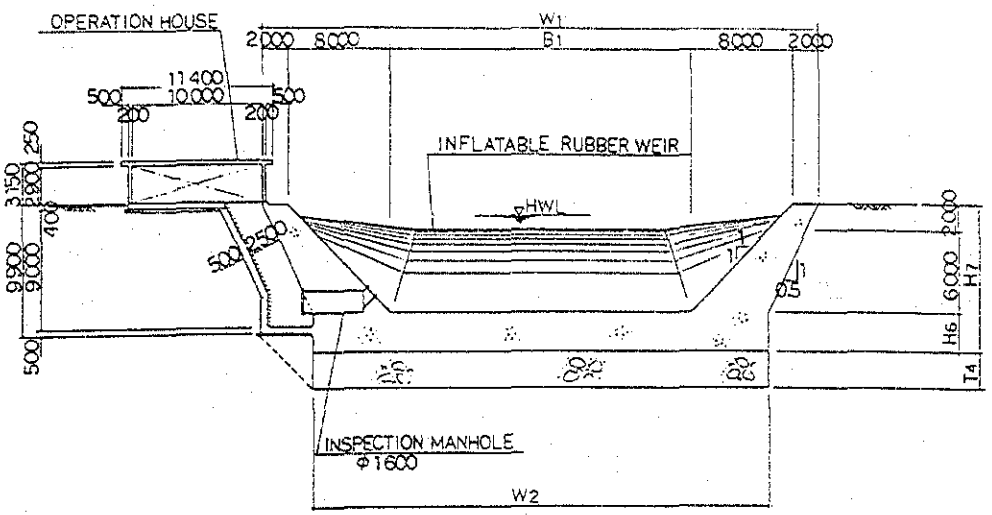
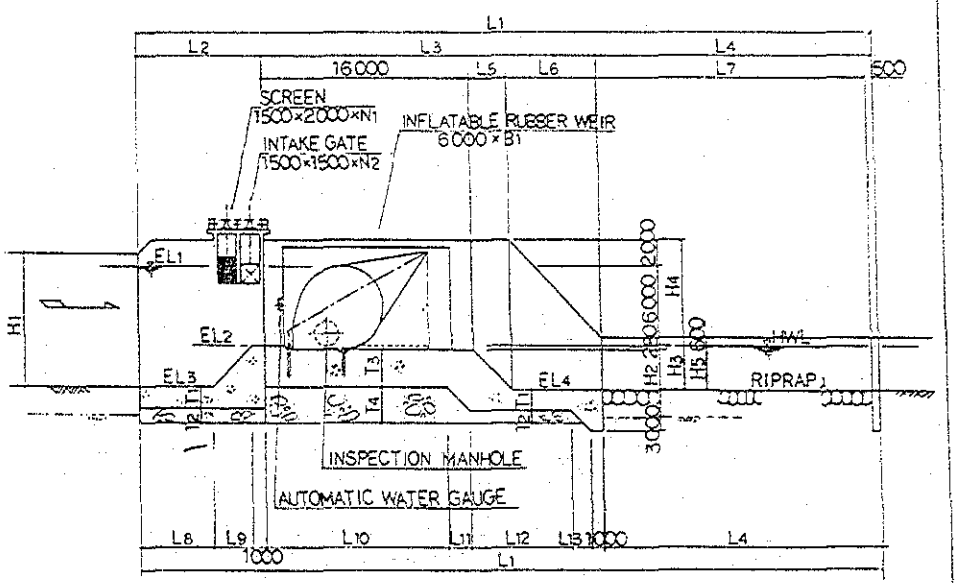
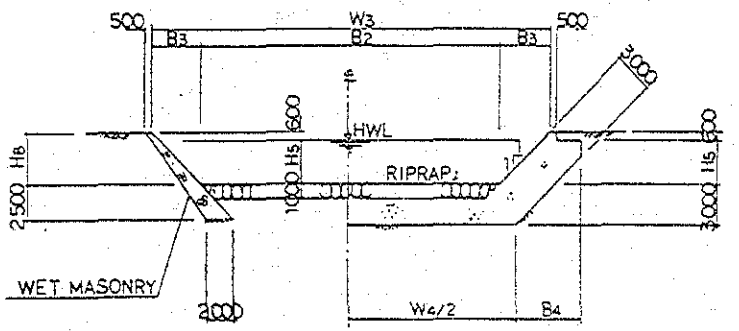
## CROSS SECTION OF WEIR BODY S = 1 / 400




## LONGITUDINAL SECTION S = 1 / 400




## CROSS SECTION OF DOWNSTREAM S = 1 / 400




DIMENSION TABLE ( INFLATABLE RUBBER WEIR )

UNIT : EL in (m), OTHERS in (mm)

| WEIR SITE | EL.1 | EL.2 | EL.3 | EL.4 | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 | L9 | L10 | L11 | L12 | L13 | W1 | B2 | B3 | B4 | X1 | X2 | B1 | T1 | T2 | T3 | T4 | Y1 | Y2 | Y3 | H4 | B1 | B2 | B3 | B4 | N1 | N2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PLAN - 1<br>Rahwana River | 73.2 | 67.2 | 66.0 | 64.0 | 54,000 | 7,000 | 22,000 | 25,000 | 1,000 | 5,000 | 74,500 | 4,500 | 2,200 | 15,500 | 500 | 3,000 | 2,000 | 8,200 | 920 | 4,600 | 1,400 | 4,000 | 2,500 | 8,500 | 4,600 | 1,000 | 1,500 | 2,200 | 1,200 | 30,000 | 22,000 | 19,200 | 12,600 | 10,000 | 10,000 | 4,600 | 5,000 | 2 | 2 |
| PLAN - 1<br>Andole R. | 73.2 | 67.2 | 66.1 | 64.1 | 49,000 | 7,000 | 22,000 | 20,000 | 1,000 | 3,000 | 19,500 | 4,900 | 1,100 | 15,500 | 500 | 3,000 | 2,000 | 8,100 | 820 | 2,600 | 1,300 | 2,000 | 2,300 | 8,500 | 2,600 | 1,000 | 1,500 | 2,200 | 1,100 | 32,500 | 24,500 | 17,700 | 14,960 | 12,500 | 12,500 | 2,600 | 4,000 | 3 | 3 |
| PLAN - 2<br>Timbolketiya R. | 73.2 | 67.2 | 66.0 | 64.0 | 66,000 | 10,000 | 26,000 | 30,000 | 2,920 | 7,080 | 29,500 | 5,860 | 2,700 | 34,000 | 2,800 | 7,500 | 1,500 | 10,200 | 2,920 | 3,900 | 7,300 | 7,100 | 3,000 | 11,000 | 3,500 | 1,560 | 980 | 2,700 | 2,700 | 43,000 | 35,000 | 30,800 | 25,460 | 23,000 | 22,000 | 3,900 | 5,060 | 2 | 2 |

**Fig. A7.8-2 MAIN FEATURES OF DIVERSION WEIRS OF ALTERNATIVE 1 & 2**

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS IRRIGATION AND MAHAWELI DEVELOPMENT

THE FEASIBILITY STUDY ON WALAWE IRRIGATION UPGRADING AND EXTENSION PROJECT

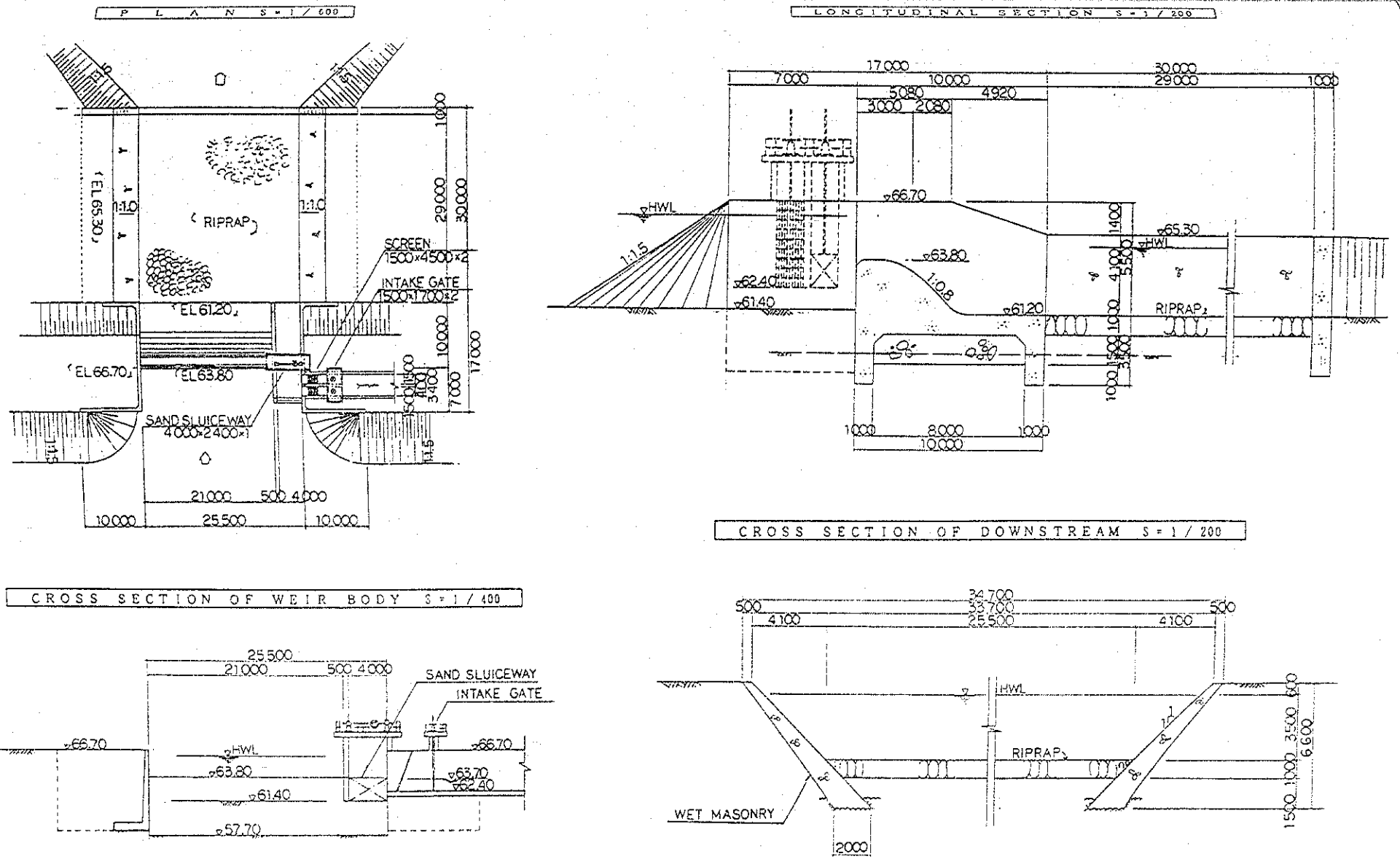



Fig. A7.8-3 MAIN FEATURES OF DIVERSION WEIR OF ALTERNATIVE 3

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE FEASIBILITY STUDY ON WALAWE IRRIGATION UPGRADING AND EXTENSION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

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2. Design of Irrigation Headworks for Small Catchments, A. J. P. Ponrajah, Irrigation Department. M/LIMD, May 1984

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# *Annex - VIII*

# *Water Balance Study*

# ANNEX VIII WATER BALANCE STUDY

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# ANNEX VIII WATER BALANCE STUDY

## 8.1 General

Objectives of the water balance study are:

(i) to determine the potential development area on the left bank,
(ii) to assess the impact of the left bank development on the existing water users at downstream the Uda Walawe reservoir,
(iii) to analyze effects of the Samanalawewa reservoir operation, (iv) to evaluate the Timbolketiya diversion plan.

Four check points have been established for examining water balance: they are the Samanalawewa dam, the Uda Walawe dam, the Liyangastota anicut and Ambalantota (domestic water supply).

Natural monthly inflow data of the Samanalawewa dam and Uda Walawe dam have been generated for 31 years from 1960 to 1990. But the Samanalawewa data regarding reservoir operation are available only for 20 years from 1970 to 1989. Therefore, water balance calculation has been undertaken for 31 years on a monthly basis except for the case of with Samanalawewa, of which water balance has been examined for 20 years.

Water balance study is a process of trial and error. First, a hypothetical development area and its water requirements are assumed and the water balance between soupy and demand at a certain check point is examined. The process is repeated changing the hypothetical development area and its water requirements until the result of examination satisfies a certain condition.

In this study, calculation has been made on a monthly basis. Priority of water use has been given to existing water users.

Result of water balance is judged on the criteria of 80% dependability as in most of irrigation projects under international financing. Therefore, occurrence of water shortage in four years out of 20 years will be accepted.

The schematic diagram of the Walawe basin applied for the Study is presented in Fig. A8.1-1.

## 8.2 Available Water Resources

i) Uda Walawe reservoir

Monthly inflow data of the Uda Walawe reservoir for 31 years from 1960 to 1990 have been estimated as shown in Annex II. Annual average inflow is 900 MCM. The active storage capacity of the reservoir is 240 MCM. Evaporation loss from the surface water has been counted In the water balance calculation.

ii) Samanalawewa reservoir

Monthly inflow data of the Samanalawewa reservoir have been estimated by CEB for 30 years from 1960 to 1989. Annual average inflow is 527 MCM. The active storage capacity of the reservoir is 218 MCM. Monthly turbine flow (outflow) data of the Samanalawewa power station are available for 20 years from 1970 to 1989 which have been prepared by CEB in their simulation study.

iii) Liyangastota anicut and Ambalantota

Discharge at the Liyangastota anicut.is composed of the discharge from the intermediate basin between the Uda Walawe dam and the anicut plus the release from the Uda Walawe reservoir plus the return flow from part of the paddy irrigation areas on both banks. Monthly discharge data at Embilipitiya have been estimated for 31 years from 1960 to 1990 as shown in Annex II. Discharge from the intermediate basin between the Uda Walawe dam and Embilipitiya has been estimated by deducting the Uda Walawe discharge from the Embilipitiya discharge. The discharge from the intermediate basin is about 250 MCM per annum. Monthly discharge data of the Mau Ara have been estimated for 31 years from 1960 to 1990. Annual average discharge is only 9 MCM. Run-off of the Hulanda Oya is regulated by the Chandrikawewa for irrigation of the Walawe right bank area. Water resources of both rivers are disregarded in the water balance study for safety reason. Discharge at Ambalantota comprises the excess water released from the Liyangastota anicut and the return flow from part of the paddy irrigation areas under the Liyangastota irrigation system.

iv) Timbolketiya

Monthly discharge data of the Timbolketiya river have been estimated for 31 years from 1960 to 1990 as shown in Annex II. Annual average discharge is 132 MCM. Timbolketiya diversion plan has been studied as an alternative. The plan is intended to divert part of the Timbolketiya flow to the right bank main canal by means of anicut(s) or pumping. The amount of diversion is about 76 MCM per annum.

vi) Return Flow

Irrigation water requirements for paddy field reclaimed on RBE soils in the Study area have been estimated as high as 4.3 to 6.9 m per annum due to the high percolation/seepage loss and canal loss. However, most of these losses are expected to re-appear in the downstream drain or river. This is called the return flow which has chances of re-use at downstream. According to the research undertaken by Tropical Agriculture Research Center of Japan in the dry zone of Sri Lanka, the percentage of return flow were 90 to 100% of the percolation/seepage loss. In this study, 90% of the percolation/seepage loss and 80 % of canal loss are assumed for the estimation of return flow.

## 8.3 Water Demands

i) Walawe Right Bank Area

The Walawe Irrigation Improvement Project is presently under way with ADB's finance aiming at 12,300 ha of irrigation development. In the project appraisal report of 1984, the annual water requirements for the right bank were estimated at 435 MCM comprising 405 MCM for irrigation demand and 30 MCM for industrial demand. However, ADB expressed their view in the meeting held at MASL on June 10th 1992 that these figures should not be considered in determining the water requirements for the right bank, because substantial insight has been gained regarding the validity of the appraisal assumptions according to studies made in recent years by IIMI and consultants who insisted more requirements than the appraisal figures.

MASL supports the original figure of 405 MCM considering the favorable prospect of crop diversification in future.

In response to ADB and MASL's request, MMP (a British consultant attached to WIIP) made another estimate of 346 MCM taking into account the crop diversification, improved water management including effective use of upper catchment run-off and return flows, improved physical infrastructure, and better cooperation between farmers.

It was agreed between MASL and JICA Study Team that the water balance study would principally be based on 435 MCM of irrigation and industrial requirements with a sensitivity analysis based on 376 MCM of irrigation and industrial requirements.

ii) Liyangastota anicut

The command area is presently 6,210 ha on both banks practising double cropping of paddy for many years. The irrigation water requirements have been estimated at 273 MCM per annum based on the water requirements for LHG soil used for the left bank. In addition, domestic and other purpose demands of 18,000 m3/day, which is estimated by the Irrigation Office, has been counted. The Ridiyagama tank lying on the left bank and receiving supply from the anicut has an active storage capacity of 23.2 MCM. But the regulating function of the Ridiyagama tank has been disregarded in this study.

iii) Hambantota-Ambalantota water supply scheme

The scheme supplies pipe borne water to Ambalantota and Hambantota cities. The water resource of the scheme is obtained through a direct intake from the Walawe river and pumped after treatment to the respect towers at Hambantota and Ambalantota. The treatment consists of aeration, coagulation, sedimentation, rapid sand filtration and disinfection. The scheme presently supplies about 3,400 $m^3$/day of treated water. The salient feature of the water supply scheme is shown below:

a) General

| | | |
|---|---|---|
| Population served | : | 23,000 head in Ambalantota and Hambantota in year 2010 |
| Design demand | : | 5,600 $m^3$/day (240 l/day /head) |
| Year of commissioning | : | 1982 |
| Water source | : | Walawe river |

b) Present condition (in 1985)

| | | |
|---|---|---|
| Production | : | 3,430 $m^3$/day Treatment plant |
| Capacity | : | 327 $m^3$/hour |
| Aerator | : | Cascade type aerator |
| Sedimentation tank | : | Rapid sand filter |
| Chlorinator | : | 2.3 kg/hour |

Source: District Plan on Drinking Water Supply and Sanitation, Hambantota District, Ministry of Plan Implementation, 1986

Based on the above, the net water requirement in 2010 has been estimated at 0.2 MCM per month (5,600 $m^3$/day x 30 days). Considering the allowances for intake from the Walawe river, requirement of 1 MCM per month has been considered in the water balance study.

iv) Kaltota Irrigation Scheme

The scheme covers 870 ha of paddy field lying just downstream of the Samanalawewa dam. The irrigation water requirements are estimated based on the same unit water requirements for LHG soil in the left bank and the effective rainfall at M 060 station. The estimated water requirements are 52 MCM per annum, of which return flow has been estimated at 41 MCM.

v) Old and Extension Areas on the Left Bank

Irrigation water requirements for the old and extension areas on the left bank covering a net irrigation area of 12,030 ha have been estimated at 340 MCM per annum as shown in Annex VII.

Irrigation water requirements for MEA control area covering 9,280 ha in net have been estimated at 282 MCM based on the proposed cropping pattern.

Regarding Sevanagala sugar area, the water demand of 61 MCM/year for the development of 2,750 ha, which has been estimated by the Sugar Industries, is taken as the entire water demand of the scheme. The demand comprises irrigation water requirement of 56 MCM and other demand of 5 MCM such as sugar factory demand and settlers demand.

Water demands other than irrigation in the left bank except Sevanagala sugar scheme have been estimated at 3 MCM per annum comprising (a) drinking water supply for the settlers and (b) water demand of agro-industries as shown in Annex VII.

## 8.4 Results of Water Balance Calculation

### 8.4.1 Conditions of calculation

(1) Priority of Water Use

The Liyangastota anicut and the Ambalantota have been dealt with as priority water users in the Walawe basin. In the water balance study, if any deficit occurs, it has been offset with release from the Uda Walawe reservoir. But the right bank area has been deemed as part of the overall Walawe irrigation scheme composed of the right and left banks.

(2) Alternative cases

The water balance has been examined for 25 cases based on 17 calculations. Check points are the Samanalawewa dam, the Uda Walawe dam and the Liyangastota anicut and Ambalantota. There are two kinds of water requirements for the Walawe right bank: one is the original figure (435 MCM) which is referred to as Scenario-1 in this study, and the other is MMP figure (376 MCM) which is referred to as Scenario 2.

Concerning the Samanalawewa dam and the Timbolketiya diversion plan, two cases of with (w) and without (w/o) have been conceived.

Alternative cases are shown in Table A8.4-1.

### 8.4.2 Results of water balance study

(1) Potential Development Area on the Left Bank

The new irrigation development area will be 6,380 ha on the left bank it has been justified through the water balance study that. Probabilities of occurrence of deficit at the Uda Walawe reservoir have been estimated as follows:

| Scenario | Samanalawewa | Timbolketiya | Probability |
|---|---|---|---|
| 1 | w | w/o | 1/5 |
| 1 | w | w | 1/5 |
| 2 | w | w/o | 1/5 |
| 2 | w | w | 1/20 |

Since all cases satisfy the targeted probability of 1/5, the proposed new irrigation development area of 6,380 ha on the left bank has been justified through the water balance study. Summary of the water balance calculations and details of the calculation under the conditions of "with Samanalawewa dam and without Timbolketiya river development " are shown in Tables A8.4-2 to A8.4-4.

(2) Influence to the Existing Water Users

i) Samanalawewa dam

According to the study on case 1-1, the Samanalawewa reservoir becomes empty almost every year, which renders not only the power generation but also the irrigation supply to Kaltota scheme unstable. However, as the reservoir is located upstream the Uda Walawe dam, it does not affect the development potential of the left bank.

ii) Liyangastota anicut

In each case of 3-5 and 3-7, a small amount of deficit occurs once in 20 years. But this deficit will be offset with the release from the Uda Walawe reservoir or negated by the regulating function of the Ridiyagama tank in reality. Results of the water balance study are as follows:

| Scenario | Samanalawewa | Timbolketiya | Probability |
|---|---|---|---|
| 1 | w | w/o | 1/20 |
| 1 | w | w | 1/20 |
| 2 | w | w/o | infinitesimal |
| 2 | w | w | 1/20 |

iii) Ambalantota

As the demand is drinking water of human being, deficit will be supplied from the Uda Walawe reservoir. Results of the water balance study are as follows:

| Scenario | Samanalawewa | Timbolketiya | Probability |
|---|---|---|---|
| 1 | w | w/o | infinitesimal |
| 1 | w | w | infinitesimal |
| 2 | w | w/o | infinitesimal |
| 2 | w | w | infinitesimal |

(3) Effect of the Samanalawewa Reservoir Operation

Results of the water balance study indicate the operation of the Samanalawewa reservoir will decrease the frequency of occurrence of water deficit as well as the amount of deficit at the Uda Walawe reservoir. Therefore, it is considered that operation of the Samanalawewa reservoir will bring forth favorable effects to water users at downstream.
Probability of occurrence of deficit at the Uda Walawe dam is shown below.

| Scenario | Samanalawewa | Timbolketiya | Probability |
|---|---|---|---|
| 1 | w/o | w/o | 1/3.4 |
| 1 | w/o | w | 1/5 |
| 1 | w | w/o | 1/4.4 |
| 1 | w | w | 1/5 |
| 2 | w/o | w/o | 3.9 |
| 2 | w/o | w | 1/5 |
| 2 | w | w/o | 1/10.3 |
| 2 | w | w | 1/20 |

(4) Effect of the Timbolketiya Diversion Plan

The Timbolketiya diversion plan will augment the water resources of the Uda Walawe reservoir and reduce the amount of deficit in drought years. Probabilities of occurrence of deficit at the Uda Walawe dam, Liyangastota and Ambalantota under with and without Timbolketiya conditions are shown below.

| Scenario | Timbolketiya | Uda Walawe | Liyangastota | Ambalantota |
|---|---|---|---|---|
| 1 | w/o | 1/5 | 1/20 | infinitesimal |
| 1 | w | 1/5 | 1/20 | infinitesimal |
| 2 | w/o | 1/6.7 | infinitesimal | infinitesimal |
| 2 | w | 1/20 | infinitesimal | infinitesimal |

## 8.5 Conclusion

(1) The water balance study indicates that the potential irrigation area in the Walawe left bank will be 12,030 ha under the proposed cropping pattern. It comprises the Sevanagala sugar scheme of 2,750 ha, the existing irrigation area under MEA control of 2,900 ha and the new irrigation development area of 6,380 ha.

(2) The operation of the Samanalawewa reservoir will give generally favorable effects on the operation of the Uda Walawe reservoir as well as the overall water use in the Walawe basin.

(3) The Liyangastota anicut and the Ambalantota domestic water supply scheme are deemed priority water users in the Walawe basin. Deficit will be offset with release from the Uda Walawe reservoir.

(4) The Scenario 2 and the Timbolketiya diversion plan will not change the probability of occurrence of deficit, but greatly contribute to improve the safety of water management in the Walawe basin through decreasing the volume of deficit.

(5) The deficit normally occurs in the latter part of the Yala season which gives certain prospects of avoiding crop damage in drought years. As practiced by MASL in 1992, the cropping area should be limited to a certain extent according to the storage capacity of the Uda Walawe and Samanalawewa reservoirs at the beginning of the Yala season.

# *TABLES*

Table A8.4-1 CALCULATION CASES FOR WATER BALANCE STUDY

| No. | Calculation Point | Case No. | Samanalawewa dam | | Timbolketiya development | | Water demand | |
|---|---|---|---|---|---|---|---|---|
| | | | With condition | Without conditin | With conditin | Without condition | Scenario-1 | Scenario-2 |
| 1 | Samanalawewa dam | Case 1- 1 | - | - | - | - | - | - |
| 2 | | Case 2- 1 | | #### | | #### | #### | |
| 3 | | Case 2- 2 | | #### | | #### | | #### |
| 4 | | Case 2- 3 | | #### | #### | | #### | |
| 5 | Uda Walawe dam | Case 2- 4 | | #### | #### | | | #### |
| 6 | | Case 2- 5 | #### | | | #### | #### | |
| 7 | | Case 2- 6 | #### | | | #### | | #### |
| 8 | | Case 2- 7 | #### | | #### | | #### | |
| 9 | | Case 2- 8 | #### | | #### | | | #### |
| 10 | | Case 3- 1 | | #### | | #### | #### | |
| 11 | | Case 3- 2 | | #### | | #### | | #### |
| 12 | | Case 3- 3 | | #### | #### | | #### | |
| 13 | Liyangastota anicut | Case 3- 4 | | #### | #### | | | #### |
| 14 | | Case 3- 5 | #### | | | #### | #### | |
| 15 | | Case 3- 6 | #### | | | #### | | #### |
| 16 | | Case 3- 7 | #### | | #### | | #### | |
| 17 | | Case 3- 8 | #### | | #### | | | #### |
| 18 | | Case 4- 1 | | #### | | #### | #### | |
| 19 | | Case 4- 2 | | #### | | #### | | #### |
| 20 | | Case 4- 3 | | #### | #### | | #### | |
| 21 | Ambalantota bridge | Case 4- 4 | | #### | #### | | | #### |
| 22 | | Case 4- 5 | #### | | | #### | #### | |
| 23 | | Case 4- 6 | #### | | | #### | | #### |
| 24 | | Case 4- 7 | #### | | #### | | #### | |
| 25 | | Case 4- 8 | #### | | #### | | | #### |

Table 8.4 - 2 : Summary table of the Water deficit on Uda Walawe River 1/2

( Scenario - 1 )

| Year . Month | W/O Samanala Dam | | | | | | W/ Samanala Dam | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W/O Timbolketiya Oya | | | W/ Timbolketiya Oya | | | W/O Timbolketiya Oya | | | W/ Timbolketiya Oya | | |
| | Walawe Dam | Anicut point | River mouth | Walawe Dam | Anicut point | River mouth | Walawe Dam | Anicut point | River mouth | Walawe Dam | Anicut point | River mouth |
| 1965 . FEB | 55.94 | | | 11.46 | | | | | | | | |
| . MAR | 19.88 | | | 12.98 | | | | | | | | |
| Total | 75.82 | | | 24.44 | | | | | | | | |
| 1967 . SEP | 2.83 | | | | | | | | | | | |
| . OCT | 21.95 | | | | | | | | | | | |
| Total | 24.78 | | | | | | | | | | | |
| 1968 . MAY | 22.18 | | | | | | | | | | | |
| . JUN | 80.85 | | | 19.59 | | | | | | | | |
| . JUL | 53.54 | | | 53.55 | | | | | | | | |
| . AUG | 29.38 | | | 24.18 | | | | | | | | |
| . OCT | 31.95 | | | 26.62 | | | | | | | | |
| . NOV | 20.34 | | | 12.48 | | | | | | | | |
| . DEC | 15.24 | | | 9.58 | | | | | | | | |
| Total | 253.48 | | | 146.00 | | | | | | | | |
| 1969 . JAN | 31.92 | | | 29.42 | | | | | | | | |
| . FEB | 62.74 | | | 57.94 | | | | | | | | |
| Total | 94.66 | | | 87.36 | | | | | | | | |
| 1974 . MAR | 17.81 | | | | | | | | | | | |
| . APR | 6.42 | | | | | | | | | | | |
| . JUN | 39.42 | | | | | | 27.14 | | | | | |
| . JUL | 66.88 | | | 46.72 | | | 97.24 | 9.50 | | 42.95 | | |
| . AUG | 22.68 | | | 17.48 | | | 54.38 | | | 49.18 | | |
| . SEP | | | | | | | 15.13 | | | 11.03 | | |
| . OCT | 11.42 | | | 1.20 | | | 53.58 | | | 49.35 | 3.00 | |
| Total | 164.63 | | | 65.40 | | | 247.47 | 9.50 | | 152.51 | 3.00 | |
| 1976 . JUL | 77.77 | | | 25.71 | | | | | | | | |
| . AUG | 27.48 | | | 22.28 | | | | | | | | |
| . SEP | 14.13 | | | 9.16 | | | | | | | | |
| Total | 119.38 | | | 57.15 | | | | | | | | |
| 1983 . JUL | 50.90 | | | 11.85 | | | 18.57 | | | | | |
| . AUG | 35.28 | | | 30.08 | | | 35.60 | | | 9.54 | | |
| . OCT | 32.38 | | | 26.28 | | | 22.17 | | | 12.05 | | |
| Total | 118.56 | | | 68.21 | | | 76.34 | | | 21.59 | | |
| 1987 . JUN | 16.40 | | | | | | | | | | | |
| . JUL | 89.77 | | | 10.69 | | | 32.49 | | | | | |
| . AUG | 43.88 | | | 38.68 | | | 37.40 | | | 31.51 | | |
| . OCT | 0.85 | | | | | | 6.73 | | | | | |
| Total | 150.90 | | | 49.37 | | | 76.62 | | | 31.51 | | |
| 1989 . JUL | | | | | | | 12.24 | | | | | |
| . AUG | 6.94 | | | | | | 42.56 | | | 13.85 | | |
| . SEP | | | | | | | 2.31 | | | | | |
| Total | 6.94 | | | | | | 57.11 | | | 13.85 | | |
| Occurrence of deficit | 9 years | | | 7 years | | | 4 years | 1 years | | 4 years | 1 years | |
| Probability of occurrence | 1/ 3.44 | | | 1/ 4.43 | | | 1/ 5.00 | 1/20.00 | | 1/ 5.00 | 1/20.00 | |

Table 8.4 - 2 : Sumary table of the Water deficit on Uda Walawe River 2/2

( Scenario - 2 )

| Year . Month | W/O Samanala Dam | | | | | | W/ Samanala Dam | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W/O Timbolketiya Oya | | | W/ Timbolketiya Oya | | | W/O Timbolketiya Oya | | | W/ Timbolketiya Oya | | |
| | Walawe Dam | Anicut point | River mouth | Walawe Dam | Anicut point | River mouth | Walawe Dam | Anicut point | River mouth | Walawe Dam | Anicut point | River mouth |
| 1965 . MAR | 7.09 | | | | | | | | | | | |
| Total | 7.09 | | | | | | | | | | | |
| 1967 . OCT | 5.26 | | | | | | | | | | | |
| Total | 5.26 | | | | | | | | | | | |
| 1968 . JUN | 56.89 | | | | | | | | | | | |
| . JUL | 39.54 | | | 4.13 | | | | | | | | |
| . AUG | 9.43 | | | 4.23 | | | | | | | | |
| . SEP | 0.88 | | | | | | | | | | | |
| . OCT | 50.59 | | | 40.59 | | | | | | | | |
| . NOV | 10.87 | | | 0.67 | | | | | | | | |
| . DEC | 11.71 | | | 4.61 | | | | | | | | |
| Total | 179.91 | | | 54.23 | | | | | | | | |
| 1969 . JAN | 34.78 | | | 34.40 | | | | | | | | |
| . FEB | 22.18 | | | 17.38 | | | | | | | | |
| Total | 56.96 | | | 51.78 | | | | | | | | |
| 1974 . JUN | 2.75 | | | | | | | | | | | |
| . JUL | 52.16 | | | | | | 52.50 | | | | | |
| . AUG | 2.73 | | | | | | 34.43 | | | 0.06 | | |
| . SEP | | | | | | | 21.88 | | | 16.18 | | |
| . OCT | 30.93 | | | | | | 65.61 | | | 62.19 | | 1.15 |
| Total | 88.57 | | | | | | 174.42 | | | 78.43 | | 1.15 |
| 1976 . JUL | 19.70 | | | | | | | | | | | |
| . AUG | 7.53 | | | | | | | | | | | |
| . SEP | 20.57 | | | | | | | | | | | |
| Total | 47.80 | | | | | | | | | | | |
| 1983 . JUL | 3.96 | | | | | | | | | | | |
| . AUG | 15.33 | | | | | | | | | | | |
| . OCT | 52.49 | | | 22.39 | | | 30.67 | | | | | |
| Total | 71.78 | | | 22.39 | | | 30.67 | | | | | |
| 1987 . JUL | 11.96 | | | | | | | | | | | |
| . AUG | 23.93 | | | | | | 5.31 | | | | | |
| . SEP | 0.88 | | | | | | 1.20 | | | | | |
| . OCT | 19.49 | | | | | | 25.06 | | | | | |
| Total | 56.26 | | | | | | 31.57 | | | | | |
| 1989 . SEP | | | | | | | 0.37 | | | | | |
| . OCT | | | | | | | 3.08 | | | | | |
| Total | | | | | | | 3.45 | | | | | |
| Occurrence of deficit | 8 years | | | 3 years | | | 4 years | | | 1 years | 1 years | |
| Probability of occurrence | 1/ 3.88 | | | 1/10.33 | | | 1/ 5.00 | | | 1/20.00 | 1/20.00 | |

Table 8.4 - 3 : Summary table of the Water Balance Caluculation at Uda Walawe Reservoir

( Scenario - 1 : W/ Samanalaweva Dam , W/O Timbolketiya )

< Capacity > Total Storage : 268.76 (MCM)
Dead Storage : 28.26 (MCM)
Live Storage : 240.50 (MCM)

< Water Level > F.S.L : 88.39 (M)
Gate Sill : 82.18 (M)
M.D.L : 74.98 (M)

