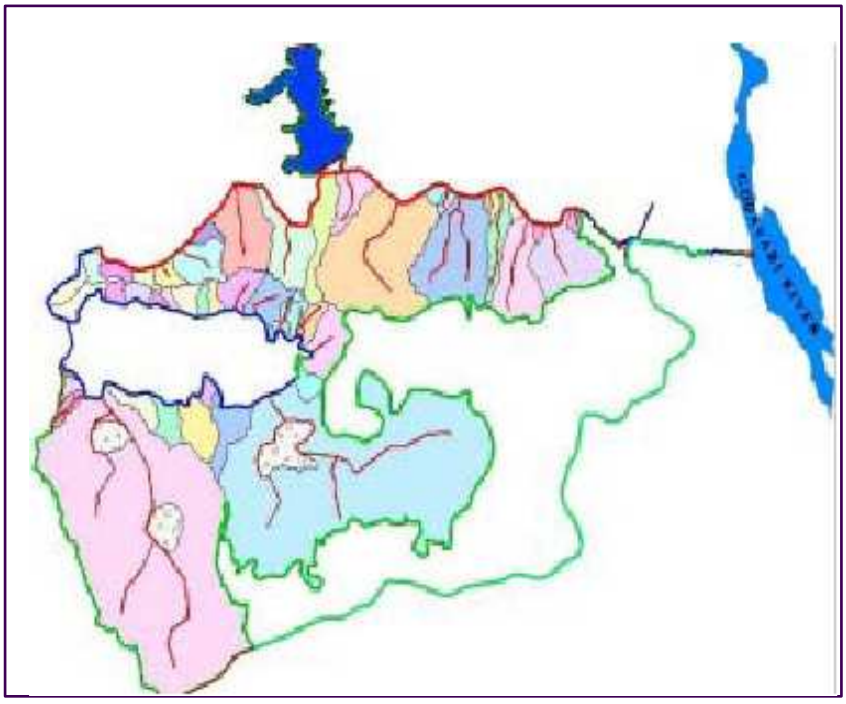
GOVERNMENT OF ANDHRA PRADESH
WATER RESOURCES DEPARTMENT

CHINTHALAPUDI LIFT IRRIGATION SCHEME

FEASIBILITY REPORT



SUBMITTED TO
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Feasibility Report

CHINTALAPUDI LIFT IRRIGATION SCHEME ON RIVER GODAVARI NEAR TALLAPUDI (V) IN WEST GODAVARI DISTRICT.

SYNOPSIS

INTRODUCTION:

India is a developing country. The economic stagnation and vicious circle of Poverty are slowly but steadily giving place to rapid economic activity and higher level of income under the impact of economic planning. Agriculture forms are the backbone of the Indian economy and occupy a place of pride. Andhra Pradesh with its increasing population and finite land resources exerting pressure on agricultural productivity. Hence, considerable importance is being given to provide additional irrigation facilities to create more irrigation potential. .

The Chinthalapudi Lift Irrigation Scheme envisages pumping of 56 cumecs (1977.64 cusecs) of water from river Godavari in two stages to main canal and one lift is proposed for storage at Jalleru reservoir on Right side of main canal to irrigate upland areas. This project is located on Akhanda Godavari Right Bank at 21.00 Km from Kovvur in West Godavari District of Andhra Pradesh. The scheme is a major irrigation project conferring irrigation benefits to an extent of 80939 Ha (200000acres) during Khariff season with an utilization of 402.850 M.Cum(15.50 TMC) in the 15 Upland Medals 1) Gopalapuram 2) Koyyakagudem 3) Buttaigudem 4) Jeelugumilli 5) Chinthalapudi 6) T.Narsapuram 7) Lingapalem 8) Kamavarapukota 9) Pedavegi 10) Jangareddygudem 11) DwarakaTirumala 12) Nallajerla of West Godavari and 13) Vissannapeta 14) Chatrai and 15) Nuzvid of Krishna District Besides, the scheme provides drinking water facilities to 6.65 lash population living in 160 villages enroute canal and command area.

. The people in the proposed command area already are irrigating their lands tapping waters from rain fed tanks or entirely depending upon rains. The failure of rains results in frequent drought and distress conditions. There is no assured water supply and the few bores drilled in the past few years are insufficient to meet the drinking water facility and irrigation requirement. Due to lack of sufficient irrigation development in the proposed ayacut, many Agricultural labour are suffering to get their livelihood, forcing them to migrate to the urban areas for their survival and

hence this project will definitely help in improving the Socio-economic conditions of people and all-round development of the area.

