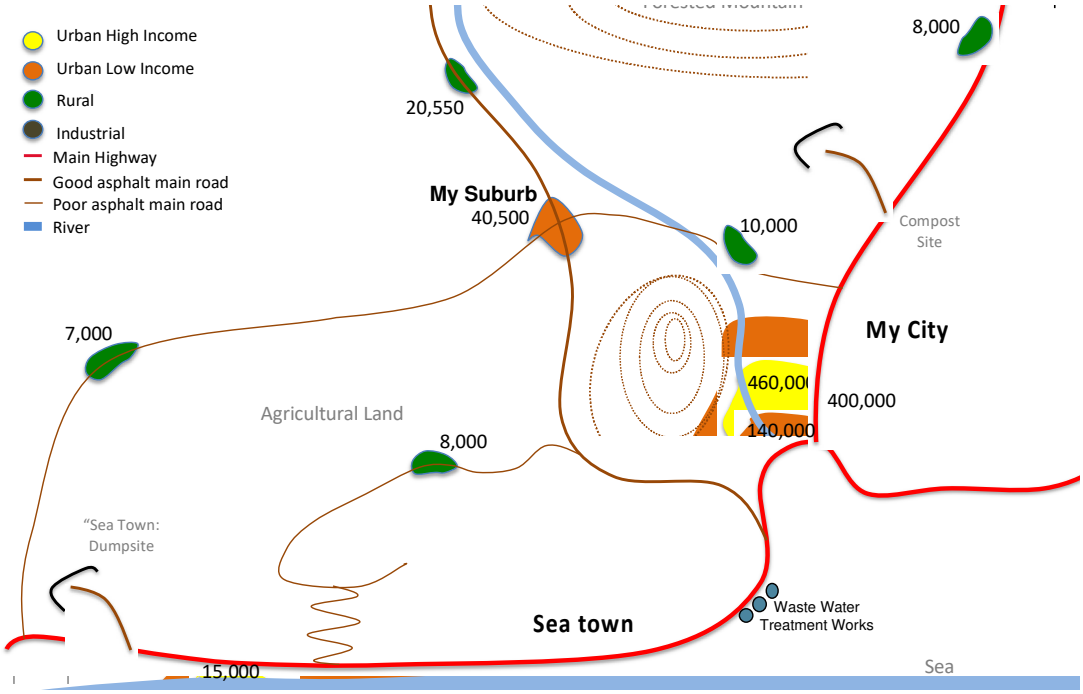
Exercise 3 – Waste Data Management



MSW Generation by income group (kg/cap/day):

Income Group	MSW Generation Rate
Urban High Income:	1.52 kg/cap/day
Urban Low Income:	0.78 kg/cap/day
Rural:	0.37 kg/cap/day
National Average:	1.03 kg/cap/day

MSW Generation Composition by income group (% by weight):

	Waste Fraction	*Urban High Income*	*Urban Low Income*	*Rural*	*National Average*
1	Food waste	26	***55***	20	39
2	Parks & Garden waste	15	***5***	2	6
3	Wood	3	***1***	0	2
4	Paper & Cardboard	10	***3***	2	3
5	Textiles	8	***4***	3	6
6	Nappies	5	***8***	6	6
7	Rubber & Leather	2	***1***	0	2
8	Plastics	19	***11***	9	12
9	Metal	2	***2***	1	1
10	Glass	8	***3***	2	5
11	Other waste	2	***7***	55	5

Each group will present their results followed by group analysis of the differences in results between Groups 1&2 and Group 3 highlighting how more accurate data produces more accurate data!

GROUP 1 – “My City” & “My Suburb”

1. Calculate the Population of your area (“My City and “My Suburb”) using the data on the map:

Income Group	Population (by income Group)
Urban High Income:	460,000
Urban Low Income:	
Rural (total rural population for “My Country”)	

2. Calculate mass of waste being disposed by each income group

Municipal Waste Disposal	**Urban High Income**		**Urban Low Income**		**Diverted to Recycling & Composting**
Waste Generation Rate	*kg/capita/day*	1.52	*kg/capita/day*	0.78	
Population	*Number*	460,000	*Number*		
Waste Disposed	*kg/day*	699,200	*kg/day*		(150,000)
	Tonnes/day	699.20	*Tonnes/day*		(150)
MSW Composition	*%*	*Tonnes/day*	*%*	*Tonnes/day*	*Tonnes/day*
Food waste	26%	182			-
Parks & Garden waste	15%	105			(50)
Wood	3%	21			-
Paper & Cardboard	10%	70			(35)
Textiles	8%	56			(5)
Nappies	5%	35			-
Rubber & Leather	2%	14			-
Plastics	19%	133			(35)
Metal	2%	14			(15)
Glass	8%	56			(10)
Other waste	2%	14			-

3. Calculate Mass of waste by composition and total being disposed to Solid Waste Disposal Site ("My City" Landfill Site) (after removing composting and recycling)

Disposed to Managed Anaerobic SWDS		
Waste Generation Rate	*kg/capita/day*	1.002
Population	*Number*	1,040,500
Waste Disposed	*kg/day*	
	Tonnes/day	
MSW Composition	*%*	*Tonnes/day*
Food waste	43%	
Parks & Garden waste	8%	
Wood	3%	
Paper & Cardboard	5%	
Textiles	7%	
Nappies	7%	
Rubber & Leather	2%	
Plastics	15%	
Metal	1%	
Glass	6%	
Other waste	5%	