< Area > F.S.L : 34.43 (km²)
M.D.L : 6.76 (km²)

| Year | Samanala Discha. (MCM) | Uda Wala Direct.A (MCM) | Inflow (MCM) | L.B.C Demand (MCM) | R.B.C Demand (MCM) | Exten. Demand (MCM) | Factory Demand (MCM) | Drink. Demand (MCM) | Ani cut Demand (MCM) | Total Demand (MCM) | Reserv. Loss (MCM) | Spill Out (MCM) | Year End Storage (MCM) | Year End S.Area (Km²) | Year End Water.L (M) | Demand Deficit (MCM) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 | | | 997.60 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 30.93 | 241.65 | 186.89 | 28.71 | 86.67 | 0.00 |
| 1961 | | | 1050.70 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 31.29 | 187.17 | 240.50 | 34.43 | 88.38 | 0.00 |
| 1962 | | | 1039.80 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 32.61 | 228.56 | 240.50 | 34.43 | 88.38 | 0.00 |
| 1963 | | | 1627.00 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 35.53 | 812.84 | 240.50 | 34.43 | 88.38 | 0.00 |
| 1964 | | | 778.90 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 30.80 | 142.35 | 67.62 | 16.19 | 81.25 | 0.00 |
| 1965 | | | 905.30 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 16.01 | 13.60 | 240.50 | 34.43 | 88.38 | 75.82 |
| 1966 | | | 1353.70 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 32.35 | 542.72 | 240.50 | 34.43 | 88.38 | 0.00 |
| 1967 | | | 732.80 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.01 | 778.64 | 24.37 | 81.81 | 113.26 | 21.23 | 83.68 | 24.78 |
| 1968 | | | 439.10 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 16.90 | 795.53 | 10.31 | 0.00 | 0.00 | 6.76 | 74.98 | 253.48 |
| 1969 | | | 817.10 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 17.77 | 0.00 | 115.36 | 21.45 | 83.79 | 94.66 |
| 1970 | 566.77 | 533.80 | 1100.57 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 27.35 | 182.88 | 227.07 | 32.99 | 87.96 | 0.00 |
| 1971 | 544.94 | 450.50 | 995.44 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 31.91 | 188.90 | 223.07 | 32.56 | 87.84 | 0.00 |
| 1972 | 698.09 | 390.70 | 1088.79 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 31.99 | 260.74 | 240.50 | 34.43 | 88.38 | 0.00 |
| 1973 | 496.76 | 301.20 | 797.96 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.01 | 778.64 | 26.12 | 117.77 | 115.93 | 21.51 | 83.81 | 0.00 |
| 1974 | 349.33 | 374.90 | 724.23 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 14.40 | 793.03 | 13.22 | 40.88 | 240.50 | 34.43 | 88.38 | 247.47 |
| 1975 | 581.58 | 361.60 | 943.18 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 30.74 | 220.88 | 153.43 | 25.32 | 85.42 | 0.00 |
| 1976 | 559.87 | 496.40 | 1056.27 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.01 | 778.64 | 26.50 | 164.06 | 240.50 | 34.43 | 88.38 | 0.00 |
| 1977 | 503.11 | 448.60 | 951.71 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.01 | 778.64 | 31.05 | 155.81 | 226.71 | 32.95 | 87.95 | 0.00 |
| 1978 | 409.40 | 401.30 | 810.70 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 28.91 | 129.83 | 100.04 | 19.84 | 83.03 | 0.00 |
| 1979 | 630.29 | 411.10 | 1041.39 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 29.56 | 92.74 | 240.50 | 34.43 | 88.38 | 0.00 |
| 1980 | 497.80 | 395.80 | 893.60 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 30.06 | 84.91 | 240.50 | 34.43 | 88.38 | 0.00 |
| 1981 | 348.88 | 356.60 | 705.48 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 23.44 | 0.00 | 143.91 | 24.36 | 85.06 | 0.00 |
| 1982 | 428.03 | 505.70 | 933.73 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.01 | 778.64 | 24.58 | 39.24 | 235.18 | 33.86 | 88.22 | 0.00 |
| 1983 | 317.87 | 288.90 | 606.77 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 20.14 | 0.00 | 119.52 | 21.88 | 83.99 | 76.34 |
| 1984 | 607.04 | 425.00 | 1032.04 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 27.22 | 159.91 | 185.80 | 28.60 | 86.63 | 0.00 |
| 1985 | 476.03 | 333.90 | 809.93 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 27.04 | 12.09 | 177.97 | 27.81 | 86.35 | 0.00 |
| 1986 | 534.64 | 392.50 | 927.14 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 31.13 | 54.85 | 240.50 | 34.43 | 88.38 | 0.00 |
| 1987 | 398.72 | 269.90 | 668.62 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 20.19 | 19.74 | 167.18 | 26.71 | 85.95 | 76.62 |
| 1988 | 532.07 | 421.20 | 953.27 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 27.86 | 73.46 | 240.50 | 34.43 | 88.38 | 0.00 |
| 1989 | 325.77 | 285.60 | 612.37 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 19.73 | 0.00 | 111.62 | 21.06 | 83.60 | 57.11 |
| 1990 | | | 864.50 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 0.00 | 778.63 | 19.20 | 0.00 | 178.29 | 27.84 | 86.36 | 0.00 |
| Ave. | 490.40 | 392.26 | 911.60 | 171.61 | 435.20 | 168.66 | 1.96 | 1.20 | 1.01 | 779.64 | 26.13 | 137.08 | 185.00 | 28.54 | 86.23 | |

Table 8.4-4 Explanation of the Water Balance Caluculation 1/11

Water Balance Caluculation at Uda Walawe Reservoir

| Year. Month | Samanala Discha. (MCM) | Uda Wala Direct. A (MCM) | Inflow (MCM) | Surface Area (Km²) | Demand | | | | | | | Reserv. Loss (MCM) | Spill Out (MCM) | Storage (MCM) | Water Level (m) | Demand Deficit (MCM) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | L. B. C (MCM) | R. B. C (MCM) | Exten. (MCM) | Factory (MCM) | Drinking (MCM) | Ani cut (MCM) | Total (MCM) | | | | | |
| | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ | ⑫ | ⑬ | ⑭ | ⑮ | ⑯ |
| | | | ①+② | | | | | | | | ⑤~⑩ | | | | | |

① Inflow to the Uda Walawe Reservoir excluding the outflow from the remaining catchment area between Uda Walawe and Samanalawewa Dams
② Outflow from the remaining catchment area between Uda Walawe and Samanalawewa Dams
③ Total inflow to the Uda Walawe Reservoir
④ Reservoir Surface Area
⑥ Intake volume at the Left Bank Area
⑧ Intake volume at the Right Bank Area
⑦ Intake volume at the Extension Area
⑧ Intake volume for the Industrial Use
⑨ Intake volume for the Domestic Use
⑩ Water duty to the downstream reach of Uda Walawe Dam
⑪ Total Release volume from the Uda Walawe Reservoir
⑫ Reservoir loss
⑬ Spillage from the Reservoir
⑭ Reservoir storage
⑮ Reservoir Water level
⑯ Reservoir Deficit

Water Balance Caluculation on Walawe River

| Year. Month | Stream flow at Uda Walawe | | | | | | | | Ridiyagama Demand (MCM) | Stream flow at Uda Walawe | | | Domestic Water Deficit (MCM) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Walawe Dam | | Walawe Dam ~ Embilipitiya | | R. B. C | L. B. C(0) | | | | | Ridiyagama Return. F (MCM) | Total (MCM) | |
| | Spillout (MCM) | Release (MCM) | Direct. A (MCM) | RBC Demand (MCM) | Outflow (MCM) | Return. F (MCM) | Return. F (MCM) | Total (MCM) | | Discharge (MCM) | | | |
| | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ | ⑫ | ⑬ |
| | | | | | ③-④ | | | ①②⑥~⑦ | | ⑧-⑨ | | ⑩+⑪ | |

① Spillage from the Reservoir
② Water duty to the downstream reach of Uda Walawe Dam
③ Outflow from the remaining catchment area between Uda Walawe Dam and Embilipitiya
④ Supply water volume from Timbolketiya to Right Bank Area
⑤ ③-④
⑥ Return flow from the Right Bank Area to Uda Walawe River
⑦ Return flow from the Left Bank Area to Uda Walawe River
⑧ Total inflow volume at the Liyangastota Anicut
⑨ Supply water volume to the Ridiyagama
⑩ ⑧-⑨
⑪ Return flow from the Ridiyagama to Uda Walawe River
⑫ Total inflow volume at the estuary of Uda Walawe River
⑬ Deficit of Domestic water

Table 8.4 - 4 : Breakdown of the Water Balance Caluculation at Uda Walawe Reservoir

( Scenario - 1 : W/ Samanalawewa Dam , W/O Timbolketiya )

| Year. Month | Samanala Discha. (MCM) ① | Uda Wala Direct A (MCM) ② | Inflow (MCM) ③ ①+② | Surface Area (Km²) ④ | Demand L.B.C (MCM) ⑤ | R.B.C (MCM) ⑥ | Exten. (MCM) ⑦ | Factory (MCM) ⑧ | Drinking (MCM) ⑨ | Ani cut (MCM) ⑩ | Total (MCM) ⑪ ⑤~⑩ | Reserv. Loss (MCM) ⑫ | Spill Out (MCM) ⑬ | Storage (MCM) ⑭ | Water Level (M) ⑮ | Demand Deficit (MCM) ⑯ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | 240.50 | 88.38 | |
| 1960. JAN | | | 113.80 | 34.43 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.83 | 26.31 | 240.50 | 88.38 | 0.00 |
| . FEB | | | 114.80 | 34.43 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.83 | 32.09 | 240.50 | 88.38 | 0.00 |
| . MAR | | | 117.30 | 34.43 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 3.46 | 63.04 | 240.50 | 88.38 | 0.00 |
| . APR | | | 186.40 | 34.43 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.83 | 120.21 | 240.50 | 88.38 | 0.00 |
| . MAY | | | 70.20 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 0.00 | 227.42 | 87.98 | 0.00 |
| . JUN | | | 33.20 | 33.03 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.32 | 0.00 | 169.63 | 86.04 | 0.00 |
| . JUL | | | 64.50 | 26.96 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 2.71 | 0.00 | 134.86 | 84.67 | 0.00 |
| . AUG | | | 20.90 | 23.44 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.36 | 0.00 | 99.50 | 83.01 | 0.00 |
| . SEP | | | 36.50 | 19.79 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 1.99 | 0.00 | 118.56 | 83.94 | 0.00 |
| . OCT | | | 56.80 | 21.78 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 1.79 | 0.00 | 116.28 | 83.83 | 0.00 |
| . NOV | | | 105.80 | 21.55 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.51 | 0.00 | 163.10 | 85.80 | 0.00 |
| . DEC | | | 77.40 | 26.30 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.84 | 0.00 | 186.89 | 86.67 | 0.00 |
| 1961. JAN | | | 81.70 | 28.71 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.36 | 0.00 | 181.57 | 86.48 | 0.00 |
| . FEB | | | 60.70 | 28.17 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.32 | 0.00 | 160.07 | 85.68 | 0.00 |
| . MAR | | | 87.00 | 26.00 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 2.62 | 0.00 | 193.65 | 86.91 | 0.00 |
| . APR | | | 106.80 | 29.40 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.42 | 0.00 | 234.67 | 88.20 | 0.00 |
| . MAY | | | 139.50 | 33.81 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.40 | 50.45 | 240.50 | 88.38 | 0.00 |
| . JUN | | | 56.50 | 34.43 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.46 | 0.00 | 205.87 | 87.31 | 0.00 |
| . JUL | | | 43.40 | 30.72 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 3.09 | 0.00 | 149.62 | 85.28 | 0.00 |
| . AUG | | | 58.90 | 24.94 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.51 | 0.00 | 152.11 | 85.37 | 0.00 |
| . SEP | | | 32.70 | 25.19 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 2.53 | 0.00 | 166.83 | 85.94 | 0.00 |
| . OCT | | | 72.90 | 26.68 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 2.20 | 0.00 | 180.24 | 86.43 | 0.00 |
| . NOV | | | 179.40 | 28.04 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.97 | 59.70 | 240.50 | 88.38 | 0.00 |
| . DEC | | | 131.20 | 34.43 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 2.41 | 77.02 | 240.50 | 88.38 | 0.00 |
| 1962. JAN | | | 86.20 | 34.43 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.83 | 0.00 | 239.21 | 88.34 | 0.00 |
| . FEB | | | 54.90 | 34.29 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.82 | 0.00 | 211.41 | 87.48 | 0.00 |
| . MAR | | | 85.20 | 31.31 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 3.15 | 2.16 | 240.50 | 88.38 | 0.00 |
| . APR | | | 148.50 | 34.43 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.83 | 82.31 | 240.50 | 88.38 | 0.00 |
| . MAY | | | 180.30 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 97.02 | 240.50 | 88.38 | 0.00 |
| . JUN | | | 60.70 | 34.43 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.46 | 0.00 | 210.07 | 87.44 | 0.00 |
| . JUL | | | 42.30 | 31.17 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 3.14 | 0.00 | 152.67 | 85.39 | 0.00 |
| . AUG | | | 28.70 | 25.25 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.54 | 0.00 | 124.93 | 84.23 | 0.00 |
| . SEP | | | 43.50 | 22.43 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 2.26 | 0.00 | 150.72 | 85.32 | 0.00 |
| . OCT | | | 63.50 | 25.05 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 2.06 | 0.00 | 154.87 | 85.48 | 0.00 |
| . NOV | | | 125.70 | 25.47 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.79 | 0.00 | 221.31 | 87.79 | 0.00 |
| . DEC | | | 120.30 | 32.37 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 2.27 | 47.07 | 240.50 | 88.38 | 0.00 |
| 1963. JAN | | | 219.90 | 34.43 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.83 | 132.41 | 240.50 | 88.38 | 0.00 |
| . FEB | | | 95.30 | 34.43 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.83 | 12.59 | 240.50 | 88.38 | 0.00 |
| . MAR | | | 106.90 | 34.43 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 3.46 | 52.64 | 240.50 | 88.38 | 0.00 |
| . APR | | | 257.90 | 34.43 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.83 | 191.71 | 240.50 | 88.38 | 0.00 |
| . MAY | | | 196.10 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 112.82 | 240.50 | 88.38 | 0.00 |
| . JUN | | | 88.60 | 34.43 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.46 | 0.00 | 237.97 | 88.30 | 0.00 |
| . JUL | | | 58.90 | 34.16 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 3.44 | 0.00 | 196.87 | 87.03 | 0.00 |
| . AUG | | | 43.90 | 29.75 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.99 | 0.00 | 183.88 | 86.56 | 0.00 |
| . SEP | | | 42.80 | 28.41 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 2.86 | 0.00 | 208.37 | 87.38 | 0.00 |
| . OCT | | | 127.20 | 30.98 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 2.55 | 35.23 | 240.50 | 88.38 | 0.00 |
| . NOV | | | 220.80 | 34.43 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 2.41 | 160.92 | 240.50 | 88.38 | 0.00 |
| . DEC | | | 168.70 | 34.43 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 2.41 | 114.52 | 240.50 | 88.38 | 0.00 |
| 1964. JAN | | | 105.00 | 34.43 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.83 | 17.51 | 240.50 | 88.38 | 0.00 |
| . FEB | | | 56.90 | 34.43 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.83 | 0.00 | 214.69 | 87.58 | 0.00 |
| . MAR | | | 127.00 | 31.66 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 3.18 | 47.21 | 240.50 | 88.38 | 0.00 |
| . APR | | | 137.40 | 34.43 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.83 | 71.21 | 240.50 | 88.38 | 0.00 |
| . MAY | | | 89.70 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 6.42 | 240.50 | 88.38 | 0.00 |
| . JUN | | | 43.30 | 34.43 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.46 | 0.00 | 192.67 | 86.88 | 0.00 |
| . JUL | | | 43.40 | 29.30 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 2.95 | 0.00 | 136.56 | 84.74 | 0.00 |
| . AUG | | | 28.10 | 23.61 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.38 | 0.00 | 108.38 | 83.44 | 0.00 |
| . SEP | | | 42.50 | 20.72 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 2.08 | 0.00 | 133.35 | 84.60 | 0.00 |
| . OCT | | | 39.40 | 23.28 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 1.92 | 0.00 | 113.54 | 83.70 | 0.00 |
| . NOV | | | 44.80 | 21.26 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.49 | 0.00 | 99.38 | 83.00 | 0.00 |
| . DEC | | | 21.40 | 19.78 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.39 | 0.00 | 67.62 | 81.25 | 0.00 |
| 1965. JAN | | | 20.90 | 16.19 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 1.33 | 0.00 | 2.53 | 75.44 | 0.00 |
| . FEB | | | 22.00 | 7.13 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 0.59 | 0.00 | 0.00 | 74.98 | 55.94 |
| . MAR | | | 31.60 | 6.76 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 0.68 | 0.00 | 0.00 | 74.98 | 19.88 |
| . APR | | | 183.00 | 6.76 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 0.56 | 0.00 | 119.08 | 83.97 | 0.00 |
| . MAY | | | 121.60 | 21.83 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 2.20 | 0.00 | 158.66 | 85.62 | 0.00 |
| . JUN | | | 52.40 | 25.85 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 2.60 | 0.00 | 120.79 | 84.05 | 0.00 |
| . JUL | | | 19.60 | 22.01 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 2.21 | 0.00 | 41.62 | 79.37 | 0.00 |
| . AUG | | | 22.80 | 12.83 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 1.29 | 0.00 | 9.23 | 76.34 | 0.00 |
| . SEP | | | 48.50 | 8.10 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 0.81 | 0.00 | 41.47 | 79.36 | 0.00 |
| . OCT | | | 66.70 | 12.81 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 1.05 | 0.00 | 49.83 | 80.02 | 0.00 |
| . NOV | | | 153.40 | 13.92 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 0.98 | 0.00 | 144.78 | 85.09 | 0.00 |
| . DEC | | | 162.80 | 24.45 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.71 | 13.60 | 240.50 | 88.38 | 0.00 |
| 1966. JAN | | | 99.60 | 34.43 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.83 | 12.11 | 240.50 | 88.38 | 0.00 |
| . FEB | | | 49.80 | 34.43 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.83 | 0.00 | 207.59 | 87.36 | 0.00 |
| . MAR | | | 102.60 | 30.90 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 3.11 | 15.78 | 240.50 | 88.38 | 0.00 |
| . APR | | | 170.30 | 34.43 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.83 | 104.11 | 240.50 | 88.38 | 0.00 |
| . MAY | | | 77.70 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 0.00 | 234.92 | 88.21 | 0.00 |
| . JUN | | | 37.30 | 33.83 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.40 | 0.00 | 181.15 | 86.46 | 0.00 |
| . JUL | | | 31.90 | 28.13 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 2.83 | 0.00 | 113.66 | 83.70 | 0.00 |
| . AUG | | | 24.60 | 21.27 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.14 | 0.00 | 82.22 | 82.10 | 0.00 |
| . SEP | | | 114.80 | 17.93 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 1.80 | 0.00 | 179.77 | 86.41 | 0.00 |
| . OCT | | | 195.50 | 27.99 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 2.30 | 75.18 | 240.50 | 88.38 | 0.00 |
| . NOV | | | 243.10 | 34.43 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 2.41 | 183.22 | 240.50 | 88.38 | 0.00 |
| . DEC | | | 206.50 | 34.43 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 2.41 | 152.32 | 240.50 | 88.38 | 0.00 |

Table 8.4 - 4 : Breakdown of the Water Balance Caluculation at Uda Walawe Reservoir 3/11

( Scenario - 1 : W/ Samanalawewa Dam , W/O Timbolketiya )

| Year. Month | Samanala Discha. (MCM) ① | Uda Wala Direct. A (MCM) ② | Inflow (MCM) ③ ①+② | Surface Area (Km²) ④ | Demand L. B. C (MCM) ⑤ | R. B. C (MCM) ⑥ | Exten. (MCM) ⑦ | Factory (MCM) ⑧ | Drinking (MCM) ⑨ | Ani cut (MCM) ⑩ | Total (MCM) ⑪ ⑤~⑩ | Reserv. Loss (MCM) ⑫ | Spill Out (MCM) ⑬ | Storage (MCM) ⑭ | Water Level (M) ⑮ | Demand Deficit (MCM) ⑯ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1967. JAN | | | 169.30 | 34.43 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.83 | 81.81 | 240.50 | 88.38 | 0.00 |
| . FEB | | | 53.50 | 34.43 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.83 | 0.00 | 211.29 | 87.47 | 0.00 |
| . MAR | | | 64.30 | 31.30 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 3.15 | 0.00 | 221.64 | 87.80 | 0.00 |
| . APR | | | 63.50 | 32.41 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.67 | 0.00 | 219.11 | 87.72 | 0.00 |
| . MAY | | | 55.70 | 32.14 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.23 | 0.00 | 191.76 | 86.84 | 0.00 |
| . JUN | | | 26.70 | 29.20 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 2.94 | 0.00 | 127.85 | 84.36 | 0.00 |
| . JUL | | | 15.80 | 22.72 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 2.29 | 0.00 | 44.80 | 79.62 | 0.00 |
| . AUG | | | 14.20 | 13.25 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 1.33 | 0.00 | 3.77 | 75.67 | 0.00 |
| . SEP | | | 9.60 | 7.31 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.01 | 15.46 | 0.74 | 0.00 | 0.00 | 74.98 | 2.83 |
| . OCT | | | 35.90 | 6.76 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 0.56 | 0.00 | 0.00 | 74.98 | 21.95 |
| . NOV | | | 150.10 | 6.76 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 0.47 | 0.00 | 92.16 | 82.62 | 0.00 |
| . DEC | | | 74.20 | 19.02 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.33 | 0.00 | 113.26 | 83.68 | 0.00 |
| 1968. JAN | | | 78.70 | 21.23 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 1.75 | 0.00 | 105.55 | 83.30 | 0.00 |
| . FEB | | | 16.30 | 20.42 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 1.68 | 0.00 | 40.29 | 79.26 | 0.00 |
| . MAR | | | 17.70 | 12.65 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 1.27 | 0.00 | 5.92 | 76.06 | 0.00 |
| . APR | | | 58.80 | 7.62 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 0.63 | 0.00 | 0.73 | 75.11 | 0.00 |
| . MAY | | | 57.60 | 6.87 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 0.69 | 0.00 | 0.00 | 74.98 | 22.18 |
| . JUN | | | 24.40 | 6.76 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 16.90 | 104.57 | 0.68 | 0.00 | 0.00 | 74.98 | 80.85 |
| . JUL | | | 43.70 | 6.76 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 0.68 | 0.00 | 0.00 | 74.98 | 53.54 |
| . AUG | | | 25.20 | 6.76 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 0.68 | 0.00 | 0.00 | 74.98 | 29.38 |
| . SEP | | | 22.00 | 6.76 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 0.68 | 0.00 | 5.87 | 76.05 | 0.00 |
| . OCT | | | 20.10 | 7.61 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 0.63 | 0.00 | 0.00 | 74.98 | 31.95 |
| . NOV | | | 37.60 | 6.76 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 0.47 | 0.00 | 0.00 | 74.98 | 20.34 |
| . DEC | | | 37.00 | 6.76 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 0.47 | 0.00 | 0.00 | 74.98 | 15.24 |
| 1969. JAN | | | 53.30 | 6.76 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 0.56 | 0.00 | 0.00 | 74.98 | 31.92 |
| . FEB | | | 17.70 | 6.76 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 0.56 | 0.00 | 0.00 | 74.98 | 62.74 |
| . MAR | | | 58.90 | 6.76 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 0.68 | 0.00 | 7.42 | 76.24 | 0.00 |
| . APR | | | 104.50 | 7.84 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 0.65 | 0.00 | 47.91 | 79.87 | 0.00 |
| . MAY | | | 252.80 | 13.67 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 1.38 | 0.00 | 219.51 | 87.73 | 0.00 |
| . JUN | | | 39.90 | 32.18 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.24 | 0.00 | 168.50 | 86.00 | 0.00 |
| . JUL | | | 26.00 | 26.85 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 2.70 | 0.00 | 95.24 | 82.78 | 0.00 |
| . AUG | | | 34.00 | 19.34 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 1.95 | 0.00 | 73.39 | 81.59 | 0.00 |
| . SEP | | | 23.10 | 16.88 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 1.70 | 0.00 | 79.34 | 81.95 | 0.00 |
| . OCT | | | 76.90 | 17.59 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 1.45 | 0.00 | 97.50 | 82.90 | 0.00 |
| . NOV | | | 80.40 | 19.58 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.37 | 0.00 | 119.06 | 83.97 | 0.00 |
| . DEC | | | 49.60 | 21.83 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.53 | 0.00 | 115.36 | 83.79 | 0.00 |
| 1970. JAN | 54.98 | 42.40 | 97.38 | 21.45 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 1.77 | 0.00 | 126.31 | 84.29 | 0.00 |
| . FEB | 42.98 | 24.30 | 67.28 | 22.57 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 1.86 | 0.00 | 111.85 | 83.61 | 0.00 |
| . MAR | 99.41 | 77.60 | 177.01 | 21.08 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 2.12 | 0.00 | 235.94 | 88.24 | 0.00 |
| . APR | 102.35 | 73.70 | 176.05 | 33.94 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.79 | 105.34 | 240.50 | 88.38 | 0.00 |
| . MAY | 77.72 | 83.10 | 160.82 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 77.54 | 240.50 | 88.38 | 0.00 |
| . JUN | 31.20 | 14.40 | 45.60 | 34.43 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.46 | 0.00 | 194.97 | 86.96 | 0.00 |
| . JUL | 27.34 | 5.10 | 32.44 | 29.55 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 2.97 | 0.00 | 127.88 | 84.36 | 0.00 |
| . AUG | 0.00 | 8.00 | 8.00 | 22.73 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.29 | 0.00 | 79.69 | 81.97 | 0.00 |
| . SEP | 34.99 | 2.50 | 37.49 | 17.63 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 1.77 | 0.00 | 99.96 | 83.03 | 0.00 |
| . OCT | 5.97 | 14.20 | 20.17 | 19.84 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 1.63 | 0.00 | 61.21 | 80.84 | 0.00 |
| . NOV | 47.28 | 155.40 | 202.68 | 15.43 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.08 | 0.00 | 205.34 | 87.29 | 0.00 |
| . DEC | 42.55 | 33.10 | 75.65 | 30.66 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 2.15 | 0.00 | 227.07 | 87.96 | 0.00 |
| 1971. JAN | 50.84 | 128.50 | 179.34 | 32.99 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.72 | 78.53 | 240.50 | 88.38 | 0.00 |
| . FEB | 69.78 | 33.50 | 103.28 | 34.43 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.83 | 20.57 | 240.50 | 88.38 | 0.00 |
| . MAR | 100.44 | 24.10 | 124.54 | 34.43 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 3.46 | 70.28 | 240.50 | 88.38 | 0.00 |
| . APR | 81.91 | 3.80 | 85.71 | 34.43 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.83 | 19.52 | 240.50 | 88.38 | 0.00 |
| . MAY | 51.85 | 21.90 | 73.75 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 0.00 | 230.97 | 88.09 | 0.00 |
| . JUN | 29.60 | 49.20 | 78.80 | 33.41 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.36 | 0.00 | 218.74 | 87.71 | 0.00 |
| . JUL | 4.19 | 16.40 | 20.59 | 32.10 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 3.23 | 0.00 | 139.54 | 84.87 | 0.00 |
| . AUG | 0.00 | 31.60 | 31.60 | 23.91 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.41 | 0.00 | 114.83 | 83.76 | 0.00 |
| . SEP | 0.00 | 55.20 | 55.20 | 21.40 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 2.15 | 0.00 | 152.43 | 85.38 | 0.00 |
| . OCT | 5.97 | 6.40 | 12.37 | 25.22 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 2.08 | 0.00 | 105.43 | 83.30 | 0.00 |
| . NOV | 97.71 | 33.70 | 131.41 | 20.41 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.43 | 0.00 | 177.94 | 86.35 | 0.00 |
| . DEC | 52.65 | 46.20 | 98.85 | 27.80 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.95 | 0.00 | 223.07 | 87.84 | 0.00 |
| 1972. JAN | 69.19 | 23.90 | 93.09 | 32.56 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.68 | 0.00 | 228.82 | 88.02 | 0.00 |
| . FEB | 69.65 | 5.50 | 75.15 | 33.18 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.73 | 0.00 | 221.36 | 87.79 | 0.00 |
| . MAR | 113.91 | 6.30 | 120.21 | 32.38 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 3.26 | 47.01 | 240.50 | 88.38 | 0.00 |
| . APR | 113.70 | 15.20 | 128.90 | 34.43 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.83 | 62.71 | 240.50 | 88.38 | 0.00 |
| . MAY | 91.63 | 88.60 | 180.23 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 96.95 | 240.50 | 88.38 | 0.00 |
| . JUN | 51.45 | 12.10 | 63.55 | 34.43 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.46 | 0.00 | 212.92 | 87.52 | 0.00 |
| . JUL | 20.04 | 3.20 | 23.24 | 31.47 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 3.17 | 0.00 | 136.43 | 84.73 | 0.00 |
| . AUG | 26.83 | 0.20 | 27.03 | 23.60 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.37 | 0.00 | 107.19 | 83.38 | 0.00 |
| . SEP | 40.34 | 14.90 | 55.24 | 20.59 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 2.07 | 0.00 | 144.91 | 85.09 | 0.00 |
| . OCT | 5.97 | 28.40 | 34.37 | 24.46 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 2.01 | 0.00 | 119.98 | 84.01 | 0.00 |
| . NOV | 51.86 | 171.70 | 223.56 | 21.92 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.54 | 44.03 | 240.50 | 88.38 | 0.00 |
| . DEC | 43.52 | 20.70 | 64.22 | 34.43 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 2.41 | 10.04 | 240.50 | 88.38 | 0.00 |
| 1973. JAN | 55.36 | 36.70 | 92.06 | 34.43 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.83 | 4.57 | 240.50 | 88.38 | 0.00 |
| . FEB | 71.49 | 5.50 | 76.99 | 34.43 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.83 | 0.00 | 234.78 | 88.20 | 0.00 |
| . MAR | 59.27 | 86.30 | 145.57 | 33.82 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 3.40 | 85.65 | 240.50 | 88.38 | 0.00 |
| . APR | 57.74 | 36.00 | 93.74 | 34.43 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.83 | 27.55 | 240.50 | 88.38 | 0.00 |
| . MAY | 22.39 | 29.90 | 52.29 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 0.00 | 209.51 | 87.42 | 0.00 |
| . JUN | 18.10 | 1.60 | 19.70 | 31.11 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.13 | 0.00 | 138.41 | 84.82 | 0.00 |
| . JUL | 10.50 | 3.20 | 13.70 | 23.80 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 2.39 | 0.00 | 53.16 | 80.26 | 0.00 |
| . AUG | 4.54 | 0.20 | 4.74 | 14.37 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 1.45 | 0.00 | 2.55 | 75.45 | 0.00 |
| . SEP | 35.55 | 1.00 | 36.55 | 7.13 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.01 | 15.46 | 0.72 | 0.00 | 22.92 | 77.66 | 0.00 |
| . OCT | 40.36 | 43.80 | 84.16 | 10.10 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 0.83 | 0.00 | 48.96 | 79.95 | 0.00 |
| . NOV | 48.68 | 45.70 | 94.38 | 13.81 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 0.97 | 0.00 | 84.90 | 82.24 | 0.00 |
| . DEC | 72.78 | 11.30 | 84.08 | 18.25 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.28 | 0.00 | 115.93 | 83.81 | 0.00 |

Table 8.4 - 4 : Breakdown of the Water Balance Caluculation at Uda Walawe Reservoir 4/11