The scheme provides early benefits and avoids uncertain conditions and backwardness of these areas.

SCOPE OF THE SCHEME:

The scope of the present scheme is broadly categorized into two components. The first one consists of Head works i.e., construction of one pump house on A.G.R.B. to accommodate 4 No's of vertical turbine pumps, installation of pumps, delivery pipes, pressure mains, construction of delivery cisterns and erection of electrical substation. After a leading channel of a length of 12.300 km the Second stage Pump House will be constructed to accommodate 4 No's of vertical turbine pumps, installation of pumps, delivery pipes, pressure mains, construction of delivery cisterns and erection of electrical substation. The second one consists of excavation of main canal, distributaries and field channels with CM&CD works including 1 No of third stage pump house on main canal Right bank for formation of Jalleru Reservoir to store 8.00 TMC of water.

LOCATION OF HEAD-WORKS:

The head works are proposed at Km 34.00 upstream of Sir Aurthur Cotton Barrage at Dowlaiswaram, on Akhanda Godavari Left Bank near Tadipudi Village, of Tallapudi Mandal of West Godavari District to draw 56 cumecs (1977.64 cusecs) of water from river Godavari. The water from river Godavari is drawn through an approach channel to the sump of pump house provided for the main canal.

The Co-Ordinates of the Proposed Head works site are as follows:

Latitude 17^0 8' 59.7120 "N

Longitude 81^0 39' 43.0380 "E

COMMUNICATION:

The Head works located near Tadipudi village of Tallapudi Mandal of West Godavri District, A.P. The site can be approched by tavelling 28 Kms by Road on Aakanda Godavari Right Bank from Rajhamundry city railway station East Godavari Dist. The nearest town is Kovvuru which is well connected with neighbouring district capitals and towns by roads and railway line.

CLIMATE:-

The climate is mostly hot and humid, with mostly a tropical climate and thereby, with no distinct seasons. The mean maximum temperature is 36 °C. The hottest season is from April to June, with temperature ranging from 34 °C to 48 °C -- with maximum of 51 °C recorded in May 2002 and May 2007. The coolest months are December and January, when it is pleasant at 27 °C – 30 °C. There is a lot of rain due to the monsoon and cyclonic storms in the Bay of Bengal.

TOPOGRAPHY:

The command area is gradually, sloping with vegetation and cultivable patches of land. Sandy loamy, red soils with patches of Black cotton are the main soils met within the command area. The command area is tolerably plain with few mounds of high grounds. Topography of the area is gradually modulating with an elevation difference of 20 to 30 M. Three major streams namely Jalleru, Bineru and Yerra Kalva flow through the command area.

ECONOMIC CONDITION:

The ayacut proposed under this L.I.Scheme is a drought stricken area, almost all the people are backward and below poverty Line. There is no other skill on which the people of this region can depend upon for economic development except irrigation, which is at very poor level. There are tanks in the area fed by small catchments of their own. The vagaries of the rainfall and frequent failure of monsoon make the tanks dry. Though every land under the tanks is cultivated ayacut in these areas already brought under irrigation entirely depends upon rains and therefore the crop production is not assured in most cases. After construction of this scheme, the agriculture sector in the upland areas of west godavari district will be developed remarkably and promotes the Socio – Economic conditions. The green development in the vicinity will certainly uplift the people living below poverty line by providing self employment, directly or indirectly.

OCCUPATION:

The main occupation of the people is to work as agricultural labour and satisfy with the wages they get during working season and starve during the rest of the period. The agriculture Labour constitutes bulk of the population of all the mandals. Small and marginal farmers and rural Artisans are in a limited number.

HYDROLOGY:

The River Godavari is the main source of the present proposed Lift Irrigation Scheme. The River Godavari originates at Nasik in western Ghats. The catchment area of the river is about 3**,** 12,882 Sq KM and runs 1,230 km before it merges into the Bay of Bengal, at 80 km East of Rajahmundry town.

As per Bachawat Commission report 1979 the dependable annual flow in river is 77.00 T.M. cum (2719.26TMC). The available 75% dependable yield of Polavaram Project at its dam site as furnished in the project and approved by central water commission is 969.67 TMC.

The total demand of Polavaram Project as furnished in the project report is 15.08 TM.Cum (532.45 TMC) as against the available 75% dependable yield of 27.53 TM Cum. (972.2 TMC)

The minimum surplus discharge day of the Month from July to November observed daily at Sir Aurthur Cotton Barrage, Dowlaiswaram, which is located at about 30 Km Downstream of the proposed project site for a period from 1962 to 2008 is taken for calculating the availability of water in river duly taking into consideration of requirement of ongoing schemes as appended. The succesbility of the scheme is 36 years out of 47 years which works out to 77%.as per the available statistical data. Surplus water discharges of River Godavari at Sir Auther Cotton Barrage (S.A.C.B), Dowlaiswaram is appended.

