

# ECO-SANITATION

FROM WASTE to RESOURCE

# KARNATAKA AS AN EXAMPLE

5.40 MILLION RURAL  
HOUSEHOLDS  
DO NOT HAVE TOILETS

### Household -Sanitation Coverage

District	No. of rural-BPL households			No. of rural-APL households			Total no. of households without latrine
	Total	With latrine	Without latrine	Total	With Latrine	Without latrine	
Kodagu	<b>37494</b>	16884	20610	<b>59323</b>	40352	18971	<b>39581</b>
Udupi	<b>93828</b>	49938	43890	<b>86924</b>	52638	34286	<b>78176</b>
D.Kannada	<b>101908</b>	57604	44304	<b>134669</b>	99137	35532	<b>79836</b>
Shimoga	<b>65508</b>	19650	45858	<b>152852</b>	107050	45802	<b>91660</b>
Gadag	<b>60276</b>	5193	55083	<b>57520</b>	18000	39520	<b>94603</b>
Bangalore-U	<b>74115</b>	2223	71892	<b>94330</b>	66031	28299	<b>100191</b>
Chickmagalur	<b>54530</b>	18773	35757	<b>120951</b>	44895	76056	<b>111813</b>
Dharwad	<b>56538</b>	12942	43596	<b>91677</b>	15627	76050	<b>119646</b>
C.R.Nagar	<b>137735</b>	27547	110188	<b>35297</b>	6500	28797	<b>138985</b>
Bidar	<b>81256</b>	12568	68688	<b>115564</b>	28239	87325	<b>156013</b>
U.Kannada	<b>118931</b>	14533	104398	<b>79287</b>	21798	57489	<b>161887</b>
Koppal	<b>76303</b>	7189	69114	<b>106930</b>	5115	101815	<b>170929</b>
Haveri	<b>119025</b>	3218	115807	<b>88883</b>	31008	57875	<b>173682</b>
Bagalkote	<b>79144</b>	6014	73130	<b>123753</b>	14598	109155	<b>182285</b>
Bangalore-R	<b>119227</b>	14307	104920	<b>164643</b>	65857	98786	<b>203706</b>
Chitrdurga	<b>94343</b>	18943	75400	<b>138364</b>	7814	130550	<b>205950</b>
Davangere	<b>114068</b>	23260	90808	<b>157977</b>	29677	128300	<b>219108</b>

Raichur	<b>104887</b>	5768	99119	<b>133663</b>	13036	120627	<b>219746</b>
Bellary	<b>139000</b>	38748	100252	<b>146600</b>	16643	129957	<b>230209</b>
Bijapur	<b>133016</b>	5844	127172	<b>122457</b>	13843	108614	<b>235786</b>
Mandya	<b>119116</b>	8934	110182	<b>194844</b>	46692	148152	<b>258334</b>
Mysore	<b>126322</b>	39518	86804	<b>222938</b>	36822	186116	<b>272920</b>
Tumkur	<b>140956</b>	56560	84396	<b>285474</b>	95639	189835	<b>274231</b>
Hassan	<b>64451</b>	4512	59939	<b>240315</b>	24032	216283	<b>276222</b>
<b>Kolar</b>	<b>138298</b>	<b>30440</b>	<b>107858</b>	<b>243041</b>	<b>68357</b>	<b>174684</b>	<b>282542</b>
Gulbarga	<b>273396</b>	3670	269726	<b>182264</b>	10000	172264	<b>441990</b>
Belgaum	<b>150551</b>	52741	97810	<b>507476</b>	16274	491202	<b>589012</b>
<b>TOTAL</b>	<b>2874222</b>	<b>557521</b>	<b>2316701</b>	<b>4088016</b>	<b>995674</b>	<b>3092342</b>	<b>5409043</b>

