Annual Performance Report 2016

Ministry of Irrigation and Water Resources Management

Message of the Secretary to the
Ministry of Irrigation and Water Resources Management

Ministry of Irrigation and Water Resources Management has invested Rs. 30.28 Bn for the Development and Management of Water Resources in 2016.

Gin Nilwala Diversion Project is the largest major irrigation project that the Ministry has launched with its pipeline investments. It should be mentioned here that the project had been temporary hold up due to unavoidable circumstances throughout the year, though a sum of Rs. 4 Bn had been allocated under 2016 budget estimate. Yet, it was able to get the approval from cabinet of Ministers to assign the EIA study and Geological Survey under the 1st phase of the project to the CAMC Engineering Company Ltd after discussing with them whom the contract agreement was made.

It was able to get the EIA approval for the Thalpitigala Reservoir Project and it was expected to negotiate with EXIM Bank of China for funding through the Department of External Resources. Lower Malwathu Oya Reservoir Project is one of the important projects which funds have been allocated under the Ministry. By end of 2016, Cabinet approval was obtained to award Engineering, Procurement and Construction (EPC) contract to the CAMC Engineering Company Ltd of China and they were asked to submit technical and financial reports. The initial works for the recruitment of staff for the Gin Nilwala Diversion, Thalpitigala and Lower Malwathu Oya Reservoir projects were already commenced at the end of the year 2016.

It is to be noted that the Climate Resilience Improvement Project has reached to 32% of cumulative physical as well as financial performance at the end of 2016. World Bank has also approved an additional Finance for the project.

It was able to complete a substantial amount of downstream development work of the Deduru Oya and Rambukkan Oya reservoir projects after completing headworks by the Irrigation Department. It is noteworthy that Morana and Kalugal Oya reservoir projects under major irrigation schemes as well as Gurugal Oya, Gonagalathenna reservoirs under medium irrigation schemes could be able to achieve a reasonable progress during year 2016.

Yan Oya reservoir is one of the major projects under major irrigation schemes implemented under irrigation Department. It is expected to cater for facilitating water for 5696 hectares of lands in Anuradhapura and Trincomalee Districts by Yan Oya reservoir project.

It is worthwhile to mention that the construction of headworks of Yan Oya reservoir has even exceeded the targets as scheduled in 2016.

The Ministry has commenced updating Irrigation Ordinance which has now become obsolete and to seek remedies for existing problems in irrigation management in 2016 and was able to complete it substantially. Facilitating to conduct EIA studies while implementing water resources and irrigation development Projects, the study called Strategic Environmental Assessments has been initiated. Studies for Flood control in Kelani River, Riverine Management and Protection etc were also initiated and achieved a good progress at the end of year 2016.

It is a great achievement that the Ministry was able to finalize feasibility reports for the new water resources development projects to be included in Budget Estimate 2017 and obtained approval from the Cabinet of Ministers for number of Cabinet Memorandums.

It is praiseworthy that the Water Resources Board has achieved about 100% of financial progress in implementing 09 groundwater development and monitoring related studies under Rs 35 million allocation given to the institution.

Irrigation Management Division has implemented many programmes such as awareness, training, increase of production and productivity improvement, strengthening of farmer organizations, community empowerment and programmes to improve irrigation management under the Integrated Irrigation Management in major irrigation schemes under the budgetary allocation of Rs 49 million in 2016.

It is seen some reduction in the financial progress of the Ministry as few major projects to implement could not be implemented as planned and due to lack of imprest at the year end. However, I appreciate the work done by the Ministry, Irrigation Department, Water Resources Board and Irrigation Management Division amidst of staff deficiencies while taking necessary action to rectify them and to make them success. I would like to thank all of them for their dedication towards the success.

I would like to offer my sincere gratitude to the honorable Minister of Irrigation and Water Resources Management, Vijith Wijayamuni Zoysa for his leadership and guidance on dealing with land problems while implementing ongoing projects as well as launching new projects and obtaining necessary cabinet approvals for them.

My special thanks go to the honorable State Minister of Irrigation and Water Resources Management, Wasantha Senanayake for his guidance and contribution rendered in solving numerous problems arised while implementing Projects in Polonnaruwa District.

Eng. R.M.W.Rathnayake

Secretary Ministry of Irrigation 7 Water Resources Management

Content

Annual Performance Report 2016

Ministry of Irrigation and Water Resources Management

1. Vision

Prosperous Sri Lanka through sustainable Water Resources Development & Management

2. Mission

Providing wellbeing of community & environment by fulfilling multiple water users through Water Resources Development & Management

3. Functions of the Ministry

1. Formulate policies and legislations related to allocation and regulation of Water Resources.
2. Provide guidance and direction to develop and regulate ground water resources
3. Execute programmes and projects related to water resources development, modernization and rehabilitation
4. Provide guidance and direction to mitigate flood and drought impacts on irrigation eco systems
5. Provide guidance and direction for salt water extrusion in coastal areas
6. Provide guidance and direction to control of pollution and conservation of water sources
7. Provide guidance and direction to transfer irrigation system management to water user association (FOOs)

4. Actual against the forecast in relation to expenditure under Ministry Head 198 and ID Head 282

Form	A	Appropriation Account	Head 198
Form	B	Revenue Account	Head 282
Form	C	Advance Account	

CATEGORY : APROPRIATION ACCOUNT Head 198													Form - A
	Financial Performance (Rs.In '000)					Physical Performance							
Description	Current Year 2016		Previous Year Actual 2015	Variation Over		Output (Service/Goods)		Current Year's Output		Previous Years output	Variation Over		
	Budgeted	Actual		Budget	Previous Year Actual	Type/ Class	Measure	Targeted	Actual		Targeted	Previous Years Actual	
Programme Title and No.													
Operational Activities 01													
Project Title and No:													
Minister office 01													
Expenditure													
Recurrent Expenditure													
Personnel Emoluments	11,190	10,917.18	8,264.47	97%	100%								
Other Recurrent	14,835.29	12,882.13	3,914.25	86%	67%								
Project Title and No:													
Administration & Establishment Services 02													
Expenditure													
Recurrent Expenditure													
Personnel Emoluments	6,050.75	45,386.27	23,782.10	98%	99%								
Other Recurrent	42,608.46	30,904.49	20,404.88	72%	84%								
Project Title and No:													
State Minister’s Office 11													
Expenditure													
Recurrent Expenditure													
Personnel Emoluments	13,532	12,750.16	930.99	95%	26%								
Other Recurrent	16,193.50	13,570.46	1,278.34	83%	30%								
Total	**144,410**	**126,410.69**	**58,575.05**										

CATEGORY : APROPRIATION ACCOUNT Head 198													Form - A
	Financial Performance (Rs.In '000)					Physical Performance							
Description	Current Year 2015		Previous Year Actual 2014	Variation Over		Output (Service/Goods)		Current Year's Output		Previous Years output	Variation Over		
	Budgeted	Actual		Budget	Previous Year Actual	Type/ Class	Measure	Targeted	Actual		Targeted	Previous Years Actual	
Programme Title and No.													
Development Activities 02													
Project Title and No:													
Inter provincial irrigation Development Programes 03													
Expenditure													
Recurrent Expenditure													
Personnel Emoluments	115,900	111,218.55	103,137.53	96%	98%								
Other Recurrent	19,275	15,738.09	12,741.32	82%	73%								
Project Title and No:													
Irrigation Institutions & Development Programmes 04													
Expenditure													
Recurrent Expenditure													
Personnel Emoluments													
Other Recurrent	155,000	155,000	141,000	100%	100%								
	290,175	**281,956.64**	**256,878.86**										

CATEGORY : APROPRIATION ACCOUNT 198 Form - A

Description	Financial Performance (Rs.In '000)					Physical Performance						
	Current Year 2016		Previous Year Actual 2015	Variation Over		Output (Service/Goods)		Current Year's Output		Previous Years output	Variation Over	
	Budgeted	Actual		Budget	Previous Year Actual	Type/ Class	Measure	Targeted	Actual		Targeted	Previous Years Actual
Capital Expenditure												
Operational Activities 01												
Minister office 01	46,350	3,040.78	950	6.5%	100%							
Administration &Establishment Services 02	108,500	81,751.59	89,976.94	75%	91%							
State Ministers Office 11	46,500	3,349.03	909.14	7.2%	95.6%							
Development Activities 02												
Inter provincial irrigation Development Programes 03	13,032,275	5,062,473.99	8,704,045.02	38%	129%							
Development programme of irrigation institutions 04	35,000	34,002.68	28,600	97%	73%							
Total Expenditure	**13,268,625**	**5,184,618.07**	**8,824,481.10**									

CATEGORY : APPROPRIATION ACCOUNT **FORM : A**

DESCRIPTION	Financial Performance (Rs, in'000')					Physical Performance						
	Current Year		Previous Year Actual 2015	Variations Over		Output Service/Goods		Current Years Output		Previous Year Output	Variations over	
	Budgeted	Actual		Budgeted	Previous Year Actual	Type/ Class	Measure	Targeted	Actual		Targeted	Previous Year Actual
Programme 01- Operational Activities												
Project 01 – Minister's Office												
Expenditure												
Recurrent Expenditure												
Personal Emoluments	11,190	10,917.18	8,264.47	-	-							
Other Recurrent	14,835.29	12,882.13	3,914.25	-	-							
Total	26,025.29	23,799.31	12,178.72	-	-							
Capital Expenditure												
2001	500	253.51	100			(a)						
2002	200	156.75	50			(b)						
2003	1,150	1,150	400			(c)						
2101	43,000	0	0			(d)						
2102	1,000	980.52	200			(e)						
2103	500	500	200			(f)						
Total	46,350	3,040.78	950									

(a)Rehabilitation & Improvements of Building & structures
(b)Rehabilitation & Improvements of Plant Machinery & Equipment
(d)Acquisition of Furniture & office equipment
(e)Acquisition of Building & structures

CATEGORY : APPROPRIATION ACCOUNT						FORM : A						
DESCRIPTION	Financial Performance (Rs, in'000')					Physical Performance						
	Current Year		Previous Year Actual 2015	Variations Over		Output Service/Goods		Current Year Output		Previous Year Output	Variations over	
	Budgeted	Actual		Budgeted	Previous Year Actual	Type/ Class	Measure	Targeted	Actual		Targeted	Previous Year's Actual
Programme 02- Development Activities Project 02 - Administration & Institutional Service												
Expenditure												
Recurrent Expenditure												
Personal Emoluments	46,050.75	45,386.27	23,782.10									
Other Recurrent	42,608.46	30,904.50	20,404.88									
Total	88,659.21	76,290.77	44,186.98									
Capital Expenditure												
2001	5,000	1,000.06	1,755.33			(a)						
2002	250	250	74.92			(b)						
2003	1,000	440.03	1,439.45			(c)						
						(d)						
2102	3,900	1,911.09	1,180.37			(e)						
2103	350	350	320			(f)						
2401	3,000	3,000	165			(g)						
2401-1	95,000	74,800.70	85,041.79									
Total Expenditure	108,500	81,751.58	89,976.94									

(a) Rehabilitation & Improvements of Building & Structures
(b) Rep. to plant machinery & equipment
(c) Repairs to vehicles
(e) Acquisition of Furniture & office equipment
(f) Acquisition of plant machinery & equipment
g) Staff Training

CATEGORY : APPROPRIATION ACCOUNT						FORM : A						
DESCRIPTION	Financial Performance (Rs, in'000')					Physical Performance						
	Current Year		Previous Year Actual 2015	Variations Over		Output Service/Goods		Current Years Output		Previous Year Output	Variations over	
	Budgeted	Actual		Budgeted	Previous Year Actual	Type/ Class	Measure	Targeted	Actual		Targeted	Previous Year's Actual
Programme 02- Deveopment Activities												
Project 03 – Inter-provincial Irrigation development Programme												
Expenditure												
Recurrent Expenditure												
Personel Emoluments	115,900	111,218.55	103,137.53									
Other Recurrent	19,275	15,738.09	12,741.32									
Total	135,175	126,956.64	115,878.86									
Capital Expenditure												
2001												
2002												
2003												
2102												
2104												
2105												
2401												
2502-14-(11)												
2502-16-(12)												
2502-16-(17)												
2502-18-(11)												
2105-8-(11)												
2502-11-(11)												
2502-8-(11)												
2502-9-(11)												
Total Expenditure	13,032,275	5,062,474	8,704,045									

CATEGORY : APPROPRIATION ACCOUNT						FORM : A						
DESCRIPTION	Financial Performance (Rs, in'000')					Physical Performance						
	Current Year		Previous Year Actual 2015	Variations Over		Output Service/Goods		Current Years Output		Previous Year Output	Variations over	
	Budgeted	Actual		Budgeted	Previous Year Actual	Type/ Class	Measure	Targeted	Actual		Targeted	Previous Year's Actual
Programme 02-												
Deveopment Activities												
Project 04 – state												
Institutions												
Expenditure												
Recurrent Expenditure												
Personel Emoluments	155,000	155,000	141,000									
Other Recurrent												
Total	155,000	155,000	141,000									
Capital Expenditure												
2105	35,000	34,002.68	28,600									
Total Expenditure	35,000	34,002.68	28,600									

CATEGORY : APPROPRIATION ACCOUNT						FORM : A						
DESCRIPTION	Financial Performance (Rs, in'000')					Physical Performance						
	Current Year		Previous Year Actual 2015	Variations Over		Output Service/Goods		Current Years Output		Previous Year Output	Variations over	
	Budgeted	Actual		Budgeted	Previous Year Actual	Type/ Class	Measure	Targeted	Actual		Targeted	Previous Year's Actual
Programme 02-												
Deveopment Activities												
Project 04 – state												
Institutions												
Expenditure												
Recurrent Expenditure												
Personel Emoluments	155,000	155,000	141,000									
Other Recurrent												
Total	155,000	155,000	141,000									
Capital Expenditure												
2105	35,000	34,002.68	28,600									
Total Expenditure	35,000	34,002.68	28,600									

CATEGORY : APPROPRIATION ACCOUNT						FORM : A						
DESCRIPTION	Financial Performance (Rs, in'000')					Physical Performance						
	Current Year		Previous Year Actual 2015	Variations Over		Output Service/Goods		Current Years Output		Previous Year Output	Variations over	
	Budgeted	Actual		Budgeted	Previous Year Actual	Type/ Class	Measure	Targeted	Actual		Targeted	Previous Year's Actual
Programme 01- Operation Activities												
Project 11 – State Minister's Office												
Expenditure												
Recurrent Expenditure												
Personel Emoluments	13,532	12,750.16	930.99									
Other Recurrent	16,193.50	13,570.46	1,278.34									
Total	29,725.50	26,320.62	2,209.33									
Capital Expenditure												
2001	500	500	100									
2002	200	200	9,347									
2003	1,300	1,149.03	400									
2101	43,000	43,000	0									
2102	1,000	1,000	199.8									
2103	500	500	200									
Total Expenditure	46,500	46,349.03	909.147									

CATEGORY : REVENUE ACCOUNTS **HEAD 198** **Form - B**

Description	Financial Performance (Rs.In '000)							Physical Performance						
	Arears of Revenue As At 01.01.2014	Current Year		Previous Year Actual 2015	Variation Over		Arears of Revenue As At 01.01.200*	Output (Service /Goods)		Current Year's Output		Previous Years output	Variation Over	
		Budgeted	Actual		Budget	Previous Year Actual		Type/ Class	Measure	Targeted	Actual		Targeted	Previous Years Actual
Revenue Codes							No							
20.02.01.01		-	1,824,808.40	43,656.63										
20.02.02.99		-	1,023,464.44	73,384.70										
20.03.99.00		-	8,959,425.14	15,247										
2003.04.00		-	-	-										
2004.01.00		-	4,405,655.06	314,829.87										
Total Revenue		-	**16,213,353.04**	**417,118.20**										

CATEGORY : ADVANCE ACCOUNTS HEAD 198												Form - C
Description	Financial Performance (Rs.In '000)					Physical Performance						
	Current Year 2015		Previous Year Actual 2015	Variation Over		Output (Service/Goods)		Current Year's Output		Previous Years output	Variation Over	
	Prescribed	Actual		Prescribed	Previous Year Actual	Type/Class	Measure	Targeted	Actual		Targeted	Previous Years Actual
Type:												
Account Title & No: Advances to Public Officers 198011												
Maximum Expenditure Limit	8,500,000	8,474,678.35	Not Relevant									
Minimum Receipt Limit	6,000,000	6,964,587.19										
Maximum Debit Limit	31,000,000	24,746,115.74										
Maximum Liability												
Financial Results												

CATEGORY : APPROPRIATION ACCOUNT Head 282 **FORM : A**

DESCRIPTION	Financial Performance (Rs, in'000')					Physical Performance						
	Current Year		Previous Year Actual	Variations Over		Output Service/Goods		Current Years Output		Previous Year Output	Variations over	
	Budgeted	Actual		Budgeted	Previous Year Actual	Type/ Class	Measure	Targeted	Actual		Targeted	Previous Year Actual
Programme 01- Operational Activities												
Project 01 - Administration & Establishment Services												
Expenditure												
Recurrent Expenditure												
Personal Emoluments	575,454	528,437	522,173	39,354	6,264		%	100	91.83	97.40	-8.17	-5.57
Other Recurrent	97,505	94,029	83,544	12,535	10,485		%	100	96.44	98.32	-3.56	-1.89
Total	672,959	622,466	605,717	51,889	16,749							
Capital Expenditure												
2001	35,717	29,314	30,799	4,217	-1,486	(a)	%	100	82.07	97.77	-17.93	-15.70
2002	817	817	256	167	561	(b)	%	100	100.00	39.38	0.00	60.62
2003	4,900	4,857	4,690	200	167	(c)	%	100	99.12	99.79	-0.88	-0.66
2102	4,886	4,886	4,342	386	544	(d)	%	100	100.00	96.49	0.00	3.51
2104	0	0	0	0	0	(e)	%	0	0	0	0	0
2401	2,497	2,410	2,338	-3	72	(f)	%	100	96.52	93.52	-3.48	3.00
Total	48,817	42,284	42,425	4,967	-142							

a)Rehabilitation & Improvements of Building & structures

(b)Rehabilitation & Improvements of Plant Machinery & Equipment

(c)Rehabilitation & Improvements of Vehicles

(d)Acquisition of Furniture & office equipment

(e)Acquisition of Building & structures

(f)Training & capacity Building

CATEGORY : APPROPRIATION ACCOUNT **Head 282** **FORM : A**

DESCRIPTION	Financial Performance (Rs, in'000')					Physical Performance						
	Current Year		Previous Year Actual	Variations Over		Output Service/Goods		Current Year Output		Previous Year Output	Variations over	
	Budgeted	Actual		Budgeted	Previous Year Actual	Type/ Class	Measure	Targeted	Actual		Targeted	Previous Year's Actual
Programme 02- Development Activities												
Project 02 - Administration & Maintenance of Irrigation Schemes												
Expenditure												
Recurrent Expenditure												
Personal Emoluments	2,249,021	2,160,885	2,124,164	114,047	36,721			100	96.08	99.49	-3.92	-3.41
Other Recurrent	90,370	85,766	91,231	-2,460	-5,465			100	94.90	98.28	-5.10	-3.37
Total	2,339,391	2,246,651	2,215,395	111,588	31,255							
Capital Expenditure												
2001	1,690,000	1,590,756	1,239,954	415,000	350,802	(a)	%	100	94.13	97.25	-5.87	-3.12
2002	80,000	75,537	58,595	20,000	16,943	(b)	%	100	94.42	97.66	-5.58	-3.24
2003	42,000	39,153	35,512	6,488	3,641	(c)	%	100	93.22	100.00	-6.78	-6.78
2101	0	0	0	0	0	(d)	%	0	0	0	0.00	0
2102	18,004	18,004	15,694	4	2,309	(e)	%	100	100.00	87.19	0.00	12.81
2103	240,000	109,348	179,565	10,000	-70,217	(f)	%	100	45.56	78.07	-54.44	-32.51
2104	50,000	38,841	31,558	18,000	7,284	(g)	%	100	77.68	98.62	-22.32	-20.94
2502	185,496	158,415	115,722	61,996	42,693	(h)	%	100	85.40	93.70	-14.60	-8.30
Total Expenditure	2,305,500	2,030,055	1,676,600	531,488	353,455							

(a) Rehabilitation & Improvements of Building & Structures
(b) Rep. to plant machinery & equipment
(c) Repairs to vehicles
(d) Acquisition of vehicles
(e) Acquisition of Furniture & office equipment
(f) Acquisition of plant machinery & equipment
(g) Acquisition of Building & structure
(h) Other capital expenditure

CATEGORY : APPROPRIATION ACCOUNT Head 282												FORM : A
DESCRIPTION	Financial Performance (Rs, in'000')					Physical Performance						
	Current Year		Previous Year Actual	Variations Over		Output Service/Goods		Current Years Output		Previous Year Output	Variations over	
	Budgeted	Actual		Budgeted	Previous Year Actual	Type/ Class	Measure	Targeted	Actual		Targeted	Previous Year's Actual
Programme 02- Deveopment Activities												
Project 03 - Major Irrigation schemes												
Expenditure												
Recurrent Expenditure												
Personel Emoluments												
Other Recurrent												
Total												
Capital Expenditure												
2105	10,833,770	8,020,417	8,448,770	2,314,289	-428,353	(a)	%	100	74.03	99.17	-25.97	-25.14
Total Expenditure	10,833,770	8,020,417	8,448,770	2,314,289	-428,353							

(a) Major Irrigation Scheme

CATEGORY : APPROPRIATION ACCOUNT **Head 282** **FORM : A**

DESCRIPTION	Financial Performance (Rs, in'000')					Physical Performance						
	Current Year		Previous Year Actual	Variations Over		Output Service/Goods		Current Years Output		Previous Year Output	Variations over	
	Budgeted	Actual		Budgeted	Previous Year Actual	Type/ Class	Measure	Targeted	Actual		Targeted	Previous Year's Actual
Programme 02- Deveopment												
Activities												
Project 04 - Medium												
Irrigation schemes												
Expenditure												
Recurrent Expenditure												
Personel Emoluments	-	-	-	-	-							
Other Recurrent	-	-	-	-	-							
Total	-	-	-	-	-							
Capital Expenditure												
2105	389,060	260,973	209,258	178,053	51,715	(a)	%	100	67.08	99.17	-32.92	-32.09
Total Expenditure	389,060	260,973	209,258	178,053	51,715							

(a) Medium Irrigation Scheme

CATEGORY : ADVANCE ACCOUNT Head 282												
	FORM : C											
DESCRIPTION : Public Officer's Advance Account	Financial Performance (Rs, in'000')					Physical Performance						
	Current Year		Previous Year Actual	Variations Over		Output Service/Goods		Current Years Output		Previous Year Out put Actual	Variations over	
	Prescrible	Actual		Prescrible	Previous Year Actual	Type/ Class	Measure	Targeted	Actual		Targeted	Previous Year Actual
Type												
Account Tile & No. 282011												
Maximum expenditure Limit	148,000	147,804	137,367	196	10,437		%	100	99.87	95.54	-0.13	4
Minimum Receipt Limit	105,000	138,388	136,841	-33,388	1,547		%	100	131.80	118.99	31.80	12.81
Maximum Debit Limit	500,000	366,275	359,650	133,725	6,625		%	100	73.26	71.93	-26.75	1.33
Maximum Liability	-	-	-	-	-			-	-	-	-	-
Financial results	-	-	-	-	-			-	-	-	-	-

CATEGORY : REVENUE ACCOUNT **Head 282** **FORM : B**

DESCRIPTION : Public Officer's Advance Account	Financial Performance (Rs, in'000')							Physical Performance						
	Arrears of Revenue as at 01-01-2014	Current Year		Previous Year Actual	Variations Over		Arrears of Revenue as at 31-12-2014	Output Service/Goods		Current Years Output		Previous Year Output Actual	Variations over	
		Budgeted	Actual		Budgeted	Previous Year Actual		Type/ Class	Measure	Targeted	Actual		Targeted	Previous Year Actual
Revenue codes														
20.02.01.01 Rent on Government Buildings		10,680	12,678	12,082	-1,820	596			%	100	118.71	96.66	18.71	22
20.02.02.99 Interrest - Other		15,000	14,403	14,090	1,000	313			%	100	96.02	100.64	-3.98	-5
20.03.02.99		0	0	749	-20,000	-749			%	0	0	0	0	0
20.03.04.00		0	0	20	0	-20			%	0	0	0	0	0
20.03.99.00 Other Recipts		20,000	687,521	85,319	0	602,202			%	100	3,437.61	426.60	3,337.61	3,011
20.04.01.00		0	81,813	69,329	0	12,484			%	0	N/A	0	0	0
20.06.02.00 Sales of capital assets		10,000	21,440	461	-15,000	20,980			%	100	214.40	1.84	114.40	213
Total		**55,680**	**817,856**	**182,051**	**-35,820**	**635,805**								

NA - Not Applicable

5. Special Projects Under the Ministry

a. Climate Resilience Improvement Project (CRIP)

Project Background

Climate Resilience Improvement Project (CRIP) is formulated jointly by GOSL and WB as a comprehensive programme to reduce the adverse impact of climate change and to adopt the stock of infrastructure to extreme climate shocks. The climate resilience encompasses a dual function, to absorb shock as well as to self-renew. The project is executed by Ministry of Irrigation and Water Resources Management (MIWRM) with the credit facilities of International Development Association (IDA) - World Bank and implemented by Department of Irrigation (ID), Mahaweli Authority of Sri Lanka (MASL), Road Development Authority (RDA) and National Building Research Organization (NBRO). Project Management Unit (PMU) established under the MIWRM plays coordinating, facilitating and monitoring functions to implement the project to increase resilience by financing to enhance the long term technical and operational capacity of Implementing Agencies (IAs) and also to physical investment to address short term infrastructure weakness together with contingent credit facilities to safeguard against immediate fiscal impact of a disaster.

