suffering from the effects of the world economic downturn and states "As outlined in the GOJ's Fiscal Policy Paper, Jamaica continues to face major social and economic challenges, including anemic growth in national output, high fiscal deficits, large current account deficits, unsustainable public debt, growing unemployment and rising poverty levels. At the same time, the government has taken a proactive stance to address these vulnerabilities through a strong commitment to their medium-term macroeconomic framework and subsequent approval of the Extended Fund Facility with the IMF on May 1, 2013."²

B. Externalities

Positive externality. The new (2012-2015) GoJ strategy of promoting Agro Parks, which consists in concentrating, in specific geographical areas, government support in the form of basic infrastructure, land clearing, training and marketing linkages, offers hope for eventual partial achievement of the DO through good use of the irrigated lands with available technical assistance for production and marketing. This new thrust has included two of the newly irrigated farm areas, (i) Yallahs and (ii) New Forest/Duff House. It is projected that by 2015, nine Agro Parks will be in operation.

Negative externality. The prolonged titling process and the discontinuation of the thrust towards assistance with the acquisition of on-farm equipment has dampened farmers' spirits, possibly reducing trust in government institutions.

¹ Jamaica Country Strategy GN-2422-1 <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=1181289>

² Jamaica Country Strategy GN-2694-2 <https://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37936454>

C. Outputs

IMPLEMENTATION PROGRESS (IP)	
Components	
Component 1: Strengthening of the National Irrigation Commission. Total Planned Cost: US\$953,500.00 Actual IDB Disbursement: US\$640,912.93 Actual Counterpart: US\$134,740.17 Total Actual Cost: US\$775,653.10 Classification: (HS, S, US, V) US	
Key Output Indicators:	
<p style="text-align: center;"><u>Planned Outputs</u></p> <p><u>Annual/Intermediate</u></p> <p>1.1 The NIC will be reorganized to progressively focus on planning, monitoring and regulating the irrigation sector. To that effect: a new NIC Business Strategy will be developed by y-2; and the accounting, billings and operations systems will be strengthened by y-2.</p> <p><u>End of Project</u></p> <p>"It will consist of improving the institutional framework and capacity for irrigation management in Jamaica. The NIC will be reorganized to progressively focus on planning, monitoring and regulating the irrigation sector. To that effect, a new NIC Business Strategy will be developed and the management, accounting, billings and operations systems will be strengthened. Years 1 – 5" (Logical Framework, 2004)</p>	<p style="text-align: center;"><u>Outputs Achieved</u></p> <p>Management Information System (MIS) installed;</p> <p>Upgraded billing system completed;</p> <p>Business Strategy developed by Deloitte & Touche in June 6, 2012. An amendment was requested by a new Board (Appointed October 14, 2013) (to take into consideration the IMF agreement, depreciating currency, the 2013 Auditor General's Report, higher than normal energy costs and Climate Change issues.) The New Draft Business Strategy was accepted by the Board in March 2014, after the program was closed.</p>
*As per Disbursement Request No.73 of May 22, 2013	
Restructuring. [✓] N/A the component was not restructured	

2. Component 2 - Promotion and formation of Water User Associations & Training

Total Planned Cost: US\$1,688,300.00

Actual IDB Disbursement: US\$433,869.97

Actual Counterpart: US\$96,677.65

Total Actual Cost: US\$530,547.62

Classification: US

Key Output Indicators: Component 2

Planned Outputs

Annual/Intermediate

Signing of MOUs with WUAs and the provision of corresponding licenses for O & M of the irrigation infrastructure by the end of the second year.

2.1 Establishment of 5 autonomous, viable, self-sustained WUAs in Colbeck, New Forest, and Yallahs by y-2; Essex Valley and Saint Dorothy, by year 3 to cover 1,700 hectares with approximately 1,000 farmers.

End of Program

"... establishing 5 autonomous, viable, self sustained WUAs in Colbeck, New Forest, Yallahs, Essex Valley and Saint Dorothy, to cover 1,700 hectares with approximately 1,000 farmers. Members will have full participation in the decision-making activities of the WUAs established. WUAs will be regulated by the NIC. Years 1 – 5." (Logical Framework, 2004)

Outputs Achieved

2.1 Three (3) Water User Associations formally established in July 2007 but to date they are neither autonomous, viable or self-sustained.

Membership numbers:

New Forrest/Duff House – 220

Yallahs – 214

Colbeck - 85

The Saint Dorothy feasibility study was cancelled as the land use in the area had changed. Essex Valley Feasibility Study was completed in 2012 but implementation cancelled due to overruns in the New Forest/Duff House System and also end of program time.

At end of program, the WUAs are fragmented due to the long wait for the irrigation systems and disappointment that the thrust towards assistance with acquisition of on farm equipment was discontinued.

MOUs signed with Colbeck (2011) and New Forrest/Duff House (2012). Licensing for O&M of the irrigation infrastructure not expected for another 5-6 years.

Restructuring.

[✓] N/A the component was not restructured

3. Component 3: Farmers' technical assistance and training.**Total Planned Cost:** US\$ 1,167,500.00**Actual IDB Disbursement:** US\$ 479,798.37**Actual Counterpart:** US\$81,698.58**Total Actual Cost:** US\$561,496.95**Classification:** US**Key Output Indicators:****Planned Outputs**

By means of a MOU with the PIU, the ASSP will implement this component.

Annual/Intermediate

It will consist of providing training to 30 Trainers, by y-2 in topics related to farming with irrigation and the use of sound environmental practices.

End of Project

Technical assistance and training to 1,000 farmers (y-2 to y-5) in topics related to farming with irrigation and the use of sound environmental practices.

Outputs Achieved

The arrangement with the Agricultural Services Support Program (ASSP) for implementation of this Component did not work out.

A training Manager hired in October 2009.

Training (One day events):

- 726 training days provided to farmers in 2010-2011 and included environmental management
- 96 training days provided to 36 lead farmers;
- 36 WUA members were engaged in an IT module (3 months);
- Exchange visits to CDB schemes;
- Exchange visit to Dominican Republic;
- Each WUA has a 5 year Strategic Plan;
- 3 auto evaluation sessions conducted with farmers during CAP to identify their needs and catalyse a search for solutions.

MOU signed with RADA in 2011 for hands on training in farm plots.

Restructuring.

[✓] N/A the component was not restructured

Component 4 :**Total Planned Cost:** US\$10,608,200.00**Actual IDB Disbursement:** US\$7,224,493.46**Actual Counterpart:** US\$1,217,943.46**Total Actual Cost:** US\$8,442,436.92**Classification:** US

Key Output Indicators

Planned Outputs

Baseline – 500has

Annual/Intermediate

Wells, pump houses, power supply, pipe networks, pumping equipment, and on-farm systems will be implemented in irrigation areas at Yallahs, Colbeck and New Forest by year 3;

End of Project

Essex Valley and St. Dorothy by year 5.

Construction and/or rehabilitation and installation of irrigation systems infrastructure in 1700 hectares.

Outputs Achieved

3 of the 5 planned irrigation areas were built, for a total of 656 ha irrigated under the program, making a total 1156has in the original program area.

- Colbeck was commissioned May 2011 -110ha;
- New Forrest was commissioned March 2013 -398ha.
- Yallahs was commissioned January 2014 – 148ha;

Each irrigated area has irrigation systems comprising pressurized underground PVC pipes with hydrants and meters to each farm lot.

Wells provide the water source for all three systems: Yallahs 1 of 2 planned; Colbeck 1 of 1; and New Forrest-Duff House – 5 of 5.

Length of pipeline: Yallahs – 15km; Colbeck – 5.5km; New Forrest 24km.

Wells are equipped with pumps:

Yallahs – 2; One presently has mechanical problems and is out of service.

Colbeck – 1.

