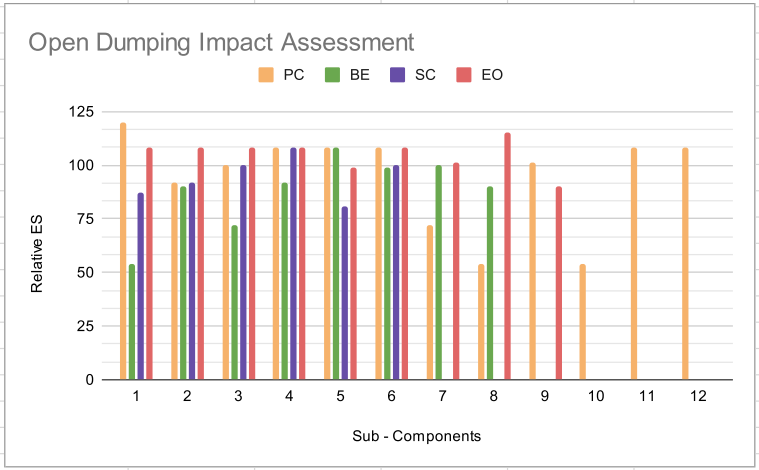
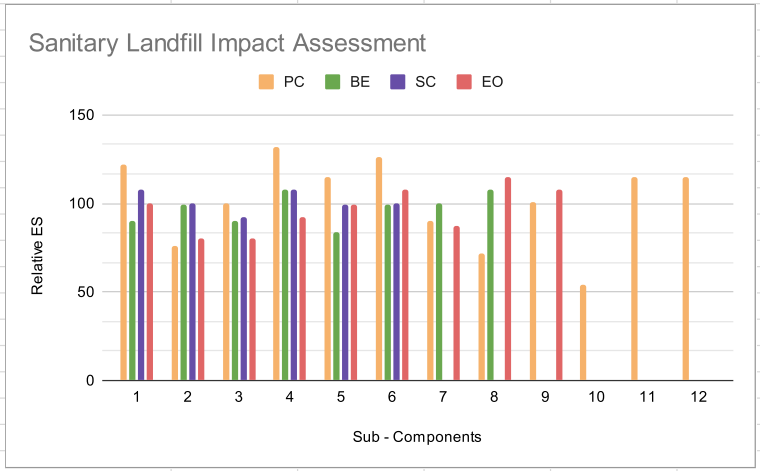
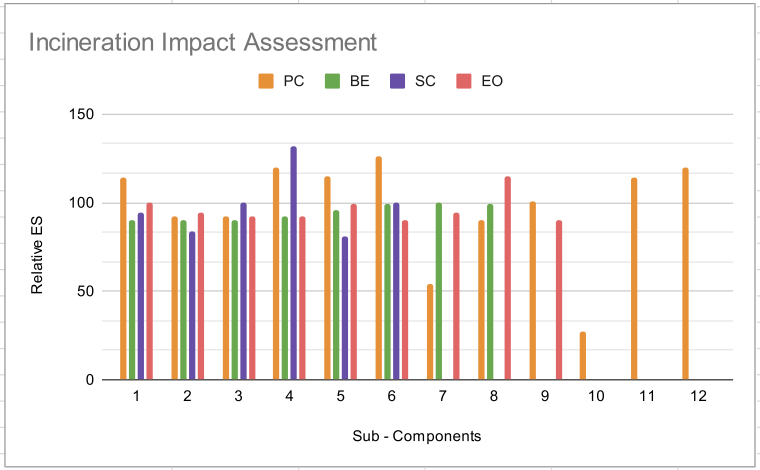
Code	Description	A1	A2	B1	B2	B3	ES	Relative ES	Susceptibility Performance Description
PC	**Physical - Chemical**								
1	Municipal solid waste disposal	1	2	2	2	2	12	120	+B
2	Leaching from the existing municipal solid waste dumpsites.	1	-2	2	3	3	-16	92	-B
3	Collection of leachates in drainage system.	1	-1	2	3	3	-8	100	-A
4	Leachate of municipal solid wastes is treated and reused.	0	0	1	1	1	0	108	N
5	Reused and treated leachate discharged to municipal sewage treatment plant.	0	0	1	1	1	0	108	N
6	Facilities for municipal solid waste treatment and recycling.	0	0	1	1	1	0	108	N
7	Cases of gaseous emission and sampling for estimation of volatile organic compound.	2	-2	3	3	3	-36	72	-D
8	Leaching to the ground water.	2	-3	3	3	3	-54	54	-D
9	Regular odour monitoring.	1	-1	2	2	3	-7	101	-A
10	Greenhouse gases and other than greenhouse gas load reduced in flue gas.	3	-2	3	3	3	-54	54	-D
11	Methods for recovery of these gases.	0	0	1	1	1	0	108	N
12	Separation of different fractions of municipal solid waste is done before dumping.	0	0	1	1	1	0	108	N
		Total ES = -163						**Mean Relative ES = 94.4166666666667**	
BE	**Biological - Ecological**								
1	Effect in the water table by diffuse leaching.	2	-3	3	3	3	-54	54	-D
2	Effect on soil.	1	-2	3	3	3	-18	90	-B
3	Effect on ecosystem.	2	-2	3	3	3	-36	72	-D
4	Default lists of impact categories for life cycle assessment.	2	-1	3	3	2	-16	92	-B
5	Direct, indirect and avoided burdens of municipal solid wastes dumpsites.	2	0	2	2	2	0	108	N
6	Effects of decomposition of wastes.	1	-1	3	3	3	-9	99	-A
7	Soil erosion and excess runoff.	1	-1	2	3	3	-8	100	-A
8	Important risks of open dumping.	1	-2	3	3	3	-18	90	-B
		Total ES = -159						**Mean Relative ES = 88.125**	
SC	**Socio - Cultural**								
1	Residential colonies present in the dumping sites.	1	-3	2	2	3	-21	87	-C
2	Problems people generally face from the dust	1	-2	2	3	3	-16	92	-B
3	Problems people face from the noise.	1	-1	2	3	3	-8	100	-A