1. Calculate Mass of waste by composition and total not being collected (**from rural communities**) and being openly burnt

Open Burning of Waste		
Waste Generation Rate	*kg/capita/day*	0.37
Population	*Number*	53,550
Waste Generated	*kg/day*	
	Tonnes/day	
MSW Composition	*%*	*Tonnes/day*
Food waste	20%	
Parks & Garden waste	2%	
Wood	0%	-
Paper & Cardboard	2%	
Textiles	3%	
Nappies	6%	
Rubber & Leather	0%	-
Plastics	9%	
Metal	1%	
Glass	2%	
Other waste	55%	

GROUP 2 – "Sea Town"

1. Calculate the Population of your area ("Sea Town") using the data on the map:

Income Group	Population (by income Group)
Urban High Income:	15,000
Urban Low Income:	
Rural (total rural population for "My Country")	53,550

2. Calculate mass of waste being disposed by each income group

Municipal Waste Disposal	**Urban High Income**		**Urban Low Income**	
Waste Generation Rate	*kg/capita/day*	1.52	*kg/capita/day*	0.78
Population	*Number*	15,000	*Number*	250,000
Waste Generated	*kg/day*	22,800	*kg/day*	195,000
	Tonnes/day	23	*Tonnes/day*	195
MSW Composition	*%*	*Tonnes/day*	*%*	*Tonnes/day*
Food waste	26%	6		
Parks & Garden waste	15%	3.5		
Wood	3%	0.7		
Paper & Cardboard	10%	2.3		
Textiles	8%	1.8		
Nappies	5%	1.2		
Rubber & Leather	2%	0.5		
Plastics	19%	4.4		
Metal	2%	0.5		
Glass	8%	1.8		
Other waste	2%	0.5		

3. Calculate Mass of waste by composition and total being disposed to Solid Waste Disposal Site ("Sea Town" Dumpsite)

Disposed to Unmanaged Deep SWDS		
Waste Generation Rate	*kg/capita/day*	0.74
Population	*Number*	265,000
Waste Generated	*kg/day*	
	Tonnes/day	
MSW Composition	*%*	*Tonnes/day*
Food waste	48%	
Parks & Garden waste	7%	
Wood	1%	
Paper & Cardboard	5%	
Textiles	5%	
Nappies	7%	
Rubber & Leather	1%	
Plastics	13%	
Metal	2%	
Glass	4%	
Other waste	6%	

4. Calculate Mass of waste by composition and total not being collected (from rural communities) and being openly burnt

Open Burning of Waste		
Waste Generation Rate	*kg/capita/day*	0.37
Population	*Number*	53,550
Waste Generated	*kg/day*	
	Tonnes/day	
MSW Composition	*%*	*Tonnes/day*
Food waste	20%	
Parks & Garden waste	2%	
Wood	0%	-
Paper & Cardboard	2%	
Textiles	3%	
Nappies	6%	
Rubber & Leather	0%	-
Plastics	9%	
Metal	1%	
Glass	2%	
Other waste	55%	

GROUP 3 – "My Country"

2. Calculate the Population of your area (entire area of "My Country") using the data on the map:

Income Group	Population (by income Group)
Urban High Income:	475,000
Urban Low Income:	830,500
Rural (total rural population for "My Country")	53,550

3. Calculate the combined total mass and mass by composition of waste being generated by the entire country (use national waste generation and composition statistics as presented in *red* (which are calculated from income group data)

National Data -	**Total "My Country" Waste Generation**		**Diverted to Recycling & Composting**
Waste Generation Rate	*kg/capita/day*	*1.03*	
Population	*Number*	1,359,050	
Waste Generated	*kg/day*		(150,000)
	Tonnes/day		(150)
MSW Composition	*%*	*Tonnes/day*	*Tonnes/day*
Food waste	*39%*		-
Parks & Garden waste	*10%*		(50)
Wood	*2%*		-
Paper & Cardboard	*7%*		(35)
Textiles	*6%*		(5)
Nappies	*6%*		-
Rubber & Leather	*2%*		-
Plastics	*15%*		(35)
Metal	*2%*		(15)
Glass	*6%*		(10)
Other waste	*5%*		-

4. Calculate mass of waste being disposed to each disposal site and uncollected waste being openly burnt

National Data -	Disposed to Managed Anaerobic SWDS		Disposed to Unmanaged Deep SWDS		Open Burning of Waste	
Waste Generation Rate	*kg/capita/day*	1.03	*kg/capita/day*	1.03	*kg/capita/day*	1.03
Population	*Number*	1,040,500	*Number*	270,000	*Number*	53,550
Waste Generated	*kg/day*	1,073,426	*kg/day*		*kg/day*	55,245
	Tonnes/day	1,073	*Tonnes/day*		*Tonnes/day*	55
MSW Composition	*%*	*Tonnes/day*	*%*	*Tonnes/day*	*%*	*Tonnes/day*
Food waste	39%	419	39%		39%	22
Parks & Garden waste	6%	60	10%		10%	6
Wood	2%	22	2%		2%	1
Paper & Cardboard	3%	37	7%		7%	4
Textiles	6%	61	6%		6%	3
Nappies	6%	68	6%		6%	4
Rubber & Leather	2%	16	2%		2%	1
Plastics	12%	129	15%		15%	8
Metal	1%	6	2%		2%	1
Glass	5%	51	6%		6%	3
Other waste	5%	54	5%		5%	3