PERFORMANCE OF YALA CULTIVATION IN 2014

KIRINDIOYA IRRIGATION PROJECT

DIVISIONAL IRRIGATION ENGINEER
TISSAMAHARAMA
# Cultivation Data & Daily Water Levels

<table>
<thead>
<tr>
<th>Name of Tank/Scheme</th>
<th>F.S.L (MSL)</th>
<th>F.S.D</th>
<th>Capacity (ac.ft)</th>
<th>Dead storage (ac.ft)</th>
<th>Acreage (ac)</th>
<th>Date of 1st issue</th>
<th>Date of last issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lunugamvehera</td>
<td>191'</td>
<td>41'-0''</td>
<td>183,795</td>
<td>23,436</td>
<td>13,417</td>
<td>1L8-2014.03.29</td>
<td>2014.07.09</td>
</tr>
<tr>
<td>Veheragala</td>
<td>303.4'</td>
<td>64'-0''</td>
<td>59,265</td>
<td>-</td>
<td>-</td>
<td>2R8-2014.03.05</td>
<td>2014.07.05</td>
</tr>
<tr>
<td>Weerawila</td>
<td>82.32'</td>
<td>12'-6''</td>
<td>10,650</td>
<td>1,300</td>
<td>2,310</td>
<td>2014.04.06</td>
<td>2014.07.25</td>
</tr>
<tr>
<td>Tissawewa</td>
<td>66.99'</td>
<td>15'-6''</td>
<td>3,516</td>
<td>50</td>
<td>2,750</td>
<td>2014.04.06</td>
<td>2014.07.25</td>
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<tr>
<td>Yodawewa</td>
<td>44.07'</td>
<td>12'-4''</td>
<td>8,375</td>
<td>300</td>
<td>3,207</td>
<td>2014.03.15</td>
<td>2014.07.25</td>
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<tr>
<td>Pannegamuwa</td>
<td>92.5'</td>
<td>8'-0''</td>
<td>1,000</td>
<td>250</td>
<td>545</td>
<td>2L8-2014.03.25</td>
<td>2014.07.20</td>
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<tr>
<td>Debarawewa</td>
<td>76.42'</td>
<td>8'-0''</td>
<td>700</td>
<td>200</td>
<td>945</td>
<td>2014.04.01</td>
<td>2014.07.20</td>
</tr>
<tr>
<td>Badagiriya</td>
<td>78.5'</td>
<td>14'-0''</td>
<td>9,050</td>
<td>300</td>
<td>1,650</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gamunupura</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>240</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## ANALYSIS OF WATER DEMAND & AVAILABILITY IN KIRINDIOYA SCHEME AT BEGINNING OF YALA.

<table>
<thead>
<tr>
<th>Tank</th>
<th>Available Qty 20.04.14</th>
<th>Demand</th>
<th>Balance required</th>
<th>Available Resource</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Weheragala</td>
</tr>
<tr>
<td>L’ wehera</td>
<td>124,767</td>
<td>145,172</td>
<td>20,405</td>
<td>00,000</td>
</tr>
<tr>
<td>Weerawila</td>
<td>9,200</td>
<td>16996.5</td>
<td>7796.5</td>
<td>7,500</td>
</tr>
<tr>
<td>Tissawewa</td>
<td>2,000</td>
<td>20,207</td>
<td>18,207</td>
<td>7,000</td>
</tr>
<tr>
<td>Yodawewa</td>
<td>3,725</td>
<td>23,333.5</td>
<td>19,608.5</td>
<td>4,000</td>
</tr>
<tr>
<td>Pannegamuwa</td>
<td>125</td>
<td>4,192</td>
<td>4067</td>
<td>1,500</td>
</tr>
<tr>
<td>Debarawewa</td>
<td>725</td>
<td>6,890.5</td>
<td>6,165.5</td>
<td>1,000</td>
</tr>
<tr>
<td>Gamunupura</td>
<td>-</td>
<td>1,680</td>
<td>1,680</td>
<td>500</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>140542</strong></td>
<td><strong>218471</strong></td>
<td><strong>77929</strong></td>
<td><strong>00,000</strong></td>
</tr>
</tbody>
</table>
ADDITIONAL REQUIREMENT OF WATER

- Total demand = 218471Acft
- Available in tanks = 140542Acft
- Assumed drainage = 21500Acft

Net additional requirement = 56429Acft
TRADITIONAL & NORMAL PRACTICE USED SO FAR IN KRINDIOYA WATER ISSUE

- Priority is given to Ellegala system (5 tanks) and at the beginning of the season all tanks are filled from Lunugamwehera reservoir.