1. Project Development Objective

The Project Development Objective (PDO) is to reduce the vulnerability of exposed people and assets to climate risk (hydro meteorological risks: flood, drought and landslide) and to improve Government's capacity to respond effectively to disasters.

2. Project Components

The project is mainly focused to establish a process that would built a more climatic resilient economy since current understanding of multispectral impacts of climate change and flood & drought risks modeling and scenario analysis are not adequate at present. In addition, project supports to implement urgent climate mitigation investments required to ensure the short-term integrity of flood control and irrigation infrastructure, transport network and critical education facilities at risk.

Therefore, project Development objectives will be achieved through evidence based investment of project funds under four project components;

1) Development of basin investment plans
2) Increase climate resilience of infrastructures
3) Project Implementation
4) Contingent emergency response

Component -1: Development of basin investment plans:

Under this component project supports to detail modeling of flood and drought risk in ten basins to develop comprehensive basin wide investment plans (over US$ 1 billion investment plans) that incorporate competing risks of both flood and drought. The analytical work under this component will serve as a basis for future climate resilience investments and will help the government to understand risk and adopt the required risk mitigation measures.

Training programme on applications of Flood Modelling in irrigation designing conducted for engineers in University of Peradeniya

In fact, Project is supported the Government to making investments in a holistic manner that consider current and future climatic risk across sectors by establishing a Climate Resilience Planning Unit (CRPU) as a long term institutional arrangement to convene agencies that compete for water resources and ensure sustainability and resilience of major investments.

Component -2: Increase climate resilience of Infrastructure

This component supports to implement urgent climate risk mitigation investments identified and prioritized to

i) implement immediate flood and drought risk mitigation works of hydraulic infrastructure in downstream of dams such as canals, flood bunds & diversion structures

ii) reduce risks to interruption of transport continuity due to floods & landslides and

iii) Protects schools from landslide risks. Identification of hydraulic infrastructures for rehabilitation are based on local level flood modeling followed by hydro-meteorological data analysis and all designs are prepared to account the level of risk identified by implementing agencies.

In addition, both GOSL and IDA-WB agreed to scaling up of the component 2 of the project by arranging Additional Financing for the project to implement the rehabilitation works in hydraulic infrastructures identified by ID and MASL and road side slope stabilization work identified by Provincial Road Development Department (PRDD) in Uva Provincial road network which are emerged as a result of December 2014 floods.

3. Project Financing

The project is completely financed by WB-IDA for 4 project components by allocating USD 110 million equivalents to Rs. 14,382 million under original project and another USD 42 million equivalent to Rs 5880 million as Additional Financing for implementation of activities identified under original project and Additional Financing. In addition, the Government of Sri Lanka (GOSL) is allocated USD 1.8 million equivalents to Rs. 235 million for payment of project allowance for staff involved in implementation of project under each Implementing Agency (IA).

4. Project Financial and Physical Status in brief

Project has been implemented over 29 month since the commenced of the project on 5th August 2014 and up to now, utilized Rs 4,688 million out of Rs 14,382 million allocated for the project including emergency response) and achieved 32% financial progress against total allocation and 36% physical progress by 31st December 2016. It is notifiable that majority of funds have been utilized for payment of mobilization advances and part payments for civil works contracts awarded under the project followed by International Support Consultancies and procurement of goods such as vehicles, IT equipment and machinery to improve the capacities of IAs.

Project has awarded two ICB contracts to undertake LiDAR survey and Areal photographic survey under component-1 and both contracts are now completed. As an International Support Consultant for development of basin investment plans, Ms WS Atkins International, UK has been carried out the investigations, consultative process of all stakeholders in basin level, data compiling for 10 basins and in progress of preparation of computation frameworks and cross sectional surveys in 6 basins.

By end of 2016, 326 rehabilitation works packages are awarded out of 445 packages under original project with value of Rs 5,945 mn and paid Rs 3,028 mn (51%) as mobilization advances and part payment for completed works for contractors. Among the awarded contracts, 166 packages are awarded under Community Participation (CP) with contract value of Rs 231 million followed by 135 National Competitive Bidding (NCB) with contract value of Rs 5620 million and 25 National Shopping (NS) packages with contract value of Rs 94 million by ID, MASL, RDA and NBRO. There are 119 more packages still in the procurement process to award. Among them majority of packages are belongs to NCB (92) and rest are 22 CP and 4 NS packages.

As a whole, ID, RDA and NBRO has shown slow progress in awarding o NCB packages compared to MASL as time taken to prepare designs and estimates. Even designs and estimates are completed for bridge improvement packages under RDA, they are unable to awarding the contract as some land acquisition issues are prevailed in these sites.

In order to strengthen the physical capacity of IAs for implementation of project, PMU has procured and distributed 189 Desktop Computers, 65 Note Book Computers, two servers, 44 Pickups, 7 Passenger Vehicles, 59 Digital Cameras, 20 excavators, 18 total stations, 58 leveling instruments, 5 water pump with pump house and trailers, several Laboratory Equipment, and Furniture among IAs. So far project has arranged 22 local training programme for 491 officers in IAs by utilizing Rs 4.3 million and 7 foreign training programme for 39 officers in IAs by spending Rs 11.7 million.

There are number of contract packages are in pipe line to award for rehabilitation of hydraulic infrastructures, improvement of bridge in selected roads and slope stabilization in road sides and school premises in Kandy district.

5. Status of project components:

5.1 Development of Basin Investment Plans

Under this component, Ms Atkins, UK has hired as an International Support Consultant (ISC) on 10th May 2016 and counterpart staff was assigned from line agencies to work with the consultant to carry out effective analysis of flood impact to understand the problem and address long term measure to establish a process that would built a more climatic resilient economy. In this process consultant is assigned to develop 6 basin investment plans and pre-feasibility studies for 6 basins prioritized based on the urgency and request of other stakeholders. In this process consultant and counterpart staff work together to give opportunity to enhance counterpart staff's capacity to carry out development of basin investment plans for rest of 4 basins their own under the technical guidance of International consultant. The feasibility reports developed under this consultancy will be ready for negotiating with donor agencies to implement with donor funding facilities. Hence, this will be an entry point of a long-term engagement in disaster risk mitigation in the country with special emphasis to contribute to the broader goal of enhancing adaptive capacity to prevent food insecurity in the country induced by climate change. Therefore, outputs of this project would serve as a foundation for large scale investments to mitigate flood and drought risks in Sri Lanka in future.

Since project has limited time to complete the consultancy on development of basin investment plans, inputs needed from LiDAR survey and Aerial Photographic survey were awarded prior to the awarding of ISC consultancy to Fugo Geoid SAS, France and Aerodata International, Belgium respectively. At present LiDAR survey and Aerial Photographic surveys are completed by both firms and outputs of these two consultancies have been utilized by ISC for development for basin investment plans.

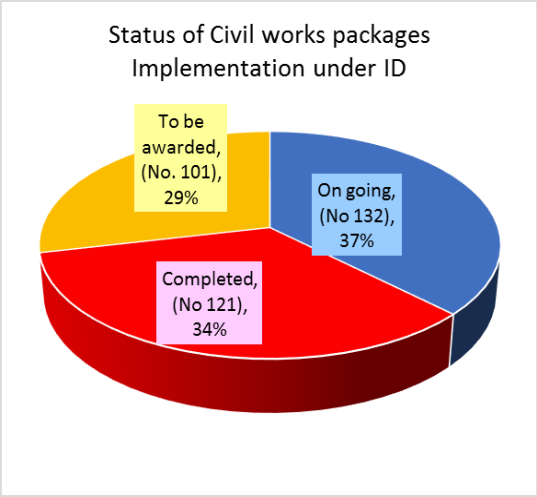
Ms Atkins consultant has been carried out the contract activities satisfactory to the Technical Working Group (TWG) and up to now they have completed some deliverables such as submitted inception report in July 2016, conducted consultation Workshops in 10 River Basins, submitted Training Plan and arranged training in UK for 20 young engineers and 4 higher level engineers in 2016 on flood and drought risk modelling, conducted several local training programmes on GIS, meteorological data compiling and analysis, training of flood and drought risk analyzing using software such as TUFLOW - 2, FLOOD MODLER – 2, WEAP – 1, Arc GIS – 3 and; consultant has commenced the development of computational framework for 6 basins and Cross Sectional Survey in 6 basins.

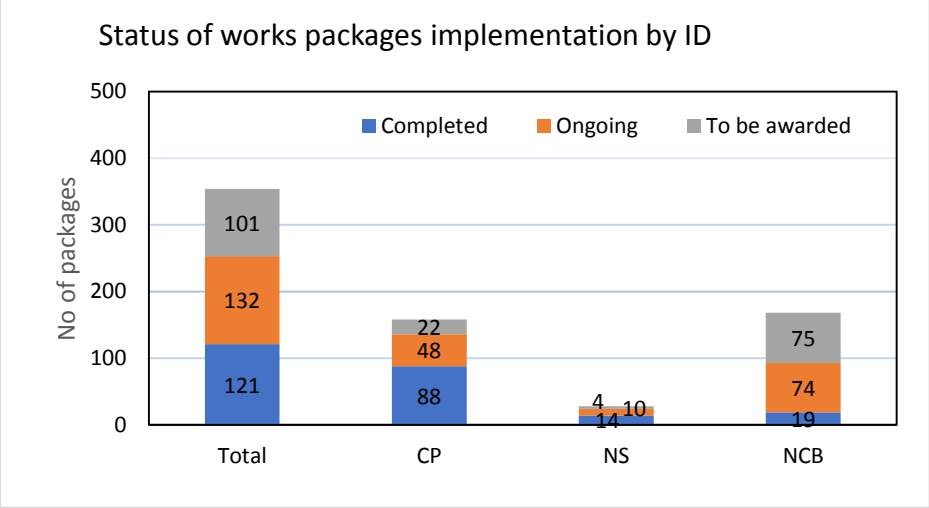
Component 2 – Increasing Climate Resilience of Infrastructure

Sub Component 2.1 - Flood & drought Mitigation;

Physical improvement of Hydraulic infrastructures of ID:

Department of Irrigation has identified 394 civil works packages to rehabilitate under the project to mitigate immediate and short term flood and drought risk in hydraulic infrastructures which were damaged in 2010/11. However, later it was reduced to 354 packages by combining some small packages in to sizable packages. After 2014 floods, ID has identified another 83 packages worth of Rs 2305 mn as emergency rehabilitation works packages on priority basis to be financed under Additional Financing (AF) to be effective very shortly. All together 437 packages identified including AF by ID with an estimated value of Rs 7,050 million. Among them Rs 195.6 mn worth 136 Community Participation (CP) packages were awarded to FO and among them 88 packages worth of Rs 121 mn are completed by FO at present. In addition, 24 packages are awarded as National Shopping (NS) packages amounting to Rs 91 mn and Rs 46.4 mn paid as part payment for completed works. Up to now 14 NS packages completed with a value of Rs 52.6 million. Further 93 NCB packages with a value of Rs 2,376 mn are awarded and Rs 909 mn paid as part payment for the completed works for contractors. Altogether 253 contracts are awarded with value of Rs 2,663.8 mn and already paid Rs 1070 mn as mobilization advances and part payments. Most of these contracts are awarded with a view to improve canal bunds, drainage canal, widening of canals and improvement to gates and other structures. Following figure show the status of works packages implemented under the original project. Overall status of works packages implementation under original project by ID is shown below.





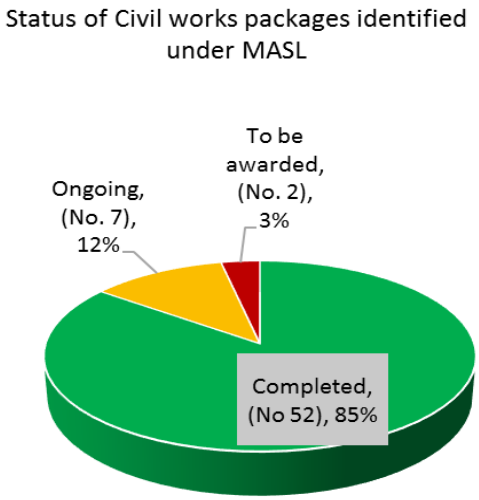
Improvements to Structures in Muslim Kolaniya DCO in D2 Main Canal Part 01 (RB - 06) - Polonnaruwa

Improvements to Structures in Muslim Kolaniya DCO in D2 Main Canal Part 01 (FC - 02)- Polonnaruwa

Rehabilitation of canal in Akkaraipathu unit

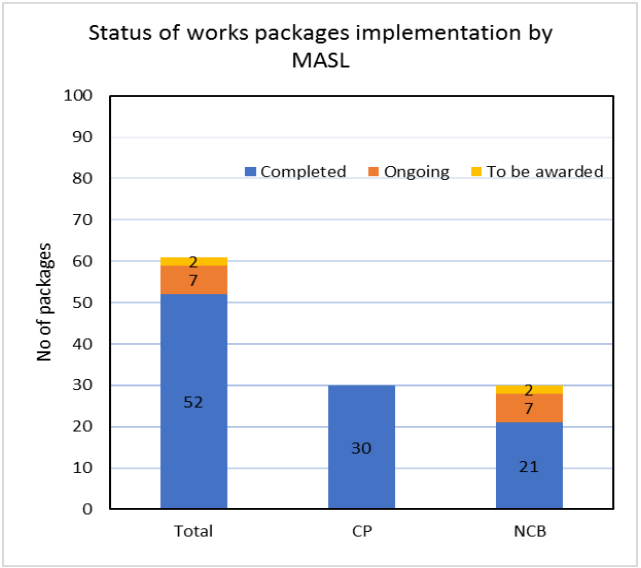
Construction of Chainage 4+892Km in Muthukandiya scheme in Moneragala

Physical improvement of Hydraulic infrastructures of MASL:

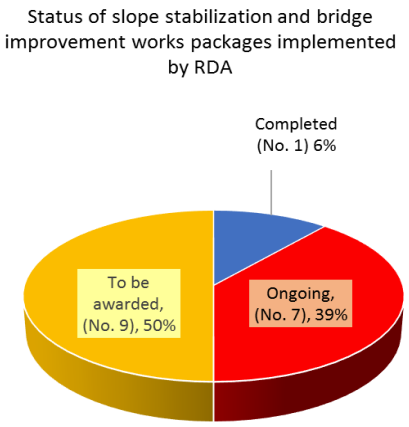


MASL has identified 60 works packages worth of Rs 1308 mn at the initial stage of the project for increase resilience of hydraulic infrastructure to reduce future flood and droughts risks. However, with the occurrence of 2014 flood such requirement is further widened to include another 18 packages worth of Rs 715.8 mn to be implemented under Additional Financing. Therefore, total packages identified under MASL has increased to 78 packages with estimated value of Rs 2,035 mn. Among them 48 packages are identified under NCB category, 30 packages as CP and only one package is awarded as a direct contract to Ceylon Electricity Board. Up to now, 28 NCB packages are awarded under original project with contract value of Rs 1,315 mn. Among the awarded NCB contracts, 21 already completed with value of Rs 998 million and paid Rs 851.9 mn as part payment for completed and ongoing NCB contracts.

With regard, to the Community Participation (CP) packages, at present all 30 packages are awarded for Farmer Organizations with a value of Rs 34.9 mn and at present all packages are completed by FO and paid Rs 29.86 mn. for bills submitted by FO. One direct contract package is awarded to CEB with a value of Rs 2.6 mn. and at present contract is completed and paid entire amount. All together 59 packages awarded with contract value of Rs 1,352.5 mn and already paid Rs 884.4 mn. Contract awarded and being implanted under original project by MASL is shown below.



Ensuring Transport Continuity – Road and Bridge Improvement



In order, to avoid interruption to transport continuity due to landslides and floods, RDA has identified 18 rehabilitation packages including 11 packages for improvement of bridges and 7 packages for stabilization of slopes in road side to rectification and mitigation of landslides. Total estimated value of 18 packages is Rs 3,672 mn. Up to now 9 NCB packages are awarded amounting to Rs 1,511 mn for improving bridges in Nadimale - Boralasgamuwa road, Polonaruwa – Thambala-Sangawila Somawathi road, Trinco-Baticaloa road, Bogahawewa-Pulmudai Road, Makandura-Badalgama Road, Kataragama-Sella kataragama road and Nadimal and Katuela bridges across Gangodawila boralasgamuawa Road.

Construction of Polonaruwa – Thambala-Sangawila Somawathi road is completed. Physical progress of the Nadimala bridge construction is 69% against the target of 100% and financial progress is 49% against 100% target. It indicates physical and financial progress are well behind the target as shipment of utility poles such as SLT cables and NWS&DB pipe lines were taken unreasonable time and contractor experienced unforeseen situation during the construction period.

Construction of Trincomalie-Baticallow (NCB-302) bridge was awarded to SD&CC and their progress is not satisfactory as physical progress is 35% and financial progress is 19% and they have only 6 more months to complete the contract. Construction of bridge for 3/1 causeway on Bogahawatta-pulmudai road is completed 66% and financial progress is 42%. Construction of 2 bridges and reconstruction of culvert over Katuela on Gangodawila- Boralasgamuwa road is completed only 34% and financial progress is 28% at end of the contract. This is very poor progress as contract is awarded for six-month period and contractor has not even reached to 50% progress.

In addition, 3 NCB packages awarded with a value of Rs. 648.6 mn to rectify unstable slope in 16 sections of Kandy – Mahiyangana road. Actual physical progress is around 90%. One packages is completed 100% and balance two packages are completed 85% and 96%.

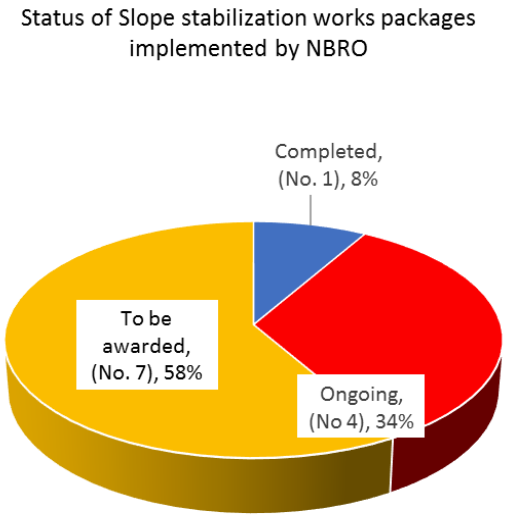
Improvements made to bridges in Polonnaruwa – Somawathi road

Slope stabilization in Kandy Mahiyangana Road

Slope stabilization and removing of falling rocks in Kandy Mahiyangana Road

School Safety – Landslide Mitigation

NBRO has identified 18 school premises as most vulnerable school sites to be protected from landslides in Kandy district. Initially rehabilitation works were packaged in to 7 NCB packages in order to attract the bigger contractors. Later on it is found that only one contractor is available in Sri Lanka to undertake such a large contract and small and medium scale contractors could not bid for such big packages due to their scale of operation. It is also experienced that two packages awarded to Soil tech are not performing properly. Therefore, decision is taken at PMU to split such large packages into small packages that could be undertaken by medium level contractors. Accordingly, 18 schools are packaged in to 12 packages and at present 5 packages are awarded with contract value of Rs 417 million and one already completed.



Out of 5 awarded packages, two packages awarded to Soil Tech PvT Ltd for Dharmaraja collage with a contract value of Rs 105.8 mn and another package is awarded to stabilize slopes in Mahamaya Girls school, Hill wood collage and Gotahmi Girls's school with a contract value of Rs 130.51 mn. Physical progress of Dharmaraja slope stabilization is 98%. Physical progress of slope stabilization in Mahamaya, Hillwood, Gothami collages is 82% and contract extended up to Nov from May 2016. Another contract is awarded new contract to stabilize slope in Galkanda kanista Vidyala is awarded and contractor commenced work. Up to now 65% physical work is completed.

Rest of packages are at different procurement stages such as 100% investigation and design are completed for Krukuthala Maha Vidyalaya, Molagoda Sri Piyadassi Vidyalaya, Gonigoda Ananda Vidyalaya and Vidyartha Vidyalaya. Design and estimate preparation are in progress for Gampola St Joshop Girls collage, Gampola Buddhist Collage and Jinaraja collage. Investigations are in progress in Bothota Vidyalaya and Halloluva Navoda Maha Vidyalaya and designing and estimate preparation in progress for Wattegedara Central Collage, Kasawatte Muslim school and Sirimalwatte Navodya school.