( Scenario - 1 : W/ Samanalawewa Dam , W/O Timbolketiya )

| Year. Month | Samanala Discha. (MCM) ① | Uda Wala Direct. A (MCM) ② | Inflow (MCM) ③ ①+② | Surface Area (Km²) ④ | Demand L. B. C (MCM) ⑤ | R. B. C (MCM) ⑥ | Exten. (MCM) ⑦ | Factory (MCM) ⑧ | Drinking (MCM) ⑨ | Anl cut (MCM) ⑩ | Total (MCM) ⑪ ⑤~⑩ | Reserv. Loss (MCM) ⑫ | Spill Out (MCM) ⑬ | Storage (MCM) ⑭ | Water Level (M) ⑮ | Demand Deficit (MCM) ⑯ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1974. JAN | 33.72 | 6.60 | 40.32 | 21.51 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 1.77 | 0.00 | 69.82 | 81.38 | 0.00 |
| . FEB | 24.24 | 43.90 | 68.14 | 16.45 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 1.35 | 0.00 | 56.73 | 80.52 | 0.00 |
| . MAR | 37.90 | 6.30 | 44.20 | 14.85 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 1.49 | 0.00 | 48.64 | 79.93 | 0.00 |
| . APR | 66.94 | 3.80 | 70.74 | 13.76 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 1.13 | 0.00 | 54.89 | 80.38 | 0.00 |
| . MAY | 35.17 | 47.30 | 82.47 | 14.60 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 1.47 | 0.00 | 56.07 | 80.47 | 0.00 |
| . JUN | 4.34 | 1.60 | 5.94 | 14.76 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 1.48 | 0.00 | 0.00 | 74.98 | 27.14 |
| . JUL | 3.10 | 3.20 | 6.30 | 6.76 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 6.30 | 102.86 | 0.68 | 0.00 | 0.00 | 74.98 | 97.24 |
| . AUG | 0.00 | 0.20 | 0.20 | 6.76 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 0.68 | 0.00 | 0.00 | 74.98 | 54.38 |
| . SEP | 0.00 | 1.00 | 1.00 | 6.76 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 0.68 | 0.00 | 0.00 | 74.98 | 15.13 |
| . OCT | 5.97 | 6.40 | 12.37 | 6.76 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 8.10 | 65.39 | 0.56 | 0.00 | 0.00 | 74.98 | 53.58 |
| . NOV | 65.35 | 102.10 | 167.45 | 6.76 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 0.47 | 0.00 | 109.51 | 83.50 | 0.00 |
| . DEC | 72.60 | 152.50 | 225.10 | 20.84 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.46 | 40.88 | 240.50 | 88.38 | 0.00 |
| 1975. JAN | 69.56 | 34.50 | 104.06 | 34.43 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.83 | 16.57 | 240.50 | 88.38 | 0.00 |
| . FEB | 72.25 | 26.00 | 98.25 | 34.43 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.83 | 15.54 | 240.50 | 88.38 | 0.00 |
| . MAR | 90.18 | 11.20 | 101.38 | 34.43 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 3.46 | 47.12 | 240.50 | 88.38 | 0.00 |
| . APR | 112.14 | 68.40 | 180.54 | 34.43 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.83 | 114.35 | 240.50 | 88.38 | 0.00 |
| . MAY | 60.28 | 50.30 | 110.58 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 27.30 | 240.50 | 88.38 | 0.00 |
| . JUN | 27.34 | 16.30 | 43.64 | 34.43 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.46 | 0.00 | 193.01 | 86.89 | 0.00 |
| . JUL | 53.49 | 3.20 | 56.69 | 29.34 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 2.95 | 0.00 | 150.19 | 85.30 | 0.00 |
| . AUG | 0.00 | 0.20 | 0.20 | 25.00 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.52 | 0.00 | 93.97 | 82.72 | 0.00 |
| . SEP | 16.60 | 1.00 | 17.60 | 19.21 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 1.93 | 0.00 | 94.19 | 82.73 | 0.00 |
| . OCT | 5.97 | 34.10 | 40.07 | 19.23 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 1.58 | 0.00 | 75.39 | 81.71 | 0.00 |
| . NOV | 19.67 | 105.10 | 124.77 | 17.12 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.20 | 0.00 | 141.49 | 84.96 | 0.00 |
| . DEC | 54.10 | 11.30 | 65.40 | 24.11 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.69 | 0.00 | 153.43 | 85.42 | 0.00 |
| 1976. JAN | 57.16 | 22.50 | 79.66 | 25.32 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.08 | 0.00 | 146.35 | 85.15 | 0.00 |
| . FEB | 65.84 | 5.50 | 71.34 | 24.60 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.02 | 0.00 | 135.79 | 84.71 | 0.00 |
| . MAR | 73.21 | 6.30 | 79.51 | 23.53 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 2.37 | 0.00 | 162.13 | 85.76 | 0.00 |
| . APR | 92.76 | 39.50 | 132.26 | 26.20 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.16 | 0.00 | 228.87 | 88.02 | 0.00 |
| . MAY | 61.21 | 33.10 | 94.31 | 33.18 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.34 | 0.00 | 240.02 | 88.37 | 0.00 |
| . JUN | 4.29 | 19.30 | 23.59 | 34.38 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.46 | 0.00 | 172.48 | 86.15 | 0.00 |
| . JUL | 4.70 | 17.30 | 22.00 | 27.25 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 2.74 | 0.00 | 95.18 | 82.78 | 0.00 |
| . AUG | 8.88 | 17.90 | 26.78 | 19.33 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 1.94 | 0.00 | 66.12 | 81.16 | 0.00 |
| . SEP | 4.08 | 1.00 | 5.08 | 16.01 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.01 | 15.46 | 1.61 | 0.00 | 54.13 | 80.33 | 0.00 |
| . OCT | 40.01 | 37.80 | 77.81 | 14.50 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 1.19 | 0.00 | 73.46 | 81.60 | 0.00 |
| . NOV | 61.77 | 230.80 | 292.57 | 16.89 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.18 | 66.88 | 240.50 | 88.38 | 0.00 |
| . DEC | 85.96 | 65.40 | 151.36 | 34.43 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 2.41 | 97.18 | 240.50 | 88.38 | 0.00 |
| 1977. JAN | 34.13 | 72.80 | 106.93 | 34.43 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.83 | 19.44 | 240.50 | 88.38 | 0.00 |
| . FEB | 24.34 | 75.50 | 99.84 | 34.43 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.83 | 17.13 | 240.50 | 88.38 | 0.00 |
| . MAR | 41.30 | 40.10 | 81.40 | 34.43 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 3.46 | 27.14 | 240.50 | 88.38 | 0.00 |
| . APR | 65.44 | 57.30 | 122.74 | 34.43 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.83 | 56.55 | 240.50 | 88.38 | 0.00 |
| . MAY | 85.73 | 33.10 | 118.83 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 35.55 | 240.50 | 88.38 | 0.00 |
| . JUN | 14.15 | 12.00 | 26.15 | 34.43 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.46 | 0.00 | 175.52 | 86.26 | 0.00 |
| . JUL | 20.88 | 17.90 | 38.78 | 27.56 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 2.77 | 0.00 | 114.97 | 83.77 | 0.00 |
| . AUG | 43.03 | 0.20 | 43.23 | 21.41 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.15 | 0.00 | 102.15 | 83.14 | 0.00 |
| . SEP | 37.19 | 1.00 | 38.19 | 20.07 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.01 | 15.46 | 2.02 | 0.00 | 122.86 | 84.14 | 0.00 |
| . OCT | 9.11 | 20.60 | 29.71 | 22.22 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 1.83 | 0.00 | 93.45 | 82.69 | 0.00 |
| . NOV | 53.36 | 106.80 | 160.16 | 19.15 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.34 | 0.00 | 194.80 | 86.95 | 0.00 |
| . DEC | 74.45 | 11.30 | 85.75 | 29.53 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 2.07 | 0.00 | 226.71 | 87.95 | 0.00 |
| 1978. JAN | 74.43 | 12.20 | 86.63 | 32.95 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.71 | 0.00 | 225.97 | 87.93 | 0.00 |
| . FEB | 54.08 | 58.30 | 112.38 | 32.87 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.71 | 15.26 | 240.50 | 88.38 | 0.00 |
| . MAR | 61.99 | 42.40 | 104.39 | 34.43 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 3.46 | 50.13 | 240.50 | 88.38 | 0.00 |
| . APR | 43.14 | 24.70 | 67.84 | 34.43 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.83 | 1.65 | 240.50 | 88.38 | 0.00 |
| . MAY | 16.47 | 129.60 | 146.07 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 62.79 | 240.50 | 88.38 | 0.00 |
| . JUN | 45.44 | 14.50 | 59.94 | 34.43 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.46 | 0.00 | 209.31 | 87.41 | 0.00 |
| . JUL | 3.10 | 3.20 | 6.30 | 31.08 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 3.13 | 0.00 | 115.92 | 83.81 | 0.00 |
| . AUG | 0.00 | 0.20 | 0.20 | 21.51 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.16 | 0.00 | 60.06 | 80.76 | 0.00 |
| . SEP | 0.82 | 21.90 | 22.72 | 15.29 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 1.54 | 0.00 | 65.79 | 81.14 | 0.00 |
| . OCT | 20.83 | 26.60 | 47.43 | 15.97 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 1.31 | 0.00 | 54.62 | 80.36 | 0.00 |
| . NOV | 28.20 | 41.20 | 69.40 | 14.56 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.02 | 0.00 | 65.53 | 81.13 | 0.00 |
| . DEC | 60.90 | 26.50 | 87.40 | 15.94 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.12 | 0.00 | 100.04 | 83.03 | 0.00 |
| 1979. JAN | 66.79 | 71.50 | 138.29 | 19.84 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 1.63 | 0.00 | 152.04 | 85.37 | 0.00 |
| . FEB | 75.76 | 38.10 | 113.86 | 25.18 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.07 | 0.00 | 183.95 | 86.56 | 0.00 |
| . MAR | 80.21 | 6.30 | 86.51 | 28.41 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 2.86 | 0.00 | 216.80 | 87.64 | 0.00 |
| . APR | 94.35 | 28.90 | 123.25 | 31.89 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.62 | 33.57 | 240.50 | 88.38 | 0.00 |
| . MAY | 77.50 | 49.80 | 127.30 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 44.02 | 240.50 | 88.38 | 0.00 |
| . JUN | 36.50 | 22.40 | 58.90 | 34.43 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.46 | 0.00 | 208.27 | 87.38 | 0.00 |
| . JUL | 13.60 | 18.80 | 32.40 | 30.97 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 3.12 | 0.00 | 140.99 | 84.94 | 0.00 |
| . AUG | 57.48 | 0.20 | 57.68 | 24.06 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.42 | 0.00 | 142.35 | 85.00 | 0.00 |
| . SEP | 27.80 | 1.00 | 28.80 | 24.20 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 2.43 | 0.00 | 153.27 | 85.42 | 0.00 |
| . OCT | 16.56 | 44.70 | 61.26 | 25.31 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 2.08 | 0.00 | 155.16 | 85.49 | 0.00 |
| . NOV | 26.64 | 9.70 | 36.34 | 25.50 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.79 | 0.00 | 132.24 | 84.55 | 0.00 |
| . DEC | 57.10 | 119.70 | 176.80 | 23.17 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.62 | 15.15 | 240.50 | 88.38 | 0.00 |
| 1980. JAN | 66.35 | 17.60 | 83.95 | 34.43 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.83 | 0.00 | 236.96 | 88.27 | 0.00 |
| . FEB | 70.77 | 5.50 | 76.27 | 34.05 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.80 | 0.00 | 230.55 | 88.07 | 0.00 |
| . MAR | 70.41 | 29.00 | 99.41 | 33.36 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 3.36 | 35.30 | 240.50 | 88.38 | 0.00 |
| . APR | 49.44 | 38.60 | 88.04 | 34.43 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.83 | 21.85 | 240.50 | 88.38 | 0.00 |
| . MAY | 38.19 | 22.40 | 60.59 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 0.00 | 217.81 | 87.68 | 0.00 |
| . JUN | 18.70 | 26.10 | 44.80 | 32.00 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.22 | 0.00 | 171.72 | 86.12 | 0.00 |
| . JUL | 17.19 | 25.80 | 42.99 | 27.17 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 2.73 | 0.00 | 115.42 | 83.79 | 0.00 |
| . AUG | 6.61 | 8.40 | 15.01 | 21.46 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.16 | 0.00 | 74.37 | 81.65 | 0.00 |
| . SEP | 19.14 | 35.70 | 54.84 | 17.00 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 1.71 | 0.00 | 112.05 | 83.62 | 0.00 |
| . OCT | 18.24 | 6.40 | 24.64 | 21.10 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 1.74 | 0.00 | 77.66 | 81.85 | 0.00 |
| . NOV | 56.66 | 109.00 | 165.66 | 17.39 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.22 | 0.00 | 184.63 | 86.59 | 0.00 |
| . DEC | 66.10 | 71.30 | 137.40 | 28.48 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 2.00 | 27.76 | 240.50 | 88.38 | 0.00 |

Table 8.4 - 4 : Breakdown of the Water Balance Caluculation at Uda Walawe Reservoir 5/11

( Scenario - 1 : W/ Samanalawewa Dam , W/O Timbolketiya )

| Year. Month | Samanala Discha. (MCM) ① | Uda Wala Direct. A (MCM) ② | Inflow (MCM) ③ ①+② | Surface Area (Km²) ④ | Demand L. B. C (MCM) ⑤ | Demand R. B. C (MCM) ⑥ | Demand Exten. (MCM) ⑦ | Demand Factory (MCM) ⑧ | Demand Drinking (MCM) ⑨ | Demand Ani cut (MCM) ⑩ | Demand Total (MCM) ⑪ ⑤~⑩ | Reserv. Loss (MCM) ⑫ | Spill Out (MCM) ⑬ | Storage (MCM) ⑭ | Water Level (M) ⑮ | Demand Deficit (MCM) ⑯ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981. JAN | 33.04 | 41.10 | 74.14 | 34.43 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.83 | 0.00 | 227.15 | 87.97 | 0.00 |
| . FEB | 18.94 | 5.50 | 24.44 | 33.00 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.72 | 0.00 | 168.99 | 86.02 | 0.00 |
| . MAR | 20.10 | 10.90 | 31.00 | 26.90 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 2.71 | 0.00 | 146.48 | 85.16 | 0.00 |
| . APR | 42.74 | 18.60 | 61.34 | 24.62 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.03 | 0.00 | 142.43 | 85.00 | 0.00 |
| . MAY | 34.30 | 48.50 | 82.80 | 24.21 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 2.44 | 0.00 | 142.97 | 85.02 | 0.00 |
| . JUN | 8.24 | 31.20 | 39.44 | 24.26 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 2.44 | 0.00 | 92.30 | 82.63 | 0.00 |
| . JUL | 46.53 | 28.20 | 74.73 | 19.03 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 1.91 | 0.00 | 68.56 | 81.31 | 0.00 |
| . AUG | 21.11 | 3.50 | 24.61 | 16.30 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 1.64 | 0.00 | 37.63 | 79.05 | 0.00 |
| . SEP | 4.96 | 35.90 | 40.86 | 12.26 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 1.23 | 0.00 | 61.81 | 80.88 | 0.00 |
| . OCT | 9.99 | 6.40 | 16.39 | 15.50 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 1.28 | 0.00 | 19.63 | 77.31 | 0.00 |
| . NOV | 43.13 | 115.50 | 158.63 | 9.62 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 0.67 | 0.00 | 120.12 | 84.02 | 0.00 |
| . DEC | 65.80 | 11.30 | 77.10 | 21.94 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.54 | 0.00 | 143.91 | 85.06 | 0.00 |
| 1982. JAN | 43.96 | 40.90 | 84.86 | 24.36 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.00 | 0.00 | 142.11 | 84.98 | 0.00 |
| . FEB | 13.34 | 33.80 | 47.14 | 24.17 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 1.99 | 0.00 | 107.38 | 83.39 | 0.00 |
| . MAR | 20.30 | 38.30 | 58.60 | 20.61 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 2.07 | 0.00 | 113.11 | 83.68 | 0.00 |
| . APR | 40.14 | 48.20 | 88.34 | 21.22 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 1.75 | 0.00 | 136.34 | 84.73 | 0.00 |
| . MAY | 49.60 | 118.90 | 168.50 | 23.59 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 2.37 | 0.00 | 222.65 | 87.83 | 0.00 |
| . JUN | 8.24 | 1.60 | 9.84 | 32.52 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.27 | 0.00 | 141.55 | 84.96 | 0.00 |
| . JUL | 27.33 | 5.60 | 32.93 | 24.12 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 2.43 | 0.00 | 75.49 | 81.72 | 0.00 |
| . AUG | 37.10 | 0.80 | 37.90 | 17.13 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 1.72 | 0.00 | 57.77 | 80.59 | 0.00 |
| . SEP | 53.36 | 1.00 | 54.36 | 14.98 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.01 | 15.46 | 1.51 | 0.00 | 95.16 | 82.78 | 0.00 |
| . OCT | 42.61 | 31.30 | 73.91 | 19.33 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 1.59 | 0.00 | 110.19 | 83.53 | 0.00 |
| . NOV | 57.59 | 170.90 | 228.49 | 20.91 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.47 | 39.24 | 240.50 | 88.38 | 0.00 |
| . DEC | 34.46 | 14.40 | 48.86 | 34.43 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 2.41 | 0.00 | 235.18 | 88.22 | 0.00 |
| 1983. JAN | 60.49 | 22.30 | 82.79 | 33.86 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.79 | 0.00 | 230.52 | 88.07 | 0.00 |
| . FEB | 28.60 | 5.60 | 34.20 | 33.36 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.75 | 0.00 | 182.09 | 86.50 | 0.00 |
| . MAR | 10.59 | 6.30 | 16.89 | 28.22 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 2.84 | 0.00 | 145.34 | 85.11 | 0.00 |
| . APR | 25.34 | 3.80 | 29.14 | 24.50 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.02 | 0.00 | 109.10 | 83.48 | 0.00 |
| . MAY | 37.70 | 56.90 | 94.60 | 20.79 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 2.09 | 0.00 | 121.79 | 84.09 | 0.00 |
| . JUN | 2.30 | 23.60 | 25.90 | 22.11 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 2.22 | 0.00 | 57.80 | 80.59 | 0.00 |
| . JUL | 3.30 | 18.40 | 21.70 | 14.99 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 1.51 | 0.00 | 0.00 | 74.98 | 18.57 |
| . AUG | 7.98 | 11.00 | 18.98 | 6.76 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 0.68 | 0.00 | 0.00 | 74.98 | 35.60 |
| . SEP | 9.78 | 27.70 | 37.48 | 6.76 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 0.68 | 0.00 | 21.35 | 77.49 | 0.00 |
| . OCT | 8.18 | 6.40 | 14.58 | 9.87 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 0.81 | 0.00 | 0.00 | 74.98 | 22.17 |
| . NOV | 47.34 | 95.60 | 142.94 | 6.76 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 0.47 | 0.00 | 85.00 | 82.25 | 0.00 |
| . DEC | 76.27 | 11.30 | 87.57 | 18.26 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.28 | 0.00 | 119.52 | 83.99 | 0.00 |
| 1984. JAN | 66.81 | 65.10 | 131.91 | 21.88 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 1.80 | 0.00 | 164.97 | 85.87 | 0.00 |
| . FEB | 46.66 | 30.00 | 76.66 | 26.49 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.18 | 0.00 | 159.57 | 85.66 | 0.00 |
| . MAR | 112.01 | 41.00 | 153.01 | 25.94 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 2.61 | 18.67 | 240.50 | 88.38 | 0.00 |
| . APR | 112.74 | 86.00 | 198.74 | 34.43 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.83 | 132.55 | 240.50 | 88.38 | 0.00 |
| . MAY | 69.77 | 22.20 | 91.97 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 8.69 | 240.50 | 88.38 | 0.00 |
| . JUN | 30.15 | 21.50 | 51.65 | 34.43 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.46 | 0.00 | 201.02 | 87.15 | 0.00 |
| . JUL | 3.10 | 11.50 | 14.60 | 30.20 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 3.04 | 0.00 | 116.02 | 83.82 | 0.00 |
| . AUG | 0.00 | 13.70 | 13.70 | 21.52 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.16 | 0.00 | 73.66 | 81.61 | 0.00 |
| . SEP | 2.83 | 17.40 | 20.23 | 16.91 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 1.70 | 0.00 | 76.74 | 81.79 | 0.00 |
| . OCT | 15.90 | 15.70 | 31.60 | 17.28 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 1.42 | 0.00 | 49.63 | 80.00 | 0.00 |
| . NOV | 71.86 | 64.80 | 136.66 | 13.90 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 0.97 | 0.00 | 127.85 | 84.36 | 0.00 |
| . DEC | 75.21 | 36.10 | 111.31 | 22.72 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.59 | 0.00 | 185.80 | 86.63 | 0.00 |
| 1985. JAN | 65.61 | 30.70 | 96.31 | 28.60 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.35 | 0.00 | 195.10 | 86.97 | 0.00 |
| . FEB | 72.18 | 13.60 | 85.78 | 29.56 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.43 | 0.00 | 198.57 | 87.08 | 0.00 |
| . MAR | 42.03 | 65.80 | 107.83 | 29.93 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 3.01 | 12.09 | 240.50 | 88.38 | 0.00 |
| . APR | 38.44 | 3.80 | 42.24 | 34.43 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.83 | 0.00 | 216.55 | 87.64 | 0.00 |
| . MAY | 43.79 | 52.70 | 96.49 | 31.86 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.21 | 0.00 | 230.01 | 88.06 | 0.00 |
| . JUN | 6.16 | 37.10 | 43.26 | 33.31 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.35 | 0.00 | 182.25 | 86.50 | 0.00 |
| . JUL | 3.10 | 3.20 | 6.30 | 28.24 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 2.84 | 0.00 | 89.15 | 82.47 | 0.00 |
| . AUG | 0.00 | 7.20 | 7.20 | 18.70 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 1.88 | 0.00 | 40.57 | 79.28 | 0.00 |
| . SEP | 32.65 | 10.80 | 43.45 | 12.68 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 1.28 | 0.00 | 67.29 | 81.23 | 0.00 |
| . OCT | 44.17 | 20.60 | 64.77 | 16.15 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 1.33 | 0.00 | 73.44 | 81.60 | 0.00 |
| . NOV | 39.31 | 40.20 | 79.51 | 16.89 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.18 | 0.00 | 94.30 | 82.74 | 0.00 |
| . DEC | 88.59 | 48.20 | 136.79 | 19.24 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.35 | 0.00 | 177.97 | 86.35 | 0.00 |
| 1986. JAN | 25.62 | 31.30 | 56.92 | 27.81 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.29 | 0.00 | 147.94 | 85.21 | 0.00 |
| . FEB | 38.85 | 17.70 | 56.55 | 24.77 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.04 | 0.00 | 122.57 | 84.12 | 0.00 |
| . MAR | 65.88 | 15.50 | 81.38 | 22.19 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 2.23 | 0.00 | 150.92 | 85.33 | 0.00 |
| . APR | 115.13 | 55.50 | 170.63 | 25.07 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.06 | 15.63 | 240.50 | 88.38 | 0.00 |
| . MAY | 74.05 | 21.20 | 95.25 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 11.97 | 240.50 | 88.38 | 0.00 |
| . JUN | 51.49 | 28.70 | 80.19 | 34.43 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.46 | 0.00 | 229.56 | 88.04 | 0.00 |
| . JUL | 40.01 | 27.00 | 67.01 | 33.26 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 3.35 | 0.00 | 196.66 | 87.02 | 0.00 |
| . AUG | 6.52 | 10.10 | 16.62 | 29.73 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.99 | 0.00 | 156.39 | 85.54 | 0.00 |
| . SEP | 15.49 | 17.90 | 33.39 | 25.62 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 2.58 | 0.00 | 171.75 | 86.12 | 0.00 |
| . OCT | 10.64 | 91.90 | 102.54 | 27.18 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 2.24 | 0.00 | 214.76 | 87.58 | 0.00 |
| . NOV | 34.01 | 24.60 | 58.61 | 31.67 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 2.22 | 0.00 | 213.68 | 87.55 | 0.00 |
| . DEC | 56.95 | 51.10 | 108.05 | 31.55 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 2.21 | 27.25 | 240.50 | 88.38 | 0.00 |
| 1987. JAN | 53.33 | 53.90 | 107.23 | 34.43 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.83 | 19.74 | 240.50 | 88.38 | 0.00 |
| . FEB | 14.34 | 5.50 | 19.84 | 34.43 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.83 | 0.00 | 177.63 | 86.33 | 0.00 |
| . MAR | 20.19 | 6.30 | 26.49 | 27.77 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 2.79 | 0.00 | 150.53 | 85.31 | 0.00 |
| . APR | 42.04 | 10.00 | 52.04 | 25.03 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.06 | 0.00 | 137.15 | 84.77 | 0.00 |
| . MAY | 49.40 | 12.30 | 61.70 | 23.67 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 2.38 | 0.00 | 116.65 | 83.85 | 0.00 |
| . JUN | 16.60 | 1.60 | 18.20 | 21.58 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 2.17 | 0.00 | 45.01 | 79.64 | 0.00 |
| . JUL | 9.80 | 10.60 | 20.40 | 13.28 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 1.34 | 0.00 | 0.00 | 74.98 | 32.49 |
| . AUG | 16.98 | 0.20 | 17.18 | 6.76 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 0.68 | 0.00 | 0.00 | 74.98 | 37.40 |
| . SEP | 18.28 | 3.40 | 21.68 | 6.76 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 0.68 | 0.00 | 5.55 | 75.99 | 0.00 |
| . OCT | 39.23 | 6.40 | 45.63 | 7.57 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 0.62 | 0.00 | 0.00 | 74.98 | 6.73 |
| . NOV | 54.11 | 96.60 | 150.71 | 6.76 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 0.47 | 0.00 | 92.77 | 82.66 | 0.00 |
| . DEC | 64.42 | 63.10 | 127.52 | 19.08 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.34 | 0.00 | 167.18 | 85.95 | 0.00 |

Table 8.4 - 4 : Breakdown of the Water Balance Caluculation at Uda Walawe Reservoir

( Scenario - 1 : W/ Samanalawewa Dam , W/O Timbolketiya )

| Year. Month | Samanala Discha. (MCM) ① | Uda Wala Direct. A (MCM) ② | Inflow (MCM) ③ ①+② | Surface Area (Km²) ④ | Demand L. B. C (MCM) ⑤ | R. B. C (MCM) ⑥ | Exten. (MCM) ⑦ | Factory (MCM) ⑧ | Drinking (MCM) ⑨ | Anl cut (MCM) ⑩ | Total (MCM) ⑪ ⑤~⑩ | Reserv. Loss (MCM) ⑫ | Spill Out (MCM) ⑬ | Storage (MCM) ⑭ | Water Level (M) ⑮ | Demand Deficit (MCM) ⑯ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988. JAN | 23.54 | 37.00 | 60.54 | 26.71 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.20 | 0.00 | 140.86 | 84.93 | 0.00 |
| . FEB | 25.34 | 64.40 | 89.74 | 24.05 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 1.98 | 0.00 | 148.74 | 85.24 | 0.00 |
| . MAR | 61.90 | 49.50 | 111.40 | 24.85 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 2.50 | 0.00 | 206.84 | 87.34 | 0.00 |
| . APR | 91.54 | 47.30 | 138.84 | 30.82 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 2.54 | 39.28 | 240.50 | 88.38 | 0.00 |
| . MAY | 54.07 | 62.70 | 116.77 | 34.43 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 3.46 | 33.49 | 240.50 | 88.38 | 0.00 |
| . JUN | 39.00 | 1.60 | 40.60 | 34.43 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 3.46 | 0.00 | 189.97 | 86.78 | 0.00 |
| . JUL | 13.29 | 7.80 | 21.09 | 29.02 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 2.92 | 0.00 | 111.58 | 83.60 | 0.00 |
| . AUG | 10.72 | 2.60 | 13.32 | 21.05 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 2.12 | 0.00 | 68.88 | 81.33 | 0.00 |
| . SEP | 27.22 | 1.00 | 28.22 | 16.34 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 1.64 | 0.00 | 80.01 | 81.99 | 0.00 |
| . OCT | 67.89 | 6.40 | 74.29 | 17.67 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 1.45 | 0.00 | 95.56 | 82.80 | 0.00 |
| . NOV | 49.21 | 129.60 | 178.81 | 19.37 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 1.36 | 0.00 | 215.54 | 87.61 | 0.00 |
| . DEC | 68.35 | 11.30 | 79.65 | 31.75 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 2.23 | 0.69 | 240.50 | 88.38 | 0.00 |
| 1989. JAN | 41.83 | 22.70 | 64.53 | 34.43 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 2.83 | 0.00 | 217.54 | 87.67 | 0.00 |
| . FEB | 12.04 | 5.50 | 17.54 | 31.97 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 2.63 | 0.00 | 152.57 | 85.39 | 0.00 |
| . MAR | 14.70 | 6.30 | 21.00 | 25.24 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 2.54 | 0.00 | 120.23 | 84.02 | 0.00 |
| . APR | 35.74 | 3.80 | 39.54 | 21.95 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 1.81 | 0.00 | 94.60 | 82.75 | 0.00 |
| . MAY | 47.67 | 87.60 | 135.27 | 19.27 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 1.94 | 0.00 | 148.11 | 85.22 | 0.00 |
| . JUN | 8.00 | 4.00 | 12.00 | 24.78 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 2.49 | 0.00 | 69.95 | 81.39 | 0.00 |
| . JUL | 5.83 | 10.20 | 16.03 | 16.47 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 1.66 | 0.00 | 0.00 | 74.98 | 12.24 |
| . AUG | 0.72 | 11.30 | 12.02 | 6.76 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 0.68 | 0.00 | 0.00 | 74.98 | 42.56 |
| . SEP | 12.82 | 1.00 | 13.82 | 6.76 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 0.68 | 0.00 | 0.00 | 74.98 | 2.31 |
| . OCT | 35.31 | 32.30 | 67.61 | 6.76 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 0.56 | 0.00 | 9.76 | 76.36 | 0.00 |
| . NOV | 74.53 | 67.00 | 141.53 | 8.18 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 0.57 | 0.00 | 93.25 | 82.68 | 0.00 |
| . DEC | 37.58 | 33.90 | 71.48 | 19.13 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.34 | 0.00 | 111.62 | 83.60 | 0.00 |
| 1990. JAN | | | 73.40 | 21.06 | 16.29 | 49.60 | 18.67 | 0.00 | 0.10 | 0.00 | 84.66 | 1.73 | 0.00 | 98.63 | 82.96 | 0.00 |
| . FEB | | | 69.70 | 19.70 | 14.59 | 54.20 | 10.99 | 0.00 | 0.10 | 0.00 | 79.88 | 1.62 | 0.00 | 86.83 | 82.35 | 0.00 |
| . MAR | | | 96.20 | 18.46 | 13.44 | 23.00 | 14.26 | 0.00 | 0.10 | 0.00 | 50.80 | 1.86 | 0.00 | 130.37 | 84.47 | 0.00 |
| . APR | | | 35.50 | 22.98 | 20.06 | 19.50 | 23.42 | 0.28 | 0.10 | 0.00 | 63.36 | 1.89 | 0.00 | 100.62 | 83.06 | 0.00 |
| . MAY | | | 123.20 | 19.91 | 14.99 | 48.80 | 15.65 | 0.28 | 0.10 | 0.00 | 79.82 | 2.00 | 0.00 | 142.00 | 84.98 | 0.00 |
| . JUN | | | 63.80 | 24.16 | 19.86 | 50.10 | 17.33 | 0.28 | 0.10 | 0.00 | 87.67 | 2.43 | 0.00 | 115.70 | 83.80 | 0.00 |
| . JUL | | | 30.30 | 21.49 | 19.38 | 59.80 | 17.00 | 0.28 | 0.10 | 0.00 | 96.56 | 2.16 | 0.00 | 47.28 | 79.82 | 0.00 |
| . AUG | | | 29.50 | 13.58 | 11.74 | 34.80 | 6.98 | 0.28 | 0.10 | 0.00 | 53.90 | 1.37 | 0.00 | 21.51 | 77.51 | 0.00 |
| . SEP | | | 13.70 | 9.90 | 6.13 | 4.10 | 4.84 | 0.28 | 0.10 | 0.00 | 15.45 | 1.00 | 0.00 | 18.76 | 77.21 | 0.00 |
| . OCT | | | 60.30 | 9.50 | 18.66 | 22.70 | 15.55 | 0.28 | 0.10 | 0.00 | 57.29 | 0.78 | 0.00 | 20.99 | 77.45 | 0.00 |
| . NOV | | | 176.50 | 9.82 | 9.40 | 34.20 | 13.77 | 0.00 | 0.10 | 0.00 | 57.47 | 0.69 | 0.00 | 139.33 | 84.86 | 0.00 |
| . DEC | | | 92.40 | 23.89 | 7.07 | 34.40 | 10.20 | 0.00 | 0.10 | 0.00 | 51.77 | 1.67 | 0.00 | 178.29 | 86.36 | 0.00 |

Table 8.4 - 4 : Water Balance Caluculation on Walawe River 7/11

( Scenario - 1 : W/ Samanalaweva Dam , W/O Timbolketiya )