New Forrest/Duff House -2**

Titling:

Table 2: Progress with titling: (Source: LAMP Office)

ACTIVITY	WATER USERS ASSOCIATIONS		
	New Forest/Duff House	Yallahs	Colbeck
Membership	220	214	85
Titles	<p>18 delivered to farmers</p> <p>14 in hand (at LAMP) awaiting funding to be completed by the NIC for distribution to farmers</p>	<p>110 files opened at LAMP (For Heartease, Norris, Poor Man's Corner & othe surrounding areas which are privately owned.</p>	<p>94 Titles completed</p> <p>52 transferred</p> <p>42 in house (LAMP)</p> <p>*Process should be finalized by end of May, 2014</p>

Water User Association Office Buildings: The titles for all the land parcels on which the WUA Office Buildings were constructed are still outstanding: *Yallahs:* Land currently owned by Jamaica Agricultural Society (JAS) which has advised the Commissioner of Lands to make 1 acre available to the Yallahs WUA. A formal survey has been prepared. *Colbeck:* Land originally owned by the JAS which had been sub-divided for purchase by farmers. One lot was set aside for community use (82B) and houses the WUA Building. *New Forrest/Duff House:* NIC purchased 1.2 acres of land with program funds and will secure the title in the Commission's name.

Table 3: Uptake of Irrigation Water at January 31, 2014: (number of farmers)			
	Potential	Actual	
Colbeck	99	52	(52.5%)
Yallahs	311	96	(30.9%)
New Forrest/ Duff House	497	257	(51.7%)
TOTAL	907	405	(44.7%)
Source: NIC Commercial Department.			
Restructuring.			
[✓] N/A the component was not restructured			
Summary Implementation Progress Classification:			
<input type="checkbox"/> Highly Satisfactory (HS) <input type="checkbox"/> Satisfactory (S) <input checked="" type="checkbox"/> Unsatisfactory(U) <input type="checkbox"/> Very Unsatisfactory (VU)			

D. Project Costs

COMPARATIVE COSTS TABLE, per Component. (US\$)							
COMPONENTS	Original*			Actual			% Difference
	IDB	GoJ	Total	IDB**	GoJ***	Total	
1. Component I NIC Institutional Strengthening	651.5	302.0	953.5	640.9	134.7	775.6	81.3%
2. Component II WUAs' Organization	1,378.1	310.2	1,688.3	433.9	96.7	530.6	31.4%
3. Component III Technical Assistance	781.5	386.0	1,167.5	479.8	81.7	561.5	48.1%
4. Component IV Irrigation Infrastructure	8,368.2	2,240.0	10,608.2	7,224.5	1,217.9	8,442.4	79.6%
TOTAL COMPONENTS (US\$)	11,179.3	3,238.2	14,417.5	8,779.1	1,531.0	10,310.1	71.5%

* Contract, Annex A

** LMS1

***Disb. Request No. 72

Procurement issues with the New Forrest/Duff House scheme also impacted timely and cost effective implementation of the project. The original estimate for this scheme was for US\$5M. Actual cost was US\$8.5M. The Feasibility Study for Essex Valley was completed in November 2012 after a late mobilization. No implementation was done in Essex Valley. St Dorothy's land use was found to have been changed. This means that only three of five planned systems were implemented. The unspent balance was transferred to the Ministry of Education (MOE).

IV. Project Implementation

A. Analysis of Critical Factors

Relevance: The Project design was relevant and consistent with both the water and agriculture sector policies of the time. It represented implementation of the National Irrigation Plan which had pre-identified sites for irrigation development which however, appear to have been supply driven rather than farmer driven. In the case of Colbeck, farm development remains inert despite being the first to have their irrigation system commissioned in 2011, and in St. Dorothy land use has changed significantly. With regards to Component 3 "Farmers technical assistance and training," the assumption that another project - ASSP - would deliver training and technical assistance for irrigation agriculture to the targeted farmers did not hold true and despite a special extension to facilitate a Consolidation Action Plan, through another government agency (RADA) the inordinate delay in the signing of a contract between RADA and NIC for implementation this program (Farmer Field School methodology) caused a significant loss in the projected time for delivery and so it did not make the expected impact.

Land titling. An amendment to the contract was made in November 2007 to exclude Section 4.02 (a) of the Special Conditions and Section 5.07 of Annex A which both asked for tenure of at least 80% of the parcels of land in each irrigation system to be regularized prior to their licensing for operation by WUAs, as it was agreed that their retention would cause significant delays to the completion of the program and the consequent loss of interest by the beneficiaries.

On-farm equipment. The project design, though based on the success of the CDB pilots which supplied on-farm irrigation equipment to participating farmers, also made the assumption that the NIDP farmers would be able to access credit to purchase their own on-farm equipment, however the supply of private goods, such as on form equipment, with public resources, was not seen as appropriate by the IDB. The loan contract's special condition which spoke to land tenure was at the time also bearing in mind the farmers access to credit. The discussion related to the contract amendment which removed the condition of land tenure being regularized before licensing of irrigation systems, missed the opportunity to seriously highlight the fact that although the bank and the GoJ accepted that land regularization was going to be a lengthy process, the parties did not adequately consider implications for the farmers and their need to finance 'on farm' equipment at this juncture. The October 2009 agreement between the IDB and the PIU to redirect U\$900,000 from the contingency budget line to finance on farm investments in the three irrigation areas was subsequently withdrawn with a proposal by the GoJ to finance the investment through the Financial Access for Responsible Members (FARM) program. This has not materialized.

Water User Criteria for registration. Despite the substantial delays in construction of the irrigation systems, the protracted program implementation timeline, and the continued pursuit of land titles through the LAMP and the NLA, most of the farmers in Yallahs and New Forest/Duff House are still without equipment. On Farm irrigation equipment, for an acre of land, costs approximately U\$2,500 and proof of installation of such equipment is a criteria for registration with the NIC as a Water User. Thus, uptake of the irrigation water is presently slower than previously envisaged.

Efficiency: Overall implementation of the program was slow, and US\$ 4,998,004.86 representing 30% of the loan, were cancelled. The Program was designed for a 5 year implementation period but with the various extensions required, a longer period of approximately 8 1/2 years was allowed. At the time of the Midterm Evaluation in October 2011, disbursement levels were low with 45% of IDB loan disbursement; and 49.9% of the total counterpart funding spent. At the end of the project expenditure amounted to 70.07% of the IDB original funding and 100% of the counterpart funding.

Overall program efficiency was affected by the following factors:

- The loan contract was signed in 2005; the inception report and first work plan was submitted in May 2006 with a one year delay.
- With the exception of the formal establishment of WUAs in 2007, the period between 2006 and mid 2008 was virtually inactive due to severe difficulties encountered in meeting the conditions of the Loan Contract (1562/OC-JA) which had required the attainment of certain benchmarks related to: (i) land titling prior to the commencement of the construction of systems and handover of schemes to WUAs; and (ii) The submission of and compliance with a two tier water tariff fixation methodology acceptable to the bank. Land titling was dependent on the progress made by the National Land Agency (NLA) and the Land Administration Management Program (LAMP) with respect to Land Regularization in the designated irrigation areas. Further to an IDB Consultant's assessment of these land tenure regularization requirements, a recommendation was made to exclude the two relevant clauses in the Loan Contract, (Section 4.02 (a) of the Special Conditions and Section 5.07 of Annex A), as their retention would continue to cause significant delays to the completion of the program and the consequent loss of interest by the beneficiaries. In the case of the water tariff the PIU submitted a methodological note that was compliant with the bank's own priorities but no further action was taken with regards to field testing.
- Due to the 2006-2008 lull, the fiscal space provided by the GoJ was scarcely used resulting in the 2008 refunding of the revolving fund to the Bank. Subsequent to this Fiscal Space tightened and resulted in procurement delays.
- Fragmentation of contracts such as pipe laying and supply of pipes.
- Delays in the development of the NIC Strategic Business Plan resulted in the lack of overall vision to guide the devolution of authority to WUAs as envisioned in the Water Policy Strategy and Action Plan 2004 and the revised Irrigation Act. The contract for its development was signed two years after tender evaluation.
- The absence of the planned WUA Support Unit which should have finalized the Water Tariff and the related implementation and management frameworks. Though the Water Tariff study was subsequently completed and accepted there is not yet any evidence of implementation of the cost recovery methodology.
- The implementation of irrigation facilities encountered major delays with only one scheme commissioned in 2011 (Colbeck). By the time detailed designs were completed in 2008/2009, the project's fiscal space had become restricted and tendering had to be kept in line with annual fiscal space. The detailed designs highlighted a major discrepancy in relation to budgeting as the final Bills of Quantity indicated important cost overruns for the New Forrest and Duff House Schemes which were confirmed during contracting. This meant that: (i) the envisaged development of 1700ha into irrigation schemes could not be met and the target would have to be limited to approximately 656ha in total; and (ii) the recovery of capital costs from farmers

through a fair water rate calculation would be impacted by these overrun levels of capital investment.