- Then only considered new area (LB and RB tracts in Lunugamwehera) for cultivation with the balance water in the reservoir.
SELECTION OF SUITABLE AREA FOR CULTIVATION

- Reuse tr.1,2,3 drainage water for Tissa & Yodawewa
- Reuse tr.1,2 drainage water for Weerawila & Pannegamunuwa Schemes
- Reuse of tr.5,6,7 drainage water is impossible
SELECTED OF SPECIFIED AREA FOR CULTIVATION

- Selected total of 8500 Ac from LB tr.1,2,3, RB tr.1,2 & five tanks under Ellegala system (because the drainage water of that area can be reused for Ellegala system, so we can save some water quantity from their demand.)

- Exempted temporarily tr. 5,6,7 from paddy & advised them to go for OFC (because of drainage water from that area can’t be reuse & flows to Bundala lagoon)
FURTHER CONSIDERED MATTERS
SELECTION OF AREA FOR FIRST STAGE
OF YALA

- Soil conditions of the cultivation area.
- Availability of other water resources
- Conveyance losses
- Possibility for OFC
AWARENESS BEFORE IMPLEMENTATION

- Longley discussed the situation at DAC, farmer reps. requested strongly total area for paddy after explaining present crisis finally agreed to our proposal

- Conducted project management committee meetings & aware them how to manage limited water in efficient & effective manner for maximum productivity of the scheme

- Aware farmers at sub project management committee meetings scheme wise.
FINALLY, SELECTED AREA & THE CROP

- Ellagala system paddy
  - Debarawewa
  - Tissawewa
  - Yodawewa
  - Pannegamuwa wewa
  - Weerawila wewa

- LB Tr. 1,2,3 paddy
- RB Tr. 1,2, paddy

- RB Tr. 5,6,7 Green Gram

20500 Ac

4500 Ac
NORMAL IRRIGATION PRACTICE OF THE SCHEME.

- Land preparation period 30 days
- Plantation period 30 days
- Rotational issues (4 days open and 3 days closed, 10 numbers issues)
NEW METHODS INTRODUCED TO FARMERS

- To minimize land preparation period for 20 days or less
- 20 days continuous water issue for plantation
- Rotational issues (4 days open and 4 days closed, 9 numbers issues)
CAPACITY BEHAVIOR OF LUNUGAMWEHERA

[Graph showing the capacity behavior of Lunugamwehera from 2004 to 2013, with monthly data from January to December for each year.]
COMPARISON OF NORMAL IRRIGATION PRACTICE AND PROPOSED BEHAVIOR

<table>
<thead>
<tr>
<th>Time</th>
<th>Capacity (Acft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-Mar</td>
<td>Start of RB issue</td>
</tr>
<tr>
<td>22-Mar</td>
<td>Start of LB issue</td>
</tr>
<tr>
<td>29-Mar</td>
<td>End of RB issue</td>
</tr>
<tr>
<td>5-Apr</td>
<td>End of LB issue</td>
</tr>
</tbody>
</table>

Issues may be stopped on 25th June.
PROGRESS OF YALA PADDY CULTIVATION

Cultivated Acreage $= 21000$

Mean Harvest per 1 Ac $= 120 \times 20.5$ Kg

Price per 1kg $= \text{Rs. } 40$

Total income from paddy in Yala season

$21000 \times 20.5 \times 120 \times 40 = 206.6 \text{ M}$
PROGRESS OF YALA GREEN GRAM CULTIVATION

Cultivated Acreage = 4000
Mean Harvest per 1 Ac = 400 Kg
Price per 1kg = Rs. 220

Total income from Green Gram in Yala season

\[4000 \times 400 \times 220 = 35.2\text{million}\]
ADDITIONAL YALA CULTIVATION IN RB TR.5,6,7,

- Since additional inflow to the reservoir was observed during 12th April to 10th May and water saving due to strict irrigation practice, the considerable capacity seemed to be saved in the reservoir compared to the expected operation curve.