4	Incinerated ash of municipal solid wastes is recycled and reused.	0	0	1	1	1	0	108	N
5	Impacts of volatile organic compounds on local people.	1	-3	3	3	3	-27	81	-C
6	Problems from odour of municipal solid wastes.	1	-1	2	3	3	-8	100	-A
		Total ES = -80						**Mean Relative ES = 94.6666666666667**	
EO	**Economic - Operational**								
1	Construction cost of smaller embankments within dumped sites.	0	0	1	1	1	0	108	N
2	Costs for the collection of leachates.	0	0	1	1	1	0	108	N
3	Costs (savings) by use of leachate in desulphurisation plants.	0	0	1	1	1	0	108	N
4	Costs of treatment plants for removal of heavy metals.	0	0	1	1	1	0	108	N
5	Costs for analysis of monitoring and sampling of municipal solid wastes.	1	-1	3	3	3	-9	99	-A
6	Operating and running costs of incineration plants.	0	0	1	1	1	0	108	N
7	Costs involved in recycling and reuse of municipal solid wastes.	1	-1	2	2	3	-7	101	-A
8	Revenues from recycled and reused municipal solid waste.	1	1	2	2	3	7	115	+A
9	Costs involved during the process of dumping to private land.	2	-1	3	3	3	-18	90	-B
		Total ES = -27						**Mean Relative ES = 105**	


Open Dumping Impact Assessment
PC
BE
SC
EO
125
100
75
50
25
0
Relative ES
1
2
3
4
5
6
7
8
9
10
11
12
Sub - Components

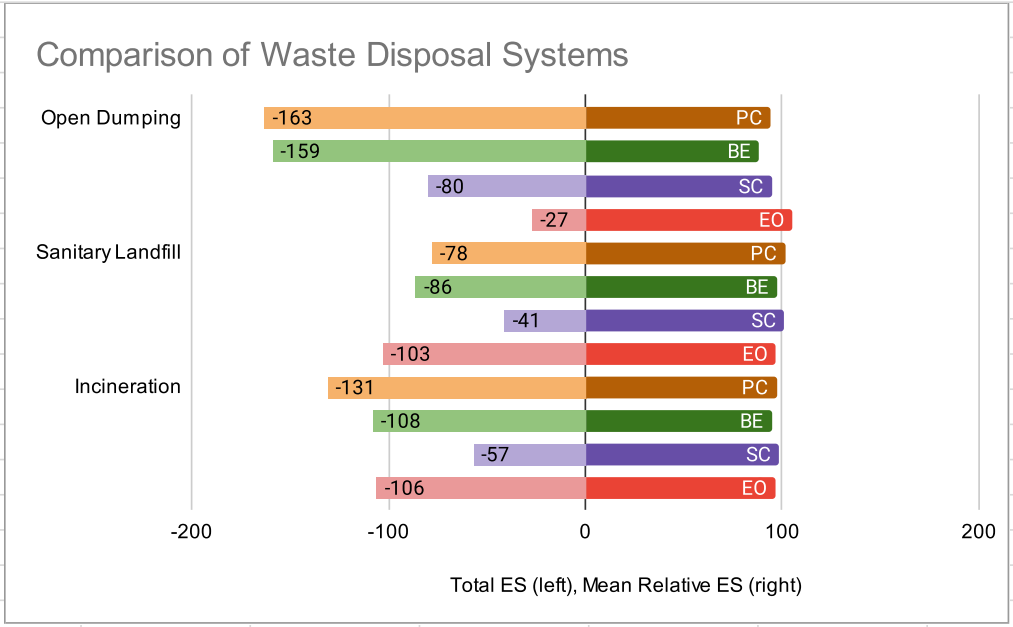
Code	Description	A1	A2	B1	B2	B3	ES	Relative ES	Susceptibility Performance Description
PC	**Physical - Chemical**								
1	Municipal solid waste disposal	1	2	3	2	2	14	122	+B
2	Leaching from the existing municipal solid waste dumpsites.	2	-2	2	3	3	-32	76	-C
3	Collection of leachates in drainage system.	1	-1	2	3	3	-8	100	-A
4	Leachate of municipal solid wastes is treated and reused.	1	3	2	3	3	24	132	+C
5	Reused and treated leachate discharged to municipal sewage treatment plant.	1	1	2	3	2	7	115	+A
6	Facilities for municipal solid waste treatment and recycling.	1	2	3	3	3	18	126	+B
7	Cases of gaseous emission and sampling for estimation of volatile organic compound.	2	-1	3	3	3	-18	90	-B
8	Leaching to the ground water.	2	-2	3	3	3	-36	72	-D
9	Regular odour monitoring.	1	-1	2	2	3	-7	101	-A
10	Greenhouse gases and other than greenhouse gas load reduced in flue gas.	3	-2	3	3	3	-54	54	-D