Construction of retaining wall at Galkanda Kanista Vidyalaya

Construction of toe drain at Galkanda Kanista Vidyalaya

b. Gin Nilwala Diversion Project

The project is a multisector development project which provider 154 MCM industrial water requirement of Greater Hambanthota area, 124 MCM of drinking water for 25 divisional secretariat areas in Galle, Matara and Hambantota districts. 111 MCM of water for existing agricultural lands as well as new agricultural lands including commercial agriculture development.

In addition development of road networks including new bridges and power generation of 6.5 Gwh/yr is also expected.

The total project cost is USD 690 million and an agreement has been signed with China CAMC Engineering Co. Ltd for contract of Engineering, procurement and construction.

The implementation of the project had temporary been hold up throughout the 2016 and further negotiations for commencement of the project was held by Official Committee on Economic Management (OCEM) and with the concurrence of Cabinet Committee on Economic Management (CCEM) Cabinet Memorandum to get the approval for the implementation of the project in two stages was submitted and approved..

1. China CAMCE Engineering Co. Ltd. is to review existing proposal deeply and enter into agreements with relevant authorities and furnishing of all data and information on project components necessary for the EIA study.

2. Completion of all construction works including detailed designs and planning.

Accordingly, MOU has been signed with CAMC Engineering Ltd to carryout geological investigation of the project. Meanwhile proposal submitted by the Mahaweli Consultancy Bureau for EIA Study is being evaluated.

c. Lower Malwathu Oya Project

Proposed Malwathu Oya Reservoir is located across Malwathu Oya at Kappachchi which lies in Anuradhapura and Vavuniya Districts. This project envisages construction of 209 MCM capacity reservoir, 3,590 m long earth dam, Radial Gated Spillway, Left Bank, Right Bank and River Sluices, Canal systems to new settlement area and power house.

Stored water at proposed reservoir is released through the river sluice to the Malwathu Oya and picked up at Tekkam Anicut (24 Km d/s from Proposed Malwathu Oya Reservoir). From Tekkam Anicut 500 Cusec and 250 Cusec capacity Right bank and Left bank canals respectively convey water to irrigate 24,450 acres and 6,230 acres under existing Giant's tank and Akitamuruppu tank respectively. 2,000 acres of new irrigable lands just downstream of the Reservoir is proposed for introducing the commercial farming and 675 acres of lands identified for paddy cultivation .Other expected benefits are, provision of 2.0 MCM of domestic water annually for the new settlers, generation of 4.28 GWH Hydro power energy annually and improvement of agricultural activities, livestock development and other infrastructure development .Total Project Cost is Rs12, 000 Million.

At the end of year 2016 feasibility study of the project completed and EIA has already completed. Cabinet approval has been obtained for implementation with CAMC Engineering Company China and they have been called for Technical and Financial reports for an EPC contract.

Initial project cadre has already been approved by the Department of Management Services as well.

d. Thalpitigala Project

The Thalpitigala Reservoir is located about 3 km upstream of existing Bathmedilla anicut at a location near the village Hunuketiya (Dematapelessa)which will lead to enhance regulation and management of Uma Oya basin water resource ensuring environmental flow, irrigation requirement at Minipe Anicut, and irrigation requirement at Bathmedilla Scheme. It is envisaged to construct a 46 m high 15.83 MCM capacity reservoir across Uma Oya at Thalpitigala and planned to release 20 MCM water to Bathmedilla Scheme to improve irrigation facilities to 668 ha of paddy lands. In addition to that it is expected to generate 51.3 GWh of electrical energy.

Total Project Cost is US $ 174 Million.

Feasibility study of the project was completed and EIA approval also granted.

At the end of 2016 it is decided to finalize the funding with China EXIM Bank through ERD.

6. Projects and Programmes Directly under the Ministry and Performance

a. Irrigation Department (ID)

1. Introduction

The Irrigation Department with over a century of experience as a pioneer organization responsible for most of the development works in the irrigation sector, looks optimistically towards the development envisage in the water sector at the dawn of the new millennium.

1.1 Vision

To optimized the returns of the water resources so as to ensure sustainable economic and social development while safeguarding the environment of the country, following the words of the King Parakramabahu the Great of "Not allowing a single drop of water falling from this sky to sea without serving the eco system and mankind".

1.2 Mission

To harness, develop, conserve, regulate, allocate and manage water resources in the country to secure &enhance the returns it produces, directly in the sphere of agriculture and indirectly in other spheres such as environment domestic, industry and power in collaboration with other organizations.

1.3 Objectives

The main objectives of the Irrigation Department are as follows;

a) Development of land and water resources for irrigated agriculture, hydro power, flood control, domestic usage, industrial usage and aquaculture development, giving priority to the environmental factors.

b) Provision of Lift irrigation, irrigation drainage and salinity exclusion facilities for cultivable lands in irrigation and drainage Projects. Provision of salinity exclusion schemes.

c) Provision of drinking water, flood protection and drainage facilities to lands affected by floods.

d) Alleviation of poverty of the rural farming community by increasing their farm income and raising their standard of living.

e) Management of Water economically for sustainable agriculture and other uses.

f) Productivity enhancement of land and water in major/medium/inter-provincial minor irrigation schemes.

g) Integrated water resources management and participatory management in major /medium. inter provincial minor irrigation systems.

h) Integrated water resources management and participatory management in river basins assigned to ID

1.4 Functions of the Irrigation Department

The functions of the Irrigation Department arising from the objectives are as follows;

a. Preparation of Master Plan for development of the different river basins for the optimum utilization of land and water resources giving priority to the environmental factors.

b. Project formulation and detail designs of irrigation, hydro-power, flood control and reclamation Projects.

c. Construction of irrigation and settlement projects for the conservation, diversion and distribution of water under gravity and lift Irrigation to new and existing land for cultivation by farmers for an enhanced food crop production and to upgrade their living conditions.

d. Construction of drainage, flood protection and salt water exclusion projects for the protection of land to enable the cultivation of such lands with rainfall for food crop production with minimized risk.

e. Providing drainage and flood protection facilities to minimize or mitigate the damages caused by floods.

f. Operation, maintenance, improvements, rehabilitation and water management for medium and major irrigation schemes. Drainage and flood protection scheme and salt water exclusion schemes for optimum productivity enlisting the participation of beneficiaries. Catering of water for Inter sectorial use, domestic, industrial use and environmental requirements. Construction and maintenance of conservation reservoirs.

g. Maintaining and upgrading the water infrastructure including dams for sustainable water supply to agriculture and domestic purposes.

h. Research in Hydraulics, Hydrology, Soil Mechanics, Engineering Geology, Geographic Information System (GIS), Engineering Materials and Land Use as applied to Water Resources Development Projects.

i. Human resources development for optimum utilization of human resources.

j. Operation and maintenance of financial management system, accounting, reporting, auditing systems of irrigation department in accordance with the financial regulation of the government of Sri Lanka.

k. Providing consultancy Services to government department, statutory boards/corporation, public and private institutions and individuals; in the fields of Water Resources Development; Foundation Engineering; Quality Control of Earthwork and Concrete; Hydraulic Model Testing and Land Use Planning

2.0 Cultivation Performance of Irrigation Department

District – wise performance during Maha 2015/2016 and performance during 2016 are given in the Table below

Table 1: Major Irrigation Schemes - Cultivation Performance Maha 2015/16

No	District	Gross Extent (Ac)	Proposed Cultivation Extent (Ac)			District Percentage
			Paddy	OFC	Total	
1	Ampara	153,260	134,881	10,745	145,626	95%
2	Anuradhapura	66,087	61,845	710	62,555	95%
3	Badulla	19,701	16,729	2,916	19,645	100%
4	Batticaloa	50,772	48,224	0	48,224	95%
5	Colombo	1,700	1,300	0	1,300	76%
6	Gampaha	6,062	6,062	0	6,062	100%
7	Rathnapura	4,387	4,287	100	4,387	100%
8	Galle	2,265	0	0	0	0%
9	Matara	24,366	10,888	0	10,888	45%
10	Hambantota	58,866	54,811	2,000	56,811	97%
11	Kandy	17,812	17,452	360	17,812	100%
12	NuwaraEliya	1,616	1,293	323	1,616	100%
13	Matale	5,000	5,000	0	5,000	100%
14	Kurunegala	38,155	38,155	0	38,155	100%
15	Monaragala	10,257	7,106	0	7,106	69%
16	Polonnaruwa	85,313	74,123	1,340	75,463	88%
17	Puttalam	13,202	11,384	950	12,334	93%
18	Trincomalee	55,816	53,816	0	53,816	96%
19	Vavuniya	4,135	4,135	0	4,135	100%
20	Mannar	31,892	31,892	0	31,892	100%
	Total	**650,664**	**583,384**	**19,444**	**602,828**	**93%**

Table 2: Medium Irrigation Schemes - Cultivation Performance Maha 2015/16

No	District	Gross Extent (Ac)	Proposed Cultivation Extent (Ac)			District Percentage
			Paddy	OFC	Total	
1	Ampara	3,783	3,781	0	3,781	100%
2	Anuradhapura	30,930	26,243	0	26,243	85%
3	Badulla	3,300	2,175	925	3,100	94%
4	Batticaloa	4,587	4,574	0	4,574	100%
5	Colombo	438	300	0	300	68%
6	Gampaha	5,492	4,100	0	4,100	75%
7	Kalutara	350	0	0	0	0%
8	Rathnapura	2,269	1,519	80	1,599	70%
9	Galle	734	0	0	0	0%
10	Matara	4,170	3,770	0	3,770	90%
11	Hambantota	2,505	2,505	0	2,505	100%
12	Kandy	2,743	2,031	389	2,420	88%
13	NuwaraEliya	1,929	1,311	117	1,428	74%
14	Matale	5,275	3,421	218	3,639	69%
15	Kurunegala	7,435	6,856	80	6,936	93%
16	Monaragala	8,995	6,644	146	6,790	75%
17	Polonnaruwa	2,907	2,634	82	2,716	93%
18	Puttalam	3,969	3,400	0	3,400	86%
19	Trincomalee	600	600	0	600	100%
20	Vavuniya	2,681	2,309	0	2,309	86%
	Total	**95,091**	**78,172**	**2,037**	**80,209**	**84%**

Table 3: Major Irrigation Schemes - Cultivation Performance Yala 2016

No	District	Gross Extent (Ac)	Cultivated Extent (Ac)			District Percentage
			Paddy	OFC	Total	
1	Ampara	153,260	136,197	11,489	147,686	96%
2	Anuradhapura	66,087	37,471	10,299	47,770	72%
3	Badulla	19,701	5,929	6,750	12,679	64%
4	Batticaloa	50,772	31,845	0	31,845	63%
5	Colombo	1,700	700	0	700	41%
6	Gampaha	6,062	32,645	0	32,645	539%
7	Rathnapura	4,387	3,573	630	4,203	96%
8	Galle	2,265	2,090	0	2,090	92%
9	Matara	24,366	7,457	0	7,457	31%
10	Hambantota	58,866	50,820	2,237	53,057	90%
11	Kandy	17,812	15,489	760	16,249	91%
12	NuwaraEliya	1,616	1,293	323	1,616	100%
13	Matale	5,000	2,210	975	3,185	64%
14	Kurunegala	38,155	31,494	2,504	33,998	89%
15	Monaragala	10,257	3,406	450	3,856	38%
16	Polonnaruwa	85,313	81,137	1,650	82,787	97%
17	Puttalam	13,202	8,657	525	9,182	70%
18	Trincomalee	55,816	25,473	648	26,121	47%
19	Vavuniya	4,135	1,089	350	1,439	35%
20	Mannar	31,892	4,182	400	4,582	14%
	Total	**650,664**	**483,156**	**39,990**	**523,145**	**80%**

Table 4: Medium Irrigation Schemes - Cultivation Performance Yala 2016

No	District	Gross Extent (Ac)	Proposed Cultivation Extent (Ac)			District Percentage
			Paddy	OFC	Total	
1	Ampara	3,783	1,776	0	1,776	47%
2	Anuradhapura	30,930	12,688	379	13,067	42%
3	Badulla	3,300	0	1,800	1,800	55%
4	Batticaloa	4,587	2,671	0	2,671	58%
5	Colombo	438	102	0	102	23%
6	Gampaha	5,492	2,430	0	2,430	44%
7	Kalutara	350	350	0	350	100%
8	Rathnapura	2,269	939	150	1,089	48%
9	Galle	734	454	0	454	62%
10	Matara	4,170	3,870	0	3,870	93%
11	Hambantota	2,505	1,275	0	1,275	51%
12	Kandy	2,743	930	1,272	2,202	80%
13	NuwaraEliya	1,929	651	364	1,015	53%
14	Matale	5,275	2,294	2,280	4,574	87%
15	Kurunegala	7,435	5,552	204	5,756	77%
16	Monaragala	8,995	5,290	939	6,229	69%
17	Polonnaruwa	2,907	1,563	355	1,918	66%
18	Puttalam	3,969	3,075	115	3,190	80%
19	Trincomalee	600	600	0	600	100%
20	Vavuniya	2,681	550	370	920	34%
	Total	**95,091**	**47,060**	**8,228**	**55,288**	**58%**

Maha 2015/16

2nd Inter monsoon is partly activated and available water percentage of 73 major reservoirs was 50 % at beginning of the season for Maha 2015/16. NE monsoon is bringing considerable inflow to 73 major reservoirs during seasons hence reservoir's capacity was increase up to 94% on 07th of January 2016 and cultivation was completed under Major irrigation schemes were 93% and Medium irrigation schemes were 84%during Maha 2015/16.

Yala 2016

1st Inter monsoon is partly activated but available water percentage of 73 major reservoirs was 84 % at begging of April 2016. But some reservoirs under Mahaweli system were in lower capacity specially GDR (Kotmale) was 31.3% of capacity. Then take decisions to reduce the cultivation under effected from Mahaweli system. At the mid of May 2016 cyclonic weather condition fill the all tanks in central of the country and flood occur in Kalani river. Cultivation was completed under Major irrigation schemes were 80% and Medium irrigation schemes were 58% during Yala 2016.

2.5 Irrigation & Productivity Enhancement

Objective

The objective of the branch is to establish an integrated management system to increase socio - economic standard of farming community through participatory management approach by optimum use of one unit of water and one unit of land in Irrigated agriculture.

Irrigation Department maintains 756000 Acs of Irrigated Land which is 75% of total Irrigated Land in Major/Medium Irrigation in Sri Lanka. Thus, 75% of the rice production is fulfilled by Irrigation land under Irrigation Department. Since, we achieved the self – sufficiency in paddy we have focused on other field crops which are imported from other countries.

Even though Irrigation Department planning to implement more and more Water Resources Development in the country. It is a big challenge to increase our Irrigated Land extent further in a large scale. We have to think of forest coverage, settlement and other industrial needs of the country and at present Irrigation Department more concentrate on improvement to land productivity in available lands.

Meantime, the government declared National food security program and **'Wasa visa nethi ratak'** program as National programs. With the new thinking as explained above Irrigation Department launched following activities in last year (2016).

1. Training of Project Managers and Field Officers.

Training of field officers is very much important for an implementing agency Like Irrigation Department, especially when launching new program training is much more important. New Project Managers were trained for two batches under the Waphaula Program



Training of Project Managers Kothmale International Training Institute February – 2016.

2. National Conference of Irrigation Farmers in BMICH Chaired by H. E. the President.

Irrigation Department organized a National Conference of Irrigation Farmers (JathikaWariGoviSamuluwa) in BMICH on 6th April 2016 under the patronage of H.E. President. There were many problems among the farming community. Such as construction issues, maintenance problems, water shortage, and fertilizer subsidiary new system introduced by the government etc and raisedby farmers in Irrigation Schemes in several occasions. Hon. Minister of Irrigation & Water Resources Management was very sensitive on the issues raised by farmers and summoned a conference to discuss and solve their problems.

The other outcome of the conference was, to aware the farmers about kidney diseases and special awareness was made to the farmers by Dr. ChannaJayasumana Senior Lecture Raja Rata University.


3. National Food Security program and Wasa visa Nathi Ratak Program

Ministry of Agriculture has organized the above program and Irrigation Department contributed by providing necessary assistant in Irrigation Schemes in field level. And also Irrigation Department contributed to National Exhibition organized by Agriculture Department in BMICH from 6th to 8th March 2016.


OFC Cultivation in Major Irrigation Schemes.


Exhibition on Wasa Visa Nethi Ratak BMICH 2016 march

4. Traditional paddy Cultivation program and organic fertilizer program

This program implemented in several districts such as Anuradhapura, Polonnaruwa, Monaragala, Badulla Galle, Matara, Hambantota, and Kandy in small scale as pilot project and found successful achievements. But, it is observed that marketing problems is a negative impact for further improvement of Traditional Paddy.


5. Management of Invasive Species (Aquatic Plants) in Irrigation Schemes

I.) Invasive Aliens species (aquatic Plants) now become a major issue in Irrigation schemes, invasive aquatic plants such as Japan Jabara (EichhorniaCrassipes), Salvinia (Molesta), DiyaHawariya (VelisneriaSpiralis), Hydrilla (HydrillaVerticillara) etc spread all over the Irrigation System and found considerable economic damage to the irrigation system.


Salvinia (Molesta) removal in P S

II.) Irrigation Department with the assistant from Bio – Diversity Secretariat, Ministry of MahaweliDevelopment and Environment has organized program to control the Invasive Plants in Irrigation System by mechanical and Biological control methods. General awareness to Irrigation Staff and Training of Trainers (TOT) program IAS were conducted in KothmaleInternational Training Institute.


III.) Baseline Survey was conducted in selected five schemes (Parackramasamudra/ Halmillawewa/ Neelabemma/Benthara RB/ Karawilawewa) representing all categories of invasive water weeds and submitted a report to Environment ministry. There by it is identified socio-economic damage and recommended some proposal for effective management of IAS in Irrigation schemes.


IV.) According to the result of base line survey, it is proposed to conduct a research study on IAS in irrigation systems for biological control for sustainable management. Then an MOU was signed with the University of Sri Jayewardenepura for the proposed research study and report will be reached to the department by March 2017.


6. National Tree Planting Program

In parallel to the tree planting program for protection of Irrigation reservations, a special program was launched under the instruction of President Secretariat during 2016. There by more than 20,000 plants were distributed all over the Irrigation Divisions and achieved successful progress.


7.) Many requests are coming to the Department by various education institutes and school in their national events to display and explain our irrigation technology for children and General public. There by full equipped exhibition install was provided for the exhibition of Royal College Colombo, AnulaVidyalayaNugegoda, etc.


8.) Establishment of Unit Office

Divisional Irrigation Engineers Offices are established for a large area and farmers have to travel long distance to Irrigation Office for various services. To avoid these inconvenient to the farming community Unit Office System was introduced at Irrigation Scheme Level by using abandoned buildings. This program was started in 2014 and achieved good progress. About 175 Unit Offices were established up to the end of 2016, out of 215 units programmed.

9.) World Water Day is celebrated every year on 22nd March 2016 and the Department is organizing main ceremony head office and other awareness program focusing of school children at Divisional Irrigation Engineers Level.

10. World Environment day is celebrated every year on 5th of June and the department is conducting various kinds of activities such as General Awareness, tree planting etc.

3. 0 Present Status of the Projects Implemented by Irrigation Department (GOSL funded projects)

The total financial allocation for capital expenditure for the year 2016isRs. 13,571.43million and Rs.10,352.07 million was spent up to the end ofDecember. Detailed Financialprogress of individual items is given below with a brief description of the items and present financial position of work.

Summary of Capital Expenditure

Name of Project	**Revised Allocation for Year 2016 Rs.million**	**Cumulative expenditure up to end of December 2016 Rs.million**
Project 1 Administration and Establishment services	43.10	42.28
Project 2 Administration and maintenance of Irrigation schemes	2,305.50	2,030.05
Project 3 Major Irrigation Schemes	10,833.77	8020.42
Project 4 Medium Irrigation Schemes	389.06	260.97
Grand Total	**13,571.43**	**10,353.73**

Summary of Recurrent Expenditure

Name of Project	**Revised Allocation for Year 2016 Rs.million**	**Cumulative expenditure up to end of December 2016 Rs.million**
Project 1 Administration and Establishment services	672.96	622.46
Project 2 Administration and maintenance of Irrigation schemes	2339.39	2246.65

Major Irrigation Schemes

1. Deduru Oya Reservoir
2. Manik Ganga Reservoir (Weheragala) –phase ii
3. Rambukkan Oya Reservoir
4. Yan Oya Project
5. Lower Uva Project
6. Mahagonawewa project
7. Gal oyanavodaya
8. Essential Rehabilitation in selected Major Irrigation Schemes
9. Morana Reservoir
10. Ellewewa Reservoir
11. Kalugaloya Reservoir
12. KumbukkanOya Reservoir
13. Rugam Kithul Reservoir

Medium Irrigation Schemes

14. GurugalOya project
15. Gonagalathenna tank
16. Extension of Kaudulla stage 11 Ella up to Damsopurawewa
17. Augmentation of Mahagalgamuwa Tank
18. Construction of Pethiyagoda Pump House
19. Rehabilitation of Ginganga Flood Regulation Project.
20. Benthra Ganga Right Bank Drainage & Salt Water Extrusion Schemes

Major Irrigation Schemes

3.1 Deduru Oya Reservoir Project

Location	:	Kurunegala&Puttlam district
Reservoir capacity	:	75 MCM
Irrigable area	:	27,000 acres
Beneficiaries	:	11,500 farmer families
TEC	:	Rs. 13,540 million
LB Main canal	:	45km
RB Trans-basin canal	:	36.5km

At present water is issuing to Inginimitiya Reservoir (Puttlam district) Magalla reservoir (Nikaweratiya) about 300 minor tanks in Wariyapola DS division, Kotawehera, Kobeiganea & Mahawa DS division and extent of over 30 thousand in above area has been cultivated both in Yala&Maha seasons during 2015th and 2016th Head works of the project and Construction of RB trans basin canal from 25km – 36km were completed and His Excellency the President has declared open the project on 22ndNovember 2014.

Rs. 11,456.83 Million has been already utilized at end of December 2016.Now project is completed.

In addition to this, drinking water supply project from DaduruOya Reservoir has started. Drinking water benefit is for 3000 families has started.

Development of damaged Sengaloyaanicut (Lower Daduru Oya Project) is done under Daduruoya project as phase II and achieved 19% progress. Total allocation for this isRs.1000.00Mn& area benefited is 3500 acs.

3.2 Weheragala Reservoir Project

Location	:	Hambantota district
Reservoir capacity	:	64 MCM
Irrigable area	:	10,000 ha.
Beneficiaries	:	8000 farmer families
TEC	:	Rs. 2900 million

The Weheragala project was started in 2005 and the construction of the reservoir and conveys system was completed in 2009 and some additional works were commenced. Total Estimated cost of the project is Rs.