- The Contracting for Feasibility Study for Essex Valley and St. Dorothy was also delayed with final submission of the study happening in November 2012.
- Frequent staff changes: 5 Project Directors; 4 CEOs; 3 Board changes; 3 IDB Task Managers.
- Inordinate delays (8 months) in implementation of the CAP resulting in only 4 of 10 months available for Technical Assistance and training for farmers in irrigated agriculture. The “agreed” three short case studies have not been done.
- Despite the delays in the CAP’s implementation, the irrigation systems in New Forrest/Duff House and Yallahs still were not yet commissioned at the time of its limited implementation.
- Delays in development of MOUs between Lead Farmers of the CAP and NIC with regards to irrigation equipment cost payback resulted in discontent and accusations of information being withheld.
- An IDB mission in 2009 identified that a monitoring and evaluation program would need to be designed under the NIDP and a specialist hired. There is no evidence that this important element of project management was implemented.
- The suggestion of the Mission to hire an international Consultant to assist with WUA development was not actualized.
- Delay in establishment of WUA Support Unit and understaffing when it was eventually established in 2013.

Effectiveness: The Program’s components were designed to be interdependent with a combination of outputs leading to achievement of the overall Development Objective (Purpose). The efficiency factors listed above impacted the timely and in some cases full delivery of these planned outputs.

The disbursement expiration date was first extended (general extension) to November 27, 2011 and then to October 31, 2013 for a Special Extension facilitating: (i) completion of works and payment for commitments already made; and (ii) Implementation of the CAP. Achievement of the CAP’s objectives were dependent on irrigation systems being commissioned in New Forrest/Duff House and Yallahs and establishment of the Water User Support Unit. Delays in commissioning these systems meant that agriculture development under the CAP was constrained. Planned outputs were not realized but farmers benefited through learning from the Farmer Field School (FFS) sessions on 17 demonstration plots across the three schemes with irrigated agriculture simulated through the use of water tanks in Yallah and New Forest/Duff House.

Component 1

- The Management Information System (CRMS) was developed and is operational.
- Accounting, Billing and Operations Systems strengthening was completed.
- The planned infrastructure though seriously delayed has now been delivered (irrigation systems and WUA Office Buildings) with the exception of Yallahs Phase 2; and two instead of four pumps in New Forrest/Duff House.
- The Strategic Business Plan (SBP) was eventually completed in June 2012 but a new NIC Board in 2013 requested amendments to this plan in-keeping with the NIC’s 2014-2016 focus on improving agricultural productivity, production, prosperity and NIC’s viability. This revised SBP was accepted in March 2014 but interestingly, despite the NIC’s mission

to focus on Agricultural productivity and farmer prosperity does not mention Irrigation Management Transfer (IMT). At the same time, the Draft Water Policy 2014 states that the NIC will NOT prioritize capacity building of WUAs. This could be fueled by the fact that the now fragmented WUAs presently consider Irrigation System Management a daunting task and have expressed a desire to concentrate on increasing their productivity over the next 5-6 years. But if IMT is to take place at all, a strategic training/handover program needs to be designed and implemented. The approach to the restructuring of the NIC was also not explained in the reduced version of the SBP that was shared.

Component 2

- Three Water User Associations were formally established (July 2007)
- The delayed Water Tariff Study was completed in August 2012 and accepted by the NIC. A determination of tariff submission was made to the Office of Utility Regulation (OUR) and tariffs were set. Because of the slow uptake of water in Colbeck, the pump was changed to a smaller more efficient one and a new submission sent to the OUR for setting of Tariff. Meanwhile, the farmers in Colbeck protested the Tariff originally set and has been allowed by the NIC to pay a subsidized rate of J\$1.80/m³ while Yallahs and New Forest/Duff House pay what has been determined to be the cost of the water production at J\$15/m³. The Tariffs set by the OUR are not yet being utilized and new thoughts are that setting of Tariffs needs to be site specific.
- The Water Support Unit has been established but with inadequate staffing.
- Each WUA has a 5 Year Strategic Business Plan (developed in 2013)

Component 3

- Farmer Training Sessions were ad hoc and 'classroom' oriented.
- Attempt at CAP implementation – FFS with 17 lead farmers/plots in 3 demonstration areas. Planned Activity was hampered by the delay in signing of contract between RADA and NIC. No measure of productivity was done at Yallahs and New Forest as crop establishment was hampered by the non-provision of water. Farmers in Colbeck had water but also had drainage problems.
- No Case Studies have been done from the FFS demonstration lots.

Component 4

- 656 has of land irrigated. Irrigated land in the project area has now been doubled rather than tripled as originally planned. Total irrigated land in project area is now 1156 has.
- Colbeck commissioned May 2011 -110ha.
- New Forrest commissioned March 2013 -398ha.
- Yallahs commissioned January 2014 – 148ha.
- Number of Lots surveyed: Yallahs – 498; Colbeck – 95; New Forrest 562.
- **Titles:**
- *New Forrest/Duff House:* 18 titles delivered; 14 at LAMP waiting funding from NIC for completion and distribution.
- *Yallahs:* 110 files opened at LAMP but only for farmers from Heartease and Norris areas as Phillipsfield, and East and West Albion are government land settlements and have to be dealt with by the Commissioner of Lands at the National Land Agency (NLA).
- *Colbeck:* 94 Titles completed; 52 transferred and 42 in house at Lamp with process finalization projected in May 2014.

Impact:

Despite the land tenure amendment and subsequent extensions, various delays during project implementation have led to non-achievement of the Development Objective. It is believed however that the outputs of the components (especially Component 4 – Irrigation Systems Infrastructure) will be utilized through the Agro Parks Program for eventual realization of the Development Objective.

Positive Impacts:

- Institutional Strengthening of the NIC.
- The Government is committed to the development of Agro Parks (AP) for contribution to economic growth. AP development is also being monitored through the IMF agreement. The New Forrest/Duff House irrigation area has been declared a full Agro Park and has already begun benefiting from the Agribusiness Support. Fourteen farmers already have marketing contracts with Grace Kennedy, loans through the St Elizabeth Credit Union for on farm irrigation equipment, and crop insurance through Jamaica International Insurance Company Ltd (JIIC). The first farmer to benefit was able to repay his U\$4000,00 loan from his first 1 acre crop of cabbage.

Twenty-two farmers in Yallahs are included in the Agro Park Pilot for onion cultivation. More farmers are slated to be included in the next planting season for onions but this is dependent on the evaluation of the pilot.

Negative Impact:

The long wait by the WUAs for the irrigation systems has resulted in fragmentation of these organizations and the loss of "empowerment" to act in their own best interests. This is evidenced by their inertia and seeming lack of creativity especially with regards to the approach to accessing credit for on-farm irrigation equipment.

B. Borrower/Executing Agency Performance

Borrower/Executing Agency			
<input type="checkbox"/> Highly Satisfactory (HS)	<input type="checkbox"/> Satisfactory (S)	<input checked="" type="checkbox"/> Unsatisfactory (U)	<input type="checkbox"/> Very Unsatisfactory (VU)

C. Bank Performance

Bank Performance			
<input type="checkbox"/> Highly Satisfactory (HS)	<input type="checkbox"/> Satisfactory (S)	<input checked="" type="checkbox"/> Unsatisfactory (U)	<input type="checkbox"/> Very Unsatisfactory (VU)

To the extent that the project has not reached its Development Objectives, nor a satisfactory rating for each of the projects component, then the Bank's performance cannot be considered

satisfactory. A specific shortcoming by the Bank has been the lengthy delay in calling for the Mid Term Evaluation (Oct. 2011), 18-months passed the original date of final disbursement (May 2010).