11	Methods for recovery of these gases.	1	1	2	3	2	7	115	+A
12	Separation of different fractions of municipal solid waste is done before dumping.	1	1	3	2	2	7	115	+A
		Total ES = -78						**Mean Relative ES = 101.5**	
BE	**Biological - Ecological**								
1	Effect in the water table by diffuse leaching.	2	-1	3	3	3	-18	90	-B
2	Effect on soil.	1	-1	3	3	3	-9	99	-A
3	Effect on ecosystem.	2	-1	3	3	3	-18	90	-B
4	Default lists of impact categories for life cycle assessment.	3	0	3	2	2	0	108	N
5	Direct, indirect and avoided burdens of municipal solid wastes dumpsites.	2	-2	2	2	2	-24	84	-C
6	Effects of decomposition of wastes.	1	-1	3	3	3	-9	99	-A
7	Soil erosion and excess runoff.	1	-1	2	3	3	-8	100	-A
8	Important risks of open dumping.	0	0	1	1	1	0	108	N
		Total ES = -86						**Mean Relative ES = 97.25**	
SC	**Socio - Cultural**								
1	Residential colonies present in the dumping sites.	0	0	1	1	1	0	108	N
2	Problems people generally face from the dust	1	-1	2	3	3	-8	100	-A
3	Problems people face from the noise.	1	-2	2	3	3	-16	92	-B
4	Incinerated ash of municipal solid wastes is recycled and reused.	0	0	1	1	1	0	108	N
5	Impacts of volatile organic compounds on local people.	1	-1	3	3	3	-9	99	-A
6	Problems from odour of municipal solid wastes.	1	-1	2	3	3	-8	100	-A
		Total ES = -41						**Mean Relative ES = 101.166666666667**	
EO	**Economic - Operational**								
1	Construction cost of smaller embankments within dumped sites.	1	-1	3	3	2	-8	100	-A
2	Costs for the collection of leachates.	2	-2	2	2	3	-28	80	-C
3	Costs (savings) by use of leachate in desulphurisation plants.	2	-2	2	2	3	-28	80	-C
4	Costs of treatment plants for removal of heavy metals.	1	-2	2	3	3	-16	92	-B
5	Costs for analysis of monitoring and sampling of municipal solid wastes.	1	-1	3	3	3	-9	99	-A
6	Operating and running costs of incineration plants.	0	0	1	1	1	0	108	N
7	Costs involved in recycling and reuse of municipal solid wastes.	1	-3	2	2	3	-21	87	-C
8	Revenues from recycled and reused municipal solid waste.	1	1	2	2	3	7	115	+A