2900 million and the total expenditure up to end of December 2016 was Rs. 2559.02millions. The physical progress of the project was 99.8% &currently following works are carried out under Weheragala Project.

	Description	Physical Progress
1.	Completion of Weheragala Scheme	90%
2.	Completion of Attikawaanicut	50%
3.	Rehabilitation of LB/ RB main canal in Lunugamwehera	71%
4.	Improvements to canal system under 5 tanks of Ellagala Scheme.	98%

3.3 Rambukkan Oya Reservoir Project

Location	:	Ampara district
Reservoir capacity	:	56 MCM
Irrigable area	:	1423 ha.
Beneficiaries	:	2300 farmer families
TEC	:	Rs. 3970 million
Bund length	:	1097 m
Main Canal	:	7.6 km

Head works of the project was completed and His Excellency the president has declared open the project on 20th July 2013 and the first water has been issuedto tract 1. Constructions of field canals and other infrastructure facilities are in progress. Overall physical progress of the project was 98%and expenditure up to the end of December 2016 was Rs. 3847.26million.

3.4 Yan Oya Project

Location	:	Anuradhapura, Trincomaleedistricts
Reservoir capacity	:	169 MCM
Irrigable area	:	5696 ha.
TEC	:	22000Rs.Mn

It is proposed to construct a dam across Yan oya at Pangurugaswewa in Trincomaleedistrict.It is located upstream of existing Yanoyaanicut.The project envisages constructing about 2.35 km longmainearthen dam and 3.59 km long saddle dams and 34km long canal system in LB and RB to irrigate 5696 ha of lands in Anuradhapura and Trincomalee Districts. This includes 2200 ha of existing lands under Padaviya scheme

where severe water deficit speciallyduringYala. This will also provide water to 140 ha existing lands under Wahalkada scheme and 100 ha new land along LB canal and existing lands under Yan oyaanicut (750 ha) and minor schemes in Meeoya basin (1735 ha) in Trincomalee District.

Physical progress have achieved for major component of the project at the end of December 2016 as follows.

Head Works	**Physical Progress**
Dam filling (Earth work)	94%
Concreting	217%
Surveying	
Surveying work of LBMC	100%
Provision of IFF	
Construction of LB & RB main canal	1% & 4% respectively
Land acquisition & Re settlement	
Paying compensation for seosonal crop cultivation	95%
Jungle clearing of re settlement area in LB & RB	1% & 50% respectively
Environment Management Cost	
Re planning of forest	17%
Archeological conservation cost	4%

Revised allocation for year 2016 is Rs. 7500 million and cumulative expenditure up to the end of December2016is Rs. 16706.44Mn. Overall Physical progress was 61% at the end of December.

Main Dam

Spill DS

3.5 Lower Uva Minor/ Medium Irrigation Project (LUMP)

Location : Monaragala district

Beneficiaries : 2500 farmer families

TEC : Rs. 550 million

This project is proposed to augment one medium tank namely DebaraAraWewa in Wellawaya Divisional Secretary Division and about 22 minor tanks. Estimated cost of the project is Rs. 550Mn. and estimate to be revised.The revised allocation for year 2016 is Rs. 90 million. Overall average physical progress of the project was 90% andRs. 603.87million has been utilized up to the end of December 2016.

18 numbers of minor tanks are completed. Following works are in progress

	Cumulative Physical Progress (%)
DebaraAra Feeder Canal	58%
Watagalaara Tank	35%
DemodaraAra	In estimate stage
Mallipotha tank	Head works completed IFF in progress
Halmillapillawa tanks	Rehabilitation works under CRIP

Excavated area of Debaraara feeder canal

Watagala ara Tank

3.6 Mahagonawewa Project

Proposed MahagonaWewa is an abandoned tank denoted by the Coordinate S/1 (2.0 X 8.6) and situated in Dambulla Divisional secretary division of Matale district. Total Estimated cost is Rs. 70 millionthe amount of revised estimated is Rs. 260 million due to the variations are encountered.

102.38 million has been utilized up to the end December 2016. Cumulative Physical Progress of the project was 56%.

Physical Progress was achieved for following items at the end of December,

1. Construction of main bund – 100%
2. Construction of Sluice – 85%
3. Construction of Spillway – 37%
4. Construction of Rip rap –95%

Revised allocation for year 2016 is Rs. 27.0 million and expenditure during 2016 is RS. 26.9 million.

Mahagona wewa project

3.7 Galoya Navodaya

The project activities include the following main components.

i. A Comprehensive Water Resources Development and irrigation Plan, that will harness unutilized potential, and increase efficiencies in the usage of water.

ii. A productivity Enhancement program in order to generate more income from irrigated Agriculture.

iii. Improving and upgrading the physical infrastructure to serve the people: road, water supply, sanitation, education etc.

iv. Harnessing the potential for Agro-based industries including post-harvest activity, for value addition and enterprise development.

Project estimate is Rs. 1260 million and the Irrigation Department component is Rs. 650 million. Allocation for year 2016 is Rs. 301.650million and cumulative expenditure of the end of December2016was Rs. 953.43million overall physical progress of the project was 89%.

The estimate is recast to include the Gal oya valley development and revised allocations for the items as follows.

	Physical Progress
Irrigation Component	96%
Infrastructure Component	48%

Gal OyaNavodaya

3.8 Essential Rehabilitation in Selected Major Irrigation Schemes.

Introduction:

The main objective of this project is to stabilize and increase agricultural production in some selected major medium irrigation schemes by rehabilitating the essential components of the downstream canal system. There are 109 major irrigation schemes which serve for 586 323 acs& 254 Medium schemes which serve for 96333 acs under Irrigation Department. Many of those schemes are now under rehabilitating state due to various reasons. The project ; Essential Rehabilitation of Selected Major Irrigation Scheme has been started in 2009 under annual budget allocation to do identified essential rehabilitation works in those schemes.

Progress:

The rehabilitation works of more than 150 irrigation schemes have been done from 2009 by the end of year 2015. This year, it has been planned to do essential rehabilitation works in 200 irrigation schemes and most of them have been started already. The financial progress at each year is shown in table 1.

Table 01: Summary of financial progress (Year wise)

Year	Expenditure /Rs.Mn
2009	11.3
2010	102.04
2011	172.73
2012	1217.58
2013	657.42
2014	634.81
2015	559.00
2016 (End of December)	594.119

Apart from this expenditure for rehabilitation works, Rs. 1115 million has been incurred in 2012/2013 under this project for the Accelerated Development Programme for enhancing the living conditions of the people affected drought. Therefore total expenditure of the project at the end of December2016 is Rs. 3963.36 million.

ERMMIS - Improvements to Ranmuduwewa TankBund

ERMMIS - Improvements to Pallemattala Tank Bund

3.9 Morana Reservoir

Location	:	Badulla district (Ridimahaliyadda)
Reservoir capacity	:	16.53MCM
Irrigable area	:	2500 acres.
Beneficiaries	:	1000 farmer families
TEC	:	Rs. 1700 million

Proposed Morana reservoir is constructed across Ulhitiyaoya at a location called "Morana" and water is diverted to Rotagollawewa in order to overcome the shortage of water at Nagadeepa scheme. Rotagollawewa is located at the downstream of the Nagadeepa reservoir.

Revised allocation for year 2016 was Rs. 524.33 million and cumulative expenditure at the end of December2016was Rs. 1106.81 million. Performance at the end of December 2016as follows.

Work Component	**Physical Progress**
Construction of Head Works	Dam Construction : – 79% Construction of tower Sluice : – 74% Construction of radial gate cum RB sluice Spill way : – 48%
Conveyance System	Construction of LB main canal including structures 75% Improvements to 2 nos. minor tanks &Rotagolla tank 52%
Regulation of lands & lands development, Resettlement	Allowance for land acquisition and surveying works 78% Construction access road & other internal roads at resettlement 82%
Infrastructure facilities	Construction of site building & providing electricity supply to Morana dam site 37%
Environmental facilities	Reforestation with Forest Department 25%

Overall Physical Progress 52.5%

Construction of LB Sluice

Construction of Spill

3.10 Ellewewa Reservoir

Location	:	Ratnapura district (Embilipitiya)
Reservoir capacity	:	2.25 MCM
Irrigable area	:	1250 acres.
Beneficiaries	:	1000 farmer families
TEC	:	Rs. 467.38 million

Ellewewareservoirproject was proposed to address the water scarcity problem in Panamure scheme. The reason for water shortage is mainly due to increase in irrigable area owing to the encroachments by new settlers.

Supplying of drinking water for 1000 heads and generation of hydropower (2.59 GWH annually) is also proposed in this project.After paying the compensation for the families are in the project area construction will be commenced. The process of paying compensation is in progress. Preparation of drawing and estimates are in progress.

Revised allocation for year 2016 was Rs. 50.0 million

3.11 Kalugal Oya Reservoir

Location	:	Ampara district (Uhana)
Reservoir capacity	:	7800 ac.ft
Irrigable area	:	1500 acres.
TEC	:	Rs. 1481. 40million

Construction of bridge across the Kalugaloya, construction of RE's office, Power supply to Head Work site, construction of work shop &construction of storeshave been completed. Construction of Main Bund 72% completed. 154% of Spillway and 43% of sluice constructions have been completedandconstruction of channel system 113% completed. Infrastructure facilities 102% completed. Cumulative expenditure at the end of December 2016was Rs. 471.32million. Revised allocation is Rs. 450.00 million for 2016&16% cumulative physical progress has achieved at the end of December2016.

Construction of Main Canal

Construction of Main Dam

3.12 Kumbukkan Oya Reservoir

Location	:	Monaragala district
Reservoir capacity	:	55 MCM
Irrigable area	:	10,000 acres new lands and 3000 acres existing.
Beneficiaries	:	6000 farmer families
TEC	:	Rs. 10000 million

Project is temporarily suspended due to objection of small group of people.

Revised allocation is Rs.20 million for 2016.

3.13 Rugam Kithul Reservoir

This project is proposed to augment Rugam tank to 90MCM by combining with Kithulwewa tank and reconstruct all the channel systems under present Rugam scheme, present Kithulwewa scheme and additional irrigable extent that can be taken under left bank of MundeniAru.

It is proposed to increase the irrigable extend of Rugam tank and Kithulwewa tank up to 200% additional 1500 acs. of lands could be taken to irrigated agriculture from rainfed at present meanwhile 2000Acs of new lands could be cultivated by lift irrigation under this project.

TEC of the project is Rs. 4500 million. Feasibility studies including Geological investigation in progress.Revised allocation is Rs. 5.00 million for 2016.

3.14 Gurugal Oya Reservoir Project

Location	:	Kandy district
Irrigable area	:	810 ha.
Beneficiaries	:	2400 farmer families
TEC	:	Rs. 780 million

Constructions of gravity dam was completed. Constructions of sluice (RB & LB) was 99% completed. Constructions of spill structure was 99% completed. Constructions of earthen bund was achieved 99% physical progress and construction of bridge over Gurugaloya dam & installation of radial gates were achieve 95% and 80% physical progress respectively.

Overall physical progress of the project was 97% at the end of December 2016. Revised allocation for the year 2016 was 80.41Mn. & Cumulative expenditure at the end of December 2016 was Rs. 755.48 million.

Bund

3.15 Gonagalathenna Tank

The proposed Gonagalathenna tank site is located in Kandy district. After implementation of this project, it is expected to provide irrigation facilities for 325 acres paddy land in Mahaseason and 37 acres in Yalaseason. Estimatedcost of the project isRs.55 million.

71% of the construction of tank bund 100% of the construction of spillway and 11% of the construction of RB sluice have been completed up to end of December 2016. Allocation granted for the year 2016 was Rs. 13.65Mn. and cumulative expenditure up to the end of December 2016 was Rs.55.39million. Cumulative physical progress atthe end of December 2016 is 55%.

Bund

LB Sluice

RB sluice site

Spill

3.16 Extension of Kaudulla Stage 11 Ela upto Dampopura.

The proposed project involves extension of LB canal of Kaudulla scheme, improvements of Damsopurawewa, augmentation of Babiyawewa, construction of canal system together with related structure and development within the project area. The project is expected to provide irrigation facilities to 1850 acres of paddy lands including 870 acres of new lands. The estimated cost of the project is Rs. 368.82 million. 4 km length of canal trace has been finalized. Annual revised allocation for year 2016 is Rs. 20.0Million&Rs. 22.46Million has been utilized at the end of December 2016.Cumulativephysical progress atthe end of December 2016 is 38%.

Canal cutting from 0+000km to 4+200km – 95%

Concrete work bench flume

A. from 0+375km 1+525 – 50%
B. Other structure –15%

3.17 Augmentation of Mahagalgamuwa Tank Project

The proposed Mahagalgamuwa Tank site is located in Kurunegala District, Ehatuwewa DS Division. After implementation of this project, it was expected to provide Irrigation facilities for 1400 acres paddy lands. The

estimated cost of the project is Rs.500 Mn. Cumulative expenditure atthe end of December 2016was Rs.118.38 million.Earth work of feeder canal 100% completed. Construction of 20 structures in Conveyance system was 40% completed.Allocation for the year 2016 is Rs. 100.00 mn. Overall physical progress atthe end of December 2016 is 50%.

3.18 Pethiyagoda Pump House Project

The proposed project involves construction of pumping station and related facilities at the present drainage gate of the north bund of Kelaniganga flood protection scheme. Part of the Kelaniya DS divisional area is subjected to frequent flooding. This is causedto various kind of damages and losses of the properties of the people in the area. Flooding is caused by local drainages are blocked when the Kelani River is higher level to prevent the river water coming in. Therefore this local flooding problem could be mitigated only by pumping.

By this project it is expected flood mitigation of 33 hec. of highly developed land area and annual saving of about 5 million worth people properties. Total project cost is Rs. 310 million.

Action has been taken to settle the people in the project area.

Allocation for the year 2016 is Rs. 50.00 mn.

3.19 Rehabilitation of Ginganga Flood Regulation Project.

The project is located in the Baddegama, BopePoddala, Weliwita Divitura and Hikkaduwa DS Divisions in Galle District. Irrigation Department has implemented the Gin Ganga Regulation Project with aid of the Chinese government during late 70's. The project was completed and commenced its operation in 1982.

The main objectives of the project are successfully survived by the project more than 30 years. If this rehabilitation will not be done followings objectives might be failed and high damage may occur.

i.) Providing flood control and drainage facilities for 5000 hectares of paddy lands so that whole area could be cultivated both Yala and Maha seasons without much troubles.

ii.) Protecting human lives and their valuable properties from frequent flood experience in the area before the project. Around 20,000 families in the area are directly benefited presently as the objectives are successfully achieved by the project.

Expert team from the Japanese International Co-operation Agency (JICA) has been recommended the replacing of all mechanical components with new items in 2009.

Total estimated cost of the Project Rs.700million &Proposed Duration of the Project is 36months.

Purchase and installation of spare parts & purchasing of pumps for 10 pump house were awarded to contracts. Allocation for the year 2016 is Rs.125.00 million and Cumulative expenditure at the end of December 2016was Rs.60.96 million. Cumulative physical progress was 17% to end of December 2016.

Divithura Flood House Aluminium Works

Mehimulla Flood House Aluminium Works

3.19 Benthra Ganga Right Bank Drainage & Salt Water Extrusion Schemes

Bentara Ganga Right Bank Scheme is divided in to Sections namely Meegama&Ittapana. The land area covered by the both Ittapana&Meegama Sections of Bentara Ganga Right Bank Scheme is 1110 ha.

There are damaged Structures and gate in the Scheme. There were one hundred and fifteen gates to operate automatically during high tide and floods in the Bentara Ganga Right Bank Scheme. Some of the gates are damaged and they are to be replaced under this project. In the scheme, flood bunds have lowered their side slopes and have washed away and the channel bund roads have been damaged. Immediately correction action is taken under this project in order to sustain the structures gates and bunds to achieve the desired objectives.

The main task of the project is to prevent floods and intrusion of salt water by improving the drainage and irrigation facilities for the extent and improving the standards of living of the people in the area.

As a summary following items are to be improved and implemented under the Improvements to Bentara Ganga Right bank Project. Physical Progress of the items are mentioned Below.

Rehabilitation and improvements to 3.25km length of SWE bunds	– 37%
15 nos. of drainage canals	– 63%
15 nos. of SWE structures	– 34%

- Clearing of Irrigation area.
- Construction of community center at Ittapana
- Construction of cattle crossings and tractor crossings where necessary.

Allocation for the year 2016 is Rs.50.00 million. Cumulative physical progress to end of December 2016, 24% and expenditure up to end of December2016 was Rs. 41.61mn.

4.0 Other Major Projects implemented by Irrigation Department

4. 1. Dam Safety and Water Resources Planning Project

The objectives of the Dam Safety and Water Resources Planning Project are establishing long-term sustainable arrangements for operation and maintenance of large dams and improving water resources planning. There are four components to the project.

The first component is for dam safety and operational efficiency improvement. This component will enhance public safety of 32 selected high risk large dams, improve operational efficiency of 80 dams (including the 32 dams), and establish sustainable institutional arrangements for dam safety management and Operation and Maintenance (O&M).

The subcomponents will include:

(i) Remedial works for 32 high risk dams;
(ii) Provision of basic safety facilities for 80 large dams;
(iii) Training for strengthening dam-owning organizations; and
(iv) Studies and supply of specialized equipment.

Clearing & Weeding Parakrama Samudra Tank Bund under O & M Gravity works

Clearing & Weeding Kaudulla Tank Bund under O & M Gravity works

Clearing & Weeding Giritale Tank Bund under O & M Gravity works

SI	Name of Dam	Estimate (LKR Mn)	Current Position
I	**Additional Financing Works**		
01	Mahawilachchiya –	254.00	Physical Progress – 75% Financial Progress –77.81Mn
02	Mahakanadarawa –	133.00	Physical Progress – 99% Financial Progress–66.28 Mn
03	Padaviya	160.50	Physical Progress – 52% Financial Progress – 34.68Mn
04	Angamuwa	212.00	Physical Progress – 95% Financial Progress – 131.58Mn
05	Unnichchi tank	75.59	Physical Progress – 2% Financial Progress – 12.03 Mn
06	Thoppur	56.20	Physical Progress – 85 % Financial Progress –16.18 Mn
07	Wan ela	82.79	Physical Progress – 45 % Financial Progress –13.88 Mn
08	Janaranjanawewa	124.77	Physical Progress – 50 % Financial Progress -31.21 Mn
09	Soraborawewa	23.55	Physical Progress – 16% Financial Progress 2.51 Mn
10	Nawakiri tank	111.90	Physical Progress –30 % Financial Progress -23.16 Mn
11	Kachchimadu	104.47	Physical Progress –15 % Financial Progress -17.12 Mn
12	Kottukachchiya	75.25	Physical Progress – 25 % Financial Progress – 17.16 Mn
13	Bandagiriya	95.55	Physical Progress – 10 % Financial Progress - 0.00 Mn

14	Rajanganaya Dam (Package -01)	265.50	Progress – 02% Financial Progress -54.50 Mn
15	Rajanganaya Dam (Package -02)	265.50	Physical Progress – 02 % Financial Progress -0.00 Mn
16	Roseneth dam (KMC)	26.39	Physical Progress – 28 % Financial Progress - 4.28 Mn
17	Dunmadalawa dam (KMC)	58.87	Physical Progress – 10 % Financial Progress -8.48 Mn
18	Muthukandiyawewa	24.14	Physical Progress –0% Financial Progress -0.00 Mn
19	Baudullaoya	66.21	Physical Progress – To be started Financial Progress – Nil
20	Improvements to training center for dam operating staff – Galgamuuwa	185.48	Physical Progress – 95%. Financial Progress – 141.17 Mn
21	Improvements to Engineering Geology Lab	23.54	Engineering Estimate approved. TEC – 45 Million
22	Improvements to Hydrology Monitoring office	46.73	Physical Progress – 60%.

4.2 Uma Oya Down Stream Development Project

Estimated Cost Rs. : 9352 Mn

Existing irrigable area : 3200 Acs.

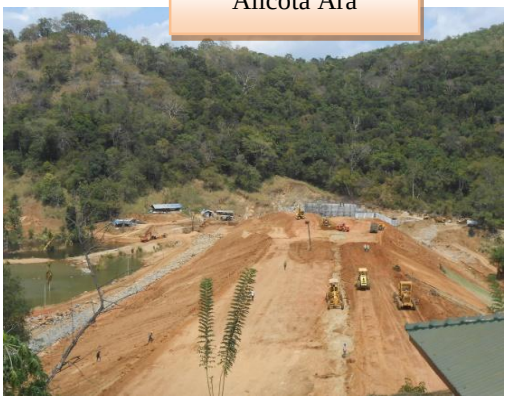
New irrigable lands : 11,000 Acs.

Project is to be completed : End of 2016

Year marked allocation for year 2016 Rs. 1200.00 mn.

- Year mark Allocation for Year 2016 : Rs. 1,200.00 Million
- Allocation released by Project Director to Irrigation Department up to now: Rs. 1,200.00 Million
- Expenditure from January 2016 up to 31st December 2016: Rs. 1200 Million
- Payment to be done at 31st December 2016 (Liabilities): Rs. 281 Million
- Cumulative expenditure of the project up to 31st December 2016: Rs. 2388.24 Million
- Cumulative Physical progress up to 31st December 2016:25.54%

Alicota Ara



Kuda Oya

Activity	Target	Progress
Construction of AlikotaAra reservoir	80%	95%
Construction of KudaOya reservoir (40 MCM) including Access Road	27%	12.3 %
Improvements to capacity of Handapanagala	81%	85%
Construction of canal from of KudaOya reservoir to Sinhalayagama	21%	04%
Construction of Handapanagala LB canal & Rehabilitation of RB system	26%	08%
Construction of canal from AlikotaAra to KudaOya	28%	04%
Improvements of Minor Tank & Irrigation network	24%	15%
Land acquisition and resettlement at Bandarawela&Thelula	100%	95%
Purchasing of Machinery & Equipment	66%	--
Social infrastructure Development	100%	--

5.0 Medium projects Implemented under the Ministry & Other Agencies Votes

5.1 Construction of Kochchipothana Feeder Canal

Kochchipathana tank (265740E, 133225N) belongs to both Tissamaharama and Kataragama divisional secretarial areas. . Kochchipathana tank is a working tank and at present cultivating only about 200 acs in Maha season due to insufficiency of water. . In Yala. Even though enough fertile lands available at tail end of the scheme, there is no possibility to extend the irrigable extent due to water shortage from own catchment inflow.

By considering the existing Kochchipathana tank capacity and possible diverting additional inflow from adjoining catchment or tank, the irrigable area can be increased up to 300 Acs. The demand of water requirement in Kochchipathana tank can be met by constructing a feeder canal from Detagamuwa tank so that it would be possible to cultivate the full extent under Kochchipathanatank in both Yala and Maha Season.

In addition during the festival season water requirements of pilgrims will be supplied by this tank.

Position as at end of December 2016

- feeder canal excavation from 0+00km – 6+00km was 93.86%
- structures from 0+00km 0+600km 90%

Allocation for 2016is Rs. 95 million (Re vote 45 & new works 50m) and expenditure to end of December was Rs. 99.15 million.