# WASTE WATER IN KARNATAKA

- 50% OF HOUSES IN BANGALORE UNSEWERED
- OF 215 TOWNS ONLY 23 HAVE SOME FORM OF PRIMARY TREATMENT
- PRIMARY METHOD IS DEEP PITS or SEPTIC TANKS
- NITRATE POLLUTION INCREASING

## Karnataka's villages

SERVICE LEVEL	HABITATIONS	PERCENT
0-10 lpcd	810	1.43
10-20 lpcd	4066	7.17
20-30 lpcd	5504	9.71
30-40 lpcd	5221	9.21
40-55 lpcd	6549	11.5
55&above	34,562	60.97
<b>Total</b>	<b>56,682</b>	<b>100.00</b>

Without water is sanitation  
possible?

Get water to households first

















# BATHROOMS

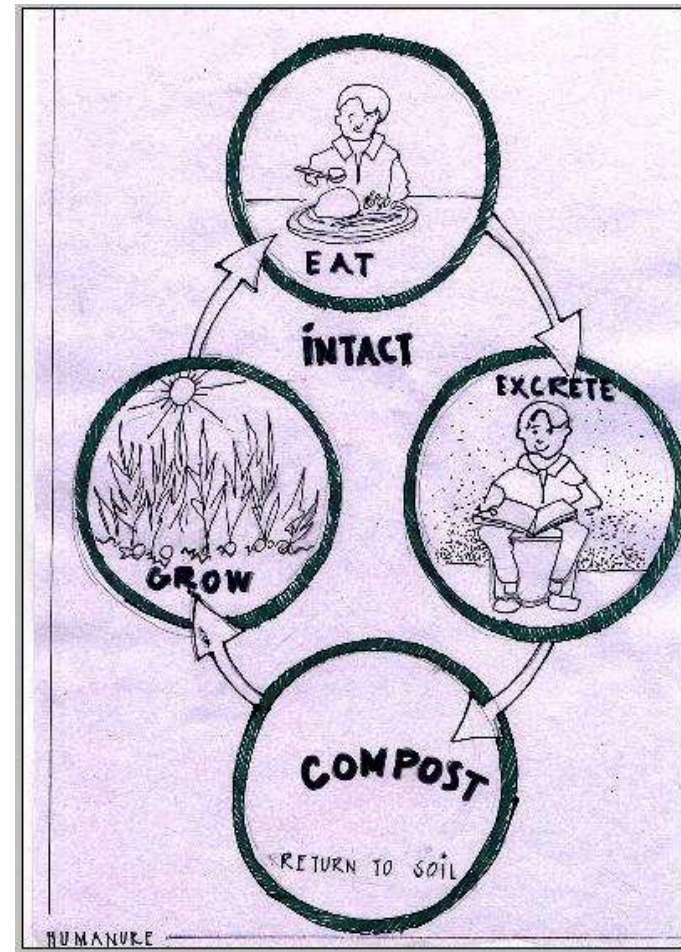
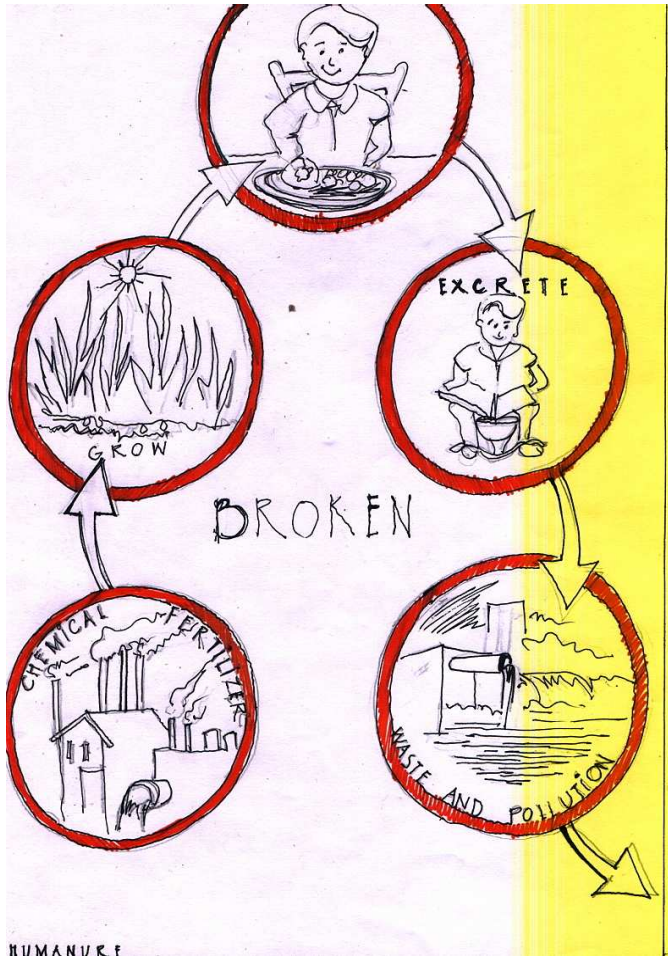
- Privacy for bathing is more important than toilets.
- Do we have a bathroom construction programme?
- Listen to women and help them
- Will a no subsidy initiative work where women are not empowered?