V. Sustainability

A. Analysis of Critical Factors

Sustainability is now strongly dependent on:

- (i) The farmers' sustained interest in agriculture and his/her ability to access funding for on-farm equipment. The situation in Colbeck where the owners of more than half of the irrigated lands have died, migrated or lost interest is worrisome. The WUA will have to strategise to get these lands leased to persons with strong farming interest.
- (ii) Farmer Access to Credit for on-farm equipment – Most farmers in New Forest/Duff House and Yallahs do not have titles yet and so this is not an option for loan collateral.
- (iii) Cohesive Water User Groups. The lengthy delays in program implementation have resulted in fragmented WUAs which need help to regain their past resolve to implement irrigated agriculture. Continued training and capacity building will be important to their sustainability.
- (iii) Continued training in Irrigated Agriculture through the Farmer Field School Methodology is integral to production of high pay off crops which will allow the farmers to earn enough to repay investment costs and water rates.

The Government's present focus on Agro Parks is expected to help steer sustainability.

B. Potential Risks

Principal risks that could affect sustainability of the NIDP's results include:

- i) The inability of the farmer to invest in on-farm irrigation equipment remains a high risk.
- ii) Prolonged drought affecting the quantity of water available from the wells.
- iii) Lack of cohesiveness in the WUAs resulting in unplanned crop production. leading to glut and low prices.
- iv) Farmers can't afford water tariffs.
- v) Further protracted period of time in processing of titles affecting farmer's access to credit.

The NIC's Strategic Business Plan 2014 targets farmer prosperity and names partnerships with agricultural agencies as the strategy to achieve this. The experiences of the project do not inspire confidence in this approach. Additionally, the future role of the Water User Support Unit is not clear especially in light of the the Draft Water Sector Policy's (2014) statement that the NIC will not prioritise capacity building of WUAs.

At this stage it is important that the WUAs continue to have support for capacity building and organizational development around irrigated agriculture especially if they are aspiring to eventually share Operation and Maintenance activities of the respective irrigation schemes.

C. Institutional Capacity

The Project contributed to the strengthening of the NIC's capacity in the areas of MIS; Accounts, Billing and Operation systems. It also ensured the development of a Strategic Business Plan which focuses the NIC's attention not only on water provision but on the viability of its services through promotion of best practices for irrigated agriculture and farmer prosperity. A Water Tariff Study was also completed and enabled the NIC to submit Tariff Determination requests to the Office of Utility Regulation (OUR).

Sustainability Classification **SU:**

<input type="checkbox"/> Highly Probable (HP)	<input type="checkbox"/> Probable (P)	<input checked="" type="checkbox"/> Low Probability (LP)	<input type="checkbox"/> Improbable (I)
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VI. Monitoring and Evaluation

A. Information on Results

Although a Monitoring and Evaluation Plan was suggested by the Bank's 2009 and 2010 missions, no evidence of an existing one was presented. Progress of project results was found documented in six monthly reports, the mid-term evaluation report, the final evaluation and the draft "end of project" report. Results were compared against planned output for the reporting period. The log frame had some baseline data, which was derived from the baseline survey done during the Feasibility Study phase.

The reported project results are supported by details of the Bank's Aide Memoires; actual copies of the studies done (Strategic Business Plan; Water Tariff Study; WUA Strategic Action Plans) and irrigation infrastructure including WUA Buildings in the program locations. Unfortunately, there are no case studies showcasing the results of the CAP.

B. Future Monitoring and Ex-Post Evaluation

It is expected that project outcomes and potential future impacts will be monitored by the NIC in order to assess the results of the actions from its Strategic Business Plan over the next three years. Additionally, the entire New Forrest/Duff House irrigation area has been designated an Agro Park while an Agro Park pilot onion operation is in process in the Yallahs irrigation area. Because Agro Parks form part of the path to economic growth under the IMF arrangement, this is another avenue through which it is expected that impacts will be monitored. The Agricultural Competitiveness Program funded by the bank will also have an opportunity to report on production and productivity coming out of the irrigation areas. Performance indicators to be monitored include increase in crop yield; increase in cropping intensity and increase in net income per ha. It must be noted that national priority crops have changed since project design. A concentration on onions is being supported in Yallahs and other areas, and the New Forrest/Duff House farmers are being encouraged to diversify their concentration on escallion and thyme to include crops that the market demands. For example, fourteen farmers have already secured contracts from Grace Kennedy for production of weekly supplies of cabbage for its processing plant which packages a value added product for distribution in supermarket chains. Continued monitoring will be important as it is expected

that although delayed, the NIDP's development objective will be met under the Agro Park Regime for which the GoJ is demonstrating serious intent. It is suggested that the Bank conducts an ex post evaluation in three years.

VII. Lessons Learned

Risk Management

More emphasis needs to be placed on risk management. In the case of this project, farmers' lack of access to credit for on farm irrigation investment was identified as a "high" risk but attempts to address this issue never materialized and at close of project the risk remains and will impact the time frame in which the program's development objective can be eventually met.

It was a high risk to establish an MOU with a Project (ASSP) on the brink of closure for provision of Technical Assistance to farmers in the NIDP.

Although partnerships are highly desirable, the bureaucracy involved in establishing partnerships with some Government agencies seems prohibitive for programs with tight timelines (as was the case with establishing the contract between RADA and NIC for implementation of the CAP).

Project Design

The original time frame set for achievement of the stated Program's Development Objective was an ambitious one especially when the loan contract's special conditions spoke to regularization of land tenure in the irrigation areas. It has been proven that land regularization especially for Government-owned land settlements is a very long process in the NLA. However, experience from other countries in LAC has shown that land regularization can be done efficiently, when there is a strong commitment from all levels of the government to do so.

Sustainability

Capacity Building Exercises and a "Consolidation Plan" need to be implemented in the irrigation areas to help catalyze the farmers into production and productivity as they need to believe the possibility for increased earning to accept that they can afford full payment for irrigation water and the associated energy costs. Additionally, farmers need to be prepared for the role they will play in IMT.

Project Management

Steering Committees are not always effective in helping to break down the barriers that lead to delays in project implementation.

Annexes:

1. PCR Workshop Register of Participants
2. Minutes from the PCR Workshop
3. Borrower's Evaluation
4. Logical Framework



ANNEX 1. PCR Workshop Register of Participants

Inter-American Development Bank
Project Completion Report Workshop - March 20, 2014
National Irrigation Development Programme (1562/OC-IA)

Participant	Organization	Email	Telephone	Signature
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ANNEX 2. Minutes from the PCR Workshop

MINUTES

1562/OC-JA

National Irrigation Development Program Project Completion Report (PCR) Workshop

1. Background

The Bank entered into contract with the Government of Jamaica on May 27, 2005 to finance the captioned program. The purpose of the National Irrigation Development Program was to increase high payoff agriculture and farmers' income, and thereby contribute to the increase of the national agricultural area under improved policy framework and irrigation management practices. The main indicator of success is the increment in irrigated area in the project area from 500 hectares to 1700 hectares benefitting 1,000 farmers with increased farm income by introducing new crops, and increasing both yields and cropping intensity. The Executing Agency for the Program was the National Irrigation Commission.

The approved amount of the bank's financing was US\$16.8million. The Government of Jamaica agreed to counterpart funding of US\$4.2million making the total project budget US\$21million. The project disbursement period was extended twice with the final date being October 31, 2012. At the close of the project, expenditure of the IDB loan funds was at 70.07%, while the Counterpart funding was 100% expended.

2. Project Completion Report Findings

A PCR Workshop was held in the Jamaica IDB Boardroom on March 20, 2014 to present the findings of the Project Completion Report (PCR) to the Stakeholders. The project experienced many delays from start to finish. These included but were not limited to the following factors: (i) A special condition of the loan contract regarding regularization of land tenure which was eventually amended; (ii) Unavailability of GoJ fiscal space; (iii) Two Changes of Government; (iv) Five changes of Project Manager; (v) An inordinate delay in the development of an NIC Strategic Business Plan; (vi) The contract between RADA and NIC for implementation of the Consolidated Action Plan took eight months to be signed; and (vii) Delay in establishment of the Water User Support Unit and understaffing when it was eventually established in 2013. Outputs for each component were designed to be interdependent but the many delays did not allow for synchronization hence despite important outputs being eventually achieved after two disbursement



extensions, the Overall Objective of the Program remained elusive. Irrigation Infrastructure was installed in 656ha increasing the total irrigated lands in the program area from the baseline of 500ha to a total of 1,156ha.