5.2 Construction of Muthukeliyawa Feeder Canal Stage II

By this feeder canal water supply to 7 minor tanks. All those tanks are belonged to Agrarian / provincial council. But total irrigable area is 600 Acs.

Position as at end of December 2016

- feeder canal excavation 100% completed
- Structures 76.5% completed

Allocation for year 2016 is Rs. 50million re vote. Expenditure to end ofDecember2016 was Rs. 34.635million.

5.3 Yakamuna Anicut

YakkamunaAnicut is located in Puttalam district. This is a restoration works and started under Economic Development ministry. As there is no allocation year 2014, the balance works are in progress under Ministry allocation.

Position as at end of December 2016

- Anicut - Almost completed
- Anicut gates - design is in progress

Allocation for year 2016 is Rs. 15.00 million and expenditure to end of December 2016 was Rs. 13.283 million achieved physical progress is 91%.

4.4 Galserugolla Tank

Construction of Galserugolla Tank was started in 2012. Total cost estimate for this item is Rs. 100.00 million. Overall physical progress is as follows

Construction of earthen bund - 90%
Construction of sluice spill - Completed
Construction of sluice - 95%

b. Irrigation Management Division

Established in 1984, Irrigation Management Division (IMD) implements Integrated Management of Agricultural Settlements (INMAS) Program along with Participatory Irrigation Management (PIM) approach in 54 major irrigation areas (MIAs), each consisting of more than 400 ha command area under inter-provincial irrigation systems. The vision of this approach is to develop a self-reliant irrigated-farming community for self-management of the irrigation resource. It is expected to achieve a sustainable economic development of farm families through implementing the said approaches and enhancing productivity of unit of irrigation water by promoting participation and contribution of farmer organizations (FO), Government and Non-Government Organizations (NGOs) and Private Sector (PS).

Primary responsibility of this Division is to enhance living conditions of farming community in major irrigation schemes through establishment and strengthening of farmer-based institutions with the objectives of improving management and productivity of major irrigation schemes, improving operation and maintenance of irrigation sub-system, and facilitating and creating enabling environment for increased agricultural production and productivity.

Progress of programs implemented in 2016

1. Strengthening and empowering Farmer Organizations (FO)

1.1 This Division has established 874 FOs in 54 Major Irrigation Area under its purview and facilitated and guided them to adopt good-governance practices through the following activities.

	Activity	Unit	Target	Progress	%
1	Preparation of FO final accounts	No	864	807	93
2	Updating of FO accounts	No	874	821	94
3	Facilitating auditing of FO accounts	No	834	635	76
4	Conducting FO elections	No	380	360	95
5	Conducting FO Annual General Meetings	No	1,664	1,649	99
6	Conducting FO monthly committee meetings	No	10,093	7,314	72
7	Updating FO membership register	No	751	584	78
8	Introducing amended constitution and systems and procedures for FOs and ensure their adoption	No	792	580	73
9	Establishing Subject Committees in FOs	No	38	19	50
10	Increasing FO Fund	Rs.000	30,156	30,200	100
11	Facilitating registration of System Level FOs under Agrarian Services Act No. 46 of 2000	No	27	10	37

Annual General Meeting of an FO - Padaviya Scheme

Annual General Meeting of an FO - Kirindi Oya Scheme

Annual General Meeting of an FO
Hakwatuna Oya Scheme

Annual General Meeting of an FO
Ridibendi Ela Scheme

Election Meeting of an FO - Damana Scheme

Election Meeting of an FO – Wahalkada Scheme

Executive committee meeting of an FO
Muruthawela Scheme

Executive committee meetings of an FO
Girithale Scheme

1.2 This Division conducted training programs for FO Leaders on the following aspects in order to strengthen participatory management process and ensure adoption of good governance procedures in FOs.

Training program	Target (No. of persons)	Progress (No. of persons)	Achievement %
Financial management	2,812	2,950	105
Improving leadership qualities	505	446	88
Introducing Constitution Amendments and Systems and Procedures	605	352	58
Income management	160	75	47
Training on Internal Auditing	70	70	100
Strengthening FOs	715	477	68
Total	**4,867**	**4,370**	**90**

Financial Management training
Parakkrama Samidraya Scheme

Financial Management training
Bathalagoda Scheme

Introducing Constitution Amendments and Systems and Procedures – Mee Oya Scheme

Income management Trainining
Mahakanadarawa Scheme

Awareness Program on Institutional Problem - Inginimitiya Scheme

Awareness Program on FO Strengthening Development Ridi Bendi Ela Scheme

1.3 In order to strengthen FOs and to provide effective service to farmers, 14 FO offices were established as a pilot demonstration in Major and Medium Irrigation areas rehabilitated by PEACE Project, namely Ridee Bendi Ela, Mee oya, Nachchaduwa, Nuwara wewa, Hulugalla and Maha Nanneriya, and were provide with office furniture, equipment and computer facilities. It is expected to solve farmer problems through enabling farmer relationship with relevant technical advisory organizations and market coordination.

In addition, 05 FO offices were established with their own initiative and funding by 05 FOs of Rajangana Scheme

Opening ceremony of Abakolawewa Gamunu FO Office – Mee oya scheme

Opening ceremony of Prakcrama FO office Nuwarawewa scheme

Opening ceremony of Sri Udara FO office Rajanganaya scheme

Opening ceremony of Wijaya FO office Rajanganaya scheme

1 .4 This Division facilitated the timely conduct of Pre-Seasonal Meetings and Seasonal (Kanna) Meetings in order to ensure timely availability of input supply including irrigation water in major irrigation schemes under its purview. Also, the monthly Project Management Committee meetings were held regularly with the participation of relevant stakeholders and FO representatives to monitor and review the progress of decisions arrived at the Seasonal Meetings and implement steps required to improve the efficiency of irrigation management.

Type of Meeting	Unit	Target	Achievement	%
Project Management Committee	No	461	442	96
Pre seasonal meetings	No	148	148	100
Seasonal meetings	No	115	115	100

Project Management Committee meeting
Ridiyagama Scheme

Project Management Committee meeting
Muruthawela Scheme

Seasonal (Kanna) meeting
Giants Tank Scheme

Seasonal (Kanna) meeting
Rajanganaya Scheme

1.5) Awareness programs were conducted for 6283 farmers and farmer leaders on ill-effects of narcotics and alcohol use in order to distract the farmers away from such vices and improve the health of community in major irrigation schemes.

Awareness on prevention of narcotic drug use
Tissa Wewa Scheme

Awareness on prevention of narcotic drug use
Bathalagoda Scheme

1.6) A farmer Conference co-organized by Irrigation Department, Irrigation Management Division and National Integrated Farmer Organization was held at the BMICH on the 6th April, 2016, under the advice of Hon. Gamini Vijith Wijayamuni de Soysa, and under the guidance the Ministry of Irrigation and Water Resources Management and with the chairmanship of H.E. Maithreepala Sirisena, The President of Sri Lanka, with the participation of more than 6000 farmers.

Farmer Conference at Bandaranaike Conference Hall on 2016.04.06

2. Participatory Maintenance and Water Management program

Operation and maintenance (O&M) of irrigation sub-system consisting of Distributory Canals (DC) and Field Canals (FC) of 54 Major Irrigation Areas coming under the purview of IMD are turned over for FOs as self-managed systems. This division is responsible for guiding and directing FOs to undertake this task in a qualitative manner and also to improve the capacity of FOs to handle such tasks.

2.1 The following Table indicates the contribution by FOs in O & M of irrigation sub system under the guidance facilitation of IMD.

Activity	**Target** **Rs. '000**	**Achievement** **Rs. '000**	**%**
Trimming grass on sides of DCs, FCs and canal roads	70,419	55,536	79
Maintenance of irrigation structures and canals	15,939	21,138	133
Maintenance of farm roads	20,556	19,230	94
Maintenance of drainage canals	9,380	8,576	91
Shrama Dana for jungle clearing, desilting and other works*	58,873	52,258	89
Total	**175,167**	**156,738**	**89**

* 01 Man Day is estimated at Rs. 700/=

A canal with regular maintenance
Rajangana Scheme

A canal with regular maintenance
Minipe Scheme

Shramadana Campaign of removing water Weed Neelabemma Scheme

Shramadana Campaign of removing water weed Nuwarawewa Scheme

2.2 The following programs were conducted to improve the participatory maintenance and water management program of irrigation sub-system.

Activity	Unit	Target	Achievement	%
Preparing plans for regular maintenance programs by FOs	No	213	229	108
Updating of plans on regular maintenance program	No	499	360	72
Demarcating and protection of reservation boundaries	No	1,076	641	60
Increasing O&M fund	No	75,359	60,256	80
Erection of Notice Boards	No	374	268	50
Facilitating and assisting to conduct rituals, beliefs and offerings associated with irrigated agriculture	No	353	286	81

Identification of removing trees in reservation Mahakanadarawa scheme

Demarcating reservation boundaries Ridibendi Ela Scheme

2.3 Popularizing irrigation-related cultural aspects among school children and farming community

Irrigation related socio-cultural festivals such as kiri-ithiraweema (milk-spilling), mutti nemeema (pot up-turning), aluth sahal mangalyaya (new-harvest rice offering festivity) were held at FO and Irrigation scheme levels in order to preserve, promote and popularize them among school children and farming community. These festivals were attended and actively participated by all the ethnic groups and communities within the irrigation schemes and in 2016, around 286 such festivals were held.

Milk spilling *(kiri ithiraweema)* festival
Inginimitiya Scheme

Milk spilling *(kiri ithiraweema)* festival
Mahawilachchiya Scheme

Mutti nemeema (pot up-turning)
Mahawilachchiya Scheme

Offering for gods *(Dewa Daanaya)*
Dewahuwa Scheme

A new harvest offering ritual of grains produced in major irrigation areas during Yala 2016 was conducted at the Temple of Tooth Relic for the first time on the 13th October, 2016, with the leadership and guidance of Minister of Irrigation and Water Resources Management, Hon. Vijith Wijayamuni de Soysa, and organized by IMD, with the participation of IMD-managed FOs and more than 2500 member-farmers. This festival will be conducted as a ritual on regular basis in future. The significance of this festival was that the offerings were made to Pulleyar Kovil, Meera Makkam Church and the St. Paul's Church in Kandy. Another important aspect of this festival is that offerings consisted of all the varieties of grains produced in irrigation schemes, while being participated and represented by all the communities.

2.4 IMD conducted the following awareness and training programs to improve the knowledge and capacity of farmers and FO leaders on participatory maintenance and water management.

Training and awareness program	Target (No. of persons)	Progress (No. of persons)	Achievement %
Regular maintenance	2,085	1,246	48
Water management	1,265	546	43
Reservation protection and maintenance	465	223	48
Legal empowerment	1,015	621	61
Training for FO water masters	280	109	39
Total	**5,110**	**2,745**	**54**

Expected targets could not be achieved in some irrigation schemes owing to the unexpected drought conditions prevailed in end of 2016.

Regular MaintenanceTraninig – Damana scheme

Water Management Training - Damana scheme

2.5 A pilot project has been initiated by the Taranagolla FO of Ridee bendi Ela Irrigation Scheme to cultivate medicinal plants such as *Nika* and *Pavatta* on irrigation canal reservations with the objective of promoting cultivation of indigenous medicinal plants while protecting canal reservations. It is planned to expand this program to the entire Project area.

Cultivating medicinal plants in irrigation reservation - Ridibendi Ela Scheme

Cultivating medicinal plants in irrigation reservation - Ridibendi Ela Scheme

2.6 The following programs were conducted in major irrigation areas to commemorate the World Water day falling on March 21st every year.

Program	**Unit**	**Total**
Awareness for FO leaders	No of persons	566
Awareness for farmers	No of persons	1,213
Awareness for school children	No of persons	3,969
Conducting art/essay/debating competitions among school children	No of persons	430
Conducting *Shrama Dana*	Man days	7,318

Awareness walk in commemoration of World Water Day at Head Office

Awareness walk in commemoration of World Water Day – Muruthawela Scheme

Awareness walk in commemoration of World Water Day –Muruthawela Scheme

Awareness on World Water Day for school children - Batalagoda Scheme

Awareness on World Water Day for school children -Maha Kanadarawa Scheme

2.7 Farmers were guided to undertake land preparation with initial rainfall of the season in 27,652 ha in order to enhance the water productivity. They were guided and facilitated to prepare Irrigation Schedules and distribute water accordingly in 357 DCs and 1146 FCs. Water Management Committee meetings were held weekly to review and monitor water situation in order to improve the water use efficiency especially during 2016 Maha season owing to lack of rainfall.

3 Increasing agricultural production and productivity

3.1 The following Table indicates the agricultural production and productivity of 54 major irrigation areas under integrated and participatory irrigation management approach, coordinated, guided and facilitated by IMD.

Description	**Unit**	**2015/16 Maha**	**2016 Yala**	**2016 Total**
Extent cultivated with paddy	Ha	152,384	126,236	278,620
Extent under Other Field Crops	Ha	1,959	10,288	12,247
Extent under Perennial crops (banana, sugarcane)	Ha	4,236	4,236	4,236
Total extent cultivated	Ha	158,579	140,760	299,339
Cropping Intensity %	%			182
Total paddy production	Mil.tons	0.73	0.57	1.33
Total value of paddy	Mil. Rs.	25,600	22,721	48,321
Total value of OFCs and vegetables	Mil. Rs	519	2,464	2,983
Total value of Perennial crops production	Mil. Rs.			2,275
Total value of paddy, OFCs, vegetables and perennial crops	Mil. Rs.			53,579

Cultivation of 12,247 ha of other food crops on irrigable lands in terms of ensuring food security is worth the mention.

Ground nut cultivation - Ridibendi Ela Scheme

Maize Cultivation – Huruluwewa Scheme

Additionally, 7764 ha of green gram was cultivated on irrigable lands as the 3rd season as a means to ensure food security, increase farm family income, and incorporate organic matter in selected major irrigation schemes. The farmers earned Rs.M. 1164.0 as an extra income from this endeavor.

Third Season Cultivation – Kirindi Oya Scheme

Third Season Cultivation – Kantale Scheme

3.2 IMD coordinated to promote Paddy Seedling Broadcast method (Parachute method) in 527 ha with the aim of reducing use of weedicides and increasing paddy yield. Also, Mechanized Transplanting was conducted in 34 ha. In addition, IMD coordinated and guided application of Organic Fertilizer in 7272 ha of paddy cultivation.

Use of seedling broadcast method - Dambarawa Scheme

Seeding Broadcast method used paddy Field Dambarawa Scheme

Mechanized transplanting of paddy Inginimitiya Scheme

Transplanted paddy field Inginimitiya Scheme

3.3 IMD facilitated and guided to produce 8650 kg of Large Onion bulbs to produce 500 kg. of Large Onion seed at Dewahuwa Scheme as a solution for shortage of onion seed. The value of the seed stock was approximately Rs.M. 7.0.

Transplanting Large Onion seedlings
Dewahuwa Scheme

Large onion crop - Dewahuwa Scheme

3.4 IMD facilitated Forward Sales Contracts (FSC) between farmers and purchasing companies to enable the producers to obtain a reasonable price for their products. Accordingly, 1680 and 530 FSCs were signed for 1365 ha of Soya and 520 ha of Maize respectively in Huruluwewa, Nachchaduwa and Nuwara wewa schemes.

Soya cultivation
Nachchaduwa Scheme

Soya cultivation closer to harvesting stage
Hurulu wewa Scheme

3.5 With the objective of developing the upland homestead and enabling income generation from it, IMD embarked on a program to cultivate 41 acs (16 ha) of Improved Mango variety, namely Tom EJC with 164 farmers in Kirindi oya (Lunugamwehera) Scheme. The plantation is around 3 years of age, and have reached the bearing stage.

3.6 With the intention of encouraging toxin free agriculture, IMD initiated a program for organic fertilizer production with the participation of farmers and FOs and with the technical guidance of Department of Agriculture. The first of these programs was started with 14 farmers at Ethdathgala FO of Weli Oya Scheme. Also, 70 farmers of Pragathi FO of Ridiyagama Scheme had started organic fertilizer production in bulk. During 2016, 1,1000 kgs of organic fertilizer was used for farming from both thses production units.

Training on organic fertilizer production and use was conducted for field officers of IMD, Irrigation Department, Agriculture Department, Agrarian Development Department, and Divineguma Development Department and selected famer organization leaders of Moneragala District. This was conducted as a pilot project and 457 persons were trained.

Manufacturing of compost fertilizer
Ridiyagama Scheme

Manufacturing of compost fertilizer
Weli oya Scheme

Traninig on motivation and leadership for Monaragala District field officers

3.7 IMD coordinated and facilitated cultivation of 175 ac. of rice variety, Bg MA2 in 2016 Yala and 105 ac. in Maha at Inginimitiya scheme as an approach for value-addition of rice. This variety is used for biscuit manufacturing and already forward sell contracts (FSC) were signed to purchase at Rs.38/= per kg. In addition, a program is initiated to sustain this program by implementing a seed paddy production program of this variety in 5 acs.

3.8 IMD facilitated and guided to expand livestock production in Kirindi Oya, Nuwara wewa, Dewahuwa and Rajanganaya major irrigation areas by increasing the milk production and thereby increase the farm family income as follows.

Program	**Unit**	**Total**
Facilitating distribution of dairy cattle	No	34
Facilitating construction of cow sheds	No	33
Facilitating cultivation and expansion of CO3 pasture	No	9

In addition, IMD facilitated bank loans to the worth of Rs.M. 5.4 for purchasing of dairy cows.

3.9 IMD facilitated to distribute 2642 mango plants, 3722 orange plants, 13145 coconut seedlings and 3400 pomegranate plants in order to improve the home gardens.

3.10 IMD facilitated palnting of 245ha of banana, 84 ha of papaw, 30 ha of cashew and 16300 seedlings of pepper in order to improve the income from highlands.

3.11 A field day was conducted in Ridi Bendi Ela scheme with the participation of all relevant stakeholders in order to review the progress for 2016.

3.12 In commemorating the World Environment Day, 1000 bamboo plants were planted on the river banks of Kala Oya under the coordination of Rajangana RPM's office with the objective of promoting river bank conservation. In addition, the following activities were conducted under the National Environment Month and National Tree Planting Programs.

3.12.1 Awareness program for 1250 farmers on the importance of environmental conservation

3.12.2 Implanting 169 containers on the banks to collect used agrochemical bottles and solid waste

3.12.3 Planting 5550 plants of selected species on river banks and reservations

3.12.4 Conducting 17 Srama Dana remove garbage and waste in the irrigation canals and reservations

Trees planting in Abagaswewa Reservation – Kauduluwewa scheme

[

Removing garbage and waste in irrigation canal Kiridioya scheme

Removing garbage and waste in near the Bathalagoda tank –Bathalagoda scheme

Agro chemical Waste collection containers- Ridibendi Ela scheme

Agro chemical Waste collection box - Mee oya scheme


Cultivating bamboo plants at Rajanagana Scheme

3.13 IMD conducted awareness and training programs to improve knowledge and skills of farmers for increasing crop productivity.

	Training and awareness program	Target (No. of persons)	Progress (No. of persons)	Achievement %
1	Exchange of field experiences	1751	2528	92
2	Seedling broadcasting technology	1000	563	56
3	Post-harvest technology	410	209	51
4	Animal husbandry	169	143	85
5	Expansion of OFC cultivation	1800	1762	98
6	Production and use of organic fertilizer	910	483	53
7	On-farm water management	620	402	65
8	Promotion of perennial crops cultivation	3000	3090	101
9	Production of dairy products	450	508	113
10	Other awareness and training	1,540	545	35
	Total	**12650**	**10233**	**81**


Exchange of experiences among Weli Oya farmers and Jaffna farmers at Jaffna

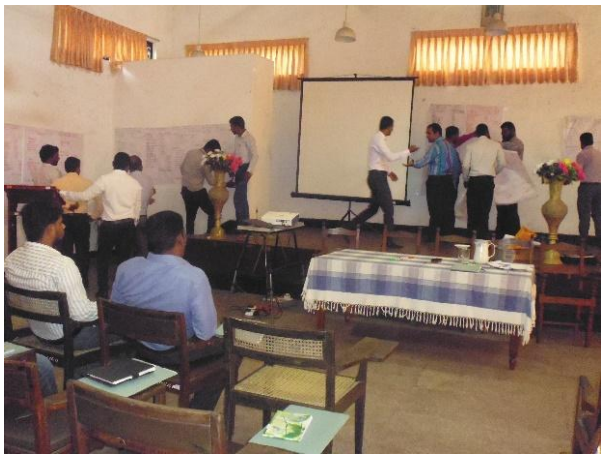
Awareness on Pepper Cultivation at Weli Oya Scheme

4 Capacity building of officers

4.1 The following programs were conducted to improve the capacity of the officers in this Division.

Topic of program	**No. participated**
Induction and leadership training	148
One year post-graduate diploma – Kelaniya University	2
Correct observation of traffic rules and effective servicing as a driver	36
Use of data and information exchange through E-technology	34
Training of trainers	32
Other training	14

The above training on Induction and Leadership was conducted with a specialist Resource Person for all the officers in the field as well as in the Head Office.



Workshop on Training of Trainers at Mahaweli Training Institute, Giradurukotte

Awareness for drivers on road rules
Rathanapitiya Rural Development Training Institute

Awareness on E-technology SLIDA, Colombo

5 Conducting Progress Review meetings

03 Workshop were conducted at National Institute of Plantation Management of Athurugiriya, Sarvodaya Training Center of Trincomalee, and Community Education and Training Institute of Talahena to review the progress of the 2016 Implementation Program and the procedure of expenditure of the budget provisions under Zero Budget Concept for officers.

6 Special programs

6.1 Conducted 02 training programs for 131 youths of Polonnaruwa Dstrict to instill attitudinal changes in order to direct the younger generation to agriculture.

Pulathisi Udana Workshop at Kundasale Training Institute

6.2 IMD facilitated and coordinated the participation of farming community in Social Security Program implemented by Dam Safety Project of Mahaweli and Environment Ministry, in Maha Kanadarawa and Maha Wilachchiya Schemes. A contribution of 67,359 Man days extended in maintenance of DCs and FCs under this program.

Distributory Canal maintained by Sharamadana under social security Program of Dam Safety Project - Maha Wilacchchiya Scheme

Distributory Canal maintained by sharamadana under Social Security Program of Dam Safety Project - Maha Kanadarawa Scheme

6.3 Coordinated with Sri Lanka National Water Partnership to conduct awareness training for 65 farmers on mitigating effects of climate change.

6.4 IMD facilitated to obtain credit for income generation activities for 240 farmers to a maximum of Rs. 200,000 each from Regional Development Banks of North Western and North Central provinces.

Agro product sale outlet Rajanganaya scheme

Reed base product Rajanganaya scheme

7 Arranging solutions for public grievances and complains

Arranging solutions for the public grievances and complains received at Head Office as well as at the RPM offices is as follows.

