

**APPENDIX - III : REFERENCE TABLES AND DESIGN EXAMPLE
FOR TANKA**

Table A-3.1 : Yield from 1 hectare of Natural (Untreated) Catchment

Total Monsoon rainfall in mm	Good Catchment		Average Catchment		Bad Catchment	
	Percentage of Utilisable rain water	Utilisable rain water (cum)	Percentage of utilisable rain water	Utilisable rain water (cum)	Percentage of utilisable rain water	Utilisable rain water (cum)
20	0.080	0.16	0.06	0.12	0.04	0.08
40	0.130	0.52	0.0975	0.39	0.065	0.26
60	0.245	1.47	0.1735	1.10	0.1225	0.73
80	0.410	3.28	0.3075	2.56	0.205	1.64
100	0.700	7.00	0.525	5.25	0.350	3.50
120	0.900	10.80	0.675	8.10	0.450	5.40
140	1.1225	17.15	0.91875	12.86	0.6125	8.57
160	1.625	26.00	1.21875	19.50	0.8125	13.00
180	2.120	31.86	1.5900	28.62	1.060	19.08
200	2.700	54.00	2.025	40.50	1.350	27.00
220	3.260	71.72	2.445	53.79	1.630	35.86
240	3.810	91.44	2.8575	68.58	1.905	47.52
260	4.450	115.70	3.3375	86.77	2.225	57.85
280	5.190	145.32	3.3925	108.99	2.595	72.66
300	5.900	177.00	4.425	132.75	2.95	88.50
320	6.720	215.04	5.040	161.26	3.36	107.52
340	7.750	257.38	5.6775	193.03	3.785	128.69
360	8.550	307.80	6.4125	230.85	4.275	153.90
380	9.450	369.10	7.0876	276.82	4.725	184.55
400	10.250	410.00	7.6875	307.50	5.125	205.00
420	11.050	464.10	8.2875	348.07	5.525	232.05
440	12.000	528.00	9.000	396.00	6.00	264.00
460	12.950	595.70	9.7125	446.77	6.475	297.86
480	13.900	667.20	10.425	500.40	6.950	333.60
500	14.700	735.00	11.025	551.25	7.350	367.50
520	15.500	806.00	11.625	604.50	7.750	403.00
540	16.360	882.90	12.2625	662.17	8.175	441.45
560	17.200	963.20	12.900	772.40	8.600	481.60
580	18.000	1040.00	13.500	780.00	9.000	520.00
600	19.000	1140.00	14.250	855.00	9.500	570.00

Good catchment: Hills or plains with little cultivation and moderately absorbent soil.

Average catchment: Flat partly cultivated stiff gravelly/ sandy absorbent soil.

Bad catchment: Flat and cultivated sandy soils.

**Table A-3.2 : Runoff from Treated Catchments (30 m dia)
for rainfall range 130 mm to 317 mm**

Sl. No.	Treatment	Percentage of utilisable rain water	Utilisable rain water (cum)
1	Bentonite 20% mixed	51-87	46.80-194.84
2	Cement 8% mixed with soil 1.25 cm thick	23-41	21.12-91.82
3	Mud Plaster (Local) 1.25 cm thick	38-67	34.90-150.00
4	Lime Concrete 5 cm thick	48-74	44.00-165.73
5	Sodium carbonate spray @ 1 kg/10 sq.m over 1.25 cm thick compacted tank silt	63-92	57.86-206.00
6	Mud Plaster - with mixture of mud, wheat husk (Bhusa) and Jantha Emulsion (a kind of asphalt) - (95:3:2)	49-79	45.00-176.92
7	Well dressed and compacted without treatment	30-57	27.55-127.65

Note: For a given rainfall the utilisable rainwater can be suitably interpolated.

DESIGN EXAMPLE

Assuming that the average annual monsoon rainfall for a village is 220 mm and the natural catchment is flat, partly cultivated, with stiff sandy absorbent soil. Land is available only for one community Tanka with a catchment of 2 ha.

From Table A-3.1, it is seen that the catchment is "Average".

For 220 mm of rainfall the available rainwater = 2×68.58
= 137.16 cum

Assuming that we decide to treat a circular area of 30 m diameter around the Tanka with lime concrete.

From Table A-3.2, the utilisable rainwater from the treated catchment (by interpolation) = 102.58 cum.

Therefore, total amount of water from natural and treated catchment = $137.16 + 102.58$
= 239.74 cum

The site is therefore suitable for a standard community Tanka of 200 cum capacity.