| Year. Month | Stream flow at Uda Walawe | | | | | | | | | | | | Domestic Water Deficit (MCM) ⑬ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Walawe Dam | | Walawe Dam ~ Embilipitiya | | | R.B.C Return. F (MCM) ⑥ | L.B.C(0) Return. F (MCM) ⑦ | Total (MCM) ⑧ ①②⑤~⑦ | Ridiyagama Demand (MCM) ⑨ | Stream flow at Uda Walawe | | | |
| | Spillout (MCM) ① | Release (MCM) ② | Direct. A (MCM) ③ | RBC Demand (MCM) ④ | Outflow (MCM) ⑤ ③-④ | | | | | Discharge (MCM) ⑩ ⑧-⑨ | Ridiyagama Return. F (MCM) ⑪ | Total (MCM) ⑫ ⑩+⑪ | |
| 1960. JAN | 26.31 | 0.00 | 20.90 | 0.00 | 20.90 | 14.43 | 8.02 | 69.66 | 29.65 | 40.01 | 7.92 | 47.93 | 0.00 |
| . FEB | 32.09 | 0.00 | 22.80 | 0.00 | 22.80 | 15.75 | 5.07 | 75.71 | 3.53 | 72.18 | 0.91 | 73.09 | 0.00 |
| . MAR | 63.04 | 0.00 | 22.50 | 0.00 | 22.50 | 6.70 | 5.07 | 97.31 | 20.01 | 77.30 | 4.59 | 81.89 | 0.00 |
| . APR | 120.21 | 0.00 | 32.90 | 0.00 | 32.90 | 5.67 | 9.08 | 167.86 | 47.08 | 120.78 | 11.20 | 131.98 | 0.00 |
| . MAY | 0.00 | 0.00 | 27.60 | 0.00 | 27.60 | 14.18 | 7.62 | 49.40 | 26.96 | 22.44 | 7.57 | 30.01 | 0.00 |
| . JUN | 0.00 | 0.00 | 15.30 | 0.00 | 15.30 | 14.58 | 8.96 | 38.84 | 30.87 | 7.97 | 8.07 | 16.04 | 0.00 |
| . JUL | 0.00 | 0.00 | 27.90 | 0.00 | 27.90 | 17.38 | 8.18 | 53.46 | 24.90 | 28.56 | 6.26 | 34.82 | 0.00 |
| . AUG | 0.00 | 0.00 | 10.70 | 0.00 | 10.70 | 10.11 | 3.98 | 24.79 | 0.56 | 24.23 | 0.00 | 24.23 | 0.00 |
| . SEP | 0.00 | 0.00 | 16.30 | 0.00 | 16.30 | 1.18 | 1.45 | 18.93 | 0.54 | 18.39 | 0.00 | 18.39 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.50 | 0.00 | 25.50 | 6.61 | 8.91 | 41.02 | 34.95 | 6.07 | 8.59 | 14.66 | 0.00 |
| . NOV | 0.00 | 0.00 | 23.40 | 0.00 | 23.40 | 9.93 | 5.93 | 39.26 | 31.40 | 7.86 | 9.19 | 17.05 | 0.00 |
| . DEC | 0.00 | 0.00 | 19.60 | 0.00 | 19.60 | 10.00 | 4.47 | 34.07 | 22.91 | 11.16 | 7.05 | 18.21 | 0.00 |
| 1961. JAN | 0.00 | 0.00 | 16.30 | 0.00 | 16.30 | 14.43 | 8.02 | 38.75 | 29.65 | 9.10 | 7.92 | 17.02 | 0.00 |
| . FEB | 0.00 | 0.00 | 9.90 | 0.00 | 9.90 | 15.75 | 5.07 | 30.72 | 3.53 | 27.19 | 0.91 | 28.10 | 0.00 |
| . MAR | 0.00 | 0.00 | 13.90 | 0.00 | 13.90 | 6.70 | 5.07 | 25.67 | 20.01 | 5.66 | 4.59 | 10.25 | 0.00 |
| . APR | 0.00 | 0.00 | 37.00 | 0.00 | 37.00 | 5.67 | 9.08 | 51.75 | 47.08 | 4.67 | 11.20 | 15.87 | 0.00 |
| . MAY | 50.45 | 0.00 | 14.50 | 0.00 | 14.50 | 14.18 | 7.62 | 86.75 | 26.96 | 59.79 | 7.57 | 67.36 | 0.00 |
| . JUN | 0.00 | 0.00 | 11.80 | 0.00 | 11.80 | 14.58 | 8.96 | 35.34 | 30.87 | 4.47 | 8.07 | 12.54 | 0.00 |
| . JUL | 0.00 | 0.00 | 11.20 | 0.00 | 11.20 | 17.38 | 8.18 | 36.76 | 24.90 | 11.86 | 6.26 | 18.12 | 0.00 |
| . AUG | 0.00 | 0.00 | 16.10 | 0.00 | 16.10 | 10.11 | 3.98 | 30.19 | 0.56 | 29.63 | 0.00 | 29.63 | 0.00 |
| . SEP | 0.00 | 0.00 | 8.00 | 0.00 | 8.00 | 1.18 | 1.45 | 10.63 | 0.54 | 10.09 | 0.00 | 10.09 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.60 | 0.00 | 25.60 | 6.61 | 8.91 | 41.12 | 34.95 | 6.17 | 8.59 | 14.76 | 0.00 |
| . NOV | 59.70 | 0.00 | 54.20 | 0.00 | 54.20 | 9.93 | 5.93 | 129.76 | 31.40 | 98.36 | 9.19 | 107.55 | 0.00 |
| . DEC | 77.02 | 0.00 | 38.80 | 0.00 | 38.80 | 10.00 | 4.47 | 130.29 | 22.91 | 107.38 | 7.05 | 114.43 | 0.00 |
| 1962. JAN | 0.00 | 0.00 | 24.90 | 0.00 | 24.90 | 14.43 | 8.02 | 47.35 | 29.65 | 17.70 | 7.92 | 25.62 | 0.00 |
| . FEB | 0.00 | 0.00 | 15.00 | 0.00 | 15.00 | 15.75 | 5.07 | 35.82 | 3.53 | 32.29 | 0.91 | 33.20 | 0.00 |
| . MAR | 2.16 | 0.00 | 24.40 | 0.00 | 24.40 | 6.70 | 5.07 | 38.33 | 20.01 | 18.32 | 4.59 | 22.91 | 0.00 |
| . APR | 82.31 | 0.00 | 44.30 | 0.00 | 44.30 | 5.67 | 9.08 | 141.36 | 47.08 | 94.28 | 11.20 | 105.48 | 0.00 |
| . MAY | 97.02 | 0.00 | 54.40 | 0.00 | 54.40 | 14.18 | 7.62 | 173.22 | 26.96 | 146.26 | 7.57 | 153.83 | 0.00 |
| . JUN | 0.00 | 0.00 | 16.80 | 0.00 | 16.80 | 14.58 | 8.96 | 40.34 | 30.87 | 9.47 | 8.07 | 17.54 | 0.00 |
| . JUL | 0.00 | 0.00 | 11.00 | 0.00 | 11.00 | 17.38 | 8.18 | 36.56 | 24.90 | 11.66 | 6.26 | 17.92 | 0.00 |
| . AUG | 0.00 | 0.00 | 6.70 | 0.00 | 6.70 | 10.11 | 3.98 | 20.79 | 0.56 | 20.23 | 0.00 | 20.23 | 0.00 |
| . SEP | 0.00 | 0.00 | 11.40 | 0.00 | 11.40 | 1.18 | 1.45 | 14.03 | 0.54 | 13.49 | 0.00 | 13.49 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.50 | 0.00 | 25.50 | 6.61 | 8.91 | 41.02 | 34.95 | 6.07 | 8.59 | 14.66 | 0.00 |
| . NOV | 0.00 | 0.00 | 37.30 | 0.00 | 37.30 | 9.93 | 5.93 | 53.16 | 31.40 | 21.76 | 9.19 | 30.95 | 0.00 |
| . DEC | 47.07 | 0.00 | 35.60 | 0.00 | 35.60 | 10.00 | 4.47 | 97.14 | 22.91 | 74.23 | 7.05 | 81.28 | 0.00 |
| 1963. JAN | 132.41 | 0.00 | 67.00 | 0.00 | 67.00 | 14.43 | 8.02 | 221.86 | 29.65 | 192.21 | 7.92 | 200.13 | 0.00 |
| . FEB | 12.59 | 0.00 | 27.80 | 0.00 | 27.80 | 15.75 | 5.07 | 61.21 | 3.53 | 57.68 | 0.91 | 58.59 | 0.00 |
| . MAR | 52.64 | 0.00 | 31.30 | 0.00 | 31.30 | 6.70 | 5.07 | 95.71 | 20.01 | 75.70 | 4.59 | 80.29 | 0.00 |
| . APR | 191.71 | 0.00 | 78.80 | 0.00 | 78.80 | 5.67 | 9.08 | 285.26 | 47.08 | 238.18 | 11.20 | 249.38 | 0.00 |
| . MAY | 112.82 | 0.00 | 59.20 | 0.00 | 59.20 | 14.18 | 7.62 | 193.82 | 26.96 | 166.86 | 7.57 | 174.43 | 0.00 |
| . JUN | 0.00 | 0.00 | 25.70 | 0.00 | 25.70 | 14.58 | 8.96 | 49.24 | 30.87 | 18.37 | 8.07 | 26.44 | 0.00 |
| . JUL | 0.00 | 0.00 | 16.10 | 0.00 | 16.10 | 17.38 | 8.18 | 41.66 | 24.90 | 16.76 | 6.26 | 23.02 | 0.00 |
| . AUG | 0.00 | 0.00 | 11.20 | 0.00 | 11.20 | 10.11 | 3.98 | 25.29 | 0.56 | 24.73 | 0.00 | 24.73 | 0.00 |
| . SEP | 0.00 | 0.00 | 11.10 | 0.00 | 11.10 | 1.18 | 1.45 | 13.73 | 0.54 | 13.19 | 0.00 | 13.19 | 0.00 |
| . OCT | 35.23 | 0.00 | 37.50 | 0.00 | 37.50 | 6.61 | 8.91 | 88.25 | 34.95 | 53.30 | 8.59 | 61.89 | 0.00 |
| . NOV | 160.92 | 0.00 | 67.10 | 0.00 | 67.10 | 9.93 | 5.93 | 243.88 | 31.40 | 212.48 | 9.19 | 221.67 | 0.00 |
| . DEC | 114.52 | 0.00 | 50.90 | 0.00 | 50.90 | 10.00 | 4.47 | 179.89 | 22.91 | 156.98 | 7.05 | 164.03 | 0.00 |
| 1964. JAN | 17.51 | 0.00 | 30.50 | 0.00 | 30.50 | 14.43 | 8.02 | 70.46 | 29.65 | 40.81 | 7.92 | 48.73 | 0.00 |
| . FEB | 0.00 | 0.00 | 15.50 | 0.00 | 15.50 | 15.75 | 5.07 | 36.32 | 3.53 | 32.79 | 0.91 | 33.70 | 0.00 |
| . MAR | 47.21 | 0.00 | 37.50 | 0.00 | 37.50 | 6.70 | 5.07 | 96.48 | 20.01 | 76.47 | 4.59 | 81.06 | 0.00 |
| . APR | 71.21 | 0.00 | 41.00 | 0.00 | 41.00 | 5.67 | 9.08 | 126.96 | 47.08 | 79.88 | 11.20 | 91.08 | 0.00 |
| . MAY | 6.42 | 0.00 | 26.00 | 0.00 | 26.00 | 14.18 | 7.62 | 54.22 | 26.96 | 27.26 | 7.57 | 34.83 | 0.00 |
| . JUN | 0.00 | 0.00 | 12.10 | 0.00 | 12.10 | 14.58 | 8.96 | 35.64 | 30.87 | 4.77 | 8.07 | 12.84 | 0.00 |
| . JUL | 0.00 | 0.00 | 11.20 | 0.00 | 11.20 | 17.38 | 8.18 | 36.76 | 24.90 | 11.86 | 6.26 | 18.12 | 0.00 |
| . AUG | 0.00 | 0.00 | 6.40 | 0.00 | 6.40 | 10.11 | 3.98 | 20.49 | 0.56 | 19.93 | 0.00 | 19.93 | 0.00 |
| . SEP | 0.00 | 0.00 | 11.10 | 0.00 | 11.10 | 1.18 | 1.45 | 13.73 | 0.54 | 13.19 | 0.00 | 13.19 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.80 | 0.00 | 25.80 | 6.61 | 8.91 | 41.32 | 34.95 | 6.37 | 8.59 | 14.96 | 0.00 |
| . NOV | 0.00 | 0.00 | 23.50 | 0.00 | 23.50 | 9.93 | 5.93 | 39.36 | 31.40 | 7.96 | 9.19 | 17.15 | 0.00 |
| . DEC | 0.00 | 0.00 | 14.30 | 0.00 | 14.30 | 10.00 | 4.47 | 28.77 | 22.91 | 5.86 | 7.05 | 12.91 | 0.00 |
| 1965. JAN | 0.00 | 0.00 | 14.30 | 0.00 | 14.30 | 14.43 | 8.02 | 36.75 | 29.65 | 7.10 | 7.92 | 15.02 | 0.00 |
| . FEB | 0.00 | 0.00 | 4.80 | 0.00 | 4.80 | 5.46 | 1.76 | 12.02 | 3.53 | 8.49 | 0.91 | 9.40 | 0.00 |
| . MAR | 0.00 | 0.00 | 17.50 | 0.00 | 17.50 | 5.67 | 4.29 | 27.46 | 20.01 | 7.45 | 4.59 | 12.04 | 0.00 |
| . APR | 0.00 | 0.00 | 55.20 | 0.00 | 55.20 | 5.67 | 9.08 | 69.95 | 47.08 | 22.87 | 11.20 | 34.07 | 0.00 |
| . MAY | 0.00 | 0.00 | 35.90 | 0.00 | 35.90 | 14.18 | 7.62 | 57.70 | 26.96 | 30.74 | 7.57 | 38.31 | 0.00 |
| . JUN | 0.00 | 0.00 | 14.30 | 0.00 | 14.30 | 14.58 | 8.96 | 37.84 | 30.87 | 6.97 | 8.07 | 15.04 | 0.00 |
| . JUL | 0.00 | 0.00 | 3.70 | 0.00 | 3.70 | 17.38 | 8.18 | 29.26 | 24.90 | 4.36 | 6.26 | 10.62 | 0.00 |
| . AUG | 0.00 | 0.00 | 4.60 | 0.00 | 4.60 | 10.11 | 3.98 | 18.69 | 0.56 | 18.13 | 0.00 | 18.13 | 0.00 |
| . SEP | 0.00 | 0.00 | 13.00 | 0.00 | 13.00 | 1.18 | 1.45 | 15.63 | 0.54 | 15.09 | 0.00 | 15.09 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.50 | 0.00 | 25.50 | 6.61 | 8.91 | 41.02 | 34.95 | 6.07 | 8.59 | 14.66 | 0.00 |
| . NOV | 0.00 | 0.00 | 45.90 | 0.00 | 45.90 | 9.93 | 5.93 | 61.76 | 31.40 | 30.36 | 9.19 | 39.55 | 0.00 |
| . DEC | 13.60 | 0.00 | 49.00 | 0.00 | 49.00 | 10.00 | 4.47 | 77.07 | 22.91 | 54.16 | 7.05 | 61.21 | 0.00 |
| 1966. JAN | 12.11 | 0.00 | 28.90 | 0.00 | 28.90 | 14.43 | 8.02 | 63.46 | 29.65 | 33.81 | 7.92 | 41.73 | 0.00 |
| . FEB | 0.00 | 0.00 | 13.50 | 0.00 | 13.50 | 15.75 | 5.07 | 34.32 | 3.53 | 30.79 | 0.91 | 31.70 | 0.00 |
| . MAR | 15.78 | 0.00 | 30.00 | 0.00 | 30.00 | 6.70 | 5.07 | 57.55 | 20.01 | 37.54 | 4.59 | 42.13 | 0.00 |
| . APR | 104.11 | 0.00 | 51.30 | 0.00 | 51.30 | 5.67 | 9.08 | 170.16 | 47.08 | 123.08 | 11.20 | 134.28 | 0.00 |
| . MAY | 0.00 | 0.00 | 22.00 | 0.00 | 22.00 | 14.18 | 7.62 | 43.80 | 26.96 | 16.84 | 7.57 | 24.41 | 0.00 |
| . JUN | 0.00 | 0.00 | 11.90 | 0.00 | 11.90 | 14.58 | 8.96 | 35.44 | 30.87 | 4.57 | 8.07 | 12.64 | 0.00 |
| . JUL | 0.00 | 0.00 | 7.80 | 0.00 | 7.80 | 17.38 | 8.18 | 33.36 | 24.90 | 8.46 | 6.26 | 14.72 | 0.00 |
| . AUG | 0.00 | 0.00 | 5.40 | 0.00 | 5.40 | 10.11 | 3.98 | 19.49 | 0.56 | 18.93 | 0.00 | 18.93 | 0.00 |
| . SEP | 0.00 | 0.00 | 33.70 | 0.00 | 33.70 | 1.18 | 1.45 | 36.33 | 0.54 | 35.79 | 0.00 | 35.79 | 0.00 |
| . OCT | 75.18 | 0.00 | 59.20 | 0.00 | 59.20 | 6.61 | 8.91 | 149.90 | 34.95 | 114.95 | 8.59 | 123.54 | 0.00 |
| . NOV | 183.22 | 0.00 | 74.10 | 0.00 | 74.10 | 9.93 | 5.93 | 273.18 | 31.40 | 241.78 | 9.19 | 250.97 | 0.00 |
| . DEC | 152.32 | 0.00 | 62.70 | 0.00 | 62.70 | 10.00 | 4.47 | 229.49 | 22.91 | 206.58 | 7.05 | 213.63 | 0.00 |

Table 8.4 - 4 : Water Balance Caluculation on Walawe River

( Scenario - 1 : W/ Samanalawewa Dam , W/O Timbolketiya )

| Year. Month | Stream flow at Uda Walawe | | | | | | | | Ridiyagama Demand (MCM) | Stream flow at Uda Walawe | | | Domestic Water Deficit (MCM) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Walawe Dam | | Walawe Dam ~ Embilipitiya | | | R.B.C Return. F (MCM) | L.B.C(0) Return. F (MCM) | Total (MCM) | | Discharge (MCM) | Ridiyagama Return. F (MCM) | Total (MCM) | |
| | Spillout (MCM) ① | Release (MCM) ② | Direct. A (MCM) ③ | RBC Demand (MCM) ④ | Outflow (MCM) ⑤ | ⑥ | ⑦ | ①②⑥~⑦ ⑧ | ⑨ | ⑧−⑨ ⑩ | ⑩ | ⑩+⑪ ⑫ | ⑬ |
| 1967. JAN | 81.81 | 0.00 | 50.90 | 0.00 | 50.90 | 14.43 | 8.02 | 155.16 | 29.65 | 125.51 | 7.92 | 133.43 | 0.00 |
| . FEB | 0.00 | 0.00 | 14.50 | 0.00 | 14.50 | 15.75 | 5.07 | 35.32 | 3.53 | 31.79 | 0.91 | 32.70 | 0.00 |
| . MAR | 0.00 | 0.00 | 17.70 | 0.00 | 17.70 | 6.70 | 5.07 | 29.47 | 20.01 | 9.46 | 4.59 | 14.05 | 0.00 |
| . APR | 0.00 | 0.00 | 38.60 | 0.00 | 38.60 | 5.67 | 9.08 | 53.35 | 47.08 | 6.27 | 11.20 | 17.47 | 0.00 |
| . MAY | 0.00 | 0.00 | 15.00 | 0.00 | 15.00 | 14.18 | 7.62 | 36.80 | 26.96 | 9.84 | 7.57 | 17.41 | 0.00 |
| . JUN | 0.00 | 0.00 | 11.80 | 0.00 | 11.80 | 14.58 | 8.96 | 35.34 | 30.87 | 4.47 | 8.07 | 12.54 | 0.00 |
| . JUL | 0.00 | 0.00 | 2.70 | 0.00 | 2.70 | 17.38 | 8.18 | 28.26 | 24.90 | 3.36 | 6.26 | 9.62 | 0.00 |
| . AUG | 0.00 | 0.00 | 2.10 | 0.00 | 2.10 | 10.11 | 3.98 | 16.19 | 0.56 | 15.63 | 0.00 | 15.63 | 0.00 |
| . SEP | 0.00 | 0.01 | 0.50 | 0.00 | 0.50 | 1.18 | 1.45 | 3.14 | 0.54 | 2.60 | 0.00 | 2.60 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.80 | 0.00 | 25.80 | 5.59 | 7.53 | 38.92 | 34.95 | 3.97 | 8.59 | 12.56 | 0.00 |
| . NOV | 0.00 | 0.00 | 44.80 | 0.00 | 44.80 | 9.93 | 5.93 | 60.66 | 31.40 | 29.26 | 9.19 | 38.45 | 0.00 |
| . DEC | 0.00 | 0.00 | 20.90 | 0.00 | 20.90 | 10.00 | 4.47 | 35.37 | 22.91 | 12.46 | 7.05 | 19.51 | 0.00 |
| 1968. JAN | 0.00 | 0.00 | 22.20 | 0.00 | 22.20 | 14.43 | 8.02 | 44.65 | 29.65 | 15.00 | 7.92 | 22.92 | 0.00 |
| . FEB | 0.00 | 0.00 | 2.80 | 0.00 | 2.80 | 15.75 | 5.07 | 23.62 | 3.53 | 20.09 | 0.91 | 21.00 | 0.00 |
| . MAR | 0.00 | 0.00 | 14.30 | 0.00 | 14.30 | 6.70 | 5.07 | 26.07 | 20.01 | 6.06 | 4.59 | 10.65 | 0.00 |
| . APR | 0.00 | 0.00 | 38.20 | 0.00 | 38.20 | 5.67 | 9.08 | 52.95 | 47.08 | 5.87 | 11.20 | 17.07 | 0.00 |
| . MAY | 0.00 | 0.00 | 15.80 | 0.00 | 15.80 | 12.73 | 6.84 | 35.37 | 26.96 | 8.41 | 7.57 | 15.98 | 0.00 |
| . JUN | 0.00 | 16.90 | 11.80 | 0.00 | 11.80 | 1.34 | 0.83 | 30.87 | 30.87 | 0.00 | 8.07 | 8.07 | 0.00 |
| . JUL | 0.00 | 0.00 | 11.20 | 0.00 | 11.20 | 9.36 | 4.41 | 24.97 | 24.90 | 0.07 | 6.26 | 6.33 | 0.00 |
| . AUG | 0.00 | 0.00 | 5.40 | 0.00 | 5.40 | 5.24 | 2.06 | 12.70 | 0.56 | 12.14 | 0.00 | 12.14 | 0.00 |
| . SEP | 0.00 | 0.00 | 4.70 | 0.00 | 4.70 | 1.18 | 1.45 | 7.33 | 0.54 | 6.79 | 0.00 | 6.79 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.60 | 0.00 | 25.60 | 3.99 | 5.38 | 34.97 | 34.95 | 0.02 | 8.59 | 8.61 | 0.00 |
| . NOV | 0.00 | 0.00 | 23.40 | 0.00 | 23.40 | 8.43 | 5.03 | 36.86 | 31.40 | 5.46 | 9.19 | 14.65 | 0.00 |
| . DEC | 0.00 | 0.00 | 14.10 | 0.00 | 14.10 | 8.78 | 3.93 | 26.81 | 22.91 | 3.90 | 7.05 | 10.95 | 0.00 |
| 1969. JAN | 0.00 | 0.00 | 14.20 | 0.00 | 14.20 | 11.53 | 6.41 | 32.14 | 29.65 | 2.49 | 7.92 | 10.41 | 0.00 |
| . FEB | 0.00 | 0.00 | 3.40 | 0.00 | 3.40 | 3.90 | 1.25 | 8.55 | 3.53 | 5.02 | 0.91 | 5.93 | 0.00 |
| . MAR | 0.00 | 0.00 | 16.10 | 0.00 | 16.10 | 6.70 | 5.07 | 27.87 | 20.01 | 7.86 | 4.59 | 12.45 | 0.00 |
| . APR | 0.00 | 0.00 | 38.40 | 0.00 | 38.40 | 5.67 | 9.08 | 53.15 | 47.08 | 6.07 | 11.20 | 17.27 | 0.00 |
| . MAY | 0.00 | 0.00 | 77.10 | 0.00 | 77.10 | 14.18 | 7.62 | 98.90 | 26.96 | 71.94 | 7.57 | 79.51 | 0.00 |
| . JUN | 0.00 | 0.00 | 11.90 | 0.00 | 11.90 | 14.58 | 8.96 | 35.44 | 30.87 | 4.57 | 8.07 | 12.64 | 0.00 |
| . JUL | 0.00 | 0.00 | 5.90 | 0.00 | 5.90 | 17.38 | 8.18 | 31.46 | 24.90 | 6.56 | 6.26 | 12.82 | 0.00 |
| . AUG | 0.00 | 0.00 | 8.30 | 0.00 | 8.30 | 10.11 | 3.98 | 22.39 | 0.56 | 21.83 | 0.00 | 21.83 | 0.00 |
| . SEP | 0.00 | 0.00 | 4.90 | 0.00 | 4.90 | 1.18 | 1.45 | 7.53 | 0.54 | 6.99 | 0.00 | 6.99 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.90 | 0.00 | 25.90 | 6.61 | 8.91 | 41.42 | 34.95 | 6.47 | 8.59 | 15.06 | 0.00 |
| . NOV | 0.00 | 0.00 | 23.40 | 0.00 | 23.40 | 9.93 | 5.93 | 39.26 | 31.40 | 7.86 | 9.19 | 17.05 | 0.00 |
| . DEC | 0.00 | 0.00 | 14.10 | 0.00 | 14.10 | 10.00 | 4.47 | 28.57 | 22.91 | 5.66 | 7.05 | 12.71 | 0.00 |
| 1970. JAN | 0.00 | 0.00 | 26.50 | 0.00 | 26.50 | 14.43 | 8.02 | 48.95 | 29.65 | 19.30 | 7.92 | 27.22 | 0.00 |
| . FEB | 0.00 | 0.00 | 18.40 | 0.00 | 18.40 | 15.75 | 5.07 | 39.22 | 3.53 | 35.69 | 0.91 | 36.60 | 0.00 |
| . MAR | 0.00 | 0.00 | 42.10 | 0.00 | 42.10 | 6.70 | 5.07 | 53.87 | 20.01 | 33.86 | 4.59 | 38.45 | 0.00 |
| . APR | 105.34 | 0.00 | 44.30 | 0.00 | 44.30 | 5.67 | 9.08 | 164.39 | 47.08 | 117.31 | 11.20 | 128.51 | 0.00 |
| . MAY | 77.54 | 0.00 | 40.70 | 0.00 | 40.70 | 14.18 | 7.62 | 140.04 | 26.96 | 113.08 | 7.57 | 120.65 | 0.00 |
| . JUN | 0.00 | 0.00 | 11.90 | 0.00 | 11.90 | 14.58 | 8.96 | 35.44 | 30.87 | 4.57 | 8.07 | 12.64 | 0.00 |
| . JUL | 0.00 | 0.00 | 5.90 | 0.00 | 5.90 | 17.38 | 8.18 | 31.46 | 24.90 | 6.56 | 6.26 | 12.82 | 0.00 |
| . AUG | 0.00 | 0.00 | 5.10 | 0.00 | 5.10 | 10.11 | 3.98 | 19.19 | 0.56 | 18.63 | 0.00 | 18.63 | 0.00 |
| . SEP | 0.00 | 0.00 | 4.10 | 0.00 | 4.10 | 1.18 | 1.45 | 6.73 | 0.54 | 6.19 | 0.00 | 6.19 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.50 | 0.00 | 25.50 | 6.61 | 8.91 | 41.02 | 34.95 | 6.07 | 8.59 | 14.66 | 0.00 |
| . NOV | 0.00 | 0.00 | 69.70 | 0.00 | 69.70 | 9.93 | 5.93 | 85.56 | 31.40 | 54.16 | 9.19 | 63.35 | 0.00 |
| . DEC | 0.00 | 0.00 | 26.50 | 0.00 | 26.50 | 10.00 | 4.47 | 40.97 | 22.91 | 18.06 | 7.05 | 25.11 | 0.00 |
| 1971. JAN | 78.53 | 0.00 | 53.00 | 0.00 | 53.00 | 14.43 | 8.02 | 153.98 | 29.65 | 124.33 | 7.92 | 132.25 | 0.00 |
| . FEB | 20.57 | 0.00 | 20.80 | 0.00 | 20.80 | 15.75 | 5.07 | 62.19 | 3.53 | 58.66 | 0.91 | 59.57 | 0.00 |
| . MAR | 70.28 | 0.00 | 20.40 | 0.00 | 20.40 | 6.70 | 5.07 | 102.45 | 20.01 | 82.44 | 4.59 | 87.03 | 0.00 |
| . APR | 19.52 | 0.00 | 31.00 | 0.00 | 31.00 | 5.67 | 9.08 | 65.27 | 47.08 | 18.19 | 11.20 | 29.39 | 0.00 |
| . MAY | 0.00 | 0.00 | 19.60 | 0.00 | 19.60 | 14.18 | 7.62 | 41.40 | 26.96 | 14.44 | 7.57 | 22.01 | 0.00 |
| . JUN | 0.00 | 0.00 | 27.00 | 0.00 | 27.00 | 14.58 | 8.96 | 50.54 | 30.87 | 19.67 | 8.07 | 27.74 | 0.00 |
| . JUL | 0.00 | 0.00 | 11.00 | 0.00 | 11.00 | 17.38 | 8.18 | 36.56 | 24.90 | 11.66 | 6.26 | 17.92 | 0.00 |
| . AUG | 0.00 | 0.00 | 12.90 | 0.00 | 12.90 | 10.11 | 3.98 | 26.99 | 0.56 | 26.43 | 0.00 | 26.43 | 0.00 |
| . SEP | 0.00 | 0.00 | 35.00 | 0.00 | 35.00 | 1.18 | 1.45 | 37.63 | 0.54 | 37.09 | 0.00 | 37.09 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.50 | 0.00 | 25.50 | 6.61 | 8.91 | 41.02 | 34.95 | 6.07 | 8.59 | 14.66 | 0.00 |
| . NOV | 0.00 | 0.00 | 32.10 | 0.00 | 32.10 | 9.93 | 5.93 | 47.96 | 31.40 | 16.56 | 9.19 | 25.75 | 0.00 |
| . DEC | 0.00 | 0.00 | 33.20 | 0.00 | 33.20 | 10.00 | 4.47 | 47.67 | 22.91 | 24.76 | 7.05 | 31.81 | 0.00 |
| 1972. JAN | 0.00 | 0.00 | 15.80 | 0.00 | 15.80 | 14.43 | 8.02 | 38.25 | 29.65 | 8.60 | 7.92 | 16.52 | 0.00 |
| . FEB | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 15.75 | 5.07 | 22.82 | 3.53 | 19.29 | 0.91 | 20.20 | 0.00 |
| . MAR | 47.01 | 0.00 | 24.90 | 0.00 | 24.90 | 6.70 | 5.07 | 83.68 | 20.01 | 63.67 | 4.59 | 68.26 | 0.00 |
| . APR | 62.71 | 0.00 | 37.20 | 0.00 | 37.20 | 5.67 | 9.08 | 114.66 | 47.08 | 67.58 | 11.20 | 78.78 | 0.00 |
| . MAY | 96.95 | 0.00 | 54.40 | 0.00 | 54.40 | 14.18 | 7.62 | 173.15 | 26.96 | 146.19 | 7.57 | 153.76 | 0.00 |
| . JUN | 0.00 | 0.00 | 11.80 | 0.00 | 11.80 | 14.58 | 8.96 | 35.34 | 30.87 | 4.47 | 8.07 | 12.54 | 0.00 |
| . JUL | 0.00 | 0.00 | 4.80 | 0.00 | 4.80 | 17.38 | 8.18 | 30.36 | 24.90 | 5.46 | 6.26 | 11.72 | 0.00 |
| . AUG | 0.00 | 0.00 | 5.10 | 0.00 | 5.10 | 10.11 | 3.98 | 19.19 | 0.56 | 18.63 | 0.00 | 18.63 | 0.00 |
| . SEP | 0.00 | 0.00 | 17.10 | 0.00 | 17.10 | 1.18 | 1.45 | 19.73 | 0.54 | 19.19 | 0.00 | 19.19 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.70 | 0.00 | 25.70 | 6.61 | 8.91 | 41.22 | 34.95 | 6.27 | 8.59 | 14.86 | 0.00 |
| . NOV | 44.03 | 0.00 | 80.90 | 0.00 | 80.90 | 9.93 | 5.93 | 140.79 | 31.40 | 109.39 | 9.19 | 118.58 | 0.00 |
| . DEC | 10.04 | 0.00 | 19.60 | 0.00 | 19.60 | 10.00 | 4.47 | 44.11 | 22.91 | 21.20 | 7.05 | 28.25 | 0.00 |
| 1973. JAN | 4.57 | 0.00 | 16.90 | 0.00 | 16.90 | 14.43 | 8.02 | 43.92 | 29.65 | 14.27 | 7.92 | 22.19 | 0.00 |
| . FEB | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 15.75 | 5.07 | 21.82 | 3.53 | 18.29 | 0.91 | 19.20 | 0.00 |
| . MAR | 85.65 | 0.00 | 35.10 | 0.00 | 35.10 | 6.70 | 5.07 | 132.52 | 20.01 | 112.51 | 4.59 | 117.10 | 0.00 |
| . APR | 27.55 | 0.00 | 30.10 | 0.00 | 30.10 | 5.67 | 9.08 | 72.40 | 47.08 | 25.32 | 11.20 | 36.52 | 0.00 |
| . MAY | 0.00 | 0.00 | 15.80 | 0.00 | 15.80 | 14.18 | 7.62 | 37.60 | 26.96 | 10.64 | 7.57 | 18.21 | 0.00 |
| . JUN | 0.00 | 0.00 | 11.80 | 0.00 | 11.80 | 14.58 | 8.96 | 35.34 | 30.87 | 4.47 | 8.07 | 12.54 | 0.00 |
| . JUL | 0.00 | 0.00 | 2.10 | 0.00 | 2.10 | 17.38 | 8.18 | 27.66 | 24.90 | 2.76 | 6.26 | 9.02 | 0.00 |
| . AUG | 0.00 | 0.00 | 4.60 | 0.00 | 4.60 | 10.11 | 3.98 | 18.69 | 0.56 | 18.13 | 0.00 | 18.13 | 0.00 |
| . SEP | 0.00 | 0.01 | 0.50 | 0.00 | 0.50 | 1.18 | 1.45 | 3.14 | 0.54 | 2.60 | 0.00 | 2.60 | 0.00 |
| . OCT | 0.00 | 0.00 | 26.50 | 0.00 | 26.50 | 6.61 | 8.91 | 42.02 | 34.95 | 7.07 | 8.59 | 15.66 | 0.00 |
| . NOV | 0.00 | 0.00 | 29.30 | 0.00 | 29.30 | 9.93 | 5.93 | 45.16 | 31.40 | 13.76 | 9.19 | 22.95 | 0.00 |
| . DEC | 0.00 | 0.00 | 14.20 | 0.00 | 14.20 | 10.00 | 4.47 | 28.67 | 22.91 | 5.76 | 7.05 | 12.81 | 0.00 |