- No. of public grievances and complains received - 2225
- No. given solutions - 2132
- Percentage given solutions - 95%

c. Water Resources Board

01. Treasury Grant Funded Groundwater Monitoring and Studies

1.1 Long term Groundwater Monitoring of the Coastal Sandy Aquifer extending from Colombo to Negombo (Rs. 0.25Mn)

Detailed hydrogeological studies of the coastal sandy aquifers extending from Colombo to Negombo have been commenced in 2011. The main aim of the study is to establish groundwater monitoring network with dedicated monitoring test boreholes in order to collect temporal data on groundwater quality changes and water table fluctuation. The test boreholes were constructed at most sensitive and vulnerable areas for groundwater deterioration due to over abstraction and industrial and domestic pollution. From 2011 to 2014, all the activities were completed and finally the groundwater monitoring network was established.

After completion of above activities, 78 test wells were selected as the long term monitoring points and started monitoring groundwater quality and water levels at dry and wet periods of the year and 2 transitional periods. This program was scheduled from 2015 and it should be continue for more years.

The progress up to December 2016 of the study are as follows:
Water samples were collected in the dry period and one transitional period. Water levels also measured parallel to sampling program.

Activity	Number of samples			
	1st quarter	2nd quarter	3rd quarter	4th quarter
Water sampling	78	73	73	76
Water quality analysis	78 (Partial)	-	-	82
Water level monitoring	78	73	73	76

Collecting water samples and measuring water levels in the field

1.2 Long term groundwater monitoring and conducting of training programmes as awareness creation about water born health hazards and conducting water clinics. (Rs. O.25Mn)

This study covers the agricultural and CKDu (Chronic Kidney diseases) prevailing areas of Anuradhapura District and purpose of the study is to awareness creation and among the people of the area on groundwater quality problems and to conduct monitoring of groundwater quality to identify long term and temporal quality variations could be occurred due to natural and anthropogenic reasons.

The progress up to December 2016 of the study are as follows:

No.	Activity	No.of items
01	Groundwater Monitoring and Water Sampling	200
02	Chemical analysis of water samples	70
03	Conducting Awareness Programmes	05

1.3 Hydrogeological Study in Limestone Aquifers in Mannar District (4 Mn)

The need for groundwater assessment study arises from the urgent to establish a set up by which groundwater can be rationally used for domestic, industrial and agricultural production in environmentally friendly and sustainable manner. In this regard, appropriate groundwater development, use, management policies and guidelines are necessary. Without detail technical investigations and studies these targets cannot be achieved.

Groundwater resources have utilized in this country from times immemorial for domestic water supply from open dug wells, particularly rural areas where the water table is within a few meters below ground level in all parts of the country.

With the rapid development of industries and increment of rural population demand for clean water have been increased and scientific explorations for groundwater and construction of deep tube wells have been practiced over the last two decades.

At present, Mannar region is rapidly developed due to resettlement activities and the expanding of agricultural area especially in paddy cultivations. It is noted that groundwater development is undertaken by both the state and privet individuals. The recent trend shows increasing rates of groundwater extraction by the privet sector, including individual farmers, for drinking and small scale agricultural activities. At the same time, most of the tube wells and hand pumps were installed in rural areas to fulfill the domestic water requirements. On the other hand distribution of tube wells has not been found in uniform throughout the area due to low population and high salinity areas.

Groundwater table can be depleted as long term result of over extraction of water, by which also badly effects to natural vegetation of the areas. On the other hand, as groundwater is used for agricultural activities cause contamination of groundwater by agro-chemical pollutants which lead to degradation of the water quality, yield reduction to crops and health hazard to people who use the same water sources for their domestic requirements.

Major Activities and Results

Geophysical Investigations

Vertical Electrical Soundings (VES) of the **Wenner** array were conducted in selected points to find out the vertical variation of the subsurface formations of the shallow and deep aquifers. The 15 numbers of vertical electrical sounding have been carried out covering the areas of Murunkan, Uilankulam, Wattakandal, Adampan, Nanaddan, Erawaddan, Wankalei, Thaladi, Silawathura and Paparakadanthan. The 15 designated locations were investigated and selected for test tube well constructions.

Drilling of exploration boreholes

Based on the geophysical investigation and resistivity data interpretation results, 15 test wells were according to the project plan.

About 270 water samples were collected from 96 shallow dug well sites of the shallow groundwater network and 31 constructed tube well sites. The water samples analysis in progress including full chemical analysis with Na^+ and K^+.

Pumping Test

Under this programme, 20 numbers Pumping Test were completed.

1.4 Hydrogeological Study in Vavuniya and Kilinochchi Districts (0.25Mm)

The research was initiated in year 2013 under treasury grant. The project objective is to identify groundwater potential areas and to see the possibility of developing groundwater sources for future drinking water and small scale irrigated agricultural projects.

A specific objective of the study is to identify the aquifer parameters; it is extensions and demarcates the groundwater potential areas within the Vavuniya and Kilinochchi districts. It is expected to identify the groundwater sources for small scale irrigated agriculture and for drinking purposes of the people in both districts with the intention of up grading the living standards of the people.

From January 2016 to December 2016 following activities were completed under this project.

Table 01: Activities carried out during the year 2016 under the Vavuniya-Kilinochchi project.

No.	Activity/ Description	No. of items
01	Water Sampling and well monitoring	200
02	Chemical Analysis of water samples	100

Measuring of Water level of a dug well

Chemical Analysis of water samples

1.5 Development of Groundwater Monitoring Network for Jaffna Peninsula (5 Mn)

Jaffna limestone aquifers are considered as one of the most important aquifers in the country as total water supply of Jaffna Peninsula provide by groundwater sources. Due to intensive agriculture and other anthropogenic activities, the Jaffna limestone aquifers are also vulnerable to easy contamination. Therefore, groundwater monitoring programs in Jaffna are conducting by Water Resources Board aiming to identifying groundwater level fluctuation, water quality changes, pollution levels, direct and indirect pollution sources and to check groundwater recharge possibilities within the Peninsula.

The Physical progress of this programme is given in table

No.	Activity	Progress
01	Carry out groundwater investigations	30
02	Construction of test bore holes	28
03	Conducting of pumping tests	30
04	Water sampling and well monitoring	568
05	Well levelling	30
06	Chemical analysis	300
07	Data analysis, interpretation and reporting	In progress

Well monitoring and collection of water samples

1.6 The Study on the direct and Indirect Impacts of the Climate Changes on the Coastal Aquifer System of Sri Lanka (2Mn)

- **Western Coastal Groundwater Aquifer**

To achieve the project objectives of this project following activities have been carried out during the year 2016.

- **Water sampling and well monitoring - 200 Nos**

To identification of salinity level changes in coastal aquifer system of Sri Lanka through a proper groundwater monitoring network and to determination of the fluctuation of fresh water groundwater interface, we were selected 50 nos. of shallow wells in the western coastal zone which exist from Colombo to Weligama coastal strip (Figure 03). We have measured the water level and collected water sample with respect to monsoon seasons. At the end of August 2016, we have completed two monitoring events which fall for the Northeast monsoon season (27-01-2016 to 02-02-2016) and First inter monsoon period (28-04-2015 to 03-05-2016).During this monitoring process we measured groundwater level of the shallow wells and collected water samples per event (total 200 nos. of water sample). Collected water sample for the northeast monsoon period were analyzed for 17 physical and chemical parameters and water samples of 1st inter monsoon period were spatially analyzed.

- **Carry out hydrogeological surveys -10 nos**

10 Numbers of hydrogeological surveys has been completed along the western coastal strip.

- **Construction of test bore wells and pumping tests – 10 nos.**

10 numbers of tests bore wells were drilled and detail pumping tests were completed for the constructed wells.

Water level measuring of shallow tube wells in Koggala BOI zone

Water sampling from shallow tube well in Koggala air-force camp

Hydrogeological survey at Saddarmakara viddiyathan piriwena, Panadura

Test well drilling at Police station, Payagala

Trincomalee District

The project objective is to identify, the water issues related to the climate change. The specific objectives of the study are determination changes of the rainfall pattern of the coastal area, To identify salinity level changes in coastal aquifer system of Sri Lanka through a proper Groundwater monitoring network, examine potential for introducing regulatory mechanism as well as using other instruments for optimum use of Groundwater, develop comprehensive data base on Groundwater and identify locations suitable for artificial recharge to groundwater

From January 2016 to December 2016 following activities were completed under this project.

.No.	Activity/ Description	No. of items
01	Water Sampling and well monitoring	100
02	Chemical Analysis of water samples	50

1.7 Identification of suitable areas for groundwater recharge in Sri Lanka (Phase 1 – Puttalam District- 0.25Mn)

The project objective is to identify the aquifer parameters, it's extensions and the suitability of recharge groundwater system in Puttalam area and identification of suitable areas for groundwater recharge and increase the groundwater potential capacities of the aquifer systems of Puttalam area. From year 2014 to 2015 following activities were completed and finally the groundwater monitoring network was established.

Activities completed in year 2014 and 2015.

- Carryout hydrogeological investigations.
- Test bore hole drilling
- Water sample analysis.
- Pump testing.

Following field activities were carried out in the year 2016

No.	Activity/ Description	No. of items
01	Water Sampling and well monitoring	200
02	Chemical Analysis of water samples	100

Measuring EC as in-situ test in the field areas.

1.8 Water Quality Study in Chronic Kidney disease prevailing areas (5 Mn)

Kurunegala District

It is an ongoing project at the Provincial office, Puttalam. This study was started in 2014 and was continued in Polpithigama and Giribawa DS divisions in 2015. Also, under this study Galgamuwa and Mahawapradeshiyasabha (including Galgamuwa, Ehetuwewa. Ambanpola and Mahawa DS divisions) areas, where are another two areas where CKD patients are frequently reported in Kurunegala district, have been selected for water quality studies in 2016.

Polonnaruwa, Trincomalee and Moneragala Districts

The project was started in 2014 covering whole Polonnaruwa, Moneragala & Trincomalee districts. Collection of data regarding the patients and random sampling in Polonnaruwa district have been completed in the consequent years of 2014 & 2015 and following activities have been completed during the year 2016.

No.	Activity	Progress
01	Carry out groundwater investigations	20
02	Construction of test bore holes	20
03	Conducting of pumping tests	30
04	Water sampling and well monitoring	370
05	Installation of Hand pumps	08
06	Chemical analysis	150
07	Conducting awareness program	09

1.9 Groundwater Assessment of Kirindi Oya Basin (2Mn)

This study was started in 2015 to assess the groundwater in the basin qualitatively and quantitatively.

The achievements under this target so far are as follows:

No.	Activity	Progress
01	Carry out groundwater investigations	10
02	Construction of test bore holes	10
03	Conducting of pumping tests	02
05	Water sampling	175
06	Chemical analysis	58
07	Data analysis, interpretation and reporting	In progress

1.10 Groundwater Assessment of Kelani Ganga Basin (2Mn)

This study covers the upper part of Kelani river basin and steps have been taken to collect important groundwater data qualitatively and quantitatively. Those data will be utilized to development of Kelani river basin in future. From January 2016 to December 2016, following activities were completed under the project work.

The achievements under this target so far are as follow:

No.	Activity	Progress
01	Carry out groundwater investigations	10
02	Construction of test bore holes	10
03	Conducting of pumping tests	08
04	Water sampling	100
05	Chemical analysis	50
06	Data analysis, interpretation and reporting	In progress

1.11 Development of groundwater resources in the districts of dry zone area by construction of deep wells, pumps and water filters installation for emergency use. (5Mn)

The main objective of this project is to provide safe and clean drinking water to the rural community who are living in most scare and drought stricken areas in Sri Lanka. During the period from January, 2016 to July 2016 following activities were completed in Mulative and Moneragala districts.

No.	Activity	Progress
01	Carry out groundwater investigations	20
02	Construction of test bore holes	17
03	Conducting of pumping tests	01
04	Chemical analysis	10

1.12. Rehabilitation of Hand pumps in Dry zone area (5Mn)

This program was carried out to rehabilitate old hand pump installed in Badulla, Moneragala and Hambantota Distrcts. Following activities were completed during the period from January 2016 to December 2016.

No.	Activity	Progress
01	Cleaning of old hand pumps	85
02	Repairing of old hand pumps	100

02. Ministry Funds

2.1 Hydrogeological study for the assessment of groundwater contamination at Chunnakam, Jaffna

The project objective of this study is to identify the source of pollution and assessment of present disperse levels of contaminant in groundwater which facilitates to forecast the possibilities of future spreading and vulnerability levels. A comprehensive hydrogeological study was started in 2015 to assess the aquifer properties and to identify the hydrogeological flow mechanism within this Chunnakam aquifer.

Following activities were completed during the period from January to July 2016 under this project

No.	Activity	Progress
01	Carry out groundwater investigations 1d Resistivity 2D resistivity	 35 10
02	Construction of test bore holes	34
04	Levelling of monitoring well points	60
05	Water sampling & chemical analysis	200
06	Pumping tests	15
07	Data analysis, interpretation and reporting	Report In progress

2.2 Groundwater development programme to enhance Gonaganara rural water supply project in Moneragala District.

The main objective of this project is to provide safe and clean drinking water for people Living in Gonaganara area in Moneragala district and following activities have been Completed during the year 2016.

Item	Description	Progress
01	Design and construction of water purification and filtering system at the existing intakes Gonagan ara stream	100%
02	Conducting 24 hrs pumping test and water quality testing of deep tube well at Gonagan ara that selected for new water source.	100%
03	Establish 7m height water tower and 5000 liter capacity water tank	100%
04	Construction of Pump house	100%
05	Installation of submersible pump, filter and other accessories.	100%

2.3 Well cleaning program in Kelani river flood affected areas from Awissawella to Colombo.

The well cleaning programme from Hanwella to Kolonnawa was commenced from 25th May to 16th June 2016 due to flood effect of Kelani Ganga as advised by the Hon. Minister of Irrigation and Water Resources Management and the Ministry Secretary. The summery of well cleaning programme is given as follows;

D.S. Division	Villages	Dug well Cleaning	Tube Well Cleaning	House Cleaning	Culvert Cleaning
Hanwella	PahalaHanwella, Madagoda, Pahathgama, IhalaHanwella, Kosgama, Wanahagoda, Kananpalla, Wewalwaththa, Niripola, Iriyagolla, SeewaliWatta Bolawaththa	**446**	**17**	**01**	**00**
Kaduwela	Ranala,Nawagamuwa- north & south, Waliwita, Ihalabomeriya	**120**	**02**	**04**	**02**
Kolonnawa	Himbutuyana, Gothatuwa, Malgama, Mulleriyawa, Angoda, Kalanimulla, Kotikawatta, Kotuwila, Wallampitiya	**273**	**01**	**02**	**04**
Total		**839**	**20**	**07**	**06**




2.4

Well cleaning program of effected areas under Salawa incidence

Due to Blasting of Salawa Army camp, the well cleaning programmme was started on 09.06.2016 as guidance of Hon. Minister of Irrigation and Water Resources Management and the advice of the Secretary, Ministry of Irrigation and Water Resources Management.Addition to thatWater samples were collected &analyzed by using Mobile Laboratory as three parameters of pH, Electrical Conductivity and Sulfate (SO_4).

The wells were selected with the help of Grama Niladari, PHI offices and Army officers in the affected area. About 950 dug wells were cleaned and 350 water samples were collected & analyzed by considering the impact areas.


2.5. Construction of Production Tube Wells in Dry zone Districts.

Considering the prevailing drought condition in 2016 Ministry of Irrigation and Water Resources Management has allocated Rs. 10 Mn to conduct 05 Nos of minor water supply sachems at most affective areas in following districts.

01. Monaragala
02. Polonnaruwa
03. Mannar

The programme was commenced on July 2016 and all the project activities were successfully completed. Minor Water supply sachems established under this programme as follows.

S. No	DS Division	Location	Progress
01	Thanamalwila	Angunukolapelassa	90%
02	Wellawaya	Thelulla	90%
03	Siyambalanduwa	Buddhama	95%
04	Mannar	Uylankulama	95%
05	Lankapura	Gamunupura	80%

The major activities of above schemes such as tube well drilling, pumping test, water quality testing, construction of water tower and tank, installation of pumps are already completed and it is expected to opens of project within 1st quarter of 2017.

03. Expansion of established Groundwater Monitoring Network in selected 07 Pilot areas of Sri Lanka (DSWRPP-AF)

The spatio-temporal assessment of hydrogeological condition and water chemistry of the groundwater resources of the country has not been addressed by a systematic approach due to various reasons during the past few decades. However the study on present status, threats, impact on these resources and subsequent establishment of a well representative surveillance groundwater monitoring network are of vital importance in long term groundwater resources management and in implementation of remedies. In this context, 07 Pilot areas covering 37 Divisional Secretariats of seven districts in seven provinces identified by WRB and activities related to the establishment of groundwater monitoring program was initiated in 2010 under the Ministry of Irrigation and Water Resources Management. Water Resources Board (WRB) was entrusted to carry out this project as a sub-component of component-2 of the Dam Safety and Water Resources Planning project (DSWRPP).

The identified pilot areas are selective DSD's of Jaffna, A'pura, Mathale, Puttalam, Gampaha and Ampara Districts considering certain issues recorded and reported with respect to water quality and Quantity. The main noted issues were: excess application of fertilizer and pesticide, over abstraction of water resulting sea water intrusion, poor sanitary facilities and high concentration of Fluoride. Further, agro wells are highly pumped and also no proper criteria of construction and management. All the above causes were taken into consideration during the process of establishing the network. Awareness programs, three national level workshops, school level programs were conducted to gather different opinion to fulfill the objectives.

Specific approach was formulated to achieve outputs based on the issues identified and objectives of each pilot area. The study was focused more towards water chemistry in the pilot areas except Mathale pilot area which addresses on the focal problem of groundwater depletion due to over abstractions. The main work components of these assessments were i.) aware the community and stake holders on present situation, ii.) identify groundwater flow regime and iii.) Determine the spatio-temporal water quality distribution through detail water quality analysis from the shallower & deeper aquifer systems during dry period as well as wet period. Awareness programs, Preliminary field investigations, base map preparations, water sampling, groundwater level monitoring, in-situ water quality testing, 1-D & 2-D Geophysical surveys, test bore hole constructions, pumping tests, water quality analysis (physical, chemical, heavy metal, bacteriological and pesticides), DGPS levelling of monitoring points, result analysis and interpretation/ processing work are some of the principal activities included in the entire methodology. The establishment of monitoring network was finalized for each respective pilot areas based on the output of these activities.

The entire Jaffna peninsula is underlained by Miocene limestone formations of karstic nature. The study reveals the high NO_3 (12-30 ppm) content in Kondavil lateritic formation where the major water supply scheme is existed. Elevated levels of NO_3 could also be detected at certain areas of the region. This is an alarming threat since the hazardous waters are distributed to the entire Jaffna and Nallur areas. High EC and high Cl content in groundwater are associated at the margins of lagoonal boundaries which characteristically reflect the hydrogeological set up of lacustrine deposits. The high mineral enrichment is encountered in these areas may due to lagoon deposits or possibly a threat indicating of saline water intrusion especially along the Karaveddi-Chavakachcheri DSD boundary.

The water chemistry in the selected DSD's of Mathale district (Dambula, Naula, Galewela, Laggala-Pallegama and Pallepola) are in desirable levels except few locations of high EC, total hardness, Iron, Fluoride. Domestic and agricultural uses are the main groundwater abstractions identified in the area. The groundwater flows dominantly along NW, SE and SW direction which controlled by the geomorphology and structure of the region. The assessment of groundwater depletion due to over abstraction is in progress at selected thirty three locations of the monitoring network by spatiotemporal groundwater level monitoring.
The several localized zones of high phosphate, fluoride, nitrate and heavy metals and low pH were identified by the groundwater quality analysis in the Gampaha Pilot area. The impact on groundwater due to industrialization is not yet emerged as an alarming issue; however surveillance monitoring is required to identify any future threats. The sea water intrusion at the deeper levels was identified at the coastal stretch of Pamunugama to Negombo by exploratory borehole drilling.

Ampara is one of highest agricultural areas in the country and therefore extensive agriculture has a major impact on groundwater resources. The study reveals contaminated groundwater sources at high agricultural areas of Sammanthurai, Karathivu, Addalachchena, Ninthavur, Irrakkamam and Navithanveli DSD's in respect to Fl, PO4, Cd, Mn pollution and also give some indication of the presence of As. This indicated the influence on groundwater due to heavy agricultural activities in the region with the extensive application of pesticides and weedicides. In urbanized areas, point sources of high NO3 contamination were identified due to poor sanitation and partly attributed to high permeable formations encountered in the area. The possible seawater intrusion is envisaged by high salinity along the coastal stretch of Ninthavur and Navithanveli. However, high salinity zones at Malwatta and Deegavapiya may result due to inherited formation characteristics.

The pilot area comprised off Puttalam, Vanathavillu and Kalpitiya DSD's have identified a threat due to excessive application of fertilizers. This was confirmed by the high levels of NO_3 and PO_4 in groundwater of Kaltpitiya area. In most of groundwater sources of the Vanathavillu area were encountered with high PO_4

contamination which exceeded the maximum permissible level of drinking water standards. The occasional isolated zones with high EC, TH, NO_3 & SO_4 were also identified in the Vanathavillu area. The groundwater quality in Puttalam, Vanathavillu and Kalpitiya areas are shown predominantly of Na-K-Cl type with mixing towards Ca-Mg-HCO_3 type. Geophysical exploration cum test borehole drilling reveals the high complexity of hydrogeology and hydro-geochemistry of the limestone formations in the region.

The High Fluoride content in ground water is identified in many of DSD's of Anuradhapura District and it highly varies with spatially as well as temporally within the region. However, the areas of Asirikgama,Kukulawa, Andaragollawa, Mahakumbukwewa, Kahatagollwa, Moraoya and Manaketiya are identified as hazardous zones with high fluoride enrichment in groundwater.

High Total Alkalinity in ground water is also identified in certain localized zones of Alayapathuwa, Gambirigaswewa, Parasangaswewa, Sangilikanadarawa ,Pulleliya, Thammanwa, Pihimbiyagollawa areas etc. The high Nitrate and Phosphate levels were identified in Asirikgama and Habagama Areas respectively. The wastes disposal and gravel mining at potential recharge zones of quartzite ridges should be properly managed and selected monitoring points at strategic points on the surveillance monitoring approach to identify any emerging threats.
The Badulla Pilot area was selected based on the importance of potential recharge zone for the most of the river basins in the country. Test boreholes (cum hand pump tube wells) provides the spatial water chemistry in the region and analysis results indicated there is no major threat in context to groundwater quality.

The activities of extended DSD's of initially selected pilot areas were started in DSWRPP phase-II and the establishment of new monitoring locations on these extended areas are in operation as final phase of the project. The following summary of all the activities performed in each pilot areas studied under the component of DSWRPP in the extended areas in Phase-II are as follows. The progress of the activities in all of the pilot areas are stated in the table included at the end of this section.