EXISTING PRACTICE AND PROPOSED CROPPING PATTERN:

The ayacut under this scheme is under rain fed cultivation and bores. The yield is very low due to uncertainty of rainfall. Paddy, ground nut, chillies, maize are grown in these areas. Out of the total ayacut of a 80939 ha (200000) proposed under this scheme, paddy is grown over an area of 20262 ac under rain fed tanks for which 50% supplementation is proposed. The remaining ayacut is proposed as dry crops that is chilies, ground nut and Maize.

The cropping pattern proposed under Chintalapudi lift irrigation scheme is as follows.

1. Paddy	----	8200 Ha (20262 Ac)
2. Groundnut	----	32677 Ha (80745 Ac)
3. Chillies	----	25994 Ha (64231 Ac)
4. Maize`	---	14068 Ha (34762 AC)
	Total:	**80,939 Ha (200000 Ac)**

The total demand of water including drinking water supply is about 0.54738 TM cum (15.50 TM cft)

GROSS IRRIGATION REQUIREMENT:

The gross irrigation requirement for the proposed cropping pattern of 80939 Ha (200000 Ac) of ayacut are arrived by modified “Penman method” and the following are the influencing parameters.

1. Rainfall in the command area
2. Evapo – Transpiratation Operation values (E.T.O. Values)
3. Crop – Factors at different stages of crop (K.C. Values)
4. Base period
5. Deep percolation losses
6. Application efficiency (E.A.)

1. Rainfall in the command area:

Polavaram, Kovvuru, Jangareddygudem and Chintalapudi are the main influencing rain gauge stations for the command area. The rainfall statistics are available for a period of 33 years from 1974 to 2008. The monthly and monthly average rainfall statistics are appended. The effective rainfall is computed from table "Average monthly effective rain fall" as related to mean monthly and monthly consumption use and 80% chance of rainfall is taken as dependable rainfall.

2. Evapo – Transpiration Operation values (ETO – values)

The Evapo Transpiration operation values calculated by the modified Penman method as worked out for Polavaram project right main canal crop water working tables in 1999 are adopted for the scheme and the same were reproduced below.

Month	E.T.O. values
July	4.986 per day
August	4.248 per day
September	4.317 per day
October	4.079 per day
November	3.951 per day

3. Crop factors at different stage of crops (KC values):

The crop factors for different crops at different stages are adopted as furnished in F.A.O. – 33 (Food and Agriculture Organizations)

4. Base Period:

The period of crop from sowing to harvesting for the crops proposed in the scheme are also adopted as specified in F.A.O. – 33 and they are shown below:

a)	Paddy	---	138 days
b)	Chillies	---	120 days
c)	Groundnut	---	120 days
d)	Maize	---	120 days

5. Deep percolation losses:

The deep percolation losses are normally accounted for the crops like paddy where the plant requires standing water. For irrigated dry crops where moist condition of soil are only to be maintained and deep percolation losses do not arise. Further these deep percolation losses also depend upon the classification of soils and seasonal variations. Thus deep percolation losses are accounted only for paddy at the rate of 6.10 mm per day as adopted in Polavaram project as the soils in the command area are red soils. No such losses are accounted for I.D. crops.

6. Application efficiency (EA)

The following percentages are adopted for the proposed crops towards field application efficiency.

a) Paddy 85%

b) Chillies 65%

c) Groundnut 65%

d) Maize 65%

FORMATION OF JELLERU RESERVOIR:

The Scheme also envisages formation of a balancing reservoir to store 8.00 TMC of water by 3rd stage lift near Rowthugudem village West Godavari District.

(i) Sedimentation Rate in the Reservoir:

Sedimentation rate in the proposed site of Jelleru Reservoir was got estimated by Deltaic Regional Centre National Institute of Hydrology, Kakinada, East Godavari District. A.P. Sedimentation rate from the catchment of Jelleru Stream and as well as from Godavari River lift water into Jelleru Reservoir were computed. The total estimated sedimentation load into the proposed Jelleru Reservoir as furnished by N.I.H is 0.0045725 TMC / Year. The detailed computation of sediment rate into Jelleru Reservoir from Godavari Lift water as furnished by N.I.H in a table form is appended.