Table 8.4 - 4 : Water Balance Caluculation on Walawe River 9/11

( Scenario - 1 : W/ Samanalawewa Dam , W/O Timbolketiya )

| Year. Month | Stream flow at Uda Walawe | | | | | | | | Ridiyagama Demand (MCM) | Stream flow at Uda Walawe | | | Domestic Water Deficit (MCM) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Walawe Dam | | Walawe Dam ~ Embilipitiya | | | R.B.C Return. F (MCM) | L.B.C(0) Return. F (MCM) | Total (MCM) | | Discharge (MCM) | Ridiyagama Return. F (MCM) | Total (MCM) | |
| | Spillout (MCM) | Release (MCM) | Direct. A (MCM) | RBC Demand (MCM) | Outflow (MCM) | | | | | | | | |
| | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ | ⑫ | ⑬ |
| | | | | | ③-④ | | | ①②⑥~⑦ | | ⑧-⑨ | | ⑩+⑪ | |
| 1974. JAN | 0.00 | 0.00 | 10.40 | 0.00 | 10.40 | 14.43 | 8.02 | 32.85 | 29.65 | 3.20 | 7.92 | 11.12 | 0.00 |
| . FEB | 0.00 | 0.00 | 19.60 | 0.00 | 19.60 | 15.75 | 5.07 | 40.42 | 3.53 | 36.89 | 0.91 | 37.80 | 0.00 |
| . MAR | 0.00 | 0.00 | 14.30 | 0.00 | 14.30 | 6.70 | 5.07 | 26.07 | 20.01 | 6.06 | 4.59 | 10.65 | 0.00 |
| . APR | 0.00 | 0.00 | 38.20 | 0.00 | 38.20 | 5.67 | 9.08 | 52.95 | 47.08 | 5.87 | 11.20 | 17.07 | 0.00 |
| . MAY | 0.00 | 0.00 | 25.20 | 0.00 | 25.20 | 14.18 | 7.62 | 47.00 | 26.96 | 20.04 | 7.57 | 27.61 | 0.00 |
| . JUN | 0.00 | 0.00 | 11.80 | 0.00 | 11.80 | 12.53 | 7.71 | 32.04 | 30.87 | 1.17 | 8.07 | 9.24 | 0.00 |
| . JUL | 0.00 | 6.30 | 9.10 | 0.00 | 9.10 | 0.00 | 0.00 | 15.40 | 24.90 | -9.50 | 3.87 | 3.87 | 0.00 |
| . AUG | 0.00 | 0.00 | 7.50 | 0.00 | 7.50 | 0.00 | 0.00 | 7.50 | 0.56 | 6.94 | 0.00 | 6.94 | 0.00 |
| . SEP | 0.00 | 0.00 | 9.30 | 0.00 | 9.30 | 0.00 | 0.00 | 9.30 | 0.54 | 8.76 | 0.00 | 8.76 | 0.00 |
| . OCT | 0.00 | 8.10 | 25.60 | 0.00 | 25.60 | 0.53 | 0.72 | 34.95 | 34.95 | 0.00 | 8.59 | 8.59 | 0.00 |
| . NOV | 0.00 | 0.00 | 41.70 | 0.00 | 41.70 | 9.93 | 5.93 | 57.56 | 31.40 | 26.16 | 9.19 | 35.35 | 0.00 |
| . DEC | 40.88 | 0.00 | 61.90 | 0.00 | 61.90 | 10.00 | 4.47 | 117.25 | 22.91 | 94.34 | 7.05 | 101.39 | 0.00 |
| 1975. JAN | 16.57 | 0.00 | 19.00 | 0.00 | 19.00 | 14.43 | 8.02 | 58.02 | 29.65 | 28.37 | 7.92 | 36.29 | 0.00 |
| . FEB | 15.54 | 0.00 | 14.30 | 0.00 | 14.30 | 15.75 | 5.07 | 50.66 | 3.53 | 47.13 | 0.91 | 48.04 | 0.00 |
| . MAR | 47.12 | 0.00 | 16.60 | 0.00 | 16.60 | 6.70 | 5.07 | 75.49 | 20.01 | 55.48 | 4.59 | 60.07 | 0.00 |
| . APR | 114.35 | 0.00 | 49.80 | 0.00 | 49.80 | 5.67 | 9.08 | 178.90 | 47.08 | 131.82 | 11.20 | 143.02 | 0.00 |
| . MAY | 27.30 | 0.00 | 33.20 | 0.00 | 33.20 | 14.18 | 7.62 | 82.30 | 26.96 | 55.34 | 7.57 | 62.91 | 0.00 |
| . JUN | 0.00 | 0.00 | 37.80 | 0.00 | 37.80 | 14.58 | 8.96 | 61.34 | 30.87 | 30.47 | 8.07 | 38.54 | 0.00 |
| . JUL | 0.00 | 0.00 | 1.60 | 0.00 | 1.60 | 17.38 | 8.18 | 27.16 | 24.90 | 2.26 | 6.26 | 8.52 | 0.00 |
| . AUG | 0.00 | 0.00 | 6.20 | 0.00 | 6.20 | 10.11 | 3.98 | 20.29 | 0.56 | 19.73 | 0.00 | 19.73 | 0.00 |
| . SEP | 0.00 | 0.00 | 4.90 | 0.00 | 4.90 | 1.18 | 1.45 | 7.53 | 0.54 | 6.99 | 0.00 | 6.99 | 0.00 |
| . OCT | 0.00 | 0.00 | 26.00 | 0.00 | 26.00 | 6.61 | 8.91 | 41.52 | 34.95 | 6.57 | 8.59 | 15.16 | 0.00 |
| . NOV | 0.00 | 0.00 | 54.40 | 0.00 | 54.40 | 9.93 | 5.93 | 70.26 | 31.40 | 38.86 | 9.19 | 48.05 | 0.00 |
| . DEC | 0.00 | 0.00 | 14.20 | 0.00 | 14.20 | 10.00 | 4.47 | 28.67 | 22.91 | 5.76 | 7.05 | 12.81 | 0.00 |
| 1976. JAN | 0.00 | 0.00 | 15.00 | 0.00 | 15.00 | 14.43 | 8.02 | 37.45 | 29.65 | 7.80 | 7.92 | 15.72 | 0.00 |
| . FEB | 0.00 | 0.00 | 1.30 | 0.00 | 1.30 | 15.75 | 5.07 | 22.12 | 3.53 | 18.59 | 0.91 | 19.50 | 0.00 |
| . MAR | 0.00 | 0.00 | 14.40 | 0.00 | 14.40 | 6.70 | 5.07 | 26.17 | 20.01 | 6.16 | 4.59 | 10.75 | 0.00 |
| . APR | 0.00 | 0.00 | 38.00 | 0.00 | 38.00 | 5.67 | 9.08 | 52.75 | 47.08 | 5.67 | 11.20 | 16.87 | 0.00 |
| . MAY | 0.00 | 0.00 | 16.60 | 0.00 | 16.60 | 14.18 | 7.62 | 38.40 | 26.96 | 11.44 | 7.57 | 19.01 | 0.00 |
| . JUN | 0.00 | 0.00 | 11.80 | 0.00 | 11.80 | 14.58 | 8.96 | 35.34 | 30.87 | 4.47 | 8.07 | 12.54 | 0.00 |
| . JUL | 0.00 | 0.00 | 5.90 | 0.00 | 5.90 | 17.38 | 8.18 | 31.46 | 24.90 | 6.56 | 6.26 | 12.82 | 0.00 |
| . AUG | 0.00 | 0.00 | 6.20 | 0.00 | 6.20 | 10.11 | 3.98 | 20.29 | 0.56 | 19.73 | 0.00 | 19.73 | 0.00 |
| . SEP | 0.00 | 0.01 | 0.50 | 0.00 | 0.50 | 1.18 | 1.45 | 3.14 | 0.54 | 2.60 | 0.00 | 2.60 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.50 | 0.00 | 25.50 | 6.61 | 8.91 | 41.02 | 34.95 | 6.07 | 8.59 | 14.66 | 0.00 |
| . NOV | 66.88 | 0.00 | 93.80 | 0.00 | 93.80 | 9.93 | 5.93 | 176.54 | 31.40 | 145.14 | 9.19 | 154.33 | 0.00 |
| . DEC | 97.18 | 0.00 | 44.50 | 0.00 | 44.50 | 10.00 | 4.47 | 156.15 | 22.91 | 133.24 | 7.05 | 140.29 | 0.00 |
| 1977. JAN | 19.44 | 0.00 | 30.30 | 0.00 | 30.30 | 14.43 | 8.02 | 72.19 | 29.65 | 42.54 | 7.92 | 50.46 | 0.00 |
| . FEB | 17.13 | 0.00 | 29.50 | 0.00 | 29.50 | 15.75 | 5.07 | 67.45 | 3.53 | 63.92 | 0.91 | 64.83 | 0.00 |
| . MAR | 27.14 | 0.00 | 24.60 | 0.00 | 24.60 | 6.70 | 5.07 | 63.51 | 20.01 | 43.50 | 4.59 | 48.09 | 0.00 |
| . APR | 56.55 | 0.00 | 39.10 | 0.00 | 39.10 | 5.67 | 9.08 | 110.40 | 47.08 | 63.32 | 11.20 | 74.52 | 0.00 |
| . MAY | 35.55 | 0.00 | 38.80 | 0.00 | 38.80 | 14.18 | 7.62 | 96.15 | 26.96 | 69.19 | 7.57 | 76.76 | 0.00 |
| . JUN | 0.00 | 0.00 | 14.50 | 0.00 | 14.50 | 14.58 | 8.96 | 38.04 | 30.87 | 7.17 | 8.07 | 15.24 | 0.00 |
| . JUL | 0.00 | 0.00 | 12.90 | 0.00 | 12.90 | 17.38 | 8.18 | 38.46 | 24.90 | 13.56 | 6.26 | 19.82 | 0.00 |
| . AUG | 0.00 | 0.00 | 4.60 | 0.00 | 4.60 | 10.11 | 3.98 | 18.69 | 0.56 | 18.13 | 0.00 | 18.13 | 0.00 |
| . SEP | 0.00 | 0.01 | 0.50 | 0.00 | 0.50 | 1.18 | 1.45 | 3.14 | 0.54 | 2.60 | 0.00 | 2.60 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.70 | 0.00 | 25.70 | 6.61 | 8.91 | 41.22 | 34.95 | 6.27 | 8.59 | 14.86 | 0.00 |
| . NOV | 0.00 | 0.00 | 55.50 | 0.00 | 55.50 | 9.93 | 5.93 | 71.36 | 31.40 | 39.96 | 9.19 | 49.15 | 0.00 |
| . DEC | 0.00 | 0.00 | 11.90 | 0.00 | 11.90 | 10.00 | 4.47 | 26.37 | 22.91 | 3.46 | 7.05 | 10.51 | 0.00 |
| 1978. JAN | 0.00 | 0.00 | 13.90 | 0.00 | 13.90 | 14.43 | 8.02 | 36.35 | 29.65 | 6.70 | 7.92 | 14.62 | 0.00 |
| . FEB | 15.26 | 0.00 | 26.90 | 0.00 | 26.90 | 15.75 | 5.07 | 62.98 | 3.53 | 59.45 | 0.91 | 60.36 | 0.00 |
| . MAR | 50.13 | 0.00 | 31.90 | 0.00 | 31.90 | 6.70 | 5.07 | 93.80 | 20.01 | 73.79 | 4.59 | 78.38 | 0.00 |
| . APR | 1.65 | 0.00 | 32.00 | 0.00 | 32.00 | 5.67 | 9.08 | 48.40 | 47.08 | 1.32 | 11.20 | 12.52 | 0.00 |
| . MAY | 62.79 | 0.00 | 65.10 | 0.00 | 65.10 | 14.18 | 7.62 | 149.69 | 26.96 | 122.73 | 7.57 | 130.30 | 0.00 |
| . JUN | 0.00 | 0.00 | 11.80 | 0.00 | 11.80 | 14.58 | 8.96 | 35.34 | 30.87 | 4.47 | 8.07 | 12.54 | 0.00 |
| . JUL | 0.00 | 0.00 | 7.20 | 0.00 | 7.20 | 17.38 | 8.18 | 32.76 | 24.90 | 7.86 | 6.26 | 14.12 | 0.00 |
| . AUG | 0.00 | 0.00 | 11.20 | 0.00 | 11.20 | 10.11 | 3.98 | 25.29 | 0.56 | 24.73 | 0.00 | 24.73 | 0.00 |
| . SEP | 0.00 | 0.00 | 12.20 | 0.00 | 12.20 | 1.18 | 1.45 | 14.83 | 0.54 | 14.29 | 0.00 | 14.29 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.70 | 0.00 | 25.70 | 6.61 | 8.91 | 41.22 | 34.95 | 6.27 | 8.59 | 14.86 | 0.00 |
| . NOV | 0.00 | 0.00 | 34.20 | 0.00 | 34.20 | 9.93 | 5.93 | 50.06 | 31.40 | 18.66 | 9.19 | 27.85 | 0.00 |
| . DEC | 0.00 | 0.00 | 24.10 | 0.00 | 24.10 | 10.00 | 4.47 | 38.57 | 22.91 | 15.66 | 7.05 | 22.71 | 0.00 |
| 1979. JAN | 0.00 | 0.00 | 30.30 | 0.00 | 30.30 | 14.43 | 8.02 | 52.75 | 29.65 | 23.10 | 7.92 | 31.02 | 0.00 |
| . FEB | 0.00 | 0.00 | 19.60 | 0.00 | 19.60 | 15.75 | 5.07 | 40.42 | 3.53 | 36.89 | 0.91 | 37.80 | 0.00 |
| . MAR | 0.00 | 0.00 | 15.90 | 0.00 | 15.90 | 6.70 | 5.07 | 27.67 | 20.01 | 7.66 | 4.59 | 12.25 | 0.00 |
| . APR | 33.57 | 0.00 | 31.80 | 0.00 | 31.80 | 5.67 | 9.08 | 80.12 | 47.08 | 33.04 | 11.20 | 44.24 | 0.00 |
| . MAY | 44.02 | 0.00 | 32.70 | 0.00 | 32.70 | 14.18 | 7.62 | 98.52 | 26.96 | 71.56 | 7.57 | 79.13 | 0.00 |
| . JUN | 0.00 | 0.00 | 14.50 | 0.00 | 14.50 | 14.58 | 8.96 | 38.04 | 30.87 | 7.17 | 8.07 | 15.24 | 0.00 |
| . JUL | 0.00 | 0.00 | 15.50 | 0.00 | 15.50 | 17.38 | 8.18 | 41.06 | 24.90 | 16.16 | 6.26 | 22.42 | 0.00 |
| . AUG | 0.00 | 0.00 | 6.20 | 0.00 | 6.20 | 10.11 | 3.98 | 20.29 | 0.56 | 19.73 | 0.00 | 19.73 | 0.00 |
| . SEP | 0.00 | 0.00 | 13.20 | 0.00 | 13.20 | 1.18 | 1.45 | 15.83 | 0.54 | 15.29 | 0.00 | 15.29 | 0.00 |
| . OCT | 0.00 | 0.00 | 27.30 | 0.00 | 27.30 | 6.61 | 8.91 | 42.82 | 34.95 | 7.87 | 8.59 | 16.46 | 0.00 |
| . NOV | 0.00 | 0.00 | 26.20 | 0.00 | 26.20 | 9.93 | 5.93 | 42.06 | 31.40 | 10.66 | 9.19 | 19.85 | 0.00 |
| . DEC | 15.15 | 0.00 | 57.60 | 0.00 | 57.60 | 10.00 | 4.47 | 87.22 | 22.91 | 64.31 | 7.05 | 71.36 | 0.00 |
| 1980. JAN | 0.00 | 0.00 | 11.50 | 0.00 | 11.50 | 14.43 | 8.02 | 33.95 | 29.65 | 4.30 | 7.92 | 12.22 | 0.00 |
| . FEB | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 15.75 | 5.07 | 21.82 | 3.53 | 18.29 | 0.91 | 19.20 | 0.00 |
| . MAR | 35.30 | 0.00 | 14.70 | 0.00 | 14.70 | 6.70 | 5.07 | 61.77 | 20.01 | 41.76 | 4.59 | 46.35 | 0.00 |
| . APR | 21.85 | 0.00 | 38.30 | 0.00 | 38.30 | 5.67 | 9.08 | 74.90 | 47.08 | 27.82 | 11.20 | 39.02 | 0.00 |
| . MAY | 0.00 | 0.00 | 18.20 | 0.00 | 18.20 | 14.18 | 7.62 | 40.00 | 26.96 | 13.04 | 7.57 | 20.61 | 0.00 |
| . JUN | 0.00 | 0.00 | 13.70 | 0.00 | 13.70 | 14.58 | 8.96 | 37.24 | 30.87 | 6.37 | 8.07 | 14.44 | 0.00 |
| . JUL | 0.00 | 0.00 | 12.30 | 0.00 | 12.30 | 17.38 | 8.18 | 37.86 | 24.90 | 12.96 | 6.26 | 19.22 | 0.00 |
| . AUG | 0.00 | 0.00 | 5.10 | 0.00 | 5.10 | 10.11 | 3.98 | 19.19 | 0.56 | 18.63 | 0.00 | 18.63 | 0.00 |
| . SEP | 0.00 | 0.00 | 12.40 | 0.00 | 12.40 | 1.18 | 1.45 | 15.03 | 0.54 | 14.49 | 0.00 | 14.49 | 0.00 |
| . OCT | 0.00 | 0.00 | 26.00 | 0.00 | 26.00 | 6.61 | 8.91 | 41.52 | 34.95 | 6.57 | 8.59 | 15.16 | 0.00 |
| . NOV | 0.00 | 0.00 | 52.10 | 0.00 | 52.10 | 9.93 | 5.93 | 67.96 | 31.40 | 36.56 | 9.19 | 45.75 | 0.00 |
| . DEC | 27.76 | 0.00 | 40.40 | 0.00 | 40.40 | 10.00 | 4.47 | 82.63 | 22.91 | 59.72 | 7.05 | 66.77 | 0.00 |

Table 8.4 - 4 : Water Balance Caluculation on Walawe River 10/11

( Scenario - 1 : W/ Samanalawewa Dam , W/O Timbolketiya )

| Year. Month | Stream flow at Uda Walawe: Walawe Dam Spillout (MCM) ① | Walawe Dam Release (MCM) ② | Walawe Dam ～ Embilipitiya Direct. A (MCM) ③ | RBC Demand (MCM) ④ | Outflow (MCM) ⑤=③-④ | R.B.C Return. F (MCM) ⑥ | L.B.C(0) Return. F (MCM) ⑦ | Total (MCM) ⑧=①②⑤～⑦ | Ridiyagama Demand (MCM) ⑨ | Stream flow at Uda Walawe: Ridiyagama Discharge (MCM) ⑩=⑧-⑨ | Ridiyagama Return. F (MCM) ⑪ | Total (MCM) ⑫=⑩+⑪ | Domestic Water Deficit (MCM) ⑬ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981. JAN | 0.00 | 0.00 | 22.50 | 0.00 | 22.50 | 14.43 | 8.02 | 44.95 | 29.65 | 15.30 | 7.92 | 23.22 | 0.00 |
| . FEB | 0.00 | 0.00 | 5.60 | 0.00 | 5.60 | 15.75 | 5.07 | 26.42 | 3.53 | 22.89 | 0.91 | 23.80 | 0.00 |
| . MAR | 0.00 | 0.00 | 18.80 | 0.00 | 18.80 | 6.70 | 5.07 | 30.57 | 20.01 | 10.56 | 4.59 | 15.15 | 0.00 |
| . APR | 0.00 | 0.00 | 38.30 | 0.00 | 38.30 | 5.67 | 9.08 | 53.05 | 47.08 | 5.97 | 11.20 | 17.17 | 0.00 |
| . MAY | 0.00 | 0.00 | 25.20 | 0.00 | 25.20 | 14.18 | 7.62 | 47.00 | 26.96 | 20.04 | 7.57 | 27.61 | 0.00 |
| . JUN | 0.00 | 0.00 | 20.70 | 0.00 | 20.70 | 14.58 | 8.96 | 44.24 | 30.87 | 13.37 | 8.07 | 21.44 | 0.00 |
| . JUL | 0.00 | 0.00 | 13.70 | 0.00 | 13.70 | 17.38 | 8.18 | 39.26 | 24.90 | 14.36 | 6.26 | 20.62 | 0.00 |
| . AUG | 0.00 | 0.00 | 3.20 | 0.00 | 3.20 | 10.11 | 3.98 | 17.29 | 0.56 | 16.73 | 0.00 | 16.73 | 0.00 |
| . SEP | 0.00 | 0.00 | 15.80 | 0.00 | 15.80 | 1.18 | 1.45 | 18.43 | 0.54 | 17.89 | 0.00 | 17.89 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.90 | 0.00 | 25.90 | 6.61 | 8.91 | 41.42 | 34.95 | 6.47 | 8.59 | 15.06 | 0.00 |
| . NOV | 0.00 | 0.00 | 52.60 | 0.00 | 52.60 | 9.93 | 5.93 | 68.46 | 31.40 | 37.06 | 9.19 | 46.25 | 0.00 |
| . DEC | 0.00 | 0.00 | 14.10 | 0.00 | 14.10 | 10.00 | 4.47 | 28.57 | 22.91 | 5.66 | 7.05 | 12.71 | 0.00 |
| 1982. JAN | 0.00 | 0.00 | 18.70 | 0.00 | 18.70 | 14.43 | 8.02 | 41.15 | 29.65 | 11.50 | 7.92 | 19.42 | 0.00 |
| . FEB | 0.00 | 0.00 | 12.80 | 0.00 | 12.80 | 15.75 | 5.07 | 33.62 | 3.53 | 30.09 | 0.91 | 31.00 | 0.00 |
| . MAR | 0.00 | 0.00 | 17.40 | 0.00 | 17.40 | 6.70 | 5.07 | 29.17 | 20.01 | 9.16 | 4.59 | 13.75 | 0.00 |
| . APR | 0.00 | 0.00 | 38.30 | 0.00 | 38.30 | 5.67 | 9.08 | 53.05 | 47.08 | 5.97 | 11.20 | 17.17 | 0.00 |
| . MAY | 0.00 | 0.00 | 52.20 | 0.00 | 52.20 | 14.18 | 7.62 | 74.00 | 26.96 | 47.04 | 7.57 | 54.61 | 0.00 |
| . JUN | 0.00 | 0.00 | 24.10 | 0.00 | 24.10 | 14.58 | 8.96 | 47.64 | 30.87 | 16.77 | 8.07 | 24.84 | 0.00 |
| . JUL | 0.00 | 0.00 | 10.40 | 0.00 | 10.40 | 17.38 | 8.18 | 35.96 | 24.90 | 11.06 | 6.26 | 17.32 | 0.00 |
| . AUG | 0.00 | 0.00 | 5.10 | 0.00 | 5.10 | 10.11 | 3.98 | 19.19 | 0.56 | 18.63 | 0.00 | 18.63 | 0.00 |
| . SEP | 0.00 | 0.01 | 0.50 | 0.00 | 0.50 | 1.18 | 1.45 | 3.14 | 0.54 | 2.60 | 0.00 | 2.60 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.50 | 0.00 | 25.50 | 6.61 | 8.91 | 41.02 | 34.95 | 6.07 | 8.59 | 14.66 | 0.00 |
| . NOV | 39.24 | 0.00 | 77.20 | 0.00 | 77.20 | 9.93 | 5.93 | 132.30 | 31.40 | 100.90 | 9.19 | 110.09 | 0.00 |
| . DEC | 0.00 | 0.00 | 19.30 | 0.00 | 19.30 | 10.00 | 4.47 | 33.77 | 22.91 | 10.86 | 7.05 | 17.91 | 0.00 |
| 1983. JAN | 0.00 | 0.00 | 12.90 | 0.00 | 12.90 | 14.43 | 8.02 | 35.35 | 29.65 | 5.70 | 7.92 | 13.62 | 0.00 |
| . FEB | 0.00 | 0.00 | 4.10 | 0.00 | 4.10 | 15.75 | 5.07 | 24.92 | 3.53 | 21.39 | 0.91 | 22.30 | 0.00 |
| . MAR | 0.00 | 0.00 | 14.30 | 0.00 | 14.30 | 6.70 | 5.07 | 26.07 | 20.01 | 6.06 | 4.59 | 10.65 | 0.00 |
| . APR | 0.00 | 0.00 | 38.20 | 0.00 | 38.20 | 5.67 | 9.08 | 52.95 | 47.08 | 5.87 | 11.20 | 17.07 | 0.00 |
| . MAY | 0.00 | 0.00 | 29.20 | 0.00 | 29.20 | 14.18 | 7.62 | 51.00 | 26.96 | 24.04 | 7.57 | 31.61 | 0.00 |
| . JUN | 0.00 | 0.00 | 11.80 | 0.00 | 11.80 | 14.58 | 8.96 | 35.34 | 30.87 | 4.47 | 8.07 | 12.54 | 0.00 |
| . JUL | 0.00 | 0.00 | 5.90 | 0.00 | 5.90 | 17.03 | 8.02 | 30.95 | 24.90 | 6.05 | 6.26 | 12.31 | 0.00 |
| . AUG | 0.00 | 0.00 | 3.70 | 0.00 | 3.70 | 3.89 | 1.53 | 9.12 | 0.56 | 8.56 | 0.00 | 8.56 | 0.00 |
| . SEP | 0.00 | 0.00 | 9.60 | 0.00 | 9.60 | 1.18 | 1.45 | 12.23 | 0.54 | 11.69 | 0.00 | 11.69 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.50 | 0.00 | 25.50 | 5.55 | 7.48 | 38.53 | 34.95 | 3.58 | 8.59 | 12.17 | 0.00 |
| . NOV | 0.00 | 0.00 | 43.30 | 0.00 | 43.30 | 9.93 | 5.93 | 59.16 | 31.40 | 27.76 | 9.19 | 36.95 | 0.00 |
| . DEC | 0.00 | 0.00 | 29.50 | 0.00 | 29.50 | 10.00 | 4.47 | 43.97 | 22.91 | 21.06 | 7.05 | 28.11 | 0.00 |
| 1984. JAN | 0.00 | 0.00 | 45.00 | 0.00 | 45.00 | 14.43 | 8.02 | 67.45 | 29.65 | 37.80 | 7.92 | 45.72 | 0.00 |
| . FEB | 0.00 | 0.00 | 22.80 | 0.00 | 22.80 | 15.75 | 5.07 | 43.62 | 3.53 | 40.09 | 0.91 | 41.00 | 0.00 |
| . MAR | 18.67 | 0.00 | 49.60 | 0.00 | 49.60 | 6.70 | 5.07 | 80.04 | 20.01 | 60.03 | 4.59 | 64.62 | 0.00 |
| . APR | 132.55 | 0.00 | 66.40 | 0.00 | 66.40 | 5.67 | 9.08 | 213.70 | 47.08 | 166.62 | 11.20 | 177.82 | 0.00 |
| . MAY | 8.69 | 0.00 | 19.00 | 0.00 | 19.00 | 14.18 | 7.62 | 49.49 | 26.96 | 22.53 | 7.57 | 30.10 | 0.00 |
| . JUN | 0.00 | 0.00 | 15.30 | 0.00 | 15.30 | 14.58 | 8.96 | 38.84 | 30.87 | 7.97 | 8.07 | 16.04 | 0.00 |
| . JUL | 0.00 | 0.00 | 12.30 | 0.00 | 12.30 | 17.38 | 8.18 | 37.86 | 24.90 | 12.96 | 6.26 | 19.22 | 0.00 |
| . AUG | 0.00 | 0.00 | 5.10 | 0.00 | 5.10 | 10.11 | 3.98 | 19.19 | 0.56 | 18.63 | 0.00 | 18.63 | 0.00 |
| . SEP | 0.00 | 0.00 | 7.30 | 0.00 | 7.30 | 1.18 | 1.45 | 9.93 | 0.54 | 9.39 | 0.00 | 9.39 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.80 | 0.00 | 25.80 | 6.61 | 8.91 | 41.32 | 34.95 | 6.37 | 8.59 | 14.96 | 0.00 |
| . NOV | 0.00 | 0.00 | 37.80 | 0.00 | 37.80 | 9.93 | 5.93 | 53.66 | 31.40 | 22.26 | 9.19 | 31.45 | 0.00 |
| . DEC | 0.00 | 0.00 | 22.00 | 0.00 | 22.00 | 10.00 | 4.47 | 36.47 | 22.91 | 13.56 | 7.05 | 20.61 | 0.00 |
| 1985. JAN | 0.00 | 0.00 | 20.60 | 0.00 | 20.60 | 14.43 | 8.02 | 43.05 | 29.65 | 13.40 | 7.92 | 21.32 | 0.00 |
| . FEB | 0.00 | 0.00 | 12.80 | 0.00 | 12.80 | 15.75 | 5.07 | 33.62 | 3.53 | 30.09 | 0.91 | 31.00 | 0.00 |
| . MAR | 12.09 | 0.00 | 32.10 | 0.00 | 32.10 | 6.70 | 5.07 | 55.96 | 20.01 | 35.95 | 4.59 | 40.54 | 0.00 |
| . APR | 0.00 | 0.00 | 38.30 | 0.00 | 38.30 | 5.67 | 9.08 | 53.05 | 47.08 | 5.97 | 11.20 | 17.17 | 0.00 |
| . MAY | 0.00 | 0.00 | 29.50 | 0.00 | 29.50 | 14.18 | 7.62 | 51.30 | 26.96 | 24.34 | 7.57 | 31.91 | 0.00 |
| . JUN | 0.00 | 0.00 | 49.20 | 0.00 | 49.20 | 14.58 | 8.96 | 72.74 | 30.87 | 41.87 | 8.07 | 49.94 | 0.00 |
| . JUL | 0.00 | 0.00 | 6.70 | 0.00 | 6.70 | 17.38 | 8.18 | 32.26 | 24.90 | 7.36 | 6.26 | 13.62 | 0.00 |
| . AUG | 0.00 | 0.00 | 4.30 | 0.00 | 4.30 | 10.11 | 3.98 | 18.39 | 0.56 | 17.83 | 0.00 | 17.83 | 0.00 |
| . SEP | 0.00 | 0.00 | 4.70 | 0.00 | 4.70 | 1.18 | 1.45 | 7.33 | 0.54 | 6.79 | 0.00 | 6.79 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.50 | 0.00 | 25.50 | 6.61 | 8.91 | 41.02 | 34.95 | 6.07 | 8.59 | 14.66 | 0.00 |
| . NOV | 0.00 | 0.00 | 31.90 | 0.00 | 31.90 | 9.93 | 5.93 | 47.76 | 31.40 | 16.36 | 9.19 | 25.55 | 0.00 |
| . DEC | 0.00 | 0.00 | 41.00 | 0.00 | 41.00 | 10.00 | 4.47 | 55.47 | 22.91 | 32.56 | 7.05 | 39.61 | 0.00 |
| 1986. JAN | 0.00 | 0.00 | 26.20 | 0.00 | 26.20 | 14.43 | 8.02 | 48.65 | 29.65 | 19.00 | 7.92 | 26.92 | 0.00 |
| . FEB | 0.00 | 0.00 | 13.50 | 0.00 | 13.50 | 15.75 | 5.07 | 34.32 | 3.53 | 30.79 | 0.91 | 31.70 | 0.00 |
| . MAR | 0.00 | 0.00 | 14.40 | 0.00 | 14.40 | 6.70 | 5.07 | 26.17 | 20.01 | 6.16 | 4.59 | 10.75 | 0.00 |
| . APR | 15.63 | 0.00 | 44.10 | 0.00 | 44.10 | 5.67 | 9.08 | 74.48 | 47.08 | 27.40 | 11.20 | 38.60 | 0.00 |
| . MAY | 11.97 | 0.00 | 18.70 | 0.00 | 18.70 | 14.18 | 7.62 | 52.47 | 26.96 | 25.51 | 7.57 | 33.08 | 0.00 |
| . JUN | 0.00 | 0.00 | 11.90 | 0.00 | 11.90 | 14.58 | 8.96 | 35.44 | 30.87 | 4.57 | 8.07 | 12.64 | 0.00 |
| . JUL | 0.00 | 0.00 | 8.30 | 0.00 | 8.30 | 17.38 | 8.18 | 33.86 | 24.90 | 8.96 | 6.26 | 15.22 | 0.00 |
| . AUG | 0.00 | 0.00 | 6.70 | 0.00 | 6.70 | 10.11 | 3.98 | 20.79 | 0.56 | 20.23 | 0.00 | 20.23 | 0.00 |
| . SEP | 0.00 | 0.00 | 9.30 | 0.00 | 9.30 | 1.18 | 1.45 | 11.93 | 0.54 | 11.39 | 0.00 | 11.39 | 0.00 |
| . OCT | 0.00 | 0.00 | 36.40 | 0.00 | 36.40 | 6.61 | 8.91 | 51.92 | 34.95 | 16.97 | 8.59 | 25.56 | 0.00 |
| . NOV | 0.00 | 0.00 | 20.90 | 0.00 | 20.90 | 9.93 | 5.93 | 36.76 | 31.40 | 5.36 | 9.19 | 14.55 | 0.00 |
| . DEC | 27.25 | 0.00 | 22.00 | 0.00 | 22.00 | 10.00 | 4.47 | 63.72 | 22.91 | 40.81 | 7.05 | 47.86 | 0.00 |
| 1987. JAN | 19.74 | 0.00 | 22.80 | 0.00 | 22.80 | 14.43 | 8.02 | 64.99 | 29.65 | 35.34 | 7.92 | 43.26 | 0.00 |
| . FEB | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 15.75 | 5.07 | 21.82 | 3.53 | 18.29 | 0.91 | 19.20 | 0.00 |
| . MAR | 0.00 | 0.00 | 17.20 | 0.00 | 17.20 | 6.70 | 5.07 | 28.97 | 20.01 | 8.96 | 4.59 | 13.55 | 0.00 |
| . APR | 0.00 | 0.00 | 38.20 | 0.00 | 38.20 | 5.67 | 9.08 | 52.95 | 47.08 | 5.87 | 11.20 | 17.07 | 0.00 |
| . MAY | 0.00 | 0.00 | 18.50 | 0.00 | 18.50 | 14.18 | 7.62 | 40.30 | 26.96 | 13.34 | 7.57 | 20.91 | 0.00 |
| . JUN | 0.00 | 0.00 | 11.80 | 0.00 | 11.80 | 14.58 | 8.96 | 35.34 | 30.87 | 4.47 | 8.07 | 12.54 | 0.00 |
| . JUL | 0.00 | 0.00 | 5.40 | 0.00 | 5.40 | 13.98 | 6.58 | 25.96 | 24.90 | 1.06 | 6.26 | 7.32 | 0.00 |
| . AUG | 0.00 | 0.00 | 1.10 | 0.00 | 1.10 | 3.50 | 1.38 | 5.98 | 0.56 | 5.42 | 0.00 | 5.42 | 0.00 |
| . SEP | 0.00 | 0.00 | 4.70 | 0.00 | 4.70 | 1.18 | 1.45 | 7.33 | 0.54 | 6.79 | 0.00 | 6.79 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.50 | 0.00 | 25.50 | 6.61 | 8.91 | 41.02 | 34.95 | 6.07 | 8.59 | 14.66 | 0.00 |
| . NOV | 0.00 | 0.00 | 50.00 | 0.00 | 50.00 | 9.93 | 5.93 | 65.86 | 31.40 | 34.46 | 9.19 | 43.65 | 0.00 |
| . DEC | 0.00 | 0.00 | 33.50 | 0.00 | 33.50 | 10.00 | 4.47 | 47.97 | 22.91 | 25.06 | 7.05 | 32.11 | 0.00 |

Table 8.4 - 4 : Water Balance Caluculation on Walawe River 11/11

( Scenario - 1 : W/ Samanalawewa Dam , W/O Timbolketiya )

| Year. Month | Stream flow at Uda Walawe | | | | | | | | Ridiyagama Demand (MCM) | Stream flow at Uda Walawe | | | Domestic Water Deficit (MCM) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Walawe Dam | | Walawe Dam ~ Embilipitiya | | | R. B. C Return. F (MCM) | L. B. C(D) Return. F (MCM) | Total (MCM) | | Discharge (MCM) | Ridiyagama Return. F (MCM) | Total (MCM) | |
| | Spillout (MCM) | Release (MCM) | Direct. A (MCM) | RBC Demand (MCM) | Outflow (MCM) | | | | | | | | |
| | ① | ② | ③ | ④ | ⑤ ③−④ | ⑥ | ⑦ | ⑧ ①②⑤~⑦ | ⑨ | ⑩ ⑧−⑨ | ⑪ | ⑫ ⑩+⑪ | ⑬ |
| 1988. JAN | 0.00 | 0.00 | 18.50 | 0.00 | 18.50 | 14.43 | 8.02 | 40.95 | 29.65 | 11.30 | 7.92 | 19.22 | 0.00 |
| . FEB | 0.00 | 0.00 | 26.10 | 0.00 | 26.10 | 15.75 | 5.07 | 46.92 | 3.53 | 43.39 | 0.91 | 44.30 | 0.00 |
| . MAR | 0.00 | 0.00 | 34.00 | 0.00 | 34.00 | 6.70 | 5.07 | 45.77 | 20.01 | 25.76 | 4.59 | 30.35 | 0.00 |
| . APR | 39.28 | 0.00 | 44.30 | 0.00 | 44.30 | 5.67 | 9.08 | 98.33 | 47.08 | 51.25 | 11.20 | 62.45 | 0.00 |
| . MAY | 33.49 | 0.00 | 35.60 | 0.00 | 35.60 | 14.18 | 7.62 | 90.89 | 26.96 | 63.93 | 7.57 | 71.50 | 0.00 |
| . JUN | 0.00 | 0.00 | 11.80 | 0.00 | 11.80 | 14.58 | 8.96 | 35.34 | 30.87 | 4.47 | 8.07 | 12.54 | 0.00 |
| . JUL | 0.00 | 0.00 | 10.40 | 0.00 | 10.40 | 17.38 | 8.18 | 35.96 | 24.90 | 11.06 | 6.26 | 17.32 | 0.00 |
| . AUG | 0.00 | 0.00 | 8.30 | 0.00 | 8.30 | 10.11 | 3.98 | 22.39 | 0.56 | 21.83 | 0.00 | 21.83 | 0.00 |
| . SEP | 0.00 | 0.00 | 9.60 | 0.00 | 9.60 | 1.18 | 1.45 | 12.23 | 0.54 | 11.69 | 0.00 | 11.69 | 0.00 |
| . OCT | 0.00 | 0.00 | 26.40 | 0.00 | 26.40 | 6.61 | 8.91 | 41.92 | 34.95 | 6.97 | 8.59 | 15.56 | 0.00 |
| . NOV | 0.00 | 0.00 | 57.50 | 0.00 | 57.50 | 9.93 | 5.93 | 73.36 | 31.40 | 41.96 | 9.19 | 51.15 | 0.00 |
| . DEC | 0.69 | 0.00 | 11.00 | 0.00 | 11.00 | 10.00 | 4.47 | 26.16 | 22.91 | 3.25 | 7.05 | 10.30 | 0.00 |
| 1989. JAN | 0.00 | 0.00 | 13.40 | 0.00 | 13.40 | 14.43 | 8.02 | 35.85 | 29.65 | 6.20 | 7.92 | 14.12 | 0.00 |
| . FEB | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 15.75 | 5.07 | 21.82 | 3.53 | 18.29 | 0.91 | 19.20 | 0.00 |
| . MAR | 0.00 | 0.00 | 14.30 | 0.00 | 14.30 | 6.70 | 5.07 | 26.07 | 20.01 | 6.06 | 4.59 | 10.65 | 0.00 |
| . APR | 0.00 | 0.00 | 38.20 | 0.00 | 38.20 | 5.67 | 9.08 | 52.95 | 47.08 | 5.87 | 11.20 | 17.07 | 0.00 |
| . MAY | 0.00 | 0.00 | 41.80 | 0.00 | 41.80 | 14.18 | 7.62 | 63.60 | 26.96 | 36.64 | 7.57 | 44.21 | 0.00 |
| . JUN | 0.00 | 0.00 | 13.70 | 0.00 | 13.70 | 14.58 | 8.96 | 37.24 | 30.87 | 6.37 | 8.07 | 14.44 | 0.00 |
| . JUL | 0.00 | 0.00 | 13.10 | 0.00 | 13.10 | 17.38 | 8.18 | 38.66 | 24.90 | 13.76 | 6.26 | 20.02 | 0.00 |
| . AUG | 0.00 | 0.00 | 11.80 | 0.00 | 11.80 | 2.38 | 0.94 | 15.12 | 0.56 | 14.56 | 0.00 | 14.56 | 0.00 |
| . SEP | 0.00 | 0.00 | 3.90 | 0.00 | 3.90 | 1.18 | 1.45 | 6.53 | 0.54 | 5.99 | 0.00 | 5.99 | 0.00 |
| . OCT | 0.00 | 0.00 | 25.50 | 0.00 | 25.50 | 6.61 | 8.91 | 41.02 | 34.95 | 6.07 | 8.59 | 14.66 | 0.00 |
| . NOV | 0.00 | 0.00 | 39.70 | 0.00 | 39.70 | 9.93 | 5.93 | 55.56 | 31.40 | 24.16 | 9.19 | 33.35 | 0.00 |
| . DEC | 0.00 | 0.00 | 26.50 | 0.00 | 26.50 | 10.00 | 4.47 | 40.97 | 22.91 | 18.06 | 7.05 | 25.11 | 0.00 |
| 1990. JAN | 0.00 | 0.00 | 20.60 | 0.00 | 20.60 | 14.43 | 8.02 | 43.05 | 29.65 | 13.40 | 7.92 | 21.32 | 0.00 |
| . FEB | 0.00 | 0.00 | 19.60 | 0.00 | 19.60 | 15.75 | 5.07 | 40.42 | 3.53 | 36.89 | 0.91 | 37.80 | 0.00 |
| . MAR | 0.00 | 0.00 | 27.90 | 0.00 | 27.90 | 6.70 | 5.07 | 39.67 | 20.01 | 19.66 | 4.59 | 24.25 | 0.00 |
| . APR | 0.00 | 0.00 | 38.80 | 0.00 | 38.80 | 5.67 | 9.08 | 53.55 | 47.08 | 6.47 | 11.20 | 17.67 | 0.00 |
| . MAY | 0.00 | 0.00 | 36.40 | 0.00 | 36.40 | 14.18 | 7.62 | 58.20 | 26.96 | 31.24 | 7.57 | 38.81 | 0.00 |
| . JUN | 0.00 | 0.00 | 17.90 | 0.00 | 17.90 | 14.58 | 8.96 | 41.44 | 30.87 | 10.57 | 8.07 | 18.64 | 0.00 |
| . JUL | 0.00 | 0.00 | 7.20 | 0.00 | 7.20 | 17.38 | 8.18 | 32.76 | 24.90 | 7.86 | 6.26 | 14.12 | 0.00 |
| . AUG | 0.00 | 0.00 | 7.00 | 0.00 | 7.00 | 10.11 | 3.98 | 21.09 | 0.56 | 20.53 | 0.00 | 20.53 | 0.00 |
| . SEP | 0.00 | 0.00 | 1.80 | 0.00 | 1.80 | 1.18 | 1.45 | 4.43 | 0.54 | 3.89 | 0.00 | 3.89 | 0.00 |
| . OCT | 0.00 | 0.00 | 26.60 | 0.00 | 26.60 | 6.61 | 8.91 | 42.12 | 34.95 | 7.17 | 8.59 | 15.76 | 0.00 |
| . NOV | 0.00 | 0.00 | 53.40 | 0.00 | 53.40 | 9.93 | 5.93 | 69.26 | 31.40 | 37.86 | 9.19 | 47.05 | 0.00 |
| . DEC | 0.00 | 0.00 | 26.50 | 0.00 | 26.50 | 10.00 | 4.47 | 40.97 | 22.91 | 18.06 | 7.05 | 25.11 | 0.00 |