9	Costs involved during the process of dumping to private land.	0	0	1	1	1	0	108	N
		Total ES = -103						**Mean Relative ES = 96.5555555555556**	


Sanitary Landfill Impact Assessment
PC
BE
SC
EO
150
100
50
0
Relative ES
1
2
3
4
5
6
7
8
9
10
11
12
Sub - Components

Code	Description	A1	A2	B1	B2	B3	ES	Relative ES	Susceptibility Performance Description
PC	**Physical - Chemical**								
1	Municipal solid waste disposal	1	1	2	2	2	6	114	+A
2	Leaching from the existing municipal solid waste dumpsites.	2	-1	2	3	3	-16	92	-B
3	Collection of leachates in drainage system.	2	-1	2	3	3	-16	92	-B
4	Leachate of municipal solid wastes is treated and reused.	1	2	2	2	2	12	120	+B
5	Reused and treated leachate discharged to municipal sewage treatment plant.	1	1	2	3	2	7	115	+A
6	Facilities for municipal solid waste treatment and recycling.	1	2	3	3	3	18	126	+B
7	Cases of gaseous emission and sampling for estimation of volatile organic compound.	2	-3	3	3	3	-54	54	-D
8	Leaching to the ground water.	2	-1	3	3	3	-18	90	-B
9	Regular odour monitoring.	1	-1	2	2	3	-7	101	-A
10	Greenhouse gases and other than greenhouse gas load reduced in flue gas.	3	-3	3	3	3	-81	27	-E
11	Methods for recovery of these gases.	1	1	2	2	2	6	114	+A
12	Separation of different fractions of municipal solid waste is done before dumping.	1	2	2	2	2	12	120	+B
		Total ES = -131						**Mean Relative ES = 97.0833333333333**	
BE	**Biological - Ecological**								
1	Effect in the water table by diffuse leaching.	2	-1	3	3	3	-18	90	-B
2	Effect on soil.	1	-2	3	3	3	-18	90	-B
3	Effect on ecosystem.	2	-1	3	3	3	-18	90	-B
4	Default lists of impact categories for life cycle assessment.	2	-1	3	3	2	-16	92	-B
5	Direct, indirect and avoided burdens of municipal solid wastes dumpsites.	2	-1	2	2	2	-12	96	-B
6	Effects of decomposition of wastes.	1	-1	3	3	3	-9	99	-A
7	Soil erosion and excess runoff.	1	-1	2	3	3	-8	100	-A
8	Important risks of open dumping.	1	-1	3	3	3	-9	99	-A
		Total ES = -108						**Mean Relative ES = 94.5**	
SC	**Socio - Cultural**								
1	Residential colonies present in the dumping sites.	1	-2	2	2	3	-14	94	-B