(ii) Spill way:

It is proposed to construct an earth dam of length 4.50 km and ogee crested spillway of Length 39m with 3 Nos of crest gates of size 11 m X 9 m. The Crest Level of spill way is to be kept at +126.000m.

(iii) Reservoir Submergence:

The total area coming under reservoir submergence is 3284 Ha (Forest and Non forest).

(iv) Forest Area:

The forest area likely to be submerged is 2235 Ha and forest area required for formation of canal system is 469 Ha.

(v) Land and Habitation:

The total land (forest & Non forest) required for this scheme is (approximately). The F.R.L of the Jalleru reservoir is fixed at +137.000. The total land submerged is 3284 Ha and 4 Nos of villages to be rehabilitated completely.

INTER STATE ASPECTS:

There is no interstate aspects arise in this scheme as the Command area under this Scheme lie entirely in Andhra Pradesh state only.

COST AND BENEFIT:

The cost of the Scheme is estimated to Rs. 170100.00 lakhs including direct and indirect charges. The annual benefit of the scheme is Rs.14496.10 Lakhs. Annual cost of the scheme works out to Rs. 9479.28 Lakhs with interest at 10% on project cost, Rs.600 per Ha towards operation and maintenance cost of 80939 Ha (2,00000 Ac), depreciation of head works at 1% of total cost of irrigation components and maintenance of head works at 1.0 % cost of head works are taken into consideration. The benefit cost ratio of the scheme is 1.53:1

CONCLUSION:

It is misfortune that when the second largest river in the Indian Union flows almost hugging to the command area and when the sanction of, Project involving formation of reservoir is being delayed for decades for one reason or other there is no pronounced interest on major Lift Irrigation Schemes in these areas. This is all together a different concept on projects from Northern states where lift irrigation is almost on par with flow irrigation.

Recently one major irrigation scheme i.e., Chagalnadu Lift Irrigation scheme was constructed in East Godavari Dist and running successfully to irrigate an ayacut of 14,164 ha (35,000 acrs). The entire ayacut of this scheme is also under the proposed Polavaram Left Main canal. And also another major irrigation scheme i.e., Tadipudi Lift irrigation scheme was constructed in West Godavari Dist to irrigate an ayacut of 83,599 Ha (2, 06,600 Acrs.).

The lift Irrigation scheme is proposed for the benefit of the small land holders living in 231 villages of upland and backward area of West Godavari district, and Krishna district, this lift irrigation scheme is proposed. The proposed project helps in providing assured water supply to the crops proposed. The agricultural productivity will improve for up lift of the people who are below poverty line which will increase per capita income and thereby social situations in this area will be improved.

The scheme also provides drinking water supply to a population of 6.80 lakhs people and their cattle living in 160 villages those are now in search of water during summer season to quench their thirst.

SALIENT FEATURES AT A GLANCE

1. Name of the Scheme	:	**Chintalapudi Lift Irrigation**
2. Location	:	On River Godavari at Km.25.50 of A.G.R.B Latitude 17^0 8' 59.7120 "N Longitude 81^0 39' 43.0380 "E
3. Project Cost	:	Rs.1701.00 corers (1 works)
4. Ayacut	:	80939 Ha (200000 Acres)
5. Demand	:	15.50 TMC
6. Discharge	:	56 Cumecs (1977.64 cusecs)
7. Static Head		
Main Canal 1st Stage	:	+28.00 M
2nd Stage	:	+80.00 M
8. Minimum draw down level	:	+12.00 M
9. Horse power and number of pumps		
(i). Head Works - First stage		
a) Number of vertical turbine pumps	:	4 No's
b) HP of each pump	:	6390 HP
c) Total HP	:	25560 HP
Leading channel	:	13.220 KM
(ii). Second stage		
a) Number of vertical turbine pumps	:	4 No's
b) HP of each pump	:	18252.50 HP
c) Total HP	:	73010 HP
(iii). Third stage - Sub lift		
a) Number of vertical turbine pumps	:	2 No's
b) HP of each pump	:	3000 HP
c) Total HP	:	6000 HP

10. Pressure Main Details :

i. Pressure Main from Head Work pump- : 4 NOs of 3000 mm dia MS for a
House to leading channel cistern : Length of 2.85 km.

ii. Pressure Main from 2nd stage pump- : 4 NOs of 3000 mm dia MS for a
House to main canal cistern : Length of 3.25 km.

iii. Static from 3rd stage : 2 No's of 3000 mm dia MS for a
Pump house to Reservoir : length of 1.400 km

11. Mandals Benefited : 15 Mandals.

12. Villages Benefited : 231 villages.

13. Power required : 28.00 MW+70.00 MW+12.60 **MW = 110.60 MW**

14. B.C. Ratio. : 1.53:1

15. Jalleru Reservoir

a) Gross storage : 10.574 TMC
b) Dead storage : 0.940 TMC
c) Live storage : 9.634 TMC
d) Full Reservoir Level : +137.000 m.
e) Crest Level : +126.000 m.
f) TBL : +140.000 m.
g) Sill level of OT sluice : +121.000 m.