# *FIGURES*

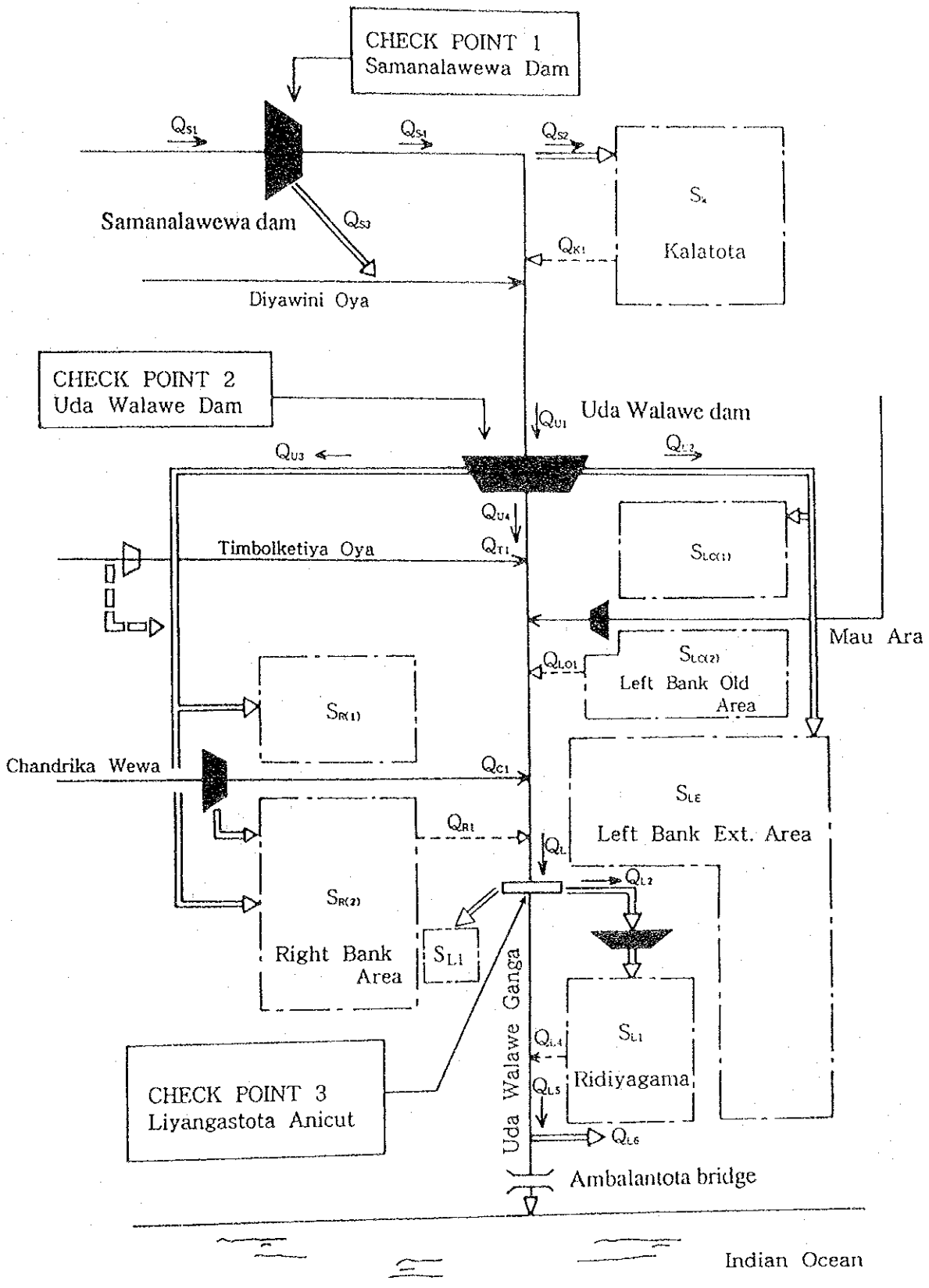


**Fig. A8.1-1 SCHEMATIC DIAGRAM OF THE WALAWE RIVER BASIN (1/2)**

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS,IRRIGATION AND MAHAWELI DEVELOPMENT

THE FEASIBILITY STUDY ON WALAWE IRRIGATION UPGRADING AND EXTENTION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

## Explanation of the abbreviation in the Water balance calculation map

Samanalawe Dam
- $Q_{s1}$ : Inflow to the reservoir
- $Q_{s2}$ : Irrigation water supply to the Kalotota Scheme
- $Q_{s3}$ : Out – flow from the Dam by power generation
- $q_{s4}$ : Spill – out from the reservoir

Kalatota Scheme
- $S_k$ : Kalatota Scheme service area
- $Q_{k1}$ : Return flow to the river from the irrigation area

Uda Walawe Dam
- $Q_{u1}$ : Inflow to the Uda Walawe Reservoir
  - $Q_{u11}$ ; in case of "without Samanalawewa Dam"
    Run – off calculated with the multiple correlationn method. Drainage areas include Samanalawewa Dam drainage basin.
  - $Q_{u12}$ : in case of "with Samanalawewa Dam"
    Run–off volume from the drainage areas between Samanalawewa Dam and Uda Walawe Dam.
    $Q_{u12} = Q_{u11} - Q_{s1}$
    $Q_{u12}$ employs for the water balance study in a "with Samanalawewa Dam" case.
- $Q_{u2}$ : Water demand for the Left Bank Area
  - $Q_{u21}$ ; Present water demaend (old area only).
  - $Q_{u22}$ ; Project water demand (including extension area).
    consists of $Q_{u221}$ , $Q_{u222}$ and $Q_{u223}$.
    - $Q_{u221}$ ; Water demand for the extension area
    - $Q_{u222}$ ; Water demand for the factory use
    - $Q_{u223}$ ; Drinking water supply
- $Q_{u3}$ : Water demand for the Right Bank Area
- $Q_{u4}$ : Spill – out from the reservoir

Timbolketiya Oya
- $Q_{t1}$ : Run – off from the Timbolketiya riber estimated by the multiple correlation method.

Left Bank Old Area
- $S_{L0}$ : Existing irrigation area in the left bank.
- $Q_{L01}$ : Return flow from the Left Bank Old Area.

Right Bank Area
- $S_R$ : Existing irrigation area in the right bank.
- $Q_{R1}$ : Return flow from the right Bank Area.

Left Bank Extension Area
- $S_{L2}$ : Irrigation area to be extended by this project in the left bank.
- $Q_{L21}$ : Return flow from the Left Bank Extension Area.

Chandrika Wewa
- $Q_{c1}$ : Inflow from the Chandrika river to the Uda Walawe river.

Mau Ara
- $Q_{M1}$ : Inflow from the Mau Ara river to the Uda Walawe river.

Liyangastota Anticut
- $Q_{L1}$ : Avalable discharge at Anticut
- $Q_{L2}$ : Irrigatation water suppuly to the left bank area
- $Q_{L3}$ : Irrigatation water suppuly to the right bank area
- $Q_{L4}$ : Return flow from $Q_{L2}$ and $Q_{L3}$
- $Q_{L5}$ : Return – off from the areas located the downstream reach of the Liyangastota Anticut
- $Q_{L6}$ : Domestic water supply to the Hambamtota and Ambalantota
  $Q_{L6} < Q_{L5}$
  $Q_{L5} = Q_{L1} - Q_{L2} - Q_{L3} + Q_{L4}$

**Fig. A8.1-1 SCHEMATIC DIAGRAM OF THE WALAWE RIVER BASIN (2/2)**

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE FEASIBILITY STUDY ON WALAWE IRRIGATION UPGRADING AND EXTENSION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

## *Annex - IX*

# *Project Cost, Benefit and Economic Evaluation*

# ANNEX 9-1 PROJECT COST ESTIMATE

Contents



List of Tables

# ANNEX 9-1 PROJECT COST ESTIMATE

## 9.1.1 Conditions of cost estimate

(1) Price level and exchange rate

Construction cost for the project is estimated on the price level of August in 1992, since the cost data of material, labour, equipment and other necessary for the cost estimate were collected in this period. Exchange rate of one U.S. Dollar (US$) applied in the conversion into Sri Lanka Rupees (Rs.) is Rs 44.0.

(2) Currency of cost estimate

The construction cost is estimated for the foreign currency (F.C) and local currency (L.C) components in accordance with the origin of material. The currency for cost estimate is expressed in Sri Lanka Rupees for both local and foreign currency components. The local and the foreign currency components include the following items, respectively;

Local currency component

- Labour cost
- Cost of local materials such as cement, aggregate, reinforcement bars
- Project administration expenses
- Local mechanic and spare parts cost for repair of plant and equipment

Foreign currency component

- Cost of plant and equipment
- Cost of imported materials such as slide gate, metal form, concrete admixture
- Cost of foreign portion of local materials such as cement, reinforcement bars, P.O.L
- Cost of engineering service for consultant

Ratios of F.C and L.C of major work items applied for the estimate are tabulated as below.

| Description | F.C | L.C |
|---|---|---|
| Cement | 60 | 40 |
| Reinforced Bar | 80 | 20 |
| Fuel and Oil | 80 | 20 |
| Equipment for Construction | 70 | 30 |
| Truck and Vehicle | 70 | 30 |
| Blasting Materials | 80 | 20 |
| Steel Gate and Structure | 80 | 20 |
| Lumber | 0 | 100 |
| Labor | 0 | 100 |
| Land Acquisition | 0 | 100 |
| Taxes and Bonding Charges | 0 | 100 |
| Contractor Profit | 50 | 50 |

(3) Physical contingency

Physical contingency is assumed to be 15 % taking into account the degree of design and investigations for the project.

(4) Price Escalation Rate

The annual price escalation rate is taken at 3.8 % for the foreign currency component and 11.6 % for the local currency component. The price escalation rate of 11.6 % is decided by referring to the "Annual Report of Central Bank of Sri Lanka (1991)" and 3.8 % is "Price Prospect for Major Primary Commodities (1990-2005) of World Bank".

(5) Constitution of capital cost

Constitution of the capital cost is as follows:

(i) DIRECT Construction cost of the project facilities including physical contingency,
(ii) Associated cost consisting of administrative expenses and engineering services cost, and
(iii) Price contingency

### 9.1.2 Direct construction cost

(1) Civil work cost

Constitution of the civil work cost is as follows:

(i) Civil works for rehabilitation and upgrading works of the existing irrigation facilities for 2,900 ha,

(ii) Civil work for irrigation and drainage canals with related structures for the irrigation extension work for 6,280 ha,

(iii) Civil works for land reclamation and on-farm development in the irrigation extension area,

(iv) Procurement of O&M equipment,

(v) Environmental mitigation measures, and

(v) Physical contingency for the civil works

The direct construction cost for civil works is estimated on the unit price basis multiplying the unit price of works by the corresponding work quantity. The unit prices are estimated by referring to the current labor wages, material and machinery cost in the country shown in Table A9.1-1. The unit price of each work item consists of the costs of material, labor and equipment. Contractor's indirect cost are counted in every unit price proportionally. These expenses are assumed to be 35 % of the direct cost. Work quantities are estimated based on the results of preliminary design taking into account the results of geological and soil mechanics investigations.

The total direct construction cost of civil work is estimated at Rs. 2,100 million, of which foreign currency component is Rs. 1,327 million (equiv. to US$ 48 million) and local

currency component is Rs. 773 million, respectively, as shown in Table A9.1-2. Breakdowns of the cost are given in Tables A9.1-3 to A9.1-7.

(2) Rural infrastructure cost

The cost for the rural infrastructure consist of : (i) land preparation for settlement area, (ii) building works comprising schools, health and medical care center, management office, post office, development center, (iii) farm and village road network, (iv) water supply, (v) electric power supply, (vi) tele-communication system, and (vii) farm operation facilities consisting of collection and shipping center and pola, and (viii) starter facilities of settlers including supply of house materials, subsidy of foods for initial year (1.5 year) of settlement and seed.

The cost is estimated based on the current unit prices applied for the similar projects under MASL. The total direct cost of rural infrastructure work is estimated at Rs. 1,318 million, of which foreign currency component is Rs. 813 million (equiv. to US$ 18 million) and the local currency component is Rs. 505 million, respectively, as shown in Table A9.1-2. Breakdowns of the cost are given in Tables A9.1-8 and A9.1-9.

(3) Cost of environmental mitigative action and monitoring

The cost consists of: (i) construction of power fence for elephants, (ii) tree planting for soil conservation, and (iii) studies and monitorings of aquatic vegetation, surface water quality, and soil salinity. The cost is estimated based on the current cost applied for similar projects. Estimated cost is Rs. 10 million in local currency.

### 9.1.3 Associated costs

(1) Administration expenses

The administration expenses consists of MASL's direct administration cost at the construction site and the compensation cost for the crops and houses to be affected by the execution of the construction works. The cost is estimated at Rs. 230 million in local currency as shown in Table A9.1-10.

No account is made of the land acquisition in view of that all the land of the project area is of the property of the Government. Required land space for the project facilities is estimated at about 400 ha.

(2) Engineering service cost

The engineering services cost consists of required costs for detailed design, additional surveys and investigations and construction supervision, and training cost. The cost is estimated based on the required man-month of the consultant engineers of ??? month in total , and cost for additional surveys and investigations including mapping cost on a scale of 1:2,000. The estimated cost is Rs. 345 million in foreign currency as shown in Table A9.1-11.

### 9.1.4 Disbursement schedule and price contingency

According to the construction schedule, the construction cost are assumed to be disbursed as shown in Table A9.1-12. Amount of price contingency of Rs 1,492 million, consisting of

Rs. 470 million of foreign currency and Rs. 1,022 million of local currency, is estimated based on the disbursement schedule and escalation rate as mentioned in Section 9.1.1.

### 9.1.5 Summary of construction cost

The total project cost comprises (i) the direct construction cost including physical contingency for civil works, rural infrastructure work, and procurement cost for OM equipment, (ii) administration expenses, (iii) engineering services cost for the detailed design and construction supervision, and (iv) prices contingencies. The total project costs is summarized below and shown in Tables A9.1-2.

(Unit : Rs. million)

| Description | L/C | F/C | Total |
|---|---|---|---|
| A. Direct construction cost | 1,090 | 1,816 | 2,906 |
| (1) Rehabilitation and upgrading works | (108) | (157) | (265) |
| (2) Extension work of irrigation area | (545) | (969) | (1,514) |
| (3) Rural infrastructure work | (427) | (690) | (1,117) |
| (4) Environmental mitigation measures | (10) | (0) | (10) |
| B. Associated cost | 220 | 345 | 565 |
| (1) Administration expenses | (220) | (0) | (220) |
| (2) Engineering service cost | (0) | (345) | (345) |
| C. Physical contingency | 197 | 323 | 520 |
| Sub- total (A + B + C) | 1,507 | 2,484 | 3,991 |
| D. Price contingency | 1,022 | 470 | 1,492 |
| Total | 2,529 | 2,954 | 5,483 |

# *TABLES*

Table A9.1-1 CURRENT UNIT COSTS OF LABORS, CONSTRUCTION MATERIALS AND CONSTRUCTION EQUIPMENT IN THE COUNTRY

## (1) WAGES OF LABOR

| Category | Wages pr 8 hr/day (Rs.) |
|---|---|
| Unskilled labor | 90.00 |
| Semi-skilled labor | 105.00 |
| Skilled (Ordinary) | 120.00 |
| Skilled (Carpenters,masons,welders) | 150.00 |
| Skilled (Heavy equipment operators) | 230.00 |

## (2) PRICES OF CIVIL ENGINEERING CONSTRUCTION

| Type of Material | Unit | Price (Rs.) |
|---|---|---|
| Lanka Heavy Diesel | lit | 11.10 |
| Lanka Auto Diesel | lit | 11.50 |
| Lanka Petrol | lit | 30.00 |
| R/F bars, mild steel (all sizes) | lb | 11.16 |
| R/F bars, tor steel (all sizes) | lb | 12.13 |
| Wire nails | lb | 16.80 |
| Portland cement (50 kg bags) | each | 175.00 |
| Bridge Beam (53'*5.07 ton) | each | 29,430.00 |
| - do -(11'*0.89 ton) | each | 3,908.00 |
| C.I Gate ( 9" dia) | each | 2,292.00 |
| - do - (30" dia) | each | 10,185.00 |
| RCC spun Pipe( 6" dia) | ft | 69.00 |
| - do - (54"dia) | ft | 990.00 |
| Class 1 timber 4"*3" | m | 114.70 |
| - do - 6"*1" | m | 65.10 |
| Sawn timber Class 1 | cu.ft | 437.50 |
| Electric Charge (general) | kwh | 2.10 |
| - do - (industrial) | kwh | 2.35 |

## (3) UNIT COSTS OF MACHINERY/EQUIPMENT

| Machinery/Equipment | Hourly plant Rate (Rs.) |
|---|---|
| Crawler Tractor (180-200 HP) | 1,709.63 |
| Motorized Scraper (14/20 cu.yd) | 2,612.30 |
| Motor Grader (120-150 HP) | 1,665.88 |
| Back-Hoe (1 cu.yd) | 1,275.22 |
| Rear Dumper (15 ton) | 661.47 |
| Air Compressor (600 cfm) | 436.94 |
| Rock drill (11/2" bit, 50 lb) | 25.86 |
| Secondary Stone Crusher (15 ton/hr) | 441.58 |
| Front End Loader (1.5-2.5 cu.yd) | 903.15 |
| Concrete Mixer (14/10 cu.ft) | 114.31 |
| Tractor (60 HP) | 221.11 |
| Lorry (5 ton) | 262.01 |
| Road Roller (10-15 ton) | 433.59 |
| Dump Truck (5 cu.yd) | 464.86 |

Table A9.1-2 **FINANCIAL CONSTRUCTION COST OF PROPOSED PROJECT WORK**

(Unit : Rs. Million)

| Description | Unit | Q'ty | Amount F.C. | Amount L.C. | Amount Total |
|---|---|---|---|---|---|
| 1 Direct Cost | | | | | |
| (1) Rehabilitation and Upgrading Works | ha | 2,900 | 157 | 108 | 265 |
| (2) Irrigaion Extension Works | | | | | |
| 1) Irrigation canal & facilities | km | 362 | 604 | 367 | 970 |
| 2) Drain & facilities | km | 106 | 142 | 73 | 215 |
| 3) On-farm | ha | 6,380 | 172 | 89 | 261 |
| 4) O/M Equipment | | | 25 | 0 | 25 |
| 5) Miscellaneous | | | 28 | 16 | 43 |
| Sub-total | | | 969 | 545 | 1,514 |
| (3) Rural Infrastructure Work | | | | | |
| 1) Landpreparation | ha | 1,200 | 7 | 4 | 11 |
| 2) Education facility (schools) | nos | 28 | 46 | 38 | 84 |
| 3) Health & medical care | nos | 12 | 14 | 11 | 25 |
| 4) Post office | nos | 4 | 2 | 1 | 3 |
| 5) Rural water supply | nos | 23 | 99 | 58 | 157 |
| 6) Main road | km | 31 | 113 | 76 | 189 |
| 7) Rural roads | km | 111 | 31 | 26 | 57 |
| 8) Bridge on the Walawe river | nos | 1 | 81 | 27 | 108 |
| 9) Electrification | nos | 4 | 111 | 60 | 171 |
| 10) Telecommunication | nos | 4 | 62 | 33 | 95 |
| 11) Administrative office | nos | 22 | 28 | 23 | 51 |
| 12) Development center | nos | 1 | 58 | 25 | 83 |
| 13) Starter facilities for settler | nos | 5,340 | 5 | 16 | 21 |
| 14) Agro extension facility | nos | 6 | 11 | 15 | 26 |
| 15) Miscellaneous | | | 22 | 14 | 36 |
| Sub-total | | | 690 | 427 | 1,117 |
| (4) Environmental Mitigative Actions and Monitorings | | | 0 | 10 | 10 |
| Total of direct cost | | | 1,816 | 1,090 | 2,906 |
| 2 Engineering Services | | | 345 | 0 | 345 |
| 3 Administration | | | 0 | 220 | 220 |
| 4 Physical contingency | | | 323 | 197 | 520 |
| 5 Total of Items 1, 2, 3 and 4 | | | 2,484 | 1,507 | 3,991 |
| 6 Price Escalation | | | 470 | 1,022 | 1,492 |
| Grand Total | | | 2,954 | 2,529 | 5,483 |

Table A9.1 - 3 SUMMARY OF DIRECT CONSTRUCTION COST OF REHABILITATION AND UPGRADING WORK

| Description | Unit | Q'ty | Amount (1,000 Rs.) | | |
|---|---|---|---|---|---|
| | | | F.C. | L.C. | Total |
| 1 CANAL SYSTEM | | | | | |
| (1) Extension of canal length | m | 30,270 | 13,435 | 10,434 | 23,869 |
| (2) Riprap of eroded portion | m | 10,150 | 8,960 | 7,756 | 16,716 |
| (3) Canal lining | m | 132,170 | 52,962 | 28,589 | 81,551 |
| (4) Bank heightening | m | 14,000 | 994 | 532 | 1,526 |
| Sub-total | | | 76,351 | 47,311 | 123,662 |
| 2 .STRUCTURES | | | | | |
| (1) Structures to be constructednewly | | | | | |
| 1) Main | nos | 12 | 21,544 | 17,571 | 39,115 |
| 2) Branch canal | nos | 5 | 1,056 | 627 | 1,683 |
| 3) Distributary canal | nos | 249 | 12,625 | 4,850 | 17,475 |
| 4) Field canal | nos | 2,583 | 15,437 | 13,668 | 29,105 |
| Sub-total | | | 50,662 | 36,716 | 87,378 |
| (2) Structures to be repaired | | | | | |
| 1) Main | nos | 26 | 9,875 | 8,408 | 18,283 |
| 2) Branch canal | nos | 114 | 5,008 | 4,179 | 9,187 |
| 3) Distributary canal | nos | 205 | 962 | 868 | 1,830 |
| 4) Field canal | nos | 449 | 2,423 | 2,217 | 4,640 |
| Sub-total | | | 18,268 | 15,672 | 33,940 |
| (3) Structures to be replaced | | | | | |
| 1) Branch canal | nos | 2 | 74 | 69 | 143 |
| 2) Distributary canal | nos | 110 | 629 | 566 | 1,195 |
| 3) Field canal | nos | 625 | 3,008 | 2,683 | 5,691 |
| Sub-total | | | 3,711 | 3,318 | 7,029 |
| Total | | | 72,641 | 55,706 | 128,347 |
| 3 Miscellaneous works | | | 7,513 | 5,680 | 13,192 |
| Total of Items of 1, 2 and 3 | | | 156,505 | 108,697 | 265,201 |
| 4 Physical contingency | | | 28,249 | 19,487 | 47,736 |
| **GROUND TOTAL** | | | **184,754** | **128,184** | **312,937** |

Table A9.1 - 4 BREAKDOWN OF DIRECT CONSTRUCTION COST OF REHABILITATION AND UPGRADING WORK (1/3)

| Description | Unit | Q'ty | Unit Rate (Rs.) F.C. | Unit Rate (Rs.) L.C. | Unit Rate (Rs.) Total | Amount (1,000 Rs.) F.C. | Amount (1,000 Rs.) L.C. | Amount (1,000 Rs.) Total |
|---|---|---|---|---|---|---|---|---|
| 1 CANAL SYSTEM | | | | | | | | |
| (1) Extension of canal length | | | | | | | | |
| Distributary canal | m | 2,470 | 656 | 488 | 1,144 | 1,620 | 1,205 | 2,825 |
| Field canal | m | 27,800 | 425 | 332 | 757 | 11,815 | 9,229 | 21,044 |
| Sub-total | | | | | | 13,435 | 10,434 | 23,869 |
| (2) Riprap of eroded portion | | | | | | | | |
| Main canal | m | 9,050 | 883 | 764 | 1,647 | 7,989 | 6,916 | 14,905 |
| Branch canal | m | 1,100 | 883 | 764 | 1,647 | 971 | 840 | 1,811 |
| Sub-total | | | | | | 8,960 | 7,756 | 16,716 |
| (3) Canal lining | | | | | | | | |
| Distributary canal | m | 45,170 | 518 | 271 | 835 | 23,382 | 12,247 | 35,629 |
| Field canal | m | 87,000 | 340 | 188 | 559 | 29,580 | 16,342 | 45,922 |
| Sub-total | | | | | | 52,962 | 28,589 | 81,551 |
| (4) Bank Heightening | | | | | | | | |
| Main canal | nos | 8,000 | 71 | 38 | 109 | 568 | 304 | 872 |
| Branch canal | m | 6,000 | 71 | 38 | 109 | 426 | 228 | 654 |
| Sub-total | | | | | | 994 | 532 | 1,526 |
| Total - 1 | | | | | | 76,351 | 47,311 | 123,662 |
| 2 STRUCTURES | | | | | | | | |
| (1) Structures to be constructed newly | | | | | | | | |
| 1) Main canal | | | | | | | | |
| Bathing step | nos | 10 | 17,766 | 24,234 | 42,000 | 177 | 242 | 419 |
| Measuring device | nos | 1 | 192,500 | 4,000 | 350,000 | 192 | 4 | 196 |
| Aqueduct (L=83 m) | nos | 1 | 21,175,000 | 17,325,000 | 38,500,000 | 21,175 | 17,325 | 38,500 |
| Sub-total | | | | | | 21,544 | 17,571 | 39,115 |
| 2) Branch canal | | | | | | | | |
| Culvert | nos | 1 | 37,440 | 34,560 | 72,000 | 37 | 34 | 71 |
| Foot bridge | nos | 2 | 317,200 | 292,800 | 610,000 | 634 | 585 | 1,219 |
| Measuring device | nos | 2 | 192,500 | 4,000 | 350,000 | 385 | 8 | 393 |
| Sub-total | | | | | | 1,056 | 627 | 1,683 |
| 3) Distributary canal | | | | | | | | |
| Bathing step | nos | 65 | 17,766 | 24,234 | 42,000 | 1,154 | 1,575 | 2,729 |
| Culvert | nos | 47 | 26,208 | 24,192 | 50,400 | 1,231 | 1,137 | 2,368 |
| Drop | nos | 2 | 6,032 | 5,568 | 11,600 | 12 | 11 | 23 |
| Cross drain | nos | 5 | 16,500 | 13,500 | 30,000 | 82 | 67 | 149 |
| Field turnout | nos | 88 | 5,616 | 5,184 | 10,800 | 494 | 456 | 950 |
| Bridge | nos | 1 | 1,760,000 | 1,440,000 | 3,200,000 | 1,760 | 1,440 | 3,200 |
| Measuring device | nos | 41 | 192,500 | 4,000 | 350,000 | 7,892 | 164 | 8,056 |
| Sub-total | | | | | | 12,625 | 4,850 | 17,475 |
| 4) Field canal | | | | | | | | |
| Culvert | nos | 359 | 26,208 | 24,192 | 50,400 | 9,408 | 8,684 | 18,092 |
| Cross drain | nos | 3 | 16,500 | 13,500 | 30,000 | 49 | 40 | 89 |
| Farm turnout | nos | 2,219 | 2,475 | 2,025 | 4,500 | 5,492 | 4,493 | 9,985 |
| Foot Bridge | nos | 2 | 244,400 | 225,600 | 470,000 | 488 | 451 | 939 |
| Sub-total | | | | | | 15,437 | 13,668 | 29,105 |
| Total - 2 (1) | | | | | | 50,662 | 36,716 | 87,378 |

Table A9.1 - 4 BREAKDOWN OF DIRECT CONSTRUCTION COST OF REHABILITATION AND UPGRADING WORK (2/3)

| Description | Unit | Q'ty | Unit Rate (Rs.) | | | Amount (1,000 Rs.) | | |
|---|---|---|---|---|---|---|---|---|
| | | | F.C. | L.C. | Total | F.C. | L.C. | Total |
| (2) Structures to be repaired | | | | | | | | |
| 1) Main | | | | | | | | |
| Cross drain | nos | 2 | 23,760 | 19,440 | 43,200 | 47 | 38 | 85 |
| Distributary turnout | nos | 8 | 10,483 | 9,677 | 20,160 | 83 | 77 | 160 |
| Foot bridge | nos | 4 | 353,600 | 326,400 | 680,000 | 1,414 | 1,305 | 2,719 |
| Spillway | nos | 3 | 232,960 | 215,040 | 448,000 | 698 | 645 | 1,343 |
| Regulator | nos | 3 | 274,560 | 253,440 | 528,000 | 823 | 760 | 1,583 |
| Control gate of tank | nos | 1 | 99,840 | 92,160 | 192,000 | 99 | 92 | 191 |
| Siphon | nos | 1 | 23,760 | 19,440 | 43,200 | 23 | 19 | 42 |
| Tank | nos | 4 | 1,672,000 | 1,368,000 | 3,040,000 | 6,688 | 5,472 | 12,160 |
| Sub-total | | | | | | 9,875 | 8,408 | 18,283 |
| 2) Branch canal | | | | | | | | |
| Bathing step | nos | 1 | 14,213 | 19,387 | 33,600 | 14 | 19 | 33 |
| Drop | nos | 1 | 4,826 | 4,454 | 9,280 | 4 | 4 | 8 |
| Cros Drain | nos | 4 | 15,840 | 12,960 | 28,800 | 63 | 51 | 114 |
| Farm turnout | nos | 6 | 1,980 | 1,620 | 3,600 | 11 | 9 | 20 |
| Field turnout | nos | 31 | 5,491 | 5,069 | 10,560 | 170 | 157 | 327 |
| Distributary turnout | nos | 12 | 7,987 | 7,373 | 15,360 | 95 | 88 | 183 |
| Foot bridge | nos | 1 | 253,760 | 234,240 | 488,000 | 253 | 234 | 487 |
| Bridge | nos | 3 | 1,408,000 | 1,152,000 | 2,560,000 | 4,224 | 3,456 | 7,680 |
| Regulator | nos | 1 | 174,720 | 161,280 | 336,000 | 174 | 161 | 335 |
| Sub-total | | | | | | 5,008 | 4,179 | 9,187 |
| 3) Distributary canal | | | | | | | | |
| Culvert | nos | 4 | 29,952 | 27,648 | 57,600 | 119 | 110 | 229 |
| Drop | nos | 61 | 4,826 | 4,454 | 9,280 | 294 | 271 | 565 |
| Cros Drain | nos | 3 | 15,840 | 12,960 | 28,800 | 47 | 38 | 85 |
| Farm turnout | nos | 71 | 1,980 | 1,620 | 3,600 | 140 | 115 | 255 |
| Field turnout | nos | 66 | 5,491 | 5,069 | 10,560 | 362 | 334 | 696 |
| Sub-total | | | | | | 962 | 868 | 1,830 |
| 4) Field canal | | | | | | | | |
| Culvert | nos | 3 | 20,966 | 19,354 | 40,320 | 62 | 58 | 120 |
| Drop | nos | 364 | 5,990 | 5,530 | 11,520 | 2,180 | 2,012 | 4,192 |
| Cros Drain | nos | 6 | 13,200 | 10,800 | 24,000 | 79 | 64 | 143 |
| Farm turnout | nos | 47 | 1,980 | 1,620 | 3,600 | 93 | 76 | 169 |
| Field turnout | nos | 29 | 326 | 267 | 593 | 9 | 7 | 16 |
| Sub-total | | | | | | 2,423 | 2,217 | 4,640 |
| Total - 2 (2) | | | | | | 18,268 | 15,672 | 33,940 |
| (3) Structures to be replaced | | | | | | | | |
| 1) Branch canal | | | | | | | | |
| Culvert | nos | 2 | 37,440 | 34,560 | 72,000 | 74 | 69 | 143 |
| Sub-total | | | | | | 74 | 69 | 143 |
| 2) Distributary canal | | | | | | | | |
| Culvert | nos | 3 | 26,208 | 24,192 | 50,400 | 78 | 72 | 150 |
| Drop | nos | 39 | 6,032 | 5,568 | 11,600 | 235 | 217 | 452 |
| Cros Drain | nos | 2 | 19,800 | 16,200 | 36,000 | 39 | 32 | 71 |
| Farm turnout | nos | 40 | 2,475 | 2,025 | 4,500 | 99 | 81 | 180 |
| Field turnout | nos | 26 | 6,864 | 6,336 | 13,200 | 178 | 164 | 342 |
| Sub-total | | | | | | 629 | 566 | 1,195 |