- Lunugamwehera water capacity at the date (10.05.2014) = 82100 Acft

- Difference between available capacity & calculated capacity = 32000 Acft
Capacity Variation: Tank

Actual Curve

Theoretical Curve
AT THAT SITUATION, TR. 5,6,7 REQUEST TO CULTIVATE PADDY

- Explained current situation & probability of risk at PMC
- Cultivation meetings were called
- At the cultivation meetings, they decided to go to paddy cultivation with high risk
- Allowed 75% of the total extent for paddy
- Advised to go for short term paddy varieties (3 months)
- Advised to complete land preparation on time
- Advised to avoid high lands and other unsuitable lands
STRATEGIES ADOPTED FOR WATER MANAGEMENT IN TR.5,6,7

- Water consumption committee meetings
- Individual attention for the place where, water losses occur
- Welding G/R gates to avoid illegal diversions
- Welding T/O gates to avoid illegal use of water
- Night patrol with police to stop illegal pumping
MONITORING DURING CULTIVATION

- Monitored the land preparation period
- Monitored the extent (75%)
- During land preparation published the notice to complete land preparation on time (next slide)
- Made an announcement to stop land preparation as per schedule

Note: Although we monitored, farmers had exceeded the percentage of extent and land preparation period
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REASONS FOR WATER SHORTAGE

- Area exceeded
- Delayed completion of land preparation
- Not a single drop of rain received during cultivation
- Heavy evaporation losses due to high temperature and low humidity
- Unexpected additional water demands. (eg. Bandagiriya tank, Banana cultivation)
ACTION TAKEN TO MINIMIZE WATER SHORTAGE

- Desilting approach canal up to sluice in the reservoir for easy flow.
- Pumping additional water from the reservoir to canal inlet.
- Additional strict Night patrol with police to stop illegal diversion & pumping.
- 48 Nos temporarily agro wells were dug for feeding possible lands.

(DI, GA, IMD, Police, my staff & political leaders in the area Supported well for this task)
CALCULATION OF WATER USAGE
IN YALA -2014

Total issue of RB 55987.36
Total issue of LB 30572.49
Total issue of Ellagala 8527.00
Available storage of Ellagala system at the begin 15200.00

Total usage water 110286.85
Deduct for green gram usage (8000.00)
Total usage of water for paddy 102286.85

Duty of paddy = \( \frac{102,286.85}{24,500} \) = 4.17 ft
DUTY BEHAVIOR OF KIRINDIOYA SCHEME FOR LAST RECENT YEARS

<table>
<thead>
<tr>
<th>Year</th>
<th>Yala</th>
<th>Maha</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>6.29</td>
<td>4.482</td>
</tr>
<tr>
<td>2011</td>
<td>6.78</td>
<td>4.883</td>
</tr>
<tr>
<td>2012</td>
<td>6.84</td>
<td>5.189</td>
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<tr>
<td>2013</td>
<td>7.57</td>
<td>4.581</td>
</tr>
<tr>
<td>2014</td>
<td>4.17</td>
<td></td>
</tr>
</tbody>
</table>
ADDITIONAL INCOME COMPARISION

- Available Storage at Beginning of season: 144600 Acft
- Possible Acreage for paddy cultivation: 20500 Acs

If that extent cultivated gross income from scheme,

\[ 20500 \times 120 \times 20.5 \times 40 = 201.7 \text{ million} \]

But;
PRACTICING OUR PROPOSAL

Current income with our attempt

Green Gram 01 stage(Tr-5,6,7) ; 4000Ac x 400kg x Rs.220 = 35.2M

Paddy stage 01 21000x 20.5 x 120x 40 = 206.6 M

Paddy stage 02 3500x 20.5 x 110x 40 = 31.5 M

Green Gram stage 02 500Ac x 400kg x Rs.220 = 4.4 M

Green Gram stage 03(Ellagala) 2000Ac x 400kg x Rs.220 = 17.6 M

Total Income = 295.3 M

Additional Income = 295.3 - 201.7

= 93.6 M
THANK YOU!

DIE
Tissamaharama