The Feasibility Study for Essex Valley was completed in November 2012 after the project completion date. St Dorothy was not pursued as it was discovered that land use in the designated area had changed. Despite a special 11 month project extension granted in November 2011 to effect a Consolidated Action Plan (CAP) which would provide training/demonstrations to catalyse irrigated agriculture in New Forest/Duff House, Colbeck and Yallahs, the delays in installation of the irrigation infrastructure resulted in none of the planned outcomes related to increased farm income, increased yields and cropping intensity being achieved.

All four project components were classified “Unsatisfactory”;

Component 1: The development of the NIC Strategic Business Plan was seriously delayed and finally developed in June 2012 but amendments were requested by a new 2013 Board and just accepted in March 2014. Reorganization of the company is expected to follow. Management of Information Systems and Accounting systems has been strengthened. The Tariff Study, though delayed, was also completed and shows energy costs as the most expensive ones related to the irrigation systems. Despite a Determination Notice issued by the Office of Utility Regulations, the Irrigation Schemes still pay lower rates set by the NIC. Colbeck Water User Association (WUA) had appealed and presently pay J\$1,80/m³ whereas Yallahs and New Forest/Duff House pay J\$15/m³.

Component 2: Three Water User Associations (WUA) were formally established in July 2007 but to date they are neither autonomous, viable nor self sustained. At end of program, the WUAs are fragmented due to the long wait for the irrigation systems and disappointment that the thrust towards assistance with acquisition of on farm equipment was discontinued.

Component 3: Although training was provided to the farmers during the program’s lifetime, the opportunity to demonstrate irrigated farming practices came only after the Mid Term Evaluation (2011)) which recommended the Consolidation Action Programme (CAP). It was agreed that RADA would implement this program. However the action was severely delayed as signing of the contract between NIC

and RADA took 8 months of deliberations and RADA was not able to deliver the various results and activities that were initially foreseen in the 3.5 months left before project closure. Additionally, there was a simultaneous delay in the commissioning of irrigation systems in New Forest/Duff House and Yallahs and Colbeck suffered drainage problems. The CAP provided on farm equipment for 17 Lead farmers with arrangements through a late MOU for repayment to the Water User Association. The farmers who received training in the demonstration plots were not able to practice the same methodologies on their land because they had no on-farm equipment.

Component 4: A Total of 656 ha were irrigated under the program making a total 1156has of irrigated land in the original program area. Of a potential 907 farmers, 407 have registered for water service. Only one system (Colbeck – 110ha - May 2011) was commissioned within the project’s timeframe. There are 99 farming lots in Colbeck , but over half have remained without activity for different reasons. New Forrest was commissioned in March 2013 with 398ha and Yallahs Phase 1 in January 2014 with 148ha. The New Forest/Duff House system experienced procurement issues with cost overruns taking the planned cost of US\$5 million to US\$8.5million. Titling efforts have continued at a very slow pace with Colbeck achieving the best results as a result of the land falling under private ownership. This poses a problem for farmers in New Forest/Duff House and Yallahs as they seek access to funding for on farm equipment which is a criteria for registration with the NIC for irrigation water supply.

Through the introduction of “Agro Parks” and the designation of all of the New Forest/Duff House Scheme as such, a small percentage (6.36%) of farmers have been able to broker contracts for production. With these contracts farmers are given loans for equipment and input from the St Elizabeth Credit Union. In Yallahs an Agro Park Onion Pilot is being conducted with 22 farmers who have been provided with opportunities to get on farm irrigation equipment. Agro Parks present an opportunity for sustainability which has been classified as “Probable”. Among the important lessons learned from project implementation are: (i)The Development Objective was overambitious especially with the special condition that required land tenure regularization; (ii) Farmers need some assistance with access to credit for on farm equipment especially in light of the fact that titling activities have progressed slowly; (iii) Capacity Building Exercises and a “Consolidaton Plan” need to be implemented in the irrigation areas to help catalyse the farmers into production and productivity as they need to believe the possibility for increased earning to accept that

they can afford full payment for irrigation water and the associated energy costs (iv) farmers need to be prepared for the role they will play in IMT.

3. Feedback

The following represents the comments made by stakeholders, as closing observations:

- Revise the unsatisfactory classification. (NIC)
- Time is of essence; Project design should take into account the agricultural planting cycle, with learning cycle, and incorporate more time for implementation.
- Mechanism to access irrigated plots should have been extended to all farmers, not just lead farmers.
- Be sensitive to the collaborative spirit of the farmer which varies significantly from one irrigation area to the other.
- Given that the Water User Association was a new concept in Jamaica, a technocrat with international experience should have been appointed as coordinator for the Programme.
- Non provision of access to irrigation equipment and financing was a major limitation for project success and was a design error.
- There is a parity issue with regards to the tariff. You are penalizing farmers if you are system specific, penalizing farmers where pumping is higher so there should be a mechanism concerning tariff development.
- Management changes within the project meant learning time for the new persons and added to the delays; (PIU; NIC; Government, IDB).
- The formation of Water User Associations was a major cultural change, without proper support.
- Not sufficient political will or understanding across the GoJ to have the synergy and will to collaborate.
- Inordinate long time to identify project; identify funding; get systems built; raising expectations with farmers which generate mistrust.
- Capacity building through Farmer Field School continuity is very important.
- Project implementation ignored the security issue (system vandalised in Colbeck).
- Project was overly ambitious, with too much, to be achieved in too short of a time.
- There is a lack of measurement of results including farmers' income.
- Unreasonable pressure with regards to regularization of land tenure



- was placed on the project by IDB .
- The O&M cost recovery debate continues. The O&M cost recovery factor is not in sync with government's objectives. Capital cost recovery was impossible at the time the project was designed, and still is today.

4. Workshop Agenda

National Irrigation Development Programme PCR Workshop

IDB Jamaica Board Room

March 20, 2014

11:00am – 5:00pm

Agenda

- | | | |
|-----|--|------------------|
| i) | Welcome & Introductions | Joseph Milewski |
| ii) | Presentation of the Project Completion Report - Part 1 | Janet Bedasse |
| | Lunch | |
| iv) | Presentation of the Project Completion Report - Part 2 | Janet Bedasse |
| v) | Discussion & Feedback | All Participants |
| vi) | Closing Remarks | Joseph Milewski |
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ANNEX 3. Borrower's Evaluation
April 3, 2014

	Inter-American Development Bank Project Completion Report –2006 PCR Borrower Evaluation
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Project Name:National Irrigation Development Programme (IDB)	
Executing Agency(ies):National Irrigation Commission Ltd	
Borrower: Government of Jamaica (GOJ)	
Date of Project Approval: Jan. 30, 2004	Date of Contract Effectiveness: May 27, 2005
Date of Borrower Evaluation: November 2012	Expected Date of Exit Workshop: Workshop held March 2005



Borrower Project Performance Ratings

Probability on Achieving its Development Objective(s):

☐ Highly Probable (HP) ☒ Probable (P) ☐ Low Probability (LP) ☐ Improbable (I)

Project Implementation:

☐ Highly Satisfactory (HS) ☐ Satisfactory (S) ☒ Unsatisfactory (US) ☐ Very Unsatisfactory (VU)

Sustainability of Project Results:

☐ Highly Probable (HP) ☒ Probable(P) ☐ Low Probability (LP) ☐ Improbable (I)

Comments:

Development Objectives: The Overall objective was to increase high pay-off agriculture while increasing farmers income. While this was not achieved under the project, the case studies under the Consolidated Action Plan (CAP) demonstrated this possibility. Subsequently, the agricultural developments in New Forest and Yallahs under Jamaica's Agro-Parks Programme have increased significantly and indications are that the development objectives of High Pay-off Agriculture are being achieved.