STATEMENT SHOWING SURPLUS WATER DISCHARGES OF RIVER GODAVARI AT S.A.C.B.,DOWLAISWARAM FOR THE MONTH OF JULY

Sl. No.	Year	Minimum discharges in cusecs	Requirement cusecs	Remarks
1	2	3	4	5
1.	1962	394	Requirement of water for the present scheme (+) requirement of water for Pushkara Lift Irrigation Scheme, Chagalnadu Lift Irrigation scheme , Tadipudi Lift Irrigation scheme and Visakhapatnam Industrial water supply scheme = 2660 cusec	Deficit
2	9163	17,355		
3.	1964	48,347		
4.	1965	24,211		
5	1966	599		Deficit
6	1967	95,538		
7.	1968	25,538		
8.	1969	3,00,200		
9.	1970	87,000		
10.	1971	53,600		
11.	1972	13,230		
12.	1973	15,200		
13.	1974	400		Deficit
14.	1975	1,28,147		
15.	1976	1,499		
16.	1977	11,846		
17.	1978	39,158		
18.	1979	30,361		
19.	1980	1,34,781		
20.	1981	44,440		
21.	1982	830		Deficit
22.	1983	51,270		
23.	1984	1,485		
24.	1985	15,286		
25.	1986	7,536		
26.	1987	4,306		
27.	1988	69,180		
28.	1989	93,290		
29.	1990	1,22,400		
30.	1991	16,540		

Sl. No.	Year	Minimum discharges in cusecs	Requirement cusecs	Remarks
1	2	3	4	5
31	1992	23,780	As above	
32	1993	19,560		
33	1994	68,580		
34	1995	33,350		
35	1996	15,990		
36	1997	7,530		
37	1998	23,020		
38	1999	12,700		
39	2000	28,650		
40	2001	18,464		
41	2002	0		Deficit
42	2003	5148		
43	2004	4,590		
44	2005	41,859		
45	2006	18237		
46	2007	75,577		
47	2008	6,414		

No. of Deficit years = 5 Nos

(1962, 1966, 1974,1982, 2002)

STATEMENT SHOWING SURPLUS WATER DISCHARGES OF RIVER GODAVARI AT S.A.C.B.,DOWLAISWARAM FOR THE MONTH OF AUGUST

Sl. No.	Year	Minimum discharges in cusecs	Requirement cusecs	Remarks
1	2	3	4	5
1.	1962	1,35,742	Requirement of water for the present scheme (+) requirement of water for Pushkara Lift Irrigation Scheme, Chagalnadu Lift Irrigation scheme , Tadipudi Lift Irrigation scheme and Visakhapatnam Industrial water supply scheme = 2660 cusec	
2	9163	3,17,820		
3.	1964	1,73,610		
4.	1965	39,871		
5	1966	1,60,150		
6	1967	2,194		
7.	1968	85,000		
8.	1969	1,68,700		
9.	1970	1,95,800		
10.	1971	1,34,200		
11.	1972	1,310		Deficit
12.	1973	63,405		
13.	1974	82,873		
14.	1975	1,95,410		
15.	1976	1,13,600		
16.	1977	1,74,730		
17.	1978	2,30,405		
18.	1979	50,086		
19.	1980	3,25,520		
20.	1981	1,17,282		
21.	1982	61,846		
22.	1983	2,31,260		
23.	1984	1,30,490		
24.	1985	1,91,276		
25.	1986	1,00,798		
26.	1987	72,550		
27.	1988	1,84,360		
28.	1989	1,05,010		
29.	1990	1,54,200		
30.	1991	2,44,340		

Sl. No.	Year	Minimum discharges in cusecs	Requirement cusecs	Remarks
1	2	3	4	5
31	1992	1,81,800	As above	
32	1993	75,810		
33	1994	2,34,830		
34	1995	1,22,690		
35	1996	1,77,550		
36	1997	68,670		
37	1998	1,96,240		
38	1999	1,42,580		
39	2000	92,290		
40	2001	1,73,218		
41	2002	15,655		
42	2003	2,24,284		
43	2004	1,07,216		
44	2005	1,23,479		
45	2006	2,07,465		
46	2007	79,251		
47	2008	1,00,556		