2	Problems people generally face from the dust	1	-3	2	3	3	-24	84	-C
3	Problems people face from the noise.	1	-1	2	3	3	-8	100	-A
4	Incinerated ash of municipal solid wastes is recycled and reused.	1	3	2	3	3	24	132	+C
5	Impacts of volatile organic compounds on local people.	1	-3	3	3	3	-27	81	-C
6	Problems from odour of municipal solid wastes.	1	-1	2	3	3	-8	100	-A
		Total ES = -57						**Mean Relative ES = 98.5**	
EO	**Economic - Operational**								
1	Construction cost of smaller embankments within dumped sites.	1	-1	3	3	2	-8	100	-A
2	Costs for the collection of leachates.	2	-1	2	2	3	-14	94	-B
3	Costs (savings) by use of leachate in desulphurisation plants.	2	-1	2	3	3	-16	92	-B
4	Costs of treatment plants for removal of heavy metals.	1	-2	2	3	3	-16	92	-B
5	Costs for analysis of monitoring and sampling of municipal solid wastes.	1	-1	3	3	3	-9	99	-A
6	Operating and running costs of incineration plants.	1	-2	3	3	3	-18	90	-B
7	Costs involved in recycling and reuse of municipal solid wastes.	1	-2	2	2	3	-14	94	-B
8	Revenues from recycled and reused municipal solid waste.	1	1	2	2	3	7	115	+A
9	Costs involved during the process of dumping to private land.	2	-1	3	3	3	-18	90	-B
		Total ES = -106						**Mean Relative ES = 96.2222222222222**	


Incineration Impact Assessment
PC
BE
SC
EO
150
100
50
0
Relative ES
1
2
3
4
5
6
7
8
9
10
11
12
Sub - Components

Waste Disposal System	Component Type	Total ES	Mean Relative ES
Open Dumping	PC	-163	94.12
	BE	-159	88.13
	SC	-80	94.67
	EO	-27	105
Sanitary Landfill	PC	-78	101.5
	BE	-86	97.25
	SC	-41	101.17
	EO	-103	96.56
Incineration	PC	-131	97.08
	BE	-108	94.5
	SC	-57	98.5
	EO	-106	96.2



M/I	Parameter	Raw Water	Drinking water	IV	EIV
Activities	Parameter Rankings				
Temp	2	0/0	1/2	2	4
Terb	12	1/4.6	9/0.34	7.66	91.92
pH	14	9/1.16	8/1.16	19.72	276.08
EC	1	0/0	2/0.6	1.2	1.2
T.H	9	4/0.85	4/1.68	10.12	91.08
Ca	6	5/0.53	5/1.41	9.7	58.2
Mg	11	6/0.8	6/0.8	9.6	105.6
Cl	5	7/0.5	7/0.64	7.98	39.9
(So4)2-	7	3/1.35	3/1.7	9.15	64.05
TDS	3	2/1.5	2/1.52	6.04	18.12
TSS	10	0/0	10/0.8	8	80
Na	8	6/0.51	6/0.6	6.66	53.28
K	13	9/0.48	9/0.96	12.96	168.48
Al	4	10/0	10/0.5	5	20