Project Implementation. The Project was implemented by the Project Implementation Unit (PIU) located within the NIC. The NIC has taken the lessons learn from the project implementation notably the lags during the first three (3) years of implementation when little was achieved. Some elements including the development of the business strategy could have been executed. This project was also a multi-dimensional one with some elements being executed through Memoranda of Understanding with other Public Sector Agencies. This approach was not successful.

In addition the work of the Steering Committee was not always as effective as required. In future such projects may best sit with the Parent Ministry and the respective agencies execute components that are within their capacity. The NIC for example did not have the Agricultural Capacity.

Sustainability of Project Results. Both the Government of Jamaica and the beneficiaries continue to build on the Project Achievements:

- **Component II - Water Users Association(WUA).** These have been formed and duly registered. They continue to function mainly as farmers organizations that are effectively improving agricultural production, marketing and bringing benefits to their members. The NIC has retained a WUA Team to work with these WUAs to promote sustainability through capacity building, increased farm productivity and the implementation of Business Plans.
- **Tariff.** Tariff Studies have been completed for the three project areas (Yallahs, New Forest and Colbeck). The NIC has implemented interim tariff structures at Yallahs and New Forest that are significantly higher than at existing schemes. This will advance the process of achieving GOJ Policy on recovery of Operation & Maintenance Cost (At a minimum).
- The issue of high energy costs for pumping however remains a challenge to sustainability.
- Raising of capital for farm development is also a challenge.
- With the implementation of the Agricultural Competitiveness Programme (ACP) and the Agro Parks programme in the project areas along with the RADA training, these will continue to positively impact sustainability within the project areas.
- NIC Business Strategy. The NIC is currently revising its business strategy to include improvements in the productivity of farmers.

Bank Performance

Please rate the Bank's overall performance during project preparation and execution. Factors to be considered include the extent to which the Bank facilitated a participatory project design, proposed adequate technical solutions to the problems identified, and responded to the needs of the Borrower (timeliness, selection of instrument type) as well as technical assistance (including informal and formal training) to Executing Agency, timeliness of Bank response and the Bank's flexibility to respond to emergency situations during project implementation.

☐ Highly Satisfactory (HS) ☐ Satisfactory(S) ☒ Unsatisfactory (US) ☐ Very Unsatisfactory (VU)

Comments:

1. There were Special Contract Conditions that were difficult if not impossible to fulfil. The titling clause for example, is yet to be achieved after sustained effort by the Government of Jamaica including LAMP, NLA
2. The IDB proposed the Mid-term evaluation when 50% of the Contract sum is spent. Rather than at the mid-term of the contract. Given the challenges with project implementation, this Mid-term evaluation was executed almost at project closure (when 50% was spent. In future, the Mid-term evaluation should be undertaken with 50% of time elapsing.
3. The period of 4 years was too short to achieve the project goals, given the regulatory challenges in executing such projects in Jamaica. Transition to WUA ownership for example is new to Jamaica and indeed takes a long transition time in many countries
4. The Project design did not permit the provision of on-farm equipment to assist farmers as available in similar projects funded by the Caribbean Development Bank (CDB), rather it required beneficiaries to make a significant contribution. The farmers did not have the required capital and this lack of capital made the agricultural development very challenging.
5. The IDB required that Agricultural Services be provided by the Agricultural Support Services Project (ASSP). A project funded by the IDB. This project closed before all the services could be delivered. In future it is in the IDB interest to allow purchases of such services from the 'Market' or even consider Private-Public Sector arrangements.
6. There was no Monitoring and Evaluation Tool (M&E) to include the setting of particular milestones for the implementation of various aspects of the Institutional Aspects of the NIDP.

Borrower Performance

Please rate your own overall performance during project preparation and execution.

☐ Highly Satisfactory (HS) ☐ Satisfactory(S) ☒ Unsatisfactory (US) ☐ Very Unsatisfactory (VU)

Comments:

Project Preparation. The Project Design was a complex one and was expected to be a "Pilot Programme" for Jamaica's Agricultural Sector. It required possibly greater flexibility in implementation allowing for example for the GOJ and IDB to have frequent joint review of Project Milestones. A Phased Approach would have also proven very useful

The GOJ was not able to convince the IDB to exclude onerous contract conditions including the Land Tenure Clause. These impeded the flexibility and execution of the programme

Project Implementation. This was very slow notably over the first three years with several challenges including fiscal space. Some components should have been implemented sooner including Component 1: Institutional Strengthening.

The Program Implementation also spanned changes in Government and this affected some aspects of implementation including WUA Support and the NIC Business Strategy Implementation.

Nevertheless the NIDP showed achievements in several components including WUAs establishment, Tariff, Farmer Training, Land Titling, CAP and the Construction of Irrigation Systems

Additional Suggestions for Improving Bank Performance



Additional comments/suggestions for improving Bank performance in the future.

1. Give greater consideration to the complex nature of such programmes especially where there are no or low existing local capacity. The matter of transfer to WUAs as well as their sustainability is very complex and has taken up to 20 years to achieve in some areas including the Dominican Republic.
2. Develop an effective Risk Profile for the projects and programmes. There are real implementation risks to Projects especially during the first two years especially if there is no Phasing. The IDB should consider for example providing the requisite Technical Assistance (TA) in such instances.



LOGICAL FRAMEWORK PROJECT NO. 1562/OC-JA

Component I – Institutional Strengthening of the National Irrigation Commission

OBJECTIVE	ACTIVITIES (2010)	OUTPUT	OUTPUT INDICATOR	MEANS OF VERIFICATION	CURRENT STATUS	COMMENTS
To ensure that the National Irrigation Commission emerges as a stronger planning and policy organization and much more responsive to customer and client needs.	Procurement of: <ul style="list-style-type: none"> Institutional Strengthening Consultant MIS Consultant Technology Design and implementation of NIC 5-Year Strategic Plan	<ul style="list-style-type: none"> Highly trained staff Strong outreach programme Modern Technology 	Number of: <ul style="list-style-type: none"> Training sessions Staff members trained per quarter New Technology Infusions Per Department/Per Quarter 	Training Reports Technology Procurement Forms	<ul style="list-style-type: none"> 3 proposals received from firms for Business Strategy Consultancy and evaluation completed CRMS consultancy awarded to Infotech for US\$149,000. Work approximately 80% completed. Software License contract completed with CITO for \$9,645,993 and 82 licences 	<ul style="list-style-type: none"> Contract awaiting NIC Board decision to proceed to be completed during upcoming semester NIC and being utilized
	Baseline Data Collection & Organizational Audit	<ul style="list-style-type: none"> Functional Database 	Amount and type of data collected per week.	Database structure, contents and customer feedback	<ul style="list-style-type: none"> IDB agreed to provide Consultant 	NIC Awaiting engagement of Consultant
	Reviewing and Implementing Internal and External Customer Surveys	<ul style="list-style-type: none"> Surveys 	Number of surveys reviewed	Assessment Report	<ul style="list-style-type: none"> On-going work by NIC 	

OBJECTIVE	ACTIVITIES (2010)	OUTPUT	OUTPUT INDICATOR	MEANS OF VERIFICATION	CURRENT STATUS	COMMENTS
	Organizational Sensitization and Orientation Workshop	<ul style="list-style-type: none">Workshop	Number of staff members trained	Workshop Content Participants feedback Participants list		
	Detailed Analysis of Baseline Data & Audit Information	<ul style="list-style-type: none">Baseline Report	Number of functional and structural areas audited per period	Workplan Consultant Report Contract for Services	<ul style="list-style-type: none">Awaiting engagement of Consultant	
	Recommendation of International Business Practices	<ul style="list-style-type: none">Recommendations	International best practices to be implemented for the year	Consultant Report	<ul style="list-style-type: none">Work awaiting the completion of the Business Strategy	