Table A9.1 - 4 BREAKDOWN OF DIRECT CONSTRUCTION COST OF REHABILITATION AND UPGRADING WORK (3/3)

| Description | Unit | Q'ty | Unit Rate (Rs.) | | | Amount (1,000 Rs.) | | |
|---|---|---|---|---|---|---|---|---|
| | | | F.C. | L.C. | Total | F.C. | L.C. | Total |
| 3) Field canal | | | | | | | | |
| Drop | nos | 268 | 7,488 | 6,912 | 14,400 | 2,006 | 1,852 | 3,858 |
| Cros Drain | nos | 4 | 16,500 | 13,500 | 30,000 | 66 | 54 | 120 |
| Farm turnout | nos | 333 | 2,475 | 2,025 | 4,500 | 824 | 674 | 1,498 |
| Field turnout | nos | 20 | 5,616 | 5,184 | 10,800 | 112 | 103 | 215 |
| Sub-total | | | | | | 3,008 | 2,683 | 5,691 |
| Total - 2 (3) | | | | | | 3,711 | 3,318 | 7,029 |
| 3 Miscellaneous Works | | | | | | 7,513 | 5,680 | 13,192 |
| Total of Items of 1, 2 and 3 | | | | | | 156,505 | 108,697 | 265,201 |
| 4 Physical contingency | | | | | | 28,249 | 19,487 | 47,736 |
| **GROUND TOTAL** | | | | | | **184,754** | **128,184** | **312,937** |

**Table A9.1 - 5 SUMMARY OF DIRECT CONSTRUCTION COST FOR IRRIGATION EXTENSION WORK**

| Description | Unit | Q'ty | Amount(1,000Rs.) F.C | L.C | Total |
|---|---|---|---|---|---|
| 1 Extension area (Suriyawewa Block) | | | | | |
| Branch canal | m | 9,700 | 23,145 | 15,067 | 38,212 |
| Distributary for paddy | m | 25,100 | 36,142 | 23,976 | 60,118 |
| Distributary for upland | m | 16,800 | 11,473 | 8,121 | 19,594 |
| Drain | m | 15,000 | 16,703 | 10,440 | 27,143 |
| On-farm | ha | 1,040 | 23,625 | 12,081 | 35,706 |
| Miscellaneous works | | | 3,333 | 2,091 | 5,423 |
| Sub-total | | | 114,421 | 71,776 | 186,196 |
| 2 Extension area (North Block) | | | | | |
| Main canal | m | 19,360 | 171,917 | 83,393 | 255,310 |
| Branch canal | m | 9,300 | 20,076 | 12,981 | 33,057 |
| Distributary for paddy | m | 67,800 | 100,018 | 67,020 | 167,038 |
| Distributary for upland | m | 61,900 | 37,553 | 24,220 | 61,773 |
| Drain | m | 48,600 | 60,946 | 28,367 | 89,313 |
| On-farm | ha | 2,880 | 82,569 | 43,191 | 125,760 |
| Miscellaneous works | | | 14,192 | 7,775 | 21,968 |
| Sub-total | | | 487,271 | 266,947 | 754,219 |
| 3 Extension area (South Block) | | | | | |
| Main canal | m | 5,620 | 31,508 | 18,781 | 50,289 |
| Branch canal | m | 16,100 | 34,027 | 22,226 | 56,253 |
| Distributary for paddy | m | 63,300 | 99,269 | 66,485 | 165,754 |
| Distributary for upland | m | 67,500 | 38,673 | 24,331 | 63,004 |
| Drain | m | 42,000 | 63,874 | 34,437 | 98,311 |
| On-farm | ha | 2,460 | 65,427 | 33,953 | 99,380 |
| Miscellaneous works | | | 9,983 | 6,006 | 15,990 |
| Sub-total | | | 342,761 | 206,219 | 548,981 |
| Total of Items of 1,2 and 3 | | | 944,453 | 544,942 | 1,489,395 |
| 4 Procurement of O&M equipment | | | 25,319 | 0 | 25,319 |
| 5 Physical contingency | | | 172,275 | 99,612 | 271,886 |
| GROUND TOTAL | | | 1,142,047 | 644,554 | 1,786,600 |

Table A9.1 - 6 BREAKDOWN OF DIRECT CONSTRUCTION COST FOR IRRIGATION EXTENSION WORK (1/5)

| Description of Item | Unit | Q'ty | Unit Rate (Rs.) | | | Amount (1,000 Rs.) | | |
|---|---|---|---|---|---|---|---|---|
| | | | F.C. | L.C. | Total | F.C. | L.C. | Total |
| 1 Extension area I (Suriyawewa block) | | | | | | | | |
| (1) Branch Canal | | | | | | | | |
| C-1-4 | m | 600 | 522 | 279 | 801 | 313 | 167 | 480 |
| C-1-5 | m | 700 | 609 | 319 | 928 | 426 | 223 | 649 |
| C-1-6 | m | 3300 | 760 | 402 | 1,162 | 2,508 | 1,326 | 3,834 |
| C-2-1 | m | 2500 | 1,159 | 602 | 1,761 | 2,897 | 1,505 | 4,402 |
| C-2-3 | m | 1100 | 1,303 | 668 | 1,971 | 1,433 | 734 | 2,167 |
| C-2-6 | m | 1500 | 1,700 | 846 | 2,546 | 2,550 | 1,269 | 3,819 |
| Branch turnout | nos | 3 | 13,104 | 12,096 | 25,200 | 39 | 36 | 75 |
| Distributary turnout | nos | 1 | 6,864 | 6,336 | 13,200 | 6 | 6 | 12 |
| Spillway | nos | 3 | 291,200 | 268,800 | 560,000 | 873 | 806 | 1,679 |
| Regulator | nos | 3 | 124,800 | 115,200 | 240,000 | 374 | 345 | 719 |
| Bridge II | nos | 1 | 1,760,000 | 1,440,000 | 3,200,000 | 1,760 | 1,440 | 3,200 |
| Foot bridge | nos | 4 | 244,400 | 225,600 | 470,000 | 977 | 902 | 1,879 |
| Bathing step | nos | 4 | 17,766 | 24,234 | 42,000 | 71 | 96 | 167 |
| Road-II | m | 9700 | 738 | 492 | 1,230 | 7,158 | 4,772 | 11,930 |
| Dranege anicut | nos | 1 | 1,760,000 | 1,440,000 | 3,200,000 | 1,760 | 1,440 | 3,200 |
| Sub-total | | | | | | 23,145 | 15,067 | 38,212 |
| (2) Disributary canal for paddy field | | | | | | | | |
| C-1-1 | m | 500 | 400 | 221 | 621 | 200 | 110 | 310 |
| C-1-2 | m | 3600 | 442 | 242 | 684 | 1,591 | 871 | 2,462 |
| C-1-3 | m | 10400 | 481 | 260 | 741 | 5,002 | 2,704 | 7,706 |
| C-1-5 | m | 10600 | 609 | 319 | 928 | 6,455 | 3,381 | 9,836 |
| Distributary turnout | nos | 16 | 6,864 | 6,336 | 13,200 | 109 | 101 | 210 |
| Field turnout | nos | 38 | 6,864 | 6,336 | 13,200 | 260 | 240 | 500 |
| Culvert | nos | 32 | 26,208 | 24,192 | 50,400 | 838 | 774 | 1,612 |
| Drop | nos | 45 | 6,032 | 5,568 | 11,600 | 271 | 250 | 521 |
| Lower Tank | nos | 1 | 1,494,000 | 1,826,000 | 3,320,000 | 1,494 | 1,826 | 3,320 |
| Foot bridge | nos | 5 | 244,400 | 225,600 | 470,000 | 1,222 | 1,128 | 2,350 |
| Bathing step | nos | 10 | 17,766 | 24,234 | 42,000 | 177 | 242 | 419 |
| Road-II | m | 25100 | 738 | 492 | 1,230 | 18,523 | 12,349 | 30,872 |
| Sub-Total Sub-total | | | | | | 36,142 | 23,976 | 60,118 |
| (3) Disributary canal for upland field | | | | | | | | |
| C-1-1 | m | 1100 | 400 | 221 | 621 | 440 | 243 | 683 |
| C-1-2 | m | 2200 | 442 | 242 | 684 | 972 | 532 | 1,504 |
| C-1-3 | m | 9900 | 481 | 260 | 741 | 4,761 | 2,574 | 7,335 |
| C-1-4 | m | 2100 | 522 | 279 | 801 | 1,096 | 585 | 1,681 |
| C-1-5 | m | 1500 | 609 | 319 | 928 | 913 | 478 | 1,391 |
| Distributary turnout | nos | 12 | 9,984 | 9,216 | 19,200 | 119 | 110 | 229 |
| Field turnout | nos | 55 | 5,616 | 5,184 | 10,800 | 308 | 285 | 593 |
| Culvert | nos | 12 | 37,440 | 34,560 | 72,000 | 449 | 414 | 863 |
| Drop | nos | 29 | 6,032 | 5,568 | 11,600 | 174 | 161 | 335 |
| Heigher Tank | nos | 6 | 373,500 | 456,500 | 830,000 | 2,241 | 2,739 | 4,980 |
| Sub-total | | | | | | 11,473 | 8,121 | 19,594 |
| (4) Drainage canals | | | | | | | | |
| D-2 | m | 1100 | 268 | 116 | 384 | 294 | 127 | 421 |
| D-3 | m | 3200 | 417 | 173 | 590 | 1,334 | 553 | 1,887 |
| D-4 | m | 7900 | 544 | 221 | 765 | 4,297 | 1,745 | 6,042 |
| D-5 | m | 2800 | 687 | 275 | 962 | 1,923 | 770 | 2,693 |
| Bridge-II | nos | 1 | 1,760,000 | 1,440,000 | 3,200,000 | 1,760 | 1,440 | 3,200 |
| Road-III | m | 15000 | 473 | 387 | 860 | 7,095 | 5,805 | 12,900 |
| Sub-total | | | | | | 16,703 | 10,440 | 27,143 |

Table A9.1 - 6 BREAKDOWN OF DIRECT CONSTRUCTION COST FOR IRRIGATION EXTENSION WORK (2/5)

| Description of Item | Unit | Q'ty | Unit Rate (Rs.) | | | Amount (1,000 Rs.) | | |
|---|---|---|---|---|---|---|---|---|
| | | | F.C. | L.C. | Total | F.C. | L.C. | Total |
| (5) On-farm works | | | | | | | | |
| Land leveling | ha | 580 | 2,024 | 1,133 | 3,157 | 1,173 | 657 | 1,830 |
| Cross ripping | ha | 580 | 6,791 | 3,804 | 10,595 | 3,939 | 2,206 | 6,145 |
| Jungle clearing | ha | 200 | 3,798 | 2,165 | 5,963 | 759 | 432 | 1,191 |
| Farm turnout I | nos | 440 | 2,475 | 2,025 | 4,500 | 1,089 | 891 | 1,980 |
| Farm turnout II | nos | 600 | 3,025 | 2,475 | 5,500 | 1,815 | 1,485 | 3,300 |
| Field canal I | m | 13200 | 268 | 116 | 384 | 3,537 | 1,531 | 5,068 |
| Field canal II | m | 18000 | 216 | 93 | 309 | 3,888 | 1,674 | 5,562 |
| Field drain I | m | 13200 | 268 | 116 | 384 | 3,537 | 1,531 | 5,068 |
| Field drain II | m | 18000 | 216 | 93 | 309 | 3,888 | 1,674 | 5,562 |
| Sub-total | | | | | | 23,625 | 12,081 | 35,706 |
| (6) Miscellaneous works | | | | | | 3,333 | 2,091 | 5,423 |
| Total of Item 1 | | | | | | 114,421 | 71,776 | 186,196 |
| 2 Extension area II (North block) | | | | | | | | |
| (1) Main canal | | | | | | | | |
| Stripping | ha | 35 | 52 | 26 | 78 | 1 | 0 | 1 |
| M-5 | m | 7130 | 6,003 | 2,335 | 8,338 | 42,801 | 16,648 | 59,449 |
| M-6 | m | 5980 | 7,147 | 2,779 | 9,926 | 42,739 | 16,618 | 59,357 |
| M-7 | m | 370 | 7,879 | 3,071 | 10,950 | 2,915 | 1,136 | 4,051 |
| M-8 | m | 5880 | 8,129 | 3,183 | 11,312 | 47,798 | 18,716 | 66,514 |
| Cross leveling | nos. | 9 | 612,000 | 748,000 | 1,360,000 | 5,508 | 6,732 | 12,240 |
| Spillway | nos. | 3 | 291,200 | 268,800 | 560,000 | 873 | 806 | 1,679 |
| Regulator | nos | 3 | 343,200 | 316,800 | 660,000 | 1,029 | 950 | 1,979 |
| Bridge II | nos. | 4 | 1,760,000 | 1,440,000 | 3,200,000 | 7,040 | 5,760 | 12,800 |
| Foot bridge | nos. | 15 | 442,000 | 408,000 | 850,000 | 6,630 | 6,120 | 12,750 |
| Bathing step | nos. | 15 | 17,766 | 24,234 | 42,000 | 266 | 363 | 629 |
| Road II | m | 19400 | 738 | 492 | 1,230 | 14,317 | 9,544 | 23,861 |
| Sub-total | | | | | | 171,917 | 83,393 | 255,310 |
| (2) Branch Canal | | | | | | | | |
| C-1-4 | m | 800 | 522 | 279 | 801 | 417 | 223 | 640 |
| C-1-5 | m | 400 | 609 | 319 | 928 | 243 | 127 | 370 |
| C-1-6 | m | 800 | 760 | 402 | 1,162 | 608 | 321 | 929 |
| C-1-7 | m | 3900 | 912 | 469 | 1,381 | 3,556 | 1,829 | 5,385 |
| C-2-1 | m | 1500 | 1,159 | 602 | 1,761 | 1,738 | 903 | 2,641 |
| C-2-2 | m | 800 | 1,230 | 634 | 1,864 | 984 | 507 | 1,491 |
| C-2-3 | m | 1100 | 1,303 | 668 | 1,971 | 1,433 | 734 | 2,167 |
| Culvert | nos. | 10 | 37,440 | 34,560 | 72,000 | 374 | 345 | 719 |
| Branch turnout | nos. | 10 | 13,104 | 12,096 | 25,200 | 131 | 120 | 251 |
| Spillway | nos. | 3 | 291,200 | 268,800 | 560,000 | 873 | 806 | 1,679 |
| Regulator | nos | 3 | 124,800 | 115,200 | 240,000 | 374 | 345 | 719 |
| Bridge II | nos. | 1 | 1,760,000 | 1,440,000 | 3,200,000 | 1,760 | 1,440 | 3,200 |
| Foot bridge | nos. | 2 | 317,200 | 292,800 | 610,000 | 634 | 585 | 1,219 |
| Bathing step | nos. | 5 | 17,766 | 24,234 | 42,000 | 88 | 121 | 209 |
| Road II | m | 9300 | 738 | 492 | 1,230 | 6,863 | 4,575 | 11,438 |
| Sub-total | | | | | | 20,076 | 12,981 | 33,057 |
| (3) Disributary canal for paddy field | | | | | | | | |
| C-1-1 | m | 1800 | 400 | 221 | 621 | 720 | 397 | 1,117 |
| C-1-2 | m | 13300 | 442 | 242 | 684 | 5,878 | 3,218 | 9,096 |
| C-1-3 | m | 9700 | 481 | 260 | 741 | 4,665 | 2,522 | 7,187 |
| C-1-4 | m | 11900 | 522 | 279 | 801 | 6,211 | 3,320 | 9,531 |
| C-1-5 | m | 22900 | 609 | 319 | 928 | 13,946 | 7,305 | 21,251 |
| C-1-6 | m | 8200 | 760 | 402 | 1,162 | 6,232 | 3,296 | 9,528 |

able A9.1 - 6 BREAKDOWN OF DIRECT CONSTRUCTION COST FOR IRRIGATION EXTENSION WORK (3/5)

| Description of Item | Unit | Q'ty | Unit Rate (Rs.) | | | Amount (1,000 Rs.) | | |
|---|---|---|---|---|---|---|---|---|
| | | | F.C. | L.C. | Total | F.C. | L.C. | Total |
| Distributary turnout | nos | 35 | 6,864 | 6,336 | 13,200 | 240 | 221 | 461 |
| Field turnout | nos | 105 | 6,864 | 6,336 | 13,200 | 720 | 665 | 1,385 |
| Drop | nos | 124 | 6,032 | 5,568 | 11,600 | 747 | 690 | 1,437 |
| Lower Tank | nos | 3 | 1,494,000 | 1,826,000 | 3,320,000 | 4,482 | 5,478 | 9,960 |
| Repair Tank | nos | 4 | 560,250 | 684,750 | 1,245,000 | 2,241 | 2,739 | 4,980 |
| Foot bridge | nos | 14 | 244,400 | 225,600 | 470,000 | 3,421 | 3,158 | 6,579 |
| Bathing step | nos | 27 | 17,766 | 24,234 | 42,000 | 479 | 654 | 1,133 |
| Road-II | m | 67800 | 738 | 492 | 1,230 | 50,036 | 33,357 | 83,393 |
| Sub-total | | | | | | 100,018 | 67,020 | 167,038 |
| (4) Disributary canal for upland field | | | | | | | | |
| C-1-1 | m | 800 | 400 | 221 | 621 | 320 | 176 | 496 |
| C-1-2 | m | 18400 | 442 | 242 | 684 | 8,132 | 4,452 | 12,584 |
| C-1-3 | m | 15900 | 481 | 260 | 741 | 7,647 | 4,134 | 11,781 |
| C-1-4 | m | 20600 | 522 | 279 | 801 | 10,753 | 5,747 | 16,500 |
| C-1-5 | m | 6200 | 609 | 319 | 928 | 3,775 | 1,977 | 5,752 |
| Distributary turnout | nos | 32 | 6,864 | 6,336 | 13,200 | 219 | 202 | 421 |
| Field turnout | nos | 160 | 5,616 | 5,184 | 10,800 | 898 | 829 | 1,727 |
| Drop | nos | 111 | 11,960 | 11,040 | 23,000 | 1,327 | 1,225 | 2,552 |
| Heigher Tank | nos | 12 | 373,500 | 456,500 | 830,000 | 4,482 | 5,478 | 9,960 |
| Sub-total | | | | | | 37,553 | 24,220 | 61,773 |
| (5) Drainage canals | | | | | | | | |
| D-2 | m | 900 | 268 | 116 | 384 | 241 | 104 | 345 |
| D-3 | m | 6600 | 417 | 173 | 590 | 2,752 | 1,141 | 3,893 |
| D-4 | m | 2500 | 544 | 221 | 765 | 1,360 | 552 | 1,912 |
| D-5 | m | 17100 | 687 | 275 | 962 | 11,747 | 4,702 | 16,449 |
| D-6 | m | 7500 | 1,068 | 426 | 1,494 | 8,010 | 3,195 | 11,205 |
| D-7 | m | 5100 | 1,427 | 553 | 1,980 | 7,277 | 2,820 | 10,097 |
| D-8 | m | 1200 | 1,704 | 664 | 2,368 | 2,044 | 796 | 2,840 |
| D-9 | m | 4900 | 2,002 | 781 | 2,783 | 9,809 | 3,826 | 13,635 |
| D-10 | m | 2800 | 2,680 | 1,030 | 3,710 | 7,504 | 2,884 | 10,388 |
| Bridge-II | nos | 2 | 1,760,000 | 1,440,000 | 3,200,000 | 3,520 | 2,880 | 6,400 |
| Road-IV | m | 48600 | 138 | 113 | 250 | 6,682 | 5,467 | 12,149 |
| Sub-total | | | | | | 60,946 | 28,367 | 89,313 |
| (6) On-farm works | | | | | | | | |
| Land leveling | ha | 2800 | 2,024 | 1,133 | 3,157 | 5,666 | 3,173 | 8,839 |
| Ripping | nos | 2800 | 6,791 | 3,804 | 10,595 | 19,015 | 10,650 | 29,665 |
| Jungle | nos | 2400 | 3,798 | 2,165 | 5,963 | 9,116 | 5,194 | 14,310 |
| Farm turnout I | nos | 1140 | 2,475 | 2,025 | 4,500 | 2,821 | 2,308 | 5,129 |
| Farm turnout II | nos | 1740 | 3,025 | 2,475 | 5,500 | 5,263 | 4,306 | 9,569 |
| Field canal I | m | 34000 | 268 | 116 | 384 | 9,112 | 3,944 | 13,056 |
| Field canal II | m | 52000 | 216 | 93 | 309 | 11,232 | 4,836 | 16,068 |
| Field drain I | m | 34000 | 268 | 116 | 384 | 9,112 | 3,944 | 13,056 |
| Field drain II | m | 52000 | 216 | 93 | 309 | 11,232 | 4,836 | 16,068 |
| Sub-total | | | | | | 82,569 | 43,191 | 125,760 |
| (7) Miscellaneous works | | | | | | 14,192 | 7,775 | 21,968 |
| Total of Item 2 | | | | | | 487,271 | 266,947 | 754,219 |

Table A9.1 - 6 BREAKDOWN OF DIRECT CONSTRUCTION COST FOR IRRIGATION EXTENSION WORK (4/5)

| Description of Item | Unit | Q'ty | Unit Rate (Rs.) | | | Amount (1,000 Rs.) | | |
|---|---|---|---|---|---|---|---|---|
| | | | F.C. | L.C. | Total | F.C. | L.C. | Total |
| 3 Extension area (South Block) | | | | | | | | |
| (1) Main canal | | | | | | | | |
| Stripping | ha | 4 | 52 | 26 | 78 | 0 | 0 | 0 |
| M-1 | m | 2630 | 2,654 | 1,019 | 3,673 | 6,980 | 2,679 | 9,659 |
| M-2 | m | 1050 | 3,138 | 1,217 | 4,355 | 3,294 | 1,277 | 4,571 |
| M-3 | m | 1450 | 3,998 | 1,554 | 5,552 | 5,797 | 2,253 | 8,050 |
| M-5 | m | 490 | 6,003 | 2,335 | 8,338 | 2,941 | 1,144 | 4,085 |
| Cross leveling | nos. | 6 | 612,000 | 748,000 | 1,360,000 | 3,672 | 4,488 | 8,160 |
| Spillway | nos. | 1 | 291,200 | 268,800 | 560,000 | 291 | 268 | 559 |
| Regulator | nos | 1 | 343,200 | 316,800 | 660,000 | 343 | 316 | 659 |
| Bridge II | nos. | 1 | 1,760,000 | 1,440,000 | 3,200,000 | 1,760 | 1,440 | 3,200 |
| Foot bridge | nos. | 5 | 442,000 | 408,000 | 850,000 | 2,210 | 2,040 | 4,250 |
| Bathing step | nos. | 5 | 17,766 | 24,234 | 42,000 | 88 | 121 | 209 |
| Road II | m | 5600 | 738 | 492 | 1,230 | 4,132 | 2,755 | 6,887 |
| Sub-total | | | | | | 31,508 | 18,781 | 50,289 |
| (2) Branch Canal | | | | | | | | |
| C-1-3 | m | 2400 | 481 | 260 | 741 | 1,154 | 624 | 1,778 |
| C-1-5 | m | 1200 | 609 | 319 | 928 | 730 | 382 | 1,112 |
| C-1-6 | m | 3100 | 760 | 402 | 1,162 | 2,356 | 1,246 | 3,602 |
| C-1-7 | m | 5900 | 912 | 469 | 1,381 | 5,380 | 2,767 | 8,147 |
| C-2-1 | m | 1300 | 1,159 | 602 | 1,761 | 1,506 | 782 | 2,288 |
| C-2-3 | m | 1300 | 1,303 | 668 | 1,971 | 1,693 | 868 | 2,561 |
| C-2-6 | m | 900 | 1,700 | 846 | 2,546 | 1,530 | 761 | 2,291 |
| Branch turnout | nos. | 12 | 13,104 | 12,096 | 25,200 | 157 | 145 | 302 |
| Spillway | nos. | 5 | 291,200 | 268,800 | 560,000 | 1,456 | 1,344 | 2,800 |
| Regulator | nos | 5 | 218,400 | 201,600 | 420,000 | 1,092 | 1,008 | 2,100 |
| Bridge II | nos. | 2 | 1,760,000 | 1,440,000 | 3,200,000 | 3,520 | 2,880 | 6,400 |
| Foot bridge | nos. | 6 | 244,400 | 225,600 | 470,000 | 1,466 | 1,353 | 2,819 |
| Bathing step | nos. | 6 | 17,766 | 24,234 | 42,000 | 106 | 145 | 251 |
| Road II | m | 16100 | 738 | 492 | 1,230 | 11,881 | 7,921 | 19,802 |
| Sub-total | | | | | | 34,027 | 22,226 | 56,253 |
| (3) Disributary canal for paddy field | | | | | | | | |
| C-1-1 | m | 2700 | 400 | 221 | 621 | 1,080 | 596 | 1,676 |
| C-1-2 | m | 8200 | 442 | 242 | 684 | 3,624 | 1,984 | 5,608 |
| C-1-3 | m | 7600 | 481 | 260 | 741 | 3,655 | 1,976 | 5,631 |
| C-1-4 | m | 13400 | 522 | 279 | 801 | 6,994 | 3,738 | 10,732 |
| C-1-5 | m | 26000 | 609 | 319 | 928 | 15,834 | 8,294 | 24,128 |
| C-1-6 | m | 1400 | 760 | 402 | 1,162 | 1,064 | 562 | 1,626 |
| C-2-1 | m | 900 | 1,159 | 602 | 1,761 | 1,043 | 541 | 1,584 |
| C-2-3 | m | 1500 | 1,303 | 668 | 1,971 | 1,954 | 1,002 | 2,956 |
| C-2-4 | m | 1600 | 1,456 | 736 | 2,192 | 2,329 | 1,177 | 3,506 |
| Distributary turnout | nos | 44 | 6,864 | 6,336 | 13,200 | 302 | 278 | 580 |
| Field turnout | nos | 107 | 5,616 | 5,184 | 10,800 | 600 | 554 | 1,154 |
| Drop | nos | 110 | 11,960 | 11,040 | 23,000 | 1,315 | 1,214 | 2,529 |
| Repair Tank | nos | 11 | 560,250 | 684,750 | 1,245,000 | 6,162 | 7,532 | 13,694 |
| Bridge-II | nos | 2 | 1,760,000 | 1,440,000 | 3,200,000 | 3,520 | 2,880 | 6,400 |
| Foot bridge | nos | 11 | 244,400 | 225,600 | 470,000 | 2,688 | 2,481 | 5,169 |
| Bathing step | nos | 22 | 17,766 | 24,234 | 42,000 | 390 | 533 | 923 |
| Road-II | m | 63300 | 738 | 492 | 1,230 | 46,715 | 31,143 | 77,858 |
| Sub-total | | | | | | 99,269 | 66,485 | 165,754 |
| (4) Disributary canal for upland field | | | | | | | | |
| C-1-1 | m | 11100 | 400 | 221 | 621 | 4,440 | 2,453 | 6,893 |
| C-1-2 | m | 20700 | 442 | 242 | 684 | 9,149 | 5,009 | 14,158 |
| C-1-3 | m | 19200 | 481 | 260 | 741 | 9,235 | 4,992 | 14,227 |

Table A9.1 - 6 BREAKDOWN OF DIRECT CONSTRUCTION COST FOR IRRIGATION EXTENSION WORK (5/5)

| Description of Item | Unit | Q'ty | Unit Rate (Rs.) | | | Amount (1,000 Rs.) | | |
|---|---|---|---|---|---|---|---|---|
| | | | F.C. | L.C. | Total | F.C. | L.C. | Total |
| C-1-4 | m | 3500 | 522 | 279 | 801 | 1,827 | 976 | 2,803 |
| C-1-5 | m | 13000 | 609 | 319 | 928 | 7,917 | 4,147 | 12,064 |
| Distributary turnout | nos | 32 | 6,864 | 6,336 | 13,200 | 219 | 202 | 421 |
| Field turnout | nos | 115 | 5,616 | 5,184 | 10,800 | 645 | 596 | 1,241 |
| Drop | nos | 126 | 11,960 | 11,040 | 23,000 | 1,506 | 1,391 | 2,897 |
| Heigher Tank | nos | 10 | 373,500 | 456,500 | 830,000 | 3,735 | 4,565 | 8,300 |
| Sub-total | | | | | | 38,673 | 24,331 | 63,004 |
| (5) Drainage canals | | | | | | | | |
| D-1 | m | 600 | 216 | 93 | 309 | 129 | 55 | 184 |
| D-2 | m | 2600 | 268 | 116 | 384 | 696 | 301 | 997 |
| D-3 | m | 5200 | 417 | 173 | 590 | 2,168 | 899 | 3,067 |
| D-4 | m | 6900 | 544 | 221 | 765 | 3,753 | 1,524 | 5,277 |
| D-5 | m | 11800 | 687 | 275 | 962 | 8,106 | 3,245 | 11,351 |
| D-6 | m | 5300 | 1,068 | 426 | 1,494 | 5,660 | 2,257 | 7,917 |
| D-7 | m | 2600 | 1,427 | 553 | 1,980 | 3,710 | 1,437 | 5,147 |
| D-8 | m | 1200 | 1,704 | 664 | 2,368 | 2,044 | 796 | 2,840 |
| D-9 | m | 1400 | 2,002 | 781 | 2,783 | 2,802 | 1,093 | 3,895 |
| D-10 | m | 2800 | 2,680 | 1,030 | 3,710 | 7,504 | 2,884 | 10,388 |
| D-11 | m | 1600 | 3,548 | 1,408 | 4,956 | 5,676 | 2,252 | 7,928 |
| Bridge-II | nos | 1 | 1,760,000 | 1,440,000 | 3,200,000 | 1,760 | 1,440 | 3,200 |
| Road-III | m | 42000 | 473 | 387 | 860 | 19,866 | 16,254 | 36,120 |
| Sub-total | | | | | | 63,874 | 34,437 | 98,311 |
| (6) On-farm works | | | | | | | | |
| Land leveling | ha | 1860 | 2,024 | 1,133 | 3,157 | 3,763 | 2,108 | 5,871 |
| Ripping | nos | 1860 | 6,791 | 3,804 | 10,595 | 12,631 | 7,074 | 19,705 |
| Jungle clearing | nos | 1860 | 3,798 | 2,165 | 5,963 | 7,065 | 4,026 | 11,091 |
| Farm turnout I | nos | 1180 | 2,475 | 2,025 | 4,500 | 2,920 | 2,389 | 5,309 |
| Fram turnout II | nos | 1280 | 3,025 | 2,475 | 5,500 | 3,872 | 3,168 | 7,040 |
| Field canal I | m | 35000 | 268 | 116 | 384 | 9,380 | 4,060 | 13,440 |
| Field canal II | m | 38000 | 216 | 93 | 309 | 8,208 | 3,534 | 11,742 |
| Field drain I | m | 35000 | 268 | 116 | 384 | 9,380 | 4,060 | 13,440 |
| Field drain II | m | 38000 | 216 | 93 | 309 | 8,208 | 3,534 | 11,742 |
| Sub-total | | | | | | 65,427 | 33,953 | 99,380 |
| (7) Miscellaneous works | | | | | | 9,983 | 6,006 | 15,990 |
| Total of Item 3 | | | | | | 342,761 | 206,219 | 548,981 |
| Total of 1, 2 and 3 | | | | | | 944,453 | 544,942 | 1,489,395 |
| 4 Procurement of O&M equipment | | | | | | 25,319 | 0 | 25,319 |
| 5 Physical contingency | | | | | | 172,275 | 99,612 | 271,886 |
| GROUND TOTAL | | | | | | 1,142,047 | 644,554 | 1,786,600 |

Note: Procurement cost of O&M equipment is not included.