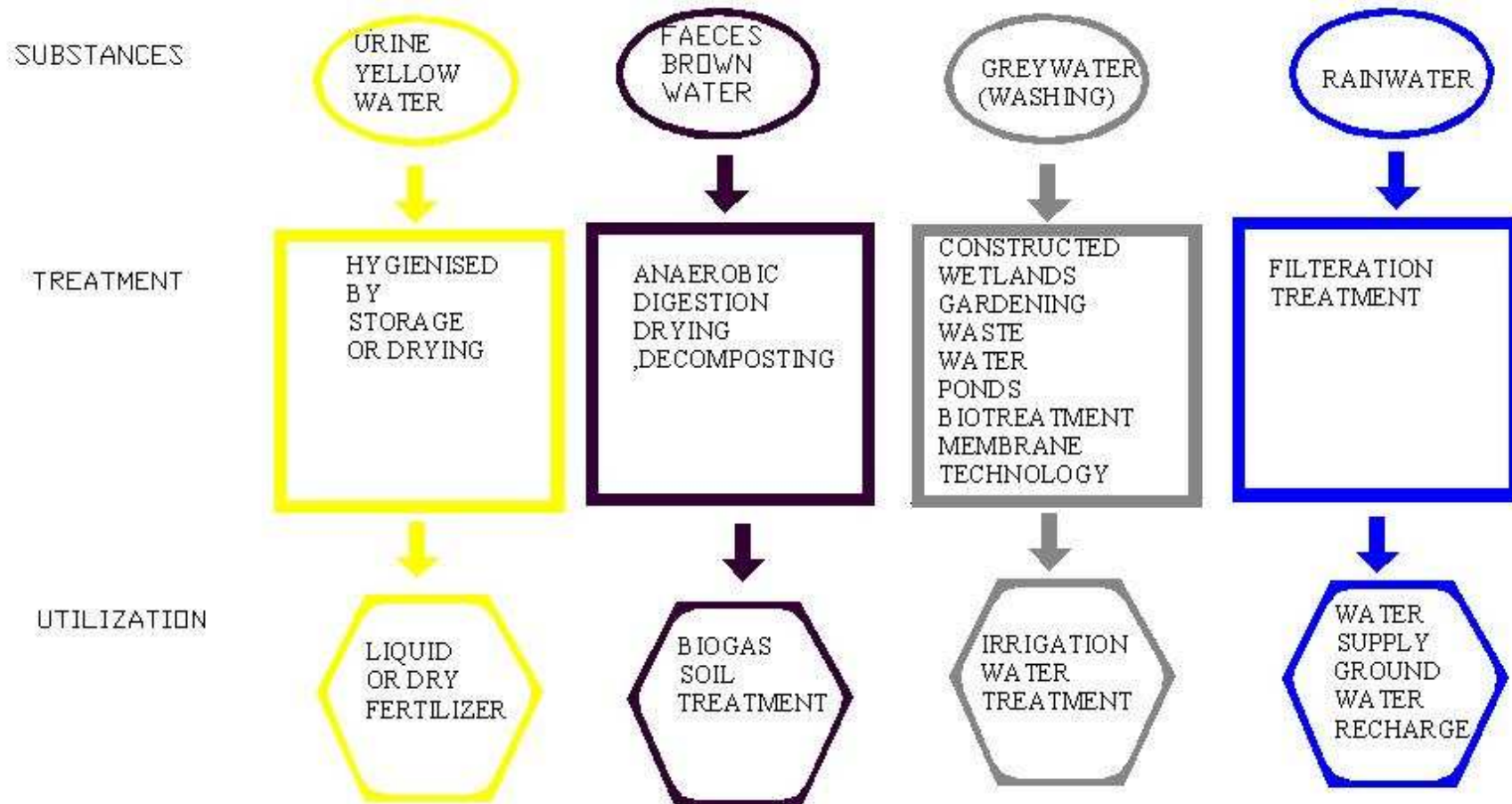
# LEAP-FROG TECHNOLOGY

Get to Eco-san



# SAN TO ECOSAN



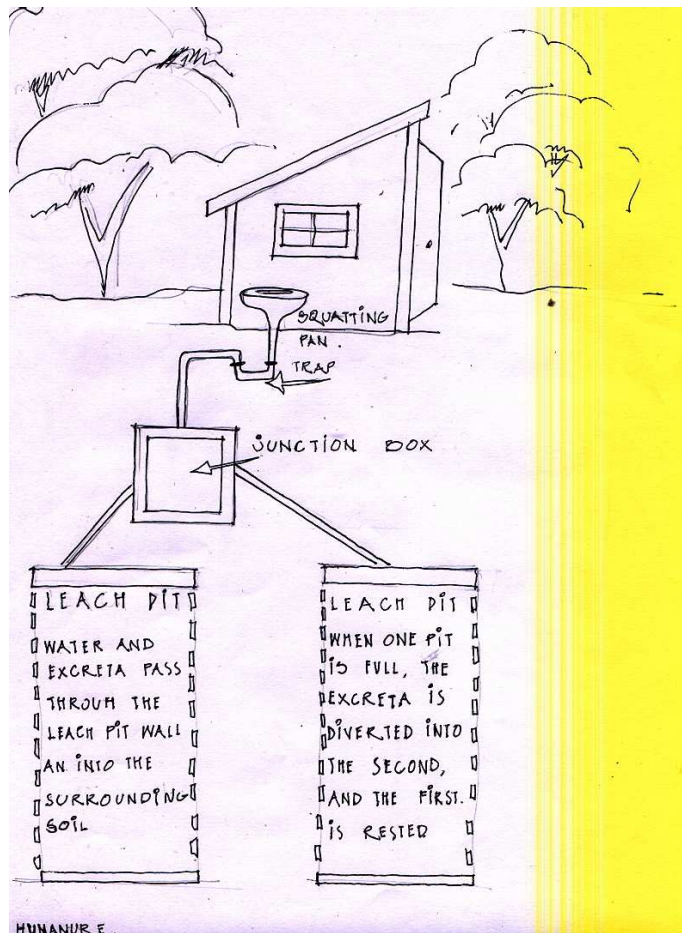


# CURRENT DESIGNS – PIT LATRINE - Disaster



# TWIN LEACH PIT – ECOSAN

## Fails in hard rock area and high water table area



# Avantage (French)

- Toilet for the house
- No water pollution for the village/city
- Fertilizer for the fields
  
- Win – win – win situation

## Source separating







**Waste composting in two tin drums 'Tippy tap' for washing with minimum water below the rain water collection drum**



# New role