OBJECTIVE	ACTIVITIES (2010)	OUTPUT	OUTPUT INDICATOR	MEANS OF VERIFICATION	CURRENT STATUS	COMMENTS
	<p>Implementation of Institutional Strengthening Strategies</p> <ul style="list-style-type: none"> • Setting up working groups with CEO and Dept Heads • Setting periodicity of working groups/seminars • Change Management Strategies (Workshop) • Design Staff Training Plans/Manuals • Illustration of Revenue Base/Customer Expansion Strategies (Workshop) • Setting Performance Standards (Workshops) • Monitoring and Evaluation Models (Workshop) 	<p>Working groups</p> <p>Seminars and working group timetables</p> <p>Training plans/manuals</p> <p>Workshops</p>	<p>Number of strategies implemented per month</p>	<p>Report Workshop Feedback</p>	<ul style="list-style-type: none"> • Work awaiting the completion of the Business Strategy 	<p>Work awaiting the completion of the Business Strategy</p>

OBJECTIVE	ACTIVITIES (2010)	OUTPUT	OUTPUT INDICATOR	MEANS OF VERIFICATION	CURRENT STATUS	COMMENTS
	Human Resource Development Programme: <ul style="list-style-type: none"> • Baseline Data Collection • Examination of & Adjustments to Present HR Protocols • Examination of Job Descriptions • Evaluation and Adjustments to Performance Evaluation Practices • Design of Mentoring Programmes • Methodology of Selection of Staff Members for Exchange Programmes 	Baseline Report New HR Protocols Updated and new Job Descriptions Staff Mentoring Programmes Exchange Training Programmes	Number of HR Initiatives per month Number of Staff members Trained Protocol changes per period	Reports Staff Feedback	<ul style="list-style-type: none"> • Work awaiting the completion of the Business Strategy 	Dependent on GOJ Fiscal Space
	Continued Operations Expansion	Training Equipment Client Monitoring & Feedback	Additional training, equipment provision etc per period	Accounting Invoices and Audit Reports Customer Feedback Reports	<ul style="list-style-type: none"> • Training plan being prepared by Training Consultant. 	Training Plan completed

OBJECTIVE	ACTIVITIES (2010)	OUTPUT	OUTPUT INDICATOR	MEANS OF VERIFICATION	CURRENT STATUS	COMMENTS
	Updates to MIS (Master) Designs	<ul style="list-style-type: none"> • WAN updates • Consultants • Monitoring and Maintenance Programmes • Training Programmes • Hardware and Software Procurement and Installation • Billing Systems • Accounting Systems • GIS Water Production System 	<p>Number of updates per period</p> <p>Hardware and software procured per period</p> <p>Number of training programmes per period</p> <p>Hardware and software procurement per period</p> <p>GIS System</p>	<p>Logical Schema of Software Architecture</p> <p>End-user Feedback</p> <p>Operation Manuals</p> <p>Customer Feedback</p>	<ul style="list-style-type: none"> • Supply of Business Virtual Private Network (VPN) completed • 6 MIS staff trained in Microsoft Network Administration. • CRMS consultancy to include Billing & water production system completed. 	Data migration being done

Component II - Promotion and Formation of Water Users Association

OBJECTIVE	ACTIVITIES (2010)	OUTPUT	INDICATOR	MEANS OF VERIFICATION	STATUS	COMMENTS
To fully strengthen and make self sustainable five (5) Water Users Association (WUAs) falling under the Project.	Colbeck Community Water Users Associations	<ul style="list-style-type: none"> • Institutional Audit • Action Plan • M&E System • Institutional Strengthening Programme • Training • Regularization and Operational Guidelines • NIC Licensing • Dissemination Campaign 	<p>Land Titles Provided per Month</p> <p>Periodicity of M&E meetings</p> <p>NIC License</p> <p>Guideline</p> <p>No of Training Programmes Per Month</p> <p>PR and Dissemination Exercises per Month</p>	<p>Reports</p> <p>WUA /Client Feedback</p> <p>Corporate Audits</p>	<ul style="list-style-type: none"> • WUAs registered under Friendly Societies Act • 90 members registered • 2009 – 10 Financial Audit completed • AGM held and new President elected. • Addendum being prepared for MOU between NIC and Colbeck WUA 	<p>Serious financial ccountability problems Colbeck, resulting in NIC suspending some programmes</p> <p>DCFS did not allow Colbeck President to seek re-election</p> <p>DCFS Action being implemented at Colbeck to include training</p> <p>Colbeck WUA Secretary attended Dominican Republic educational tour on WUAs</p>

OBJECTIVE	ACTIVITIES (2010)	OUTPUT	INDICATOR	MEANS OF VERIFICATION	STATUS	COMMENTS
			Exercises per Month		<ul style="list-style-type: none"> 90 farmers registered Training carried out in book-keeping for executive 	
	Yallahs Water Users Association	<ul style="list-style-type: none"> Institutional Audit Action Plan M&E System Institutional Strengthening Programme Training Regularization and Operational Guidelines NIC Licensing Dissemination Campaign 	Land Titles Provided per Month Periodicity of M&E meetings NIC License Guideline No of Training Programmes Per Month PR and Dissemination Exercises per Month	Reports WUA /Client Feedback Corporate Audits	<ul style="list-style-type: none"> WUA registered under Friendly Societies Act 62 members registered. 22 members trained in Team Building and Conflict Resolution Financial audits being completed for 2009 – 10 1 Executive member visited Dominican Republic on WUA Educational Tour 	Membership increased during the period despite personal challenges of President. Monitoring by DCFS and NIC continuing
	New Forest/Duff House Water Users Association	<ul style="list-style-type: none"> Institutional Audit Action Plan M&E System Institutional Strengthening Programme Training Regularization and Operational Guidelines NIC Licensing Dissemination Campaign 	Land Titles Provided per Month Periodicity of M&E meetings NIC License Guideline No of Training Programmes Per Month PR and Dissemination Exercises per Month	Reports WUA /Client Feedback Corporate Audits	<ul style="list-style-type: none"> Training carried out in conflict resolution. WUA Registered with DCFS New executive having regular meetings 	WUAs holding regular meetings and preparing for Annual General Meetings. Project Engineer has discussed the irrigation design with the WUAs

OBJECTIVE	ACTIVITIES (2010)	OUTPUT	INDICATOR	MEANS OF VERIFICATION	STATUS	COMMENTS
	Establishment of 3-5 sustainable WUAs in other Irrigation Areas (Essex, St Dorothy)"	<p>Information Exchange</p> <p>Ad Hoc Committees Training</p> <p>Registration</p> <p>Inaugural Meeting</p> <p>Institutional Strengthening Programme Training</p> <p>Dissemination of Information to Farmers</p> <p>Continuous Liaisons with Stakeholders on Land Tenure Regularization and Operational Guidelines</p> <p>Licensing of the WUA by NIC</p> <p>Operational Training</p>	<p>Number of beneficiaries interfaced with per week</p> <p>Registration Certificate</p> <p>Ad Hoc Committee Members Trained Per week</p>	<p>Reports</p> <p>WUA /Client Feedback</p> <p>Corporate Audits</p>	<ul style="list-style-type: none"> Field sensitization has commenced in Essex Valley 	Work will begin apace at the completion of the feasibility studies.
	Establishment of a WUA Support Unit	Unit	<p>Time frame for set up of unit</p> <p>Organizational Structure</p> <p>Monitoring and Evaluation System</p>	<p>Organizational Mandate and Objectives</p> <p>Work plan</p>	<p>NIC officer now covering Coordinator responsibility</p> <p>TOR finalized for International Consultant</p> <p>TOR drafted for WUA Support & Regulations unit</p>	Oversight responsibility to commence with the establishment of the WUA Support Unit