Kalpitiya area for groundwater level and quality monitoring by automated system

It was identified during phase-I of DSWRPP2 that Groundwater aquifers have contaminated due to extensive usage of agrochemicals for farming fields Therefore, it is supposed to establish automated monitoring system for the area to collect real-time data from well fields, which facilitate to monitor closely the impact relations on water quality and quantity with the external pressures in the area.

Main identified issues in the Peninsular are,

- Nitrate contamination in groundwater due to over application of fertilizer.

- Hardness or Electrical Conductivity increasing in the dry season in some high agricultural areas.

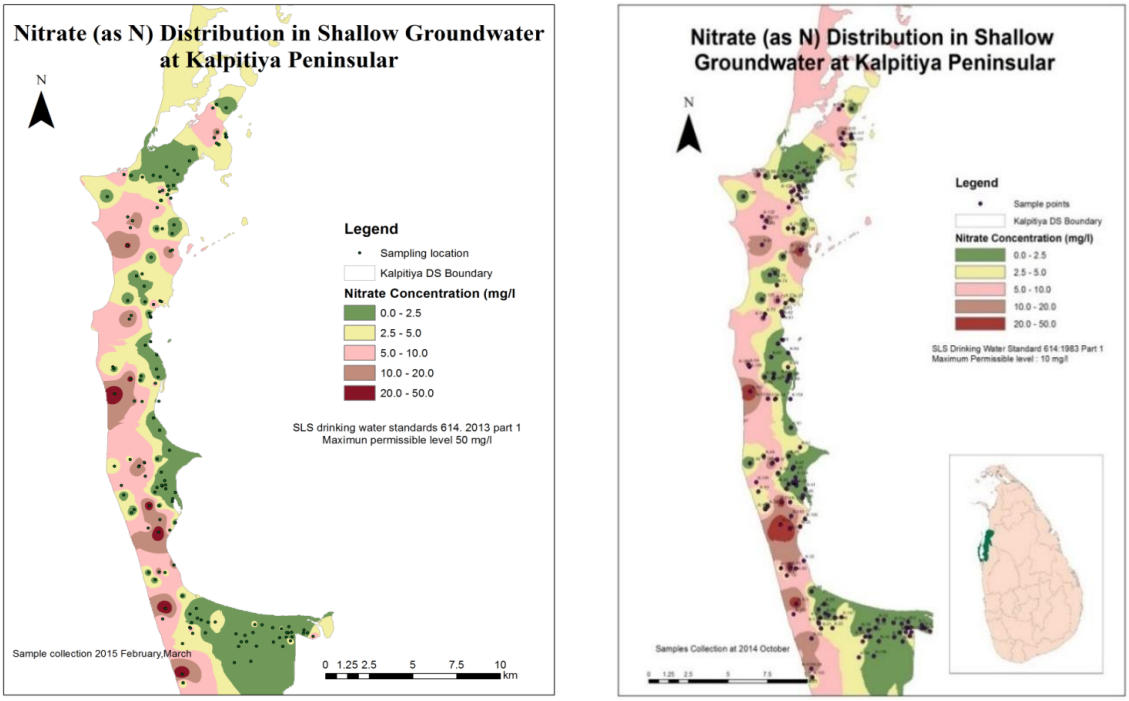


Figure: Nitrate distribution map in pre-monsoon (October 2014) & post-monsoon (March 2015)

Prior to installing data logger, it were prepared two Nitrate distribution maps for wet and dry periods for the entire peninsular with using more sampling points (154 sample locations were obtained) due to complex hydrogeological settings of the area.

Based on the Nitrate distribution pattern and following factors, places where data loggers are to be installed, were selected.

- High Nitrate contaminated areas in groundwater (places of exceeding 10mg/ of Nitrate-N)
- Areas that are in risk level due to Nitrate contamination (Places of having Nitrate levels between 5-10 mg/)
- Places where use carbonic fertilizer for the agriculture practices for their farming field.
- Some good quality groundwater available places which can be taken as reference points.

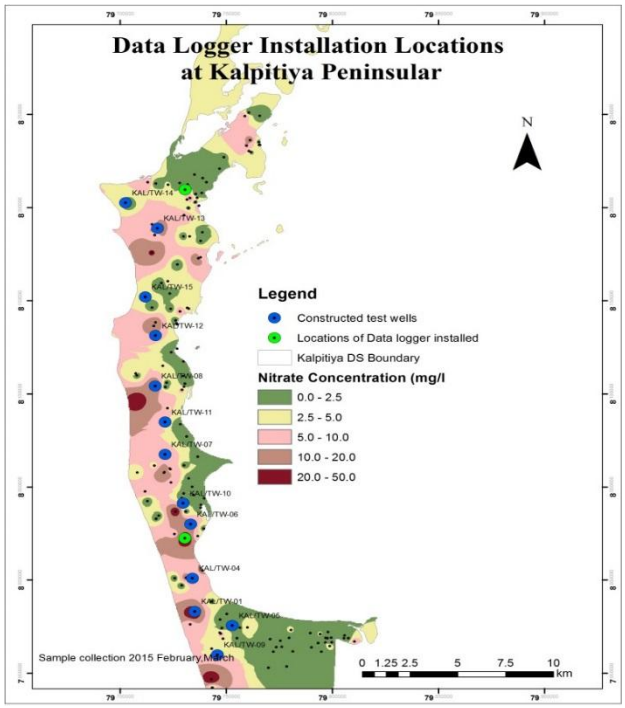
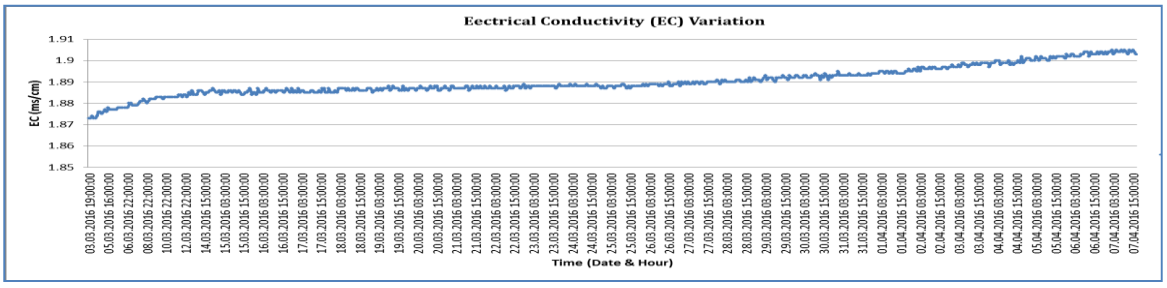
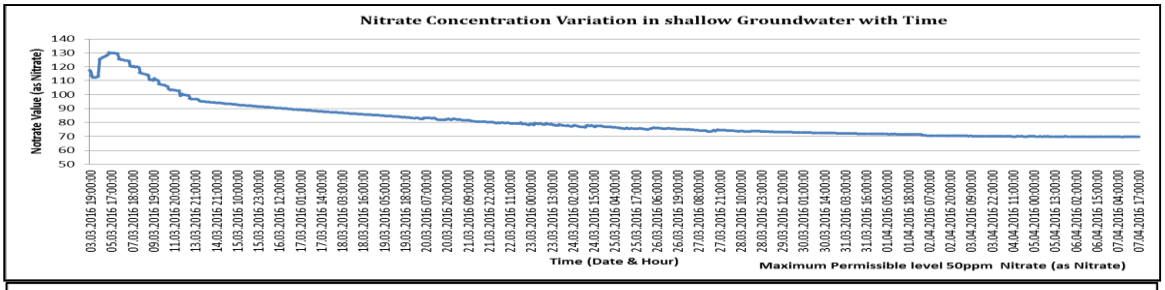
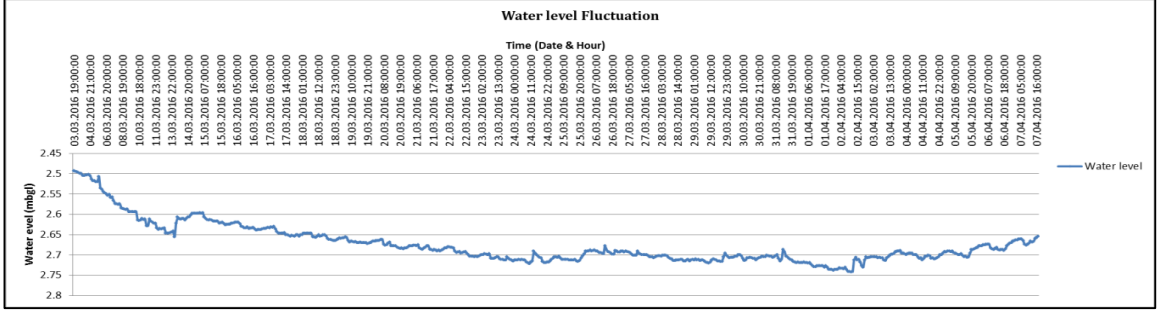


Figure : Map of the loggers installed at Kalpitiya area

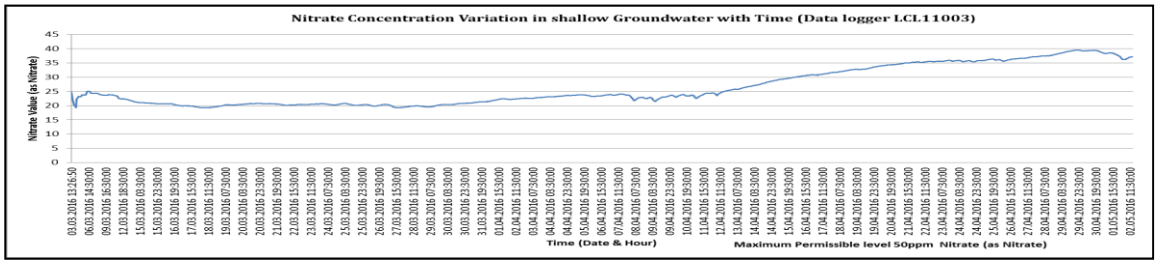
Following graphs shows the variation of Nitrate, Electrical Conductivity, Total Dissolved Solids and Water Level with time. These data obtained from a data logger that was installed at high Nitrate contaminated area in Mampuri area.







Mampuri Area



Kandakatiya

Field observations near the data logger are as follow.

- Nearest lands are not having agricultural activities during last month (From February end to April-3rd week)
- Groundwater abstraction is low with respect to other seasons by means, not pumping for the agriculture activities.

  Therefore, Nitrate levels gradually become decreasing and then it shows almost constant value. However, initially it indicates about 130ppm Nitrate-NO3 and it has decreased up to 70ppm Nitrate-NO3. It may be occurred due to,
  - Stop the agriculture during that time
  - Due to decrease the level pumping water in the area, groundwater movements can become over. Therefore, dissolving Nitrate component can be lower in groundwater.
  - Due to less groundwater movement, dissolved Nitrate contaminant may be concentrate in deeper level of the aquifer.
- Not having considerable rainfall for the area.

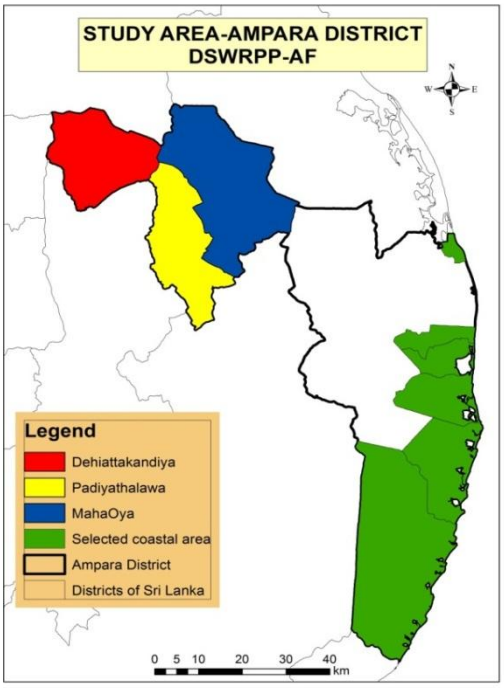
  This also may be affected for show lowering Nitrate concentration in Groundwater.

  Similarly, Electrical Conductivity (EC) value becomes high with time. Due to lack of rainfall and high evaporation may be caused for the increased of EC Values.

Ampara Pilot Area

Under DSWRP-Additional Financing Project, activities of Ampara Pilot Area directed to the coastal belt of the District to identify sea water intrusion and three new areas to address CKD issue and groundwater chemistry. In this context, there were 06 number of Divisional Secretariats selected to study seawater intrusion and three number of DSDs were selected to study CKD issue in this region.

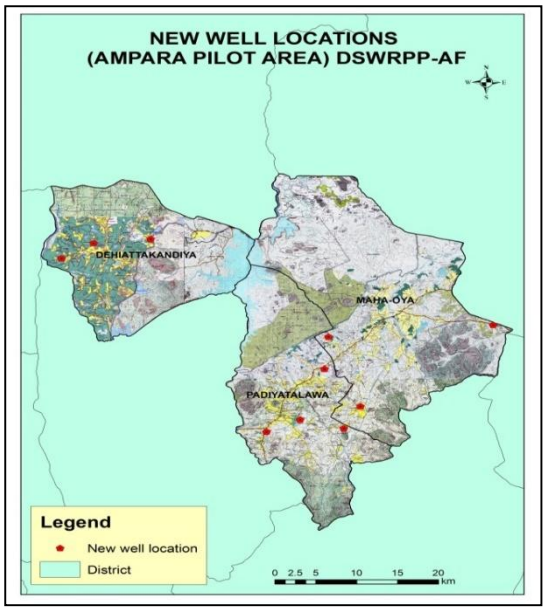
Initially there was conducted main awareness program to address the scope of the project activities to government officers in higher management in year 2015. After that, there was three number of mini-awareness programs were conducted to the Dehiattakandiya, Maha oya and Padiyathalawa DS Divisions to aware the scheduled special activities for the particular areas to address CKD issue.



Following map is showing the extended areas of Ampara pilot area under study of DSWRPP-AF.

In this regards, initially it was collect the basic details of identified CKD patients in the area with support of Grama Niladharis in DSDs. Basically, people who living in these areas, were utilized shallow groundwater from constructed dug wells in own land premise for drinking and other day to day activities. Still these areas under developing status and there were not supply basic needs such as good quality water, infrastructures, job facilities, etc. Except these, education levels of the community are very poor and based on that, they don't have potentiality to manage their basic conditions by exist sources.

After get information of groundwater uses and their habitats, geophysical investigations were done for the construction of new deep wells to address deep seated water quality and quantity. Annexure I will discuss of the details of new well locations and figure 2 is illustrating the new well locations in local map below.



Meantime, 2D geophysical surveys were conducted in coastal belt of the District on month of February to address the seawater intrusion and demarcate seawater-fresh water interface. In this regards, it was conducted 08 numbers of 2D surveys at initial stage and following map indicate the locations of survey lines which conducted in the area(Please refer annexure I).

Badulla Pilot Area

The main objective of the study is Water Quality Assessment to establish the Ground water quality monitoring network in Badulla district. The sampling was performed on these selected points for the chemical analysis work to obtain the water chemistry spatially as well as temporally

Different types of water bodies such as tube wells, dug wells, streams, tanks, and irrigation channels were identified and information on those water bodies such as the technical data of wells, rock type, morphology and soil type at each location and the pollutants were collected during field survey in Badulla districts. High values of fluorideare identified in certain urbanized areas such as Badullatown and Ridimaliyadda

The **F** is the one of major issue identified in the pilot area from the analysis results. Most of the area of monitoring locations indicates high**F** in groundwater. The Phosphate (PO4) values of deep groundwater near to the permissible level (2mg/l) at the locations of Mahiyanganaya, Ridimaliyadda, Kandakatiya and Migahakiwla.

Mahiyanganaya, Ridimaliyadda, Kandakatiya and Migahakiwlaareabasically dominated by paddy lands and farmers used various pesticides and weedicides for their cultivations. These pesticides may have a strong impact on the increase of PO_4 in groundwater. PO_4 directly impact to human health such as Urolithasis (Urine stones), skeletal etc.

Conclusion

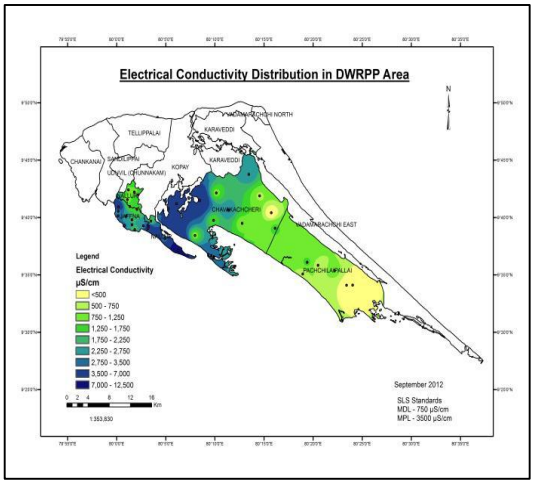
According to the results of water samples, deep aquifer groundwater is affected by F, especially in Badulla and Welimada areas.

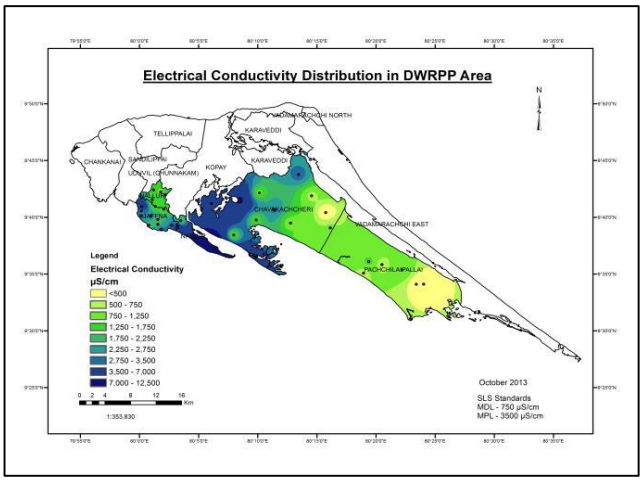
PO4 values are close to the permissible level in the study area. It is obvious that the groundwater is being contaminated in the area due to the impact of excessive applications of fertilizers. Based on the information collected during the study and the input from the health authorities, a remarkable number of CKD patients have also been identified in these areas. So a program has been initiated to extend its project activities to extend to 4 DS divisions- Mahiyanganaya, Ridimaliyadda, Kandakatiya and Meegahakiwla- to identify relationship between groundwater chemistry and CKDu.

Jaffna Pilot Area

The Jaffna peninsula is one of the pilot area which is geologically underlained by Miocene limestone formations of karstic nature. The study reveals the high NO_3 (12 to 30 ppm range) content in groundwater of Kondavil lateritic formation where the major water supply scheme is existed.

Elevated levels of NO_3 could also be detected at the areas of Kopai, Thirunalveli, Nallur, Kaithadi in the region.This is an alarming threat and continuous monitoring and mitigatory measures are required since these hazardous zones may be rapidly spread out to the entire Jaffna and Nallur areas as well due to karstic nature of the limestone. The high mineral enrichment is encountered in the areas towards the lagoonal boundaries possibly a threat indicating of saline water intrusion especially along the Karaveddi-Chavakachcheri DSD boundary.



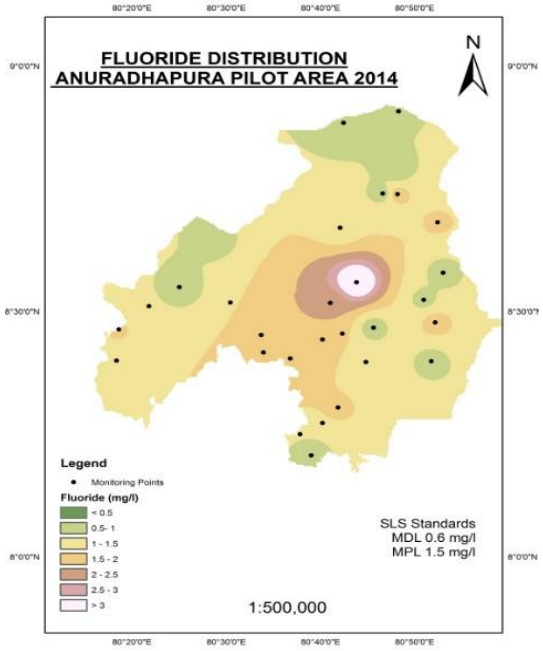


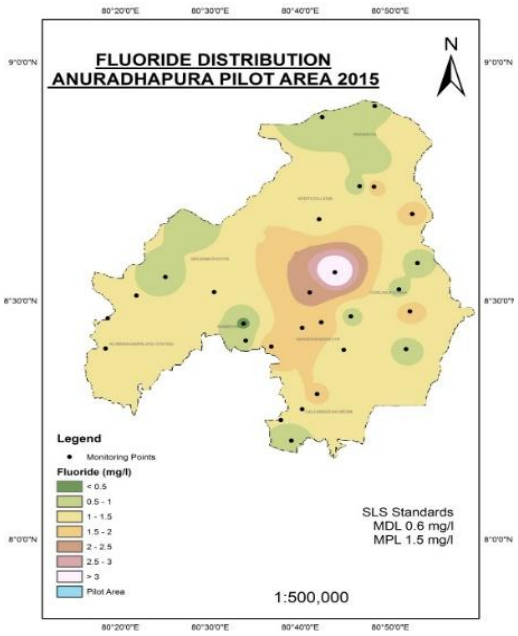
Initial water quality assessment has performed and finalized the long term monitoring points. Geophysics to be carried out to identify the seawater intrusion surveillance monitoring line with test boreholes along the interface line.

Anuradhapura Pilot Area

Fluoride Distribution in Anuradhapura District:

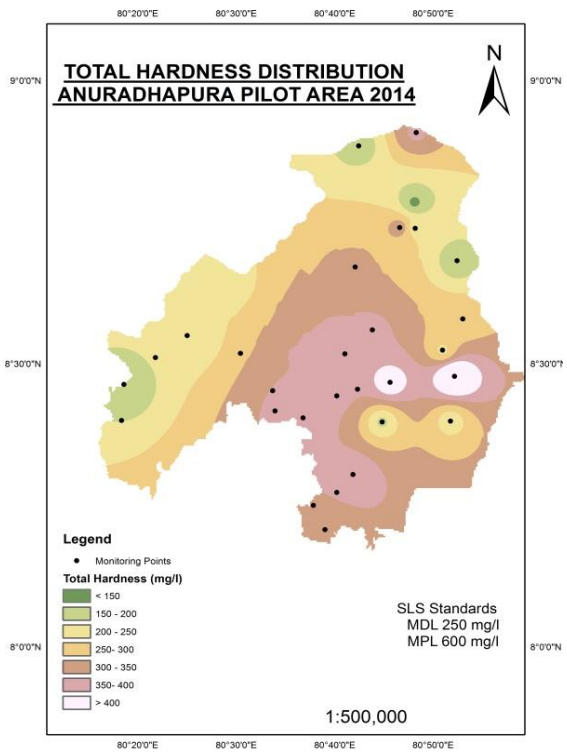
Being the most critical issue in Anuradhapura district, Fluoride distribution shows the same variation with a slight decrement in concentrations which is much more visible in areas around Medawachchiya. Further in the areas where the concentrations are high the pattern remains the same.