No. of Deficit years (1972) = 1 No

STATEMENT SHOWING SURPLUS WATER DISCHARGES OF RIVER GODAVARI AT S.A.C.B.,DOWLAISWARAM FOR THE MONTH OF SEPTEMBER

Sl. No.	Year	Minimum discharges in cusecs	Requirement cusecs	Remarks
1	2	3	4	5
1.	1962	2,50,449	Requirement of water for the present scheme (+) requirement of water for Pushkara Lift Irrigation Scheme, Chagalnadu Lift Irrigation scheme , Tadipudi Lift Irrigation scheme and Visakhapatnam Industrial water supply scheme = 2660 cusec	
2	9163	1,72.656		
3.	1964	2,00,340		
4.	1965	66,718		
5	1966	92,559		
6	1967	Not available		
7.	1968	46,000		
8.	1969	1,77,600		
9.	1970	25,400		
10.	1971	71,600		
11.	1972	38,870		
12.	1973	Not available		
13.	1974	32,105		
14.	1975	2,71,140		
15.	1976	1,150		Deficit
16.	1977	73,910		
17.	1978	1,02,050		
18.	1979	22,726		
19.	1980	3,63,870		
20.	1981	1,37,061		
21.	1982	80,927		
22.	1983	2,74,930		
23.	1984	30,319		
24.	1985	1,19,417		
25.	1986	11,862		
26.	1987	53,520		
27.	1988	2,55,970		
28.	1989	1,44,780		
29.	1990	1,27,200		
30.	1991	82,270		

Sl. No.	Year	Minimum discharges in cusecs	Requirement cusecs	Remarks
1	2	3	4	5
31	1992	61,560	As above	
32	1993	1,13,230		
33	1994	1,13,150		
34	1995	92,540		
35	1996	1,13,930		
36	1997	1,09,800		
37	1998	1,87,600		
38	1999	2,29,670		
39	2000	83,108		
40	2001	44,883		
41	2002	16,409		
42	2003	1,24,433		
43	2004	53,167		
44	2005	31,804		
45	2006	2,07,731		
46	2007	1,57,165		
47	2008	91,769		

No,of Deficit years (1976) = 1 No.

STATEMENT SHOWING SURPLUS WATER DISCHARGES OF RIVER GODAVARI AT S.A.C.B.,DOWLAISWARAM FOR THE MONTH OF OCTOBER

Sl. No.	Year	Minimum discharges in cusecs	Requirement cusecs	Remarks
1	2	3	4	5
1.	1962	66,693	Requirement of water for the present scheme (+) requirement of water for Pushkara Lift Irrigation Scheme, Chagalnadu Lift Irrigation scheme , Tadipudi Lift Irrigation scheme and Visakhapatnam Industrial water supply scheme = 2660 cusec	
2	9163	72,221		
3.	1964	45,878		
4.	1965	3,233		
5	1966	9,773		
6	1967	Not available		
7.	1968	22,000		
8.	1969	43,000		
9.	1970	2,14,400		
10.	1971	56,000		
11.	1972	3,050		
12.	1973	Not available		
13.	1974	37,477		
14.	1975	19,403		
15.	1976	Not available		
16.	1977	18,338		
17.	1978	28,910		
18.	1979	4,677		
19.	1980	1,272		
20.	1981	18,260		
21.	1982	12,118		
22.	1983	1,02,444		
23.	1984	16,963		
24.	1985	21,082		
25.	1986	11,065		
26.	1987	31,730		
27.	1988	51,340		
28.	1989	30,550		
29.	1990	1,16,530		
30.	1991	47,790		

Sl. No.	Year	Minimum discharges in cusecs	Requirement cusecs	Remarks
1	2	3	4	5
31	1992	24,060	As above	
32	1993	62,530		
33	1994	58,750		
34	1995	63,790		
35	1996	33,930		
36	1997	20,650		
37	1998	84,340		
38	1999	95,740		
39	2000	13,341		
40	2001	27,251		
41	2002	4,784		
42	2003	35,096		
43	2004	7,012		
44	2005	37,048		
45	2006	13,439		
46	2007	37,095		
47	2008	6464		