Component III – Farmers Technical Assistance and Training

OBJECTIVE	ACTIVITIES (2010)	OUTPUT	INDICATOR	MEANS OF VERIFICATION	STATUS	COMMENTS
<p>To support and enhance farmers income and competitiveness through training in the correct use of agricultural and marketing techniques and modern technology</p> <ul style="list-style-type: none"> • Training and technical assistance for 1000 farmers • 30 Lead farmers trained. 	Farmer training and Lead Farmer development activities	<ul style="list-style-type: none"> • Training Committees • WUA Audits • Training Needs Report • Lead Farmer Selection • Lead Farmer Sample • Institutional Strengthening Consultant Selection • Training Materials and Workshop 	<p>Number of farmers selected per period</p> <p>Number of WUAs audited</p> <p>Number of farmers trained per period</p> <p>Number of training sessions per period</p> <p>Sample Frame Definition</p>	<p>WUA Reports</p> <p>Social Organizer Reports</p> <p>Farmer Feedback (Sample)</p>	<ul style="list-style-type: none"> • Training Committees established and training needs identified in Colbeck especially • Lead farmers programme launched with 35 farmers • Certification programme being developed with HEART • Training commenced including by DCFS and PIU staff 	<p>Training to continue for farmers in all WUAs</p> <p>Additional training planned for lead farmers during 2011</p>
	MOU between ASSP and NIC established and implemented	<ul style="list-style-type: none"> • New MOU agreed • Training Committee • Quarterly Monitoring Scheme • Periodic Evaluations 		<p>MOU Terms and Conditions</p> <p>Signatory Dates</p>	<ul style="list-style-type: none"> • MOU revised and accepted by NIC and RADA • RADA/NIC engaged 30 Colbeck farmers in sorrel and sweet potato production 	To be completed in upcoming semester.
	Farmer Training including Lead Farmers	<p>Needs Checklist</p> <p>Environmental Models/Campaigns</p> <p>Brochures and Training</p>	<ul style="list-style-type: none"> • Number of campaigns per period • Number of training 	<p>Environmental Officer Reports</p> <p>Customer Feedback</p>	<ul style="list-style-type: none"> • Training Committee established in 3 WUAs • 80 farmers trained in drip irrigation installation. 	

OBJECTIVE	ACTIVITIES (2010)	OUTPUT	INDICATOR	MEANS OF VERIFICATION	STATUS	COMMENTS
		Materials Waste Disposal and Recycling Campaigns	materials provided • Number of farmers trained per period		<ul style="list-style-type: none">• 62 farmers visited farms in St. Elizabeth to view proper vegetable, spice cultivation.• Lead Farmer Training Programme launched in November 2010 with 35 farmers• 19 lead farmers trained in Training needs assessment and instruction delivery	

Component IV: Irrigation Infrastructure

OBJECTIVE	ACTIVITIES (2010)	OUTPUT	INDICATOR	MEANS OF VERIFICATION	STATUS (0/1)	COMMENTS
To carry out construction and/or rehabilitation projects focused on providing irrigation infrastructure in an attempt to provide benefits to over 1000 farmers	YALLAHS	Sites	Number of sites selected	Site reports		
	YALLAHS					
	Cadastral Surveys				<ul style="list-style-type: none">Contract to Llewelyn Allen and Associates for J\$15,699,575. Work 100% completed498 lots surveyed.	Surveys with NILA for checking.
	Land Acquisition Exercise <ul style="list-style-type: none">Well SitesWUA OfficePipe Network Area		Number of parcel acquired per site	Lease and sale agreements	Leases established for 2 wells sites WUA office site purchased being finalized	
	Well Development	Tested and Functioning Wells	Number of wells developed per period	Well logs Contractor Reports	<ul style="list-style-type: none">2 of 3 wells drilled.Drilling program completed for J\$25.98 million. I	Alternative well site being proposed to WRA as alternative to existing Phillipsfield Well
	Land Tenure Regularization	Cadastral Surveys Land Titles	Number of titles disbursed per period	Titles WUA and NLA Reports	<ul style="list-style-type: none">378 files opened35 titles issued by NLA	Some approvals still at St. Thomas Parish Council
	Building of WUA Office	WUA Office	WUA Office Working Drawings	As built drawings	<ul style="list-style-type: none">Construction completed.	Expected handing over during upcoming semester
Supply and Installation of Pipes and Fittings		Pipe network	Number of pipes supplied and installed per period		Network designs drafted and discussed with WUA	To be finalized subsequent to well yield determination

Component IV: Irrigation Infrastructure Cont'd	COLBECK					
To carry out construction and/or rehabilitation projects focused on providing irrigation infrastructure in an attempt to provide benefits to over 1000 farmers	Selection of Project Areas	Sites	Number of sites selected	Site reports	Being finalized	Cadastral mapping work will clear up any boundary issues
	Land Acquisition Exercise <ul style="list-style-type: none"> Well Sites WUA Office Pipe Network Area 		Number of parcel acquired per site	Lease and sale agreements	Completed	
	Well and Pump Station Development	Tested and Functioning Wells	Number of wells developed per period	Well logs Contractor Reports	<ul style="list-style-type: none"> Pump station restored 62 Titles released by LAMP 	JPSCo to complete electricity supply. Pump station vandalized resulting in delays and additional security measures
	Land Tenure Regularization	Cadastral Surveys Land Titles	Number of titles disbursed per period	Titles WUA and NLA Reports	<ul style="list-style-type: none"> 75 lots released by Parish Council 62 Titles released by LAMP 	90 farmers commenced process with LAMP for releasing titles. WUA surveyor to correct errors in Deposited Plan.
	Building of WUA Office	WUA Office	WUA Office Working Drawings	As built drawings	<ul style="list-style-type: none"> Construction completed 	To be handed over during upcoming semester. Some cost overruns due to scope change
Supply and Installation of Pipes and Fittings		Pipe network	Number of pipes supplied and installed per period		<ul style="list-style-type: none"> Pipe supply contract completed Installation contract awarded to YP Seaton & Associates for \$11,388,372 Installation completed and testing underway. 	Some delays due to weather as well as contract suspension. Completion during upcoming semester

OBJECTIVE	ACTIVITIES (2010)	OUTPUT	INDICATOR	MEANS OF VERIFICATION	STATUS (0/1)	COMMENTS
To carry out construction and/or rehabilitation projects focused on providing irrigation infrastructure in an attempt to provide benefits to over 1000 farmers	NEW FOREST/DUFF HOUSE	Sites	Number of sites selected	Site reports		
	Cadastral Surveys (New Forest/Duff House)				<ul style="list-style-type: none"> Contract to Llewelyn Allen and Associates for J\$8,369,600. Work 100% completed 562 lots surveyed. 	Surveys with NILA for checking.
	Land Acquisition Exercise <ul style="list-style-type: none"> Well Sites WUA Office Pipe Network Area 		Number of parcel acquired per site	Lease and sale agreements	<ul style="list-style-type: none"> Land tenure completed on 5 well sites WUA office site purchased 	Long term tenure being finalized for well sites.
	Well Development	Tested and Functioning Wells	Number of wells developed per period	Well logs Contractor Reports	<ul style="list-style-type: none"> Drilling completed on 5 wells Licenses issued for 4 wells Alternative well contract at NCC 	Drilling of alternative well to commence during next semester.
	Land Tenure Regularization	Cadastral Surveys Land Titles	Number of titles disbursed per period	Titles WUA and NLA Reports	<ul style="list-style-type: none"> 5 titles issued 47 farmers commenced process of titling through LAMP 	Pace of titling expected to increase whenever the Cadastral Mapping work is completed
	Building of WUA Office	WUA Office	WUA Office Working Drawings	As built drawings	<ul style="list-style-type: none"> Tender process cancelled due to lack of fiscal space. 	To be re-done once fiscal space is available

Supply of Pipes and Fittings		Pipe network	Number of pipes supplied and installed per period		<ul style="list-style-type: none"> Network diagrams drafted 	Finalization dependent on well yields and this will be completed during the upcoming semester
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Component IV: Irrigation Infrastructure

OBJECTIVE	ACTIVITIES (2010)	OUTPUT	INDICATOR	MEANS OF VERIFICATION	STATUS (0/1)	COMMENTS
To carry out construction and/or rehabilitation projects focused on providing irrigation infrastructure in an attempt to provide benefits to over 1000 farmers	ESSEX VALLEY/ST. DOROTHY	Sites	Number of sites selected	Site reports		
	Technical feasibility studies (Essex Valley and St Dorothy's)	Technical Evaluation Report	Technical Report s per area	Report Monitoring System	<ul style="list-style-type: none"> The firm Hydroplan recommended for award (US\$249,425). Recommendation forwarded to MOA&F 	Contract to be signed after clearing NCC