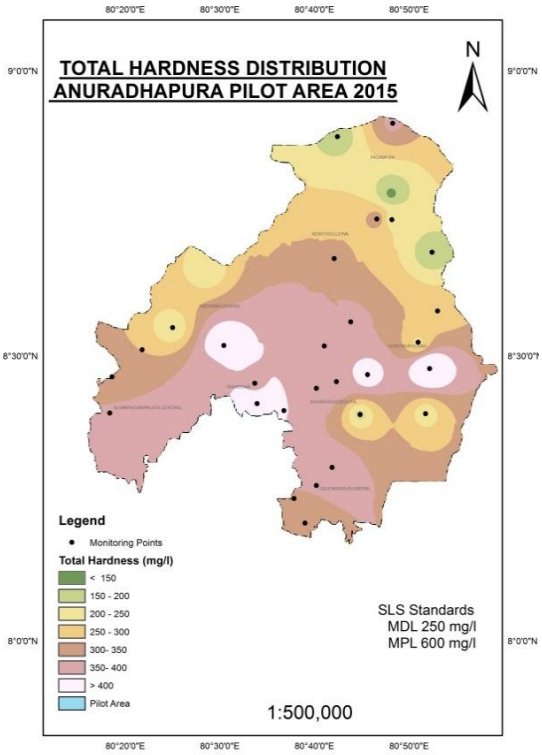




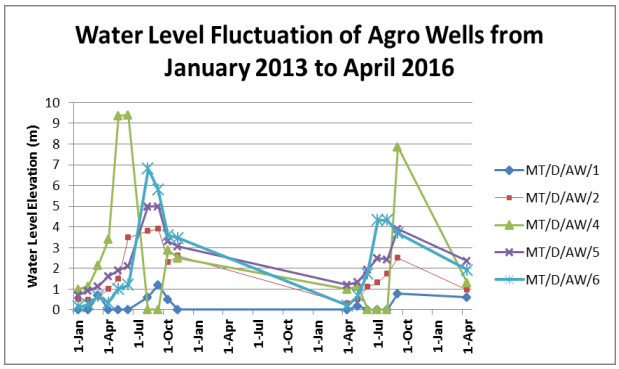
Total Hardness Distribution in Anuradhapura District

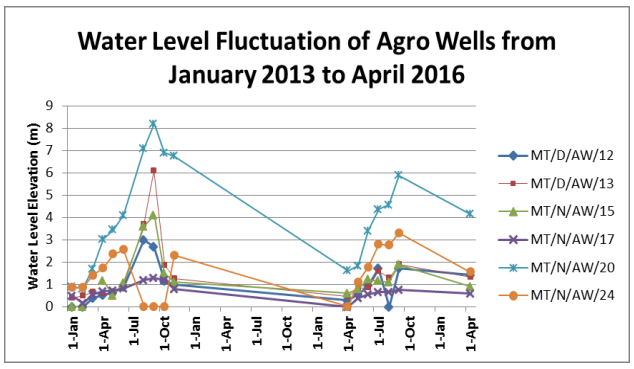
Hardness distribution which is another dangerous issue in Anuradhapura, shows a slight increment in concentrations which is much more visible in areas around Medawachchiya. Further in the areas where the concentrations are high the pattern remains the same.

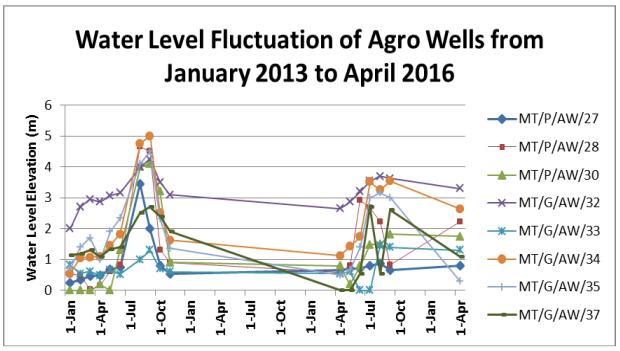


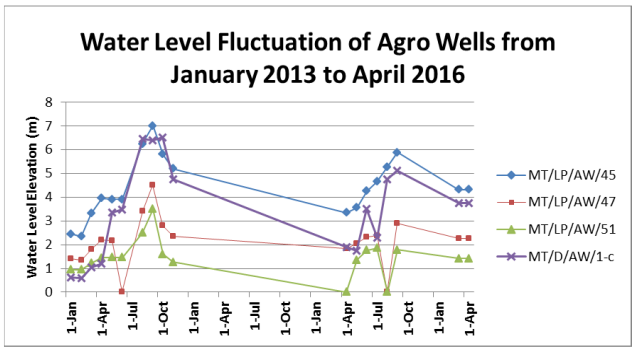


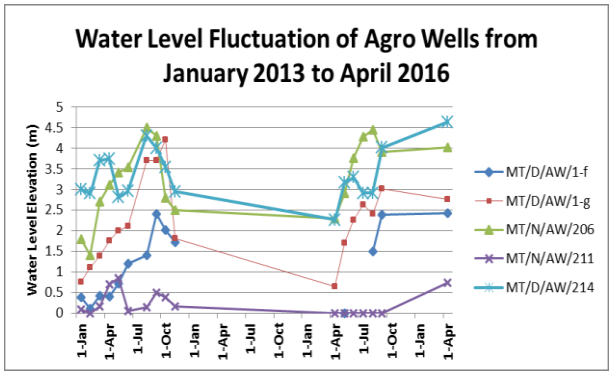
Mathale Pilot Area

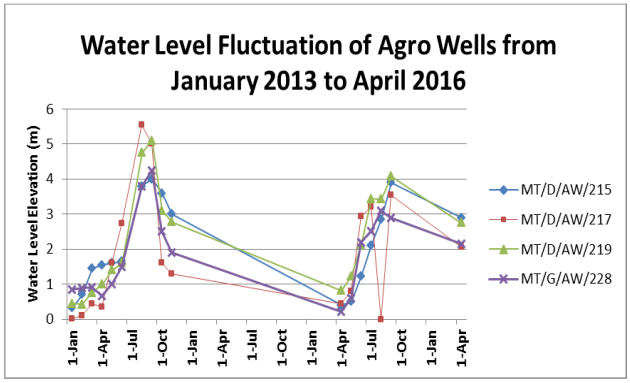


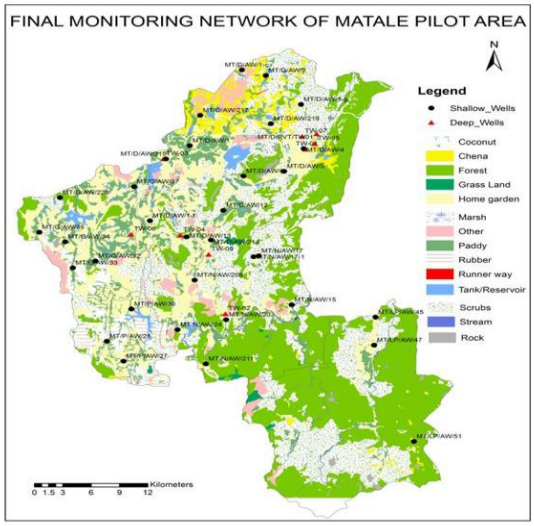












Gampaha Pilot Area

Objectives

- Industrial pollution
- Sea water intrusion

Outcomes

1. Low pH values were identified.

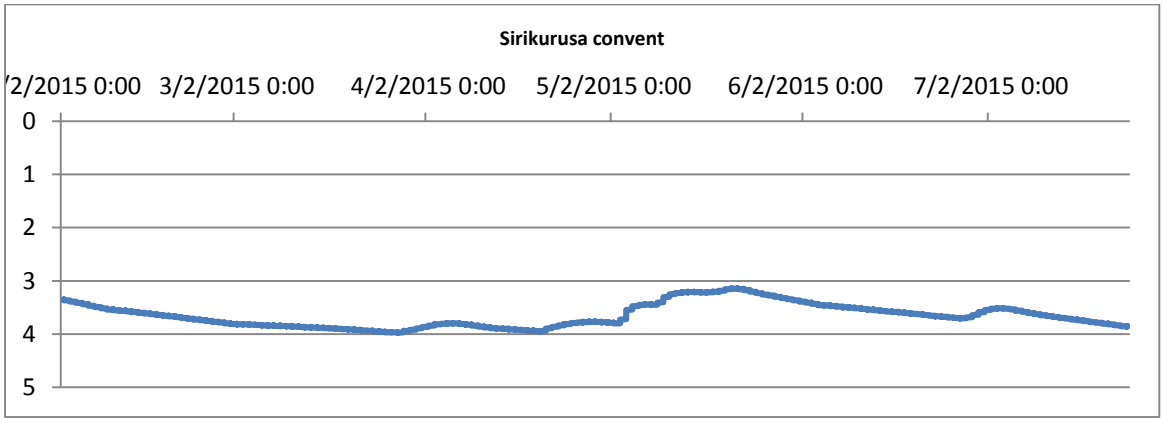
- No specific distribution pattern
- Low pH water results the corrosion of pipes and no direct health problems

2. High NO3 levels in some specific locations

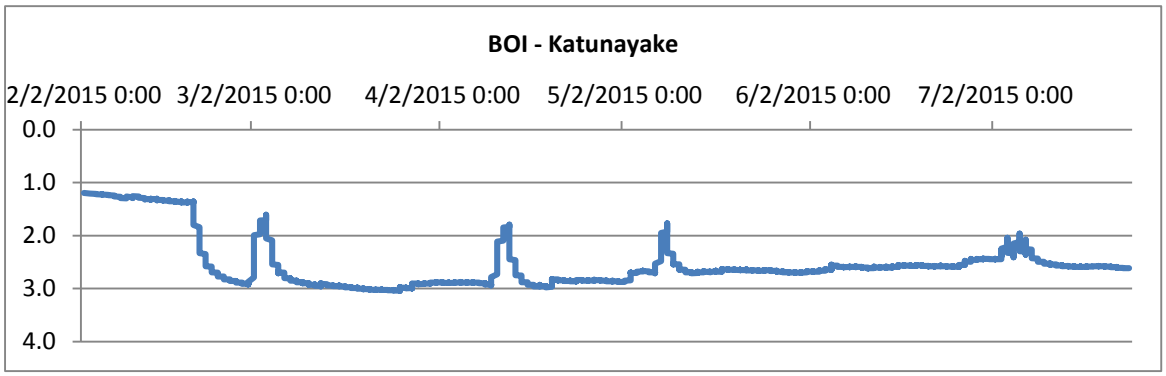
- A localized issue
- Due to sanitary problems

3. Water level fluctuation

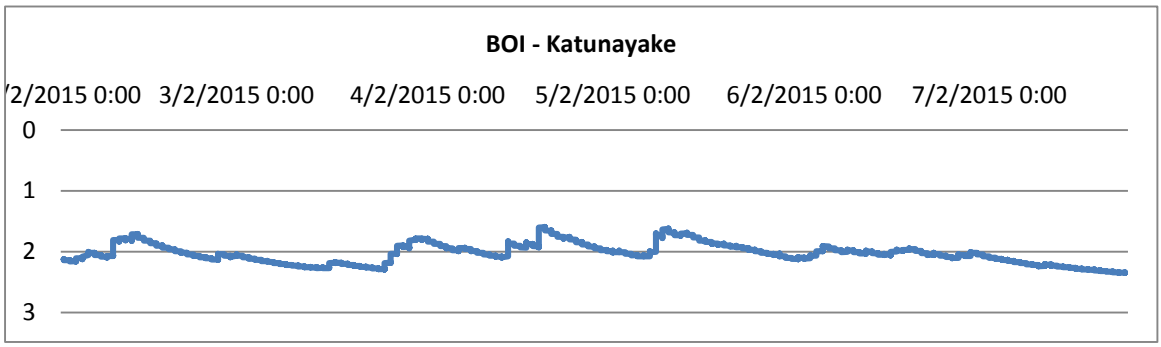
- 08 number of data loggers have installed.



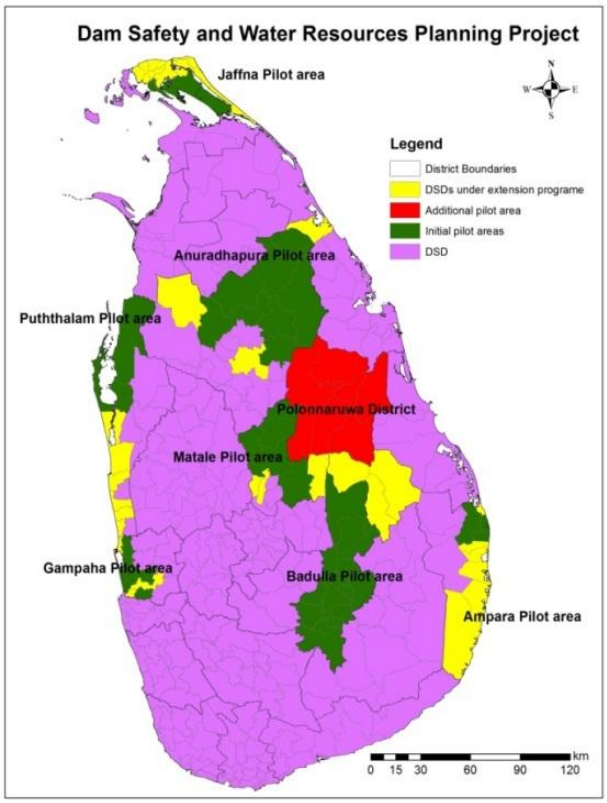
Water level fluctuation is less than 1 m.



Water level fluctuation is less than 2 m



Water level fluctuation is less than 1 m.



Activity progress on each of the pilot area as at the end of December 2016

Establishment of Groundwater Monitoring network - DSWRPP-AF : Progress as at 05/11/2016

SN	Pilot Area	CWQ		Geophysics				TW Drilling		Geo_Logging		Test Pumping		Levelling		Extended Area WQ					Awareness program	
		Wet	Dry	1D		2D																
				Tgt	Cmpl	Tgt	Cmpl	Tgt	Cmpl	Tgt	Cmpl	Tgt	Cmpl	Tgt	Cmpl	Tgt	Smpled	A	C	D	Tgt	Cmpld
1	Ampara		27	20	20	20	8	10	10	6	0	4	0	50	0	100	121	66		55	1	1
2	Apura	34	58	20	17	NR	NR	10	10	6	0	3	0	50	0	100	99		98	0	2	1
3	Matale	39	39	20	8	NR	NR	15	5	6	0	4	0	40	0	50	0				2	1
4	Puttalam		29	30	22	20	10	20	7	6	0	5	0	50	0	120	56			56	3	1
5	Gampaha			20	0	10	0	10	0	2	0	3	0	40	0	100	87		87		2	1
6	Jaffna	102	102	30	15	20	0	15	15	6	0	5	5	50	0	140	156		128		3	1
7	Kalpitiya			20	20	NR	NR	15	15	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	0	0
8	Polon'wa	TBS	TBS	100	14	NR	NR	21	0	NR	NR	21	0	50	0	200	75	55	20		3	1
9	Badulla			20	12	NR	NR	20	11	NR	NR	NR	NR	50	0	50	72		46	26	1	1
	Total			280	128	70	18	136	73	32	0	45	5	380	0	860	666	121	379	137	17	8

Tgt - target | A -Analysis in progress | D- Discarded, no analysis | TBS - To be scheduled

Cmpl -Completed | C- Analysis completed | CWQ - Continuous Water Quality Monitoring

04. Generated Funds

4.1 Moragahakande Project

I. Provision of Safe Drinking Water Facilities to Resettled People

In order to provide the safe drinking water facilities to the resettled people, it has been installed hand pump fitted tube wells and the achieved progress of the year 2016 as follows.

Activity	Physical Progress	Financial Progress (Rs Mn)
1. Groundwater Investigations	26	0.65
2. Construction of Tube wells	26	4.11
3. Installation of Hand Pumps	30	3.30
4. Installation of Iron removal Plants	11	1.10
Total		9.16

II. Provision of water for Agricultural Activities

Since the unavailability of water at the irrigation channels so far due to the work are in progress, it has been constructed high yield production tube wells in order to provide water for agricultural activities.

Activity	Physical Progress	Financial Progress (Rs Mn)
1. Groundwater Investigations	20	0.60
2. Construction of Tube wells	26	3.97
Total		4.57

4.2 Yan Oya Research Project

Under the project it has been installed Hand Pump fitted tube wells to provide safe drinking Water Facilities to the resettled people and the achieved progress of the year 2016 is as follows.

Activity	Physical Progress	Financial Progress (Rs Mn)
1. Groundwater Investigations	15	0.582
2. Construction of Tube wells	15	3.470
3. Installation of Hand Pumps	14	1.588
4. Analysis of Water Samples	15	0.032
Total		5.672

4.3 Water Supply and Sanitary Improvement Project – Mulathiu & Kilinochchi District

Under the project, it has been constructed high yield production tube wells to provide water for small scale village water supply schemes and the achieved progress for year 2016 is as follows

Activity	Physical Progress	Financial Progress (Rs Mn)
1. Groundwater Investigations	19	1.292
2. Construction of Tube wells	09	2.133
Total		3.425

4.4 Pond Rehabilitation Project in Jaffna

The main objective of this consultancy service is to determine the safe desilting bed thickness of the ponds located in the Jaffna Municipal Council (JMC) area. In addition it is also expected to carry out an assessment of quality of pond water, sediments of ponds and groundwater quality surrounding the

each pond area through a newly constructed monitoring borehole as baseline information before the commencement of the desilting process.

The final outcome of the study is to enhance the storage volume of the ponds after desiltation process thus acting as a buffer on floods by storm water runoff especially in the monsoons of the region. The safe desilt thickness assessment is to determine without affecting the natural rechargeable mechanism and impairing the quality of groundwater.

Activity	Physical Progress	Financial Progress (Rs Mn)
1. Groundwater Investigations	34	0.982
2. Construction of Tube wells	33	4.235
3. Leveling of Monitoring wells	26	0.520
4. Analysis of Water Samples	26	0.054
5. 24 hours pumping Tests	10	0.855
Total		6.646

4.5 Agro Tube Well Program in Mahaweli System "L" Area, Welioya

Under this program, it has been constructed high yield production tube wells to provide water to the farms and agricultural activities.

Activity	Physical Progress	Financial Progress (Rs Mn)
1. Groundwater Investigations	42	1.367
2. Construction of Tube wells	40	15.769
3. 24 hours pumping Tests	40	5.250
4. Analysis of Water Samples	40	0.084
Total		22.470

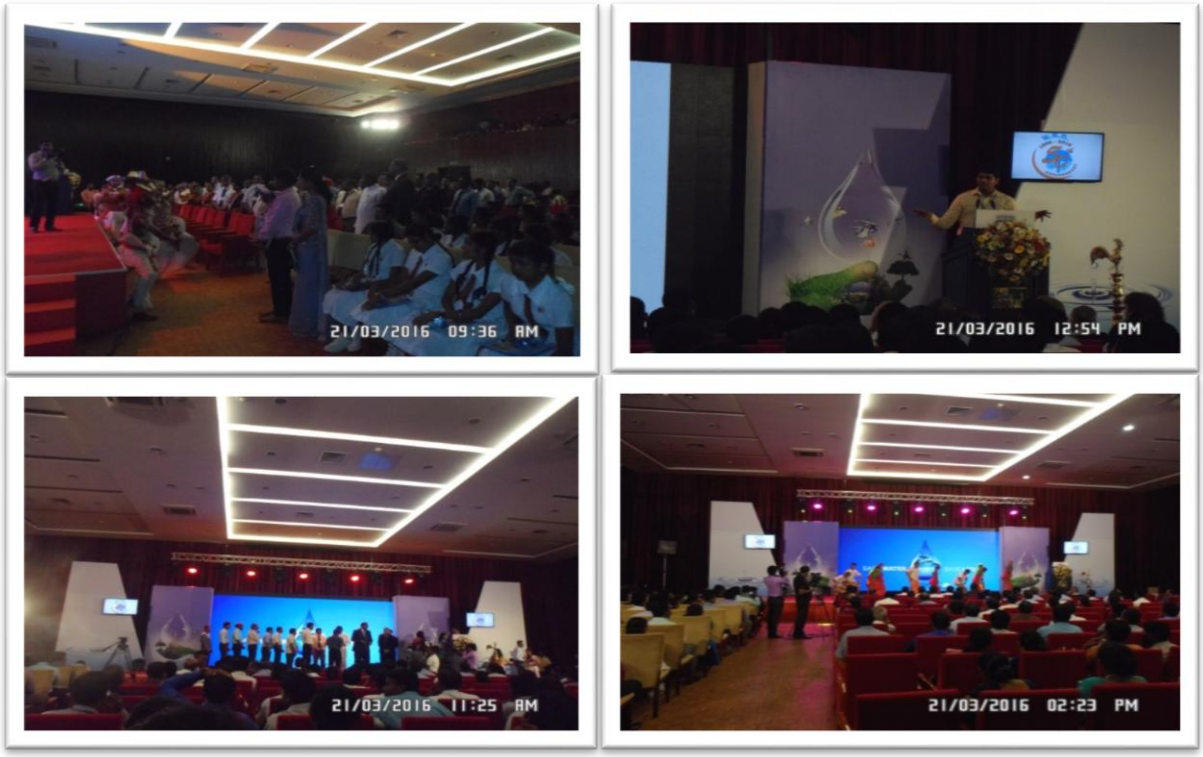
05. Other activities of Water Resources Board

5.1 50th Anniversary of WRB and World Water Day Program

Water Resources Board had completed successful event regarding celebration of 50th Anniversary of Water Resources Board and World Water Day in 2016. This was held at Bandaranaike Memorial International Conference Hall (BMICH), Colombo 7 on 21.03.2016. In this event, the key-note address was delivered by Hon. Wijith Wijayamuni Soysa, Minister of Irrigation and Water Resources Management and four (04) numbers of technical papers were presented by qualified Scientists and Doctors.

Main target of the program was to deliver the message about the duty of Water resources Board and limitation of groundwater resources and arising threatening issues on natural water resources of Sri Lanka. For that, school children were participating from Monaragala, Polonnaruwa and Anuradhapura Districts.

Some photographs of the event are showing below.



5.2 Construction of North Central Province Chemical Laboratory of WRB

Construction of new Chemical laboratory of Water Resources Board for North- Central Province was initiated on 18th May 2016 at Korakahawewa Training Center premise by Hon. Minister GaminiWijithWijayamuniSoysa, Minister of Irrigation and Water resources Management.

5.3 Establishing new office premises for Water Resources Board

In this context, there were three (3) numbers of new office premises are initiated to construct at Pallai, Vavniya and Omanthei. Meanwhile, the new WRB office of Jaffna was opened to provide safe water for Northern region of Sri Lanka.

In addition to that, rehabilitation and improvement works was initiated at Ratmalana work shop, Puttalam provincial office and Circuit Bunglow in Anuradhapura.