No. of Deficit Years: NIL

STATEMENT SHOWING SURPLUS WATER DISCHARGES OF RIVER GODAVARI AT S.A.C.B.,DOWLAISWARAM FOR THE MONTH OF NOVEMBER

Sl. No.	Year	Minimum discharges in cusecs	Requirement cusecs	Remarks
1	2	3	4	5
1.	1962	17,595	Requirement of water for the present scheme (+) requirement of water for Pushkara Lift Irrigation Scheme, Chagalnadu Lift Irrigation scheme , Tadipudi Lift Irrigation scheme and Visakhapatnam Industrial water supply scheme = 2660 cusec	
2	9163	13,486		
3.	1964	16,910		
4.	1965	2,222		
5	1966	3,302		
6	1967	Not avaialable		
7.	1968	6,000		
8.	1969	18,100		
9.	1970	12,4-00		
10.	1971	9,460		
11.	1972	5,935		
12.	1973	Not available		
13.	1974	8,751		
14.	1975	20,157		
15.	1976	800		Deficit
16.	1977	11,330		
17.	1978	12,157		
18.	1979	4,150		
19.	1980	7,450		
20.	1981	2,115		
21.	1982	5,485		
22.	1983	7,405		
23.	1984	700		Deficit
24.	1985	1,440		Deficit
25.	1986	5,850		
26.	1987	31,670		
27.	1988	23,670		
28.	1989	19,830		
29.	1990	24,130		

Sl. No.	Year	Minimum discharges in cusecs	Requirement cusecs	Remarks
1	2	3	4	5
30	1991	14,460		
31	1992	3,700	As above	
32	1993	14,480		
33	1994	3,300		
34	1995	14,740		
35	1996	7,360		
36	1997	17,790		
37	1998	40,960		
38	1999	21,670		
39	2000	0		Deficit
40	2001	10005		
41	2002	0		Deficit
42	2003	4,634		
43	2004	4,163		
44	2005	9,732		
45	2006	9,356		
46	2007	15,282		
47	2008	4,636		

No,of Deficit years = 5 Nos. (1976, 1984, 1985, 2000, 2002)

Percentage of success of the scheme

No.of deficit Years 11 Nos (1962, 1966, 1967, 1972, 1974,1976,1982,1984, 1985, 2000, 2002)

Total No.of years 47 Nos

Percentage of successability = $\frac{\text{Total No.of years- No.of deficit years}}{\text{Total No.of years}}$

= $\frac{47 - 11}{11}$ = 76.59% or 77%

TABLE SHOWING DETAILED COMPUTATION OF SEDIMENT RATE INTO JALLERU RESERVIOIR FROM GODAVARI RIVER

Month	Daily average sediment concentration (g/l)	Monthly Sediment load diverted along with discharge (tones)	Volume of sediment deposited in the reservoir during the month (Cum) (assuming the density of sediment deposits in the reservoir as 1.4 tonnes / cum)	`Volume of sediment deposited in the reservoir during 100 years (Million Cum)	Volume of sediment deposited in the reservoir during 100 years (Thousand Million Cu ft)
July	0.39200	29597.9443	21141.3888	2.1141	0.0746
August	0.48449	36581.3981	26129.5701	2.6129	0.0922
Sept	0.29527	22294.3495	15924.5354	1.5924	0.0561
Total		88473.6919	63195.4943	6.3195	0.2230

The estimated total sediment rate into the Jalleru Reservoir from its catchment area and lift water from Godavari river water is for next 75 and 100 years is around 0.34293 TMC and 0.45725 TMC respectively. If appropriate soil conservation measures like gully plugs, check dams and afforestation of degraded forest lands were adopted in the Jalleru reservoir catchment area, the rate of sediment would be further reduced.