Table A9.1 - 7 PROCUREMENT COST OF O/M EQUIPMENT

(UNIT : Rs. 1000.)

| Description | unit | Q'ty | Unit rate | Amount |
|---|---|---|---|---|
| 1 Buldozer 9t | nos. | 2 | 2,550 | 5,100 |
| 2 Backhoe 0.25m3 | nos. | 2 | 2,150 | 4,300 |
| 3 Motor grader L=2.0m | nos. | 2 | 1,560 | 3,120 |
| 4 Dump truck 4t | nos. | 1 | 960 | 960 |
| 5 Truck with crane 2t | nos. | 2 | 880 | 1,760 |
| 6 Concrete mixer 0.3m3 | nos. | 3 | 780 | 2,340 |
| 7 Jeep | nos. | 3 | 830 | 2,490 |
| 8 Motor cycle | nos. | 22 | 60 | 1,320 |
| 9 Micro-computer | nos. | 2 | 120 | 240 |
| 10 Wireless communication | nos. | 1 | 320 | 320 |
| 11 Meteo-hydrological equi. | nos. | 2 | 45 | 90 |
| 12 Miscellaneous | L.S | 1 | | 1,102 |
| 13 Spare parts (10%) | L.S | 1 | | 2,204 |
| Total | | | | 25,346 |

Table A9.1 - 8 **SUMMARY OF DIRECT CONSTRUCTION COST OF RURAL INFRASTRUCTURE WORK**

| Description of Item | Unit | Q'ty | Amount(1,000 Rs.) F.C. | L.C. | Total |
|---|---|---|---|---|---|
| SUMMARY-1 | | | | | |
| 1 Extension Area (Suriyawewa Block) | | | | | |
| (1) Rural infrastructure | | | 207,463 | 97,517 | 304,980 |
| Total -1 | | | 207,463 | 97,517 | 304,980 |
| 2 Extension Area (North Block) | | | | | |
| (1) Rural infrastructure | | | 225,401 | 145,597 | 370,999 |
| (2) Settlement | | | 2,740 | 8,220 | 10,960 |
| (3) Agroextension facilities | | | 5,499 | 7,501 | 13,000 |
| Total -2 | | | 233,640 | 161,318 | 394,959 |
| 3 Extension Area (South Block) | | | | | |
| (1) Rural infrastructure | | | 239,886 | 153,323 | 393,209 |
| (2) Settlement | | | 2,600 | 7,800 | 10,400 |
| (3) Agroextension facilities | | | 5,499 | 7,501 | 13,000 |
| Total -3 | | | 247,985 | 168,624 | 416,609 |
| Total of Items of 1,2 and 3 | | | 689,088 | 427,460 | 1,116,54 |
| 4 Physical contingency | | | 123,460 | 77,516 | 200,976 |
| **TOTAL OF DIRECT COST** | | | **812,548** | **504,976** | **1,317,524** |
| SUMMARY-2 | | | | | |
| 1 Land leveling | ha | 1,200 | 6,884 | 3,899 | 10,783 |
| 2 Education facility | nos | 28 | 45,870 | 37,530 | 83,400 |
| 3 Health & medical care | nos | 12 | 13,530 | 11,070 | 24,600 |
| 4 Postal | nos | 4 | 1,662 | 1,360 | 3,022 |
| 5 Drinking water | nos | 23 | 98,794 | 58,197 | 156,991 |
| 6 Main road | m | 30,500 | 113,460 | 75,640 | 189,100 |
| 7 Rural road | m | 110,800 | 31,270 | 25,584 | 56,854 |
| 8 Bridge | nos | 1 | 80,625 | 26,875 | 107,500 |
| 9 Electrification | nos | 4 | 111,280 | 59,920 | 171,200 |
| 10 Telecommunication | nos | 4 | 61,781 | 33,266 | 95,047 |
| 11 Administrative office | nos | 22 | 27,940 | 22,860 | 50,800 |
| 12 Development center | nos | 1 | 58,450 | 25,050 | 83,500 |
| 13 Starter facilities for settler | nos | 5,340 | 5,340 | 16,020 | 21,360 |
| 14 Agro extension facility | nos | 6 | 10,998 | 15,002 | 26,000 |
| 15 Miscellaneous works | | | 21,204 | 15,187 | 36,391 |
| Sub-total (Items of 1-15) | | | 689,088 | 427,460 | 1,116,548 |
| 16 Physical contingency | | | 123,460 | 77,516 | 200,976 |
| **TOTAL OF DIRECT COST** | | | **812,548** | **504,976** | **1,317,524** |

## Table A9.1 - 9 DIRECT CONSTRUCTION COST OF RURAL INFRASTRUCTURE WORK FOR IRRIGAITON EXTENSION AREA (1/3)

| Description | Unit | Q'ty | Unit Rate (Rs.) | | | Amount(1,000 Rs.) | | |
|---|---|---|---|---|---|---|---|---|
| | | | F.C. | L.C. | Total | F.C. | L.C. | Total |
| 1 Extension Area (Suriyawewa Block) | | | | | | | | |
| 1) Development center | nos | 1 | 58,450,000 | 25,050,000 | 83,500,000 | 58,450 | 25,050 | 83,500 |
| 2) Main road | m | 7,900 | 3,720 | 2,480 | 6,200 | 29,388 | 19,592 | 48,980 |
| 3) Bridge | nos | 1 | 80,625,000 | 26,875,000 | 107,500,000 | 80,625 | 26,875 | 107,500 |
| 4) Rural water supply | nos | 1 | 39,000,000 | 26,000,000 | 65,000,000 | 39,000 | 26,000 | 65,000 |
| Total of Item-1 | | | | | | 207,463 | 97,517 | 304,980 |
| 2 Extension Area (North Block) | | | | | | | | |
| (1) RURAL INFRASTRUCTURE | | | | | | | | |
| 1) Land leveling | | | | | | | | |
| Village area | ha | 620 | 3,798 | 2,165 | 5,963 | 2,355 | 1,342 | 3,697 |
| Jungle clearing | ha | 590 | 2,024 | 1,133 | 3,157 | 1,193 | 668 | 1,861 |
| Sub-total | | | | | | 3,548 | 2,010 | 5,558 |
| 2) Education facility | | | | | | | | |
| Primary school | nos | 11 | 1,375,000 | 1,125,000 | 2,500,000 | 15,125 | 12,375 | 27,500 |
| Junir school | nos | 2 | 2,475,000 | 2,025,000 | 4,500,000 | 4,950 | 4,050 | 9,000 |
| Senir secondly school | nos | 1 | 2,860,000 | 2,340,000 | 5,200,000 | 2,860 | 2,340 | 5,200 |
| Sub-total | | | | | | 22,935 | 18,765 | 41,700 |
| 3) Health & medical care | | | | | | | | |
| Gramodaya health center | nos | 5 | 825,000 | 675,000 | 1,500,000 | 4,125 | 3,375 | 7,500 |
| Sub-divisional health center | nos | 1 | 2,640,000 | 2,160,000 | 4,800,000 | 2,640 | 2,160 | 4,800 |
| Sub-total | | | | | | 6,765 | 5,535 | 12,300 |
| 4) Postal | | | | | | | | |
| Post box | nos | 1 | 6,600 | 5,400 | 12,000 | 6 | 5 | 11 |
| Sub-post office | nos | 1 | 825,000 | 675,000 | 1,500,000 | 825 | 675 | 1,500 |
| Sub-total | | | | | | 831 | 680 | 1,511 |
| 5) Drinking water | | | | | | | | |
| Intake facility | nos | 11 | 292,500 | 157,500 | 450,000 | 3,217 | 1,733 | 4,950 |
| Clarification facility | nos | 1 | 780,000 | 420,000 | 1,200,000 | 781 | 420 | 1,201 |
| Conveyance facility | nos | 11 | 2,275,000 | 1,225,000 | 3,500,000 | 25,025 | 13,475 | 38,500 |
| Communial tap | nos | 139 | 6,500 | 3,500 | 10,000 | 903 | 486 | 1,389 |
| Sub-total | | | | | | 29,926 | 16,114 | 46,040 |
| 6) Road | | | | | | | | |
| Hamlet road | m | 7,000 | 253 | 207 | 460 | 1,771 | 1,449 | 3,220 |
| Market road | m | 12,800 | 253 | 207 | 460 | 3,238 | 2,649 | 5,887 |
| Internal road | m | 43,800 | 253 | 207 | 460 | 11,081 | 9,066 | 20,147 |
| Main road | m | 11,100 | 3,720 | 2,480 | 6,200 | 41,292 | 27,528 | 68,820 |
| Sub-total | | | | | | 57,382 | 40,692 | 98,074 |
| 7) Electrification | | | | | | | | |
| Transmission line (11kv) | m | 6,000 | 7,800 | 4,200 | 12,000 | 46,800 | 25,200 | 72,000 |
| Low voltage distribution work | nos | 2 | 520,000 | 280,000 | 800,000 | 1,040 | 560 | 1,600 |
| Sub-Total | | | | | | 47,840 | 25,760 | 73,600 |
| 8) Telecommunication | | | | | | | | |
| Trunk cable | m | 9,500 | 2,925 | 1,575 | 4,500 | 27,787 | 14,962 | 42,749 |
| Internal line | m | 2,000 | 2,080 | 1,120 | 3,200 | 4,160 | 2,240 | 6,400 |
| Central exchange | nos | 0 | 812,500 | 437,500 | 1,250,000 | 0 | 0 | 0 |
| Sub-total | | | | | | 31,947 | 17,202 | 49,149 |
| 9) Administrative office | | | | | | | | |
| Unit service center | nos | 10 | 924,000 | 756,000 | 1,680,000 | 9,240 | 7,560 | 16,800 |
| Block office | nos | 1 | 4,730,000 | 3,870,000 | 8,600,000 | 4,730 | 3,870 | 8,600 |
| Sub-total | | | | | | 13,970 | 11,430 | 25,400 |
| 10) )Miscellaneous works | | | | | | 10,257 | 7,409 | 17,667 |
| Total of item (1) | | | | | | 225,401 | 145,597 | 370,999 |
| (2) SETTLEMENT | | | | | | | | |
| 1) Starter facilities for settler | nos | 2,740 | 1,000 | 3,000 | 4,000 | 2,740 | 8,220 | 10,960 |
| Total of item (2) | | | | | | 2,740 | 8,220 | 10,960 |

## Table A9.1 - 9 DIRECT CONSTRUCTION COST OF RURAL INFRASTRUCTURE WORK FOR IRRIGAITON EXTENSION AREA (2/3)

| Description | Unit | Q'ty | Unit Rate (Rs.) | | | Amount(1,000 Rs.) | | |
|---|---|---|---|---|---|---|---|---|
| | | | F.C. | L.C. | Total | F.C. | L.C. | Total |
| (3) AGRO EXTENSION FACILITY | | | | | | | | |
| 1) Collecting & shipping | nos | 2 | 2,115,000 | 2,885,000 | 5,000,000 | 4,230 | 5,770 | 10,000 |
| 2) Pola | nos | 1 | 1,269,000 | 1,731,000 | 3,000,000 | 1,269 | 1,731 | 3,000 |
| Total of item (3) | | | | | | 5,499 | 7,501 | 13,000 |
| Total of Item- 2 | | | | | | 233,640 | 161,318 | 394,959 |
| 3 Extension Area (South Block) | | | | | | | | |
| (1) RURAL INFRASTRUCTURE | | | | | | | | |
| 1) Land leveling | | | | | | | | |
| Village area | ha | 580 | 3,798 | 2,165 | 5,963 | 2,203 | 1,255 | 3,458 |
| Jungle clearing | ha | 560 | 2,024 | 1,133 | 3,157 | 1,133 | 634 | 1,767 |
| Sub-total | | | | | | 3,336 | 1,889 | 5,225 |
| 2) Education facility | | | | | | | | |
| Primary school | nos | 11 | 1,375,000 | 1,125,000 | 2,500,000 | 15,125 | 12,375 | 27,500 |
| Junir school | nos | 2 | 2,475,000 | 2,025,000 | 4,500,000 | 4,950 | 4,050 | 9,000 |
| Senir secondly school | nos | 1 | 2,860,000 | 2,340,000 | 5,200,000 | 2,860 | 2,340 | 5,200 |
| Sub-total | | | | | | 22,935 | 18,765 | 41,700 |
| 3) Health & medical care | | | | | | | | |
| Gramodaya health center | nos | 5 | 825,000 | 675,000 | 1,500,000 | 4,125 | 3,375 | 7,500 |
| Sub-divisional health center | nos | 1 | 2,640,000 | 2,160,000 | 4,800,000 | 2,640 | 2,160 | 4,800 |
| Sub-total | | | | | | 6,765 | 5,535 | 12,300 |
| 4) Postal | | | | | | | | |
| Post box | nos | 1 | 6,600 | 5,400 | 12,000 | 6 | 5 | 11 |
| Sub-post office | nos | 1 | 825,000 | 675,000 | 1,500,000 | 825 | 675 | 1,500 |
| Sub-total | | | | | | 831 | 680 | 1,511 |
| 5) Drinking water | | | | | | | | |
| Intake facility | nos | 11 | 292,500 | 157,500 | 450,000 | 3,217 | 1,733 | 4,950 |
| Clarification facility | nos | 1 | 780,000 | 420,000 | 1,200,000 | 781 | 420 | 1,201 |
| Conveyance facility | nos | 11 | 2,275,000 | 1,225,000 | 3,500,000 | 25,025 | 13,475 | 38,500 |
| Communial tap | nos | 130 | 6,500 | 3,500 | 10,000 | 845 | 455 | 1,300 |
| Sub-total | | | | | | 29,868 | 16,083 | 45,951 |
| 6) Road | | | | | | | | |
| Hamlet road | m | 17,000 | 253 | 207 | 460 | 4,301 | 3,519 | 7,820 |
| Market road | m | 14,000 | 253 | 207 | 460 | 3,542 | 2,898 | 6,440 |
| Internal road | m | 29,000 | 253 | 207 | 460 | 7,337 | 6,003 | 13,340 |
| Main road | m | 11,500 | 3,720 | 2,480 | 6,200 | 42,780 | 28,520 | 71,300 |
| Sub-total | | | | | | 57,960 | 40,940 | 98,900 |
| 7) Electrification | | | | | | | | |
| Transmission line (11kv) | m | 8,000 | 7,800 | 4,200 | 12,000 | 62,400 | 33,600 | 96,000 |
| Low voltage distribution work | nos | 2 | 520,000 | 280,000 | 800,000 | 1,040 | 560 | 1,600 |
| Sub-total | | | | | | 63,440 | 34,160 | 97,600 |
| 8) Telecommunication | | | | | | | | |
| Trunk cable | m | 8,500 | 2,925 | 1,575 | 4,500 | 24,862 | 13,387 | 38,249 |
| Internal line | m | 2,000 | 2,080 | 1,120 | 3,200 | 4,160 | 2,240 | 6,400 |
| Central exchange | nos | 1 | 812,500 | 437,500 | 1,250,000 | 812 | 437 | 1,249 |
| Sub-total | | | | | | 29,834 | 16,064 | 45,898 |
| 9) Administrative office | | | | | | | | |
| Unit service center | nos | 10 | 924,000 | 756,000 | 1,680,000 | 9,240 | 7,560 | 16,800 |
| Block office | nos | 1 | 4,730,000 | 3,870,000 | 8,600,000 | 4,730 | 3,870 | 8,600 |
| Sub-total | | | | | | 13,970 | 11,430 | 25,400 |
| 10) Miscellaneous works | | | | | | 10,947 | 7,777 | 18,724 |
| Total of item (1) | | | | | | 239,886 | 153,323 | 393,209 |
| (2) SETTLEMENT | | | | | | | | |
| 1) Starter facilities for settler | nos | 2,600 | 1,000 | 3,000 | 4,000 | 2,600 | 7,800 | 10,400 |
| Total of item (2) | | | | | | 2,600 | 7,800 | 10,400 |

**Table A9.1 - 9** DIRECT CONSTRUCTION COST OF RURAL INFRASTRUCTURE WORK FOR IRRIGAITON EXTENSION AREA (3/3)

| Description | Unit | Qty | Unit Rate (Rs.) | | | Amount(1,000 Rs.) | | |
|---|---|---|---|---|---|---|---|---|
| | | | F.C. | L.C. | Total | F.C. | L.C. | Total |
| (3) AGRO EXTENSION FACILITY | | | | | | | | |
| 1) Collecting & shipping | nos | 2 | 2,115,000 | 2,885,000 | 5,000,000 | 4,230 | 5,770 | 10,000 |
| 2) Pola | nos | 1 | 1,269,000 | 1,731,000 | 3,000,000 | 1,269 | 1,731 | 3,000 |
| Total of item (3) | | | | | | 5,499 | 7,501 | 13,000 |
| Total of Item- 3 | | | | | | 247,985 | 168,624 | 416,609 |
| Total of Items of 1,2, and 3 | | | | | | 689,088 | 427,460 | 1,116,548 |
| 4 Physical contingency | | | | | | 123,460 | 77,516 | 200,976 |
| **TOTAL OF DIRECT COST** | | | | | | **812,548** | **504,976** | **1,317,524** |

Table A9.1-10 **ESTIMATE OF ADMINISTRATION EXPENSES**

| Description | Specification | Q'ty | Amount (Rs. million) |
|---|---|---|---|
| 1 Personnel cost | 100 staffs for 5 years including allowances | 5,040 M/M | 45.0 |
| 2 Equipment cost | Running cost of vehicles and procurement costs of equipment which are available in the country | L.S | 35.0 |
| 3 Crop compensation cost | Crop conpensation cost for the Old area of 2,900 ha (Rs. 25,000/ha) and 400 ha (Rs. 10,000/ha) in the Extension area | L.S | 76.5 |
| 4 Office running cost | | L.S | 20.0 |
| 5 Training cost | Training for office stagffs and settlers and required administration cost | L.S | 3.0 |
| 6 Others and Contingency | | | 40.5 |
| Total | | | 220.0 |

Table A9.1-11 ESTIMATE OF ENGINEERING SERVICE COST

| Descriptions | Specifications | Q'ty | Amount (Rs. Million) |
|---|---|---|---|
| 1 Detailed design stage | | | |
| (1) Aerial photo mappings | Detailed mapping with S=1/2,000 | 100 km2 | 46.0 |
| (2) Additional surveys and investigations | Canal route surveys and geo-technical investigations | L.S | 8.0 |
| (3) Remunerations of consultants | Foreign experts of 70 M/M and local experts of 150 M/M including associated costs | 220 M/M | 85.4 |
| Sub-total (1) | | | 139.4 |
| 2 Construction supervision | | | |
| (1) Remunerations of consultants | Foreign experts of 150 M/M and local experts of 300 M/M including associated costs | 450 M/M | 203.6 |
| (2) Overseas training cost | 3 months each for 10 persons | L.S | 2.1 |
| Sub-total (1) | | | 205.7 |
| Total | | | 345.1 |

Table A9.1 - 12 ANNUAL FUND REQUIREMENT OF THE PROJECT

(Unit : Rs. million)

| Item | Total Project Cost | | | 1993 | | | 1994 | | | 1995 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | F.C | L.C | Total | F.C | L.C | Total | F.C | L.C | Total | F.C | L.C | Total |
| 1 Base cost | 2,484 | 1,507 | 3,991 | 14 | 9 | 23 | 88 | 32 | 120 | 282 | 164 | 446 |
| 2 Price contingency | 470 | 1,022 | 1,492 | 1 | 1 | 2 | 7 | 8 | 15 | 34 | 64 | 98 |
| Total | 2,954 | 2,529 | 5,483 | 15 | 10 | 25 | 95 | 40 | 135 | 316 | 228 | 544 |

| Item | 1996 | | | 1997 | | | 1998 | | |
|---|---|---|---|---|---|---|---|---|---|
| | F.C | L.C | Total | F.C | L.C | Total | F.C | L.C | Total |
| 1 Base cost | 738 | 427 | 1,165 | 802 | 506 | 1,308 | 560 | 369 | 929 |
| 2 Price contingency | 120 | 236 | 356 | 166 | 370 | 536 | 142 | 344 | 486 |
| Total | 858 | 663 | 1,521 | 968 | 876 | 1,844 | 702 | 713 | 1,415 |

Note:
Price escalation rate : F/C; 3.8 % /year L/C; 11.6 % /year

Table A.9.1-13 **COST OF ENVIRONMENTAL MITIGATING MEASURES**

(Unit : Rs. 1,000)

| No. | Item | Description | Cost |
|---|---|---|---|
| A. Mitigating Measures | | | |
| (1) | Tree planting | Compensatory measure for loss of plant cover by poviding saplings | 350 |
| (2) | Fauna/ Elephant | Construction of power fence (35 km), etc | 6,293 |
| (3) | Aquatic vegetation | Study on aquatic control and application | 400 |
| (4) | Soil conservation | Tree planting | 250 |
| (5) | Surface water quality | Monitoring of surface water quality | 500 |
| (6) | Soil salinity | Monitoring of soil salinity | 400 |
| | Total | | 8,193 |
| | | say, | **10,000** |
| B. Monitoring / Annual cost in implementation stage | | | |
| (1) | Potable water quality | | 300 |
| (2) | River water quality | in up- and low reaches | 400 |
| (3) | Irrigation water quality | | 400 |
| (4) | Soils | | 300 |
| (5) | Health care | | 200 |
| | Total | | 1,600 |
| | | say, | **2,000** |

Note: More detailed description of proposed mitigating measures is presented in Chaptes 5 & 6 of Volume III.

# ANNEX 9-2 BASIC ASSUMPTIONS FOR ECONOMIC EVALUATION

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# ANNEX 9-2 BASIC ASSUPMTIONS FOR ECONOMIC EVALUATION

## 9.2.1 General

For the economic evaluation, three measures of project worth, namely, economic internal rate of return (EIRR), benefit-cost ratio (B/C) and benefit minus cost (B-C) were examined. In addition, a sensitivity analysis in terms of EIRR was made to evaluate the economic viability of the Project against possible changes in project costs and benefits.

For the financial evaluation, the effect of the Project on farm budget of average farmers are analyzed in the farm budget assessment.

The indirect benefits and socio-economic effects, which would impact on the regional and national economy, were also studied briefly.

## 9.2.2 Basic assumptions

The project evaluation from the view point of the national economy is made on the following basic assumptions:

a) The economic useful life of the Project is fifty (50) years.

b) All prices are expressed in 1992 constant prices

c) The exchange rate of US$1.00=Rs. 44.0

d) The period of construction work including preparatory works is six (6) years.

e) A standard conversion rate (SCR) of 0.75 is applied to economic prices of non-trade goods and services.

f) The price contingency and transfer payments are excluding from the economic project costs.

g) Cost of unskilled labour is evaluated taking account of shadow wage rate (SWR) of 0.72

## 9.2.3 Economic prices

Since the domestic consumption of rice are still supplement by importation depending on the year, the economic farm gate price of rice is estimated at the average value of import parity prices on the basis of the international market price forecasted for the year of 2000 by the world bank.

As for sugarcane, the economic farm gate prices are estimated at the import substitution on the basic of same projection with rice. Since the project was formulated on the assumption that the mill capacity of Sevanagala Sugar Factory would be expanded by the factory, the economic farm gate price of sugarcane was estimated using processing cost including a deprecation cost of new processing equipments. The economic price for fertilizer is also estimated at import substitution , based on the international market price projected by the world bank. The details are shown in Table A9.2-1 (1-2).

Domestic consumption goods such as, big onion, vegetables, etc. are valued at financial prices estimated on the basis of current market or farm gate prices prevailing in the Project area in 1992.

### 9.2.4 Economic project costs

The project costs for economic evaluation consist of capital cost, annual operation and maintenance (O&M) cost, replacement cost and transmigration cost. The economic cost was obtained by applying SCR of 0.75 to local currency component of the financial project costs estimated in section A9.1. The economic construction cost is shown Table A9.2-2 and summarized as follows.

(Unit: Rs. million)

| Case | Foreign Currency | Local Currency | Total |
|---|---|---|---|
| 1. Rehabilitation | 217 | 112 | 329 |
| 2. Extension area | 1,320 | 573 | 1,893 |
| 3. Rural Infrastructure | 947 | 446 | 1,392 |
| Total | 2,484 | 1,130 | 3,614 |

*: Including cost of irrigation and drainage system, settlement and agricultural facilities.

The project base cost comprises (i) upgrading and extension costs of irrigation and drainage systems and (ii) settlement and agricultural facilities costs for the irrigation extension area and the total economic construction cost would amount to Rs. 3,614 million as shown in Table A9-2, and its annual disbursement is scheduled as shown in Table A9.2-3.

The economic annual operation and maintenance cost (O & M cost) for project facilities are estimated at Rs. 16 million and would be initially disbursed in 1999 when full operation would start.

Gates and O&M equipments, etc. will be replaced at a certain period within the project life. These facilities were assumed to imported and then the economic replacement cost of them was estimated on the basic of same projection with project construction cost. According to the implementation schedule of the project proposed in Section A9.2 and works quantities, the economic replacement cost is shown Table A9.2-4 and summarized as shown below:

(Unit: Rs. 1,000)

| Item | Cost |
|---|---|
| 1. Rehabilitation | 10,440 |
| 2. Extension area | 31,865 |
| 3. O/M | 25,356 |
| Total | 67,651 |

### 9.2.5 Economic benefits

The direct project benefits consist of irrigation benefits and will accrue primarily from increased crop production owing to stable irrigation water supply. Irrigation benefit to be expected is defined as the difference of primary profit from crops between future with and without project conditions. On the basis of the estimated production cost and gross income shown in Section A6, the economic net return per ha for each crop under the with and without project conditions are estimated as shown in Tables A9.2-5 (1-2) and 6 (1-2). By multiplying the economic net return per hectare for each crop to those harvested area, the total economic net return by crop production is calculated on both under with and without project conditions as shown in Table A9.2-7. The estimated irrigation economic benefit is summarized as below. The annual economic irrigation benefit at full development stage is estimated at Rs 684 million, as shown

below. The benefits would start to accrue from 1996, and would gradually increase up to the full benefit in 2002.

(Unit: Rs. million)

| Item | Value |
|---|---|
| Without Project Condition | |
| 1. Paddy | 88,320 |
| 2. OFC | 11,408 |
| 3. Banana | 5,494 |
| Total | 105,222 |
| With Project Condition | |
| 1. Paddy | 216,104 |
| 2. Sugarcane | 303,600 |
| 3. B. Onion | 142,632 |
| 4. Vegetable | 48,500 |
| 5. Banana | 78,080 |
| Total | 788,916 |
| Economic Benefit | 683,694 |

This benefit is primarily derived from the increased crop production attributable to following conditions:

1) Implementation of improved farming practices under irrigation throughout the year
2) Improvement of farming practices and field management in accordance with the reinforced agricultural extension services
3) Improvement of the quality and quantity of farm inputs

As regards the upland crop area and chena cultivation area in the extension area, no opportunity cost in a national economic sense was evaluated, since there was no potential alternative.

# *TABLES*

Table A9.2-1 ECONOMIC PRICE STRUCTURE (1/2)

| Item | Unit | | Unit price |
|---|---|---|---|
| Rice | | | |
| 1) Thai 5% broken, FOB Bangkok | US$/ton | | 197 |
| 2) Adjasted to 1992 constant | US$/ton | | 301 |
| 3) Quality adjustment (discount rate 10%) | US$/ton | - | 271 |
| 4) Freight and insurance | US$/ton | + | 20 |
| 5) CIF Colombo (US$1=Rs.44) | US$/ton | | 291 |
| | Rs./ton | | 12,804 |
| 6) Port handling, storage etc. | Rs./ton | + | 150 |
| 7) Transport: port to wholesaler | Rs./ton | + | 375 |
| 8) Transport: mill to wholesaler | Rs./ton | + | 75 |
| 9) Trade margins | Rs./ton | + | 180 |
| 10) Ex-mill price | Rs./ton | | 13,075 |
| 11) Conversion to paddy (65%) | Rs./ton | | 8,500 |
| 12) Milling cost | Rs./ton | - | 75 |
| 13) Transport: farm to mill | Rs./ton | - | 38 |
| 14) Economic farm gate price | Rs./ton | | 8,388 |
| (Rounded) | Rs./ton | | 8,390 |
| Sugar | | | |
| 1) FOB Calib | US$/ton | | 231 |
| 2) Adjasted to 1992constant | US$/ton | | 353 |
| 4) Freight and insurance | US$/ton | + | 42 |
| 5) CIF Colombo (US$1=Rs. 44) | US$/ton | | 395 |
| | Rs./ton | | 17,400 |
| 6) Port handling, storage and lossess | Rs./ton | + | 150 |
| 7) Transport: port to sugar factory | Rs./ton | + | 450 |
| 8) Factory Gate Price | | | 18,000 |
| 9) Processing Cost and Margine | Rs./ton | - | 7,500 |
| | | | 10,500 |
| 10) Sugar to Sugar Cane (10%) | Rs./ton | | 1,050 |
| 11) by-products (Alcohol) | Rs./ton | | 170 |
| 12) Transport: farm to Factory | Rs./ton | - | 38 |
| 13) Economic farm gate price | Rs./ton | | 1,183 |
| (Rounded) | | | 1,180 |

Source:

The World Bank, Price Prospects for Major Primary Commodities, Quartely
Review of Commodity Markets Third Quarter
Mahaweli Economic Agency
Bulletin of Selected Retail Prices
Food Commodities Bulletin
Cassava Starch Marketing Plant
Field Survey

Table A9.2-1 ECONOMIC PRICE STRUCTURE (2/2)

| Description | Unit | |
|---|---|---|
| Urea | | |
| 1) FOB EuropeA (djasted to 1992 constant) | US$/ton | 184 |
| | US$/ton | |
| 2) Freight and Insurance | US$/ton | 34 |
| 3) c.i.f. Colombo (US$1=Rs.44) | US$/ton | 218 |
| | Rs./ton | 9,574 |
| 4) Port Handling Charge | | 150 |
| 5) Transport and Handling Colombo/Projectarea | Rs./ton | 400 |
| 6) Economic farm gate price | Rs./ton | 10,124 |
| | | 10,100 |
| | (Nitrojen) | ( 22,000 ) |
| | (Am. Sulhate) | ( 4,700 ) |
| TSP | | |
| 1) FOB US Gulf (djasted to 1992 constant) | US$/ton | 174 |
| | US$/ton | |
| 2) Freight and Insurance | US$/ton | 34 |
| 3) c.i.f. Colombo (US$1=Rs.44) | US$/ton | 208 |
| | Rs./ton | 9,170 |
| 4) Port Handling Charge | | 150 |
| 5) Transport and Handling Port Sudan/Wad Medani | Rs./ton | 400 |
| 6) Economic farm gate price | Rs./ton | 9,720 |
| | | 9,700 |
| KCL | | |
| 1) FOB US Gulf (djasted to 1992 constant) | US$/ton | 112 |
| | US$/ton | |
| 2) Freight and Insurance | US$/ton | 32 |
| 3) c.i.f. Colombo (US$1=Rs.44) | US$/ton | 144 |
| | Rs./ton | 6,322 |
| 4) Port Handling Charge | | 150 |
| 5) Transport and Handling Port Sudan/Wad Medani | Rs./ton | 400 |
| 6) Economic farm gate price | Rs./ton | 6,872 |
| | | 6,900 |
| | (K2O) | ( 10,800 ) |

Source:

The World Bank, Price Prospects for Major Primary Commodities, Quartely
Review of Commodity Markets Third Quarter
Mahaweli Economic Agency
Bulletin of Selected Retail Prices
Field Survey

Table A9.2-2 ECONOMIC CONSTRUCTION COST ESTIMATION

| Description of Item | Unit | Quantity | Amount(1,000 Rs.) | | |
|---|---|---|---|---|---|
| | | | F.C. | L.C. | Total |
| 1. Rehabilitation | | | | | |
| (1) Direct Cost | | | | | |
| Rehabilitation | ha | 2,900 | 156,505 | 81,521 | 238,026 |
| (2) Engineering Services | | | 31,824 | 0 | 31,824 |
| (3) Administration | | | 0 | 15,912 | 15,912 |
| Base Cost | | | 188,329 | 97,433 | 47,736 |
| (4) Physical Contingencies | | | 28,249 | 14,615 | 42,864 |
| Total | | | 216,578 | 112,048 | 328,627 |
| 2. Extension Area | | | | | |
| (1)Direct Cost | | | | | |
| 1) Extension Area (Suriyawewa) | ha | 1,040 | 114,421 | 53,828 | 168,249 |
| 2) Extension Area (North Block) | ha | 2,880 | 487,271 | 200,208 | 687,479 |
| 3) Extension Area (South Block) | ha | 2,460 | 342,761 | 154,660 | 497,421 |
| Total | | 6,380 | 944,453 | 408,696 | 1,353,149 |
| (2)O/M Equipment | | | 25,319 | 0 | 25,319 |
| (4)Engineering Services | | | 178,725 | 0 | 178,725 |
| (5)Administration | | | 0 | 89,363 | 89,363 |
| Base Cost | | | 1,148,497 | 498,059 | 1,646,556 |
| (6)Physical Contingencies | | | 172,274 | 74,708 | 246,982 |
| Sub-Total | | | 1,320,771 | 572,767 | 1,893,538 |
| 3. Rural Infrastructure | | | | | |
| (1)Direct Cost | | | | | |
| 1) Rural Infrastructure | | | | | |
| a. Suriyawewa Block | ha | 1,040 | 207,463 | 73,138 | 280,601 |
| b. North Block | ha | 2,880 | 225,401 | 109,196 | 334,597 |
| c. South Block | ha | 2,460 | 239,886 | 114,989 | 354,875 |
| Sub-total | ha | 6,380 | 672,750 | 297,323 | 970,073 |
| 2) Starter Facilities for Settler | | | | | |
| a. North Block | ha | 2,880 | 2,740 | 6,165 | 8,905 |
| b. South Block | ha | 2,460 | 2,600 | 5,850 | 8,450 |
| Sub-total | ha | 5,340 | 5,340 | 12,015 | 17,355 |
| 3) Agricultural Facilities | | | | | |
| a. North Block | ha | 2,880 | 5,499 | 5,626 | 11,125 |
| b. South Block | ha | 2,460 | 5,499 | 5,626 | 11,125 |
| Sub-total | ha | 5,340 | 10,998 | 11,252 | 22,250 |
| Total | | | 689,088 | 320,589 | 1,009,677 |
| (2) Engineering Services | | | 133,984 | 0 | 133,984 |
| (3) Administration | | | 0 | 66,992 | 66,992 |
| Base Cost | | | 823,072 | 387,581 | 1,210,653 |
| (6)Physical Contingencies | | | 123,460 | 58,137 | 181,597 |
| Total | | | 946,532 | 445,718 | 1,392,250 |
| 6.Overall Cost | | | | | |
| 1.IRRIGATION & DRAINAGE SYSTEM | | | 216,578 | 112,048 | 328,627 |
| 2.SETTLEMENT FACILITIES | | | 1,320,771 | 572,767 | 1,893,538 |
| 3.Agricultural Facilities | | | 946,532 | 445,718 | 1,392,250 |
| Grand Total | | | 2,483,881 | 1,130,533 | 3,614,415 |

## Table A9.2-3 IMPLEMENTATION OF ECONOMIC COST

| | | | | 1993 | | 1994 | | 1995 | | 1996 | | 1997 | | 1998 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | F.C. | L.C. | T.C | F.C | L.C | F.C | L.C | F.C | L.C | F.C | L.C | F.C | L.C | F.C | L.C |
| 1. Rihabilitation | | | | | | | | | | | | | | | |
| Base Cost | 188,329 | 97,433 | 285,762 | 3,182 | 1,592 | 9,547 | 3,182 | 37,666 | 19,487 | 84,617 | 44,739 | 53,316 | 28,435 | 0 | 0 |
| Physical Conti | 28,249 | 14,615 | 42,864 | 477 | 239 | 1,432 | 477 | 5,650 | 2,923 | 12,693 | 6,711 | 7,997 | 4,265 | 0 | 0 |
| Sub Total | 216,578 | 112,049 | 328,627 | 3,659 | 1,830 | 10,979 | 3,659 | 43,316 | 22,409 | 97,310 | 51,450 | 61,313 | 32,700 | 0 | 0 |
| 2. Extension Area | | | | | | | | | | | | | | | |
| Base Cost | 1,148,498 | 498,060 | 1,646,558 | 8,936 | 4,469 | 53,618 | 17,873 | 64,079 | 25,665 | 344,401 | 140,482 | 376,256 | 169,091 | 301,208 | 140,482 |
| Physical Conti | 172,275 | 74,709 | 246,984 | 1,340 | 671 | 8,043 | 2,681 | 9,612 | 3,850 | 51,660 | 21,072 | 56,438 | 25,364 | 45,181 | 21,072 |
| Sub Total | 1,320,773 | 572,769 | 1,893,542 | 10,276 | 5,139 | 61,661 | 20,554 | 73,691 | 29,515 | 396,061 | 161,554 | 432,694 | 194,454 | 346,389 | 161,554 |
| 3. Rural Infrastructure | | | | | | | | | | | | | | | |
| Base Cost | 823,072 | 387,581 | 1,210,653 | 0 | 0 | 13,398 | 0 | 143,558 | 61,487 | 212,467 | 93,546 | 267,978 | 132,304 | 185,670 | 100,245 |
| Physical Conti | 123,461 | 58,137 | 181,598 | 0 | 0 | 2,010 | 0 | 21,534 | 9,223 | 31,870 | 14,032 | 40,197 | 19,846 | 27,851 | 15,037 |
| Sub Total | 946,533 | 445,718 | 1,392,251 | 0 | 0 | 15,408 | 0 | 165,092 | 70,709 | 244,337 | 107,578 | 308,175 | 152,150 | 213,521 | 115,282 |
| Total | | | 3,614,420 | | 20,904 | | 112,261 | | 404,732 | | 1,058,290 | | 1,181,486 | | 836,746 |