STATEMENT SHOWING MONTHLY AVERAGE RAINFALL DATA IN MM FOR 34 YEARS OF STATIONS 1.POLAVARAM 2.KOVVUR 3.JANGAREDDYGUDEM 4.CHINTALAPUDI IN THE CAMMAND AREA OF CHINTALAPUDI LIFT IRRIGATION SCHEME.															
Sl.No	**Year**	**Jan**	**Feb**	**March**	**April**	**May**	**June**	**July**	**August**	**Sept**	**Oct**	**Nov**	**Dec**	**Total**	**Remarks**
1	1974	0	0	0.9	11.75	25.6	77.35	146.9	117.475	169.375	215.35	15.725	0		
2	1975	0	0	0	3.275	43.1	137.75	132.8	251.8	217.175	164.575	12.95	0		
3	1976	0	1.75	5	17.825	56.375	69.2	233.525	244.4	88.45	21.1	251.95	0		
4	1977	0	0	6.425	43.325	38.35	95.4	172	151.3	52.75	79.95	167.5	0.75		
5	1978	1.75	21.9	4.775	23.075	27.65	203.05	176.05	231.225	99.85	28.675	12	4.25		
6	1979	0	61.775	0	20.4	80.55	56.25	90.325	63.35	234.95	60.1	96	2.55		
7	1980	0	0	3	9.575	76.75	317.675	186	243.8	105.45	96.75	9.65	11.325		
8	1981	0.4	0	19.1	10.65	28.525	104.675	306.25	229.85	220.375	46.95	2	6.5		
9	1982	0	0	0	36.2	43.5	127.85	174.1	273.55	114	163.325	42.475	0		
10	1983	2.55	10	0.95	1.9	248.8	120.5	219.35	486.4	398.325	359.4	2.95	18.45		
11	1984	3	16.05	8	26.4	33.8	122.7	223.45	92.55	133.225	107.25	42.475	1.25		
12	1985	37.55	6	0	41.6755	27.35	122.6	234.1	253.9	67.45	227.6	31.35	19.925		
13	1986	17.2	12.95	0.75	1.55	37.65	80.7	112.925	473.05	112.65	105.7	20	0		
14	1987	20.05	0	24.9	6.65	46.25	59.825	133.95	226.775	190.5	181.075	131.2	210.85		
15	1988	0	9.1	3.45	100.05	92.25	27.2	533.55	220.85	685.475	108.95	0	0		
16	1989	0	0	51.6	0	13.6	186.675	461.3	451.95	162.8	51.05	5.85	0		
17	1990	16	78.05	101.9	6.3	513.4	93.05	138.15	243.8	164.3	173.875	22.25	4.25		
18	1991	22.45	0	0	20.2	48.55	299.75	205.7	147.45	206.6	190.8	58.65	1.35		
	Total	**120.95**	**217.58**	**230.75**	**379.25**	**1120.13**	**1921.80**	**3048.88**	**3309.15**	**2561.75**	**1715.10**	**621.33**	**44.90**		

Sl.No	Year	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Total	Remarks
	Total	**120.95**	**217.58**	**230.75**	**379.25**	**1120.13**	**1921.80**	**3048.88**	**3309.15**	**2561.75**	**1715.10**	**621.33**	**44.90**		
19	1992	11.25	0	0	0	52.55	96.95	177.3	181.95	135.725	95	28.45	0		
20	1993	0	0	17.7	11.45	42.9	43.7	226	91.25	156.9	164.65	19.05	5.9		
21	1994	6.4	13.65	0	39.825	35.5	68.5	266.8	190.575	98.5	299.2	4.15	0		
22	1995	47.55	0	0	3.05	158.275	216.3	281.3	190.575	98.5	299.2	4.15	0		
23	1996	0	0	2.8	3.3	34.15	278.875	370.15	229.45	173.1	151.55	85.75	1.8		
24	1997	31.125	0	21.4	71.45	0	93.5	233.1	101.95	0	0	0	0		
25	1998	0	0	0	0	0	0	0	0	0	0	0	0		
26	1999		0	0	0	0	0	341.425	197.025	148.8	139.1	32.85	0		
27	2000	0	0	0	0	0	0	0	0	0	0	0	0		
28	2001	0	0	0	77.925	41.35	141.975	124.85	136.505	173.1	0	15.5	0		
29	2002	0	0	0	2.85	25.725	72.2	48.25	272.025	69.975	223.9	0	0		
30	2003	1.3	3.5	35.1	0	0	142.3	306.25	174.3	145.3	128.45	2.3	126.075		
31	2004	0	14.525	0	12.9	22.95	150.35	192.1	291.4	116.9	97.85	6.35	0		
32	2005	0	0	18.8	42.75	42.55	117.3	292	97.55	456.4	176.3	47.55	0.3		
33	2006	0	0	22.85	55.1	70	122.15	109.75	349.05	223.45	126.05	26.25	0		
34	2007	0	42.15	1.8	49.35	0	132.5	269.75	247.25	181.75	152	40.25	6.75		
35	2008	12.75	9.25	17	27.75	78.75	143.75	305.85	371.95	141.65	46.9	45.55	0		
	Total	**231.33**	**300.66**	**368.20**	**776.95**	**1724.83**	**3742.15**	**6593.76**	**6431.96**	**4881.80**	**3815.25**	**979.48**	**185.73**	**30032.08**	
	Average	**7.01**	**9.11**	**11.16**	**23.54**	**52.27**	**113.40**	**199.81**	**194.91**	**147.93**	**115.61**	**29.68**	**5.63**	**903.64**	

* For the year of 1998 and 2000 rain fall data not avilable

SCHEMATIC DIAGRAM OF CHINTALAPUDI LIFT IRRIGATION SCHEME