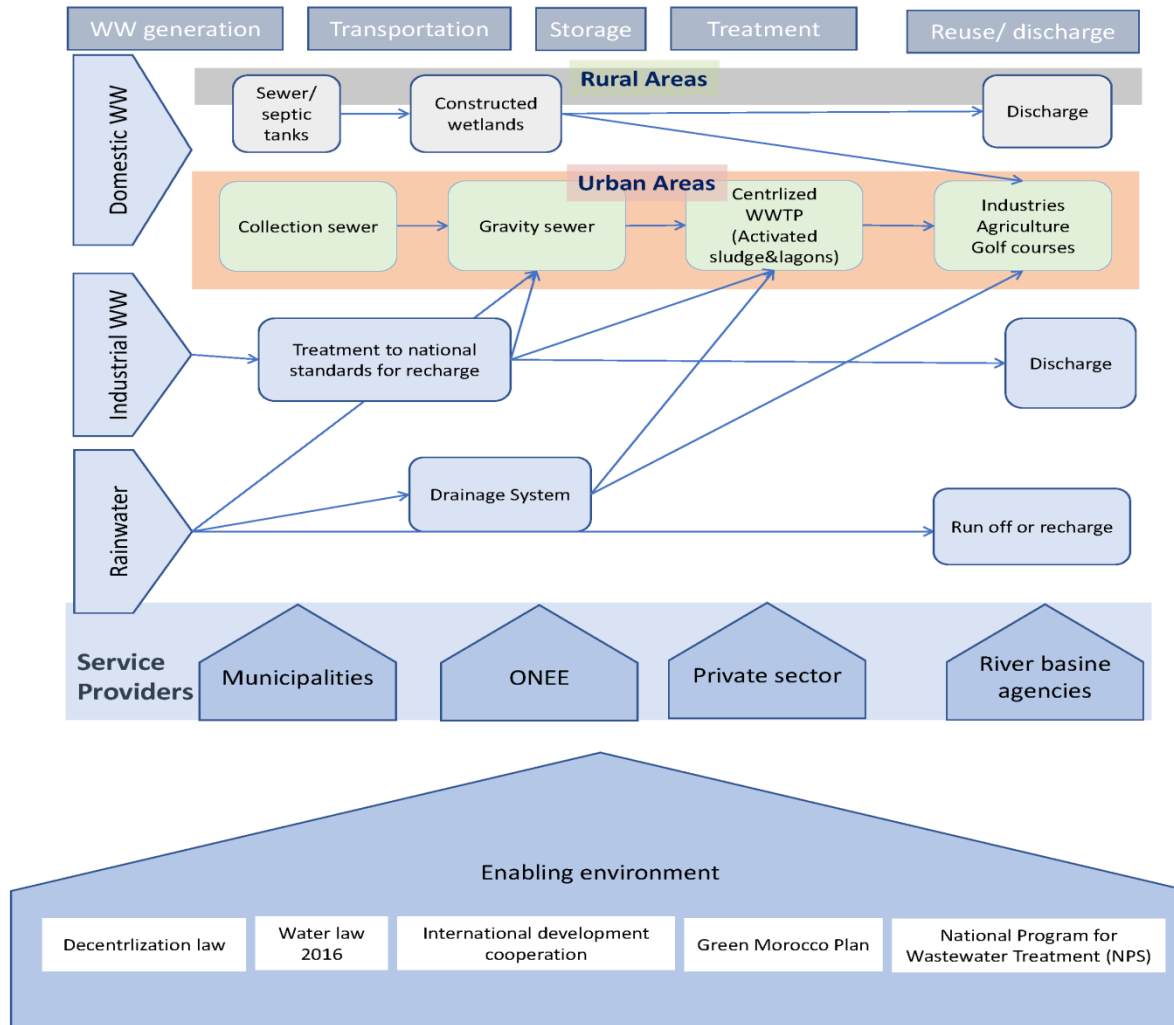


# Reuse of Wastewater in Morocco

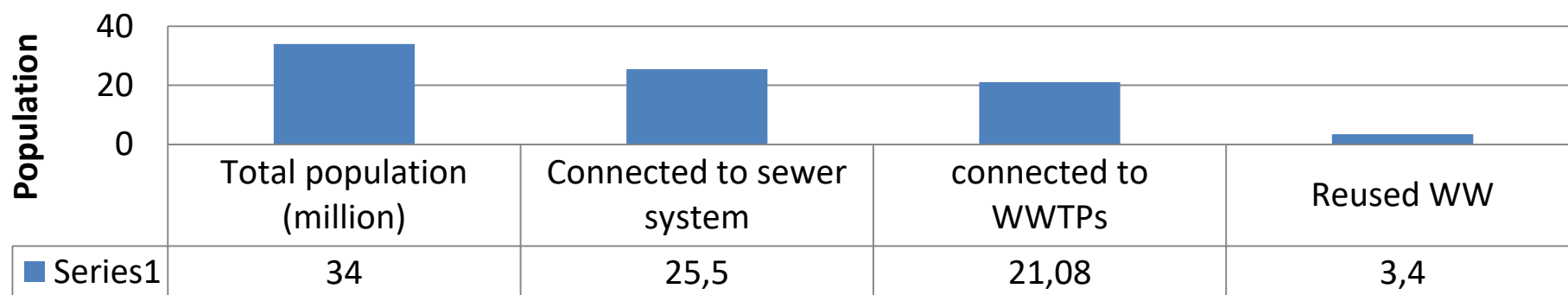
Hala Alhamed, Work4Water  
Mackenzie N, Masaki, NABC



# The stakeholders in the Waste Water sector play an important role in the growth and development of the sector.



# There is room for significant growth in re-use of waste water in Morocco.

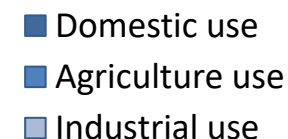
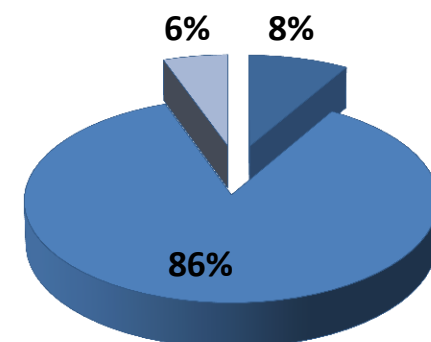


Technology	Treatment Capacity (m <sup>3</sup> /day)	No.	% (No.)	% (Capacity)	Average Capacity (m <sup>3</sup> /day)/ WWTP
Natural lagoons	193,869	80	61%	9%	2,423
Activated sludge	348,007	18	14%	15%	19,334
Aerated lagoons	78.990	10	8%	3%	7,899
Pre-treatment and marine outfall	1,571,131	8	6%	70%	196,391
Trickling filter	32,202	8	6%	1%	4,025
Percolation/infiltration	32,419	4	3%	1%	8,105
Others	3,030	3	2%	0%	1,010
<b>Total</b>	<b>2,259,648</b>	<b>131</b>	<b>100%</b>	<b>100%</b>	<b>17,249</b>

Source: Ministry of Interior Affairs





# It is important to understand the operational landscape in the Waste Water Sector.

Operators	The main cities	No. of centres	No of Connections	%
<b>12 Régies</b>	Marrakesh, Fez, Meknes, Kenitra, El Jadida, Safi, Larach, Agadir, Settat, Oujda, Beni Mellal, Taza	16	6.543.000	34%
<b>4 Private concessions</b>	1) LYDEC: Casablanca, Mohammadia 2) REDAL, Rabat, Salé, Temara 3) AMENDIS: Tanger, Assilah 4) AMENDIS: Tetouan, Mdiq	16	7.986.000	42%
<b>ONEE</b>	The biggest cities: Nador, Khouribga, Berkane, Khemisset, Al Houceima, BerrechidBenguerir	112	4.630.000	24%
<b>Total</b>	<b>17 operators</b>	<b>144</b>	<b>19.159.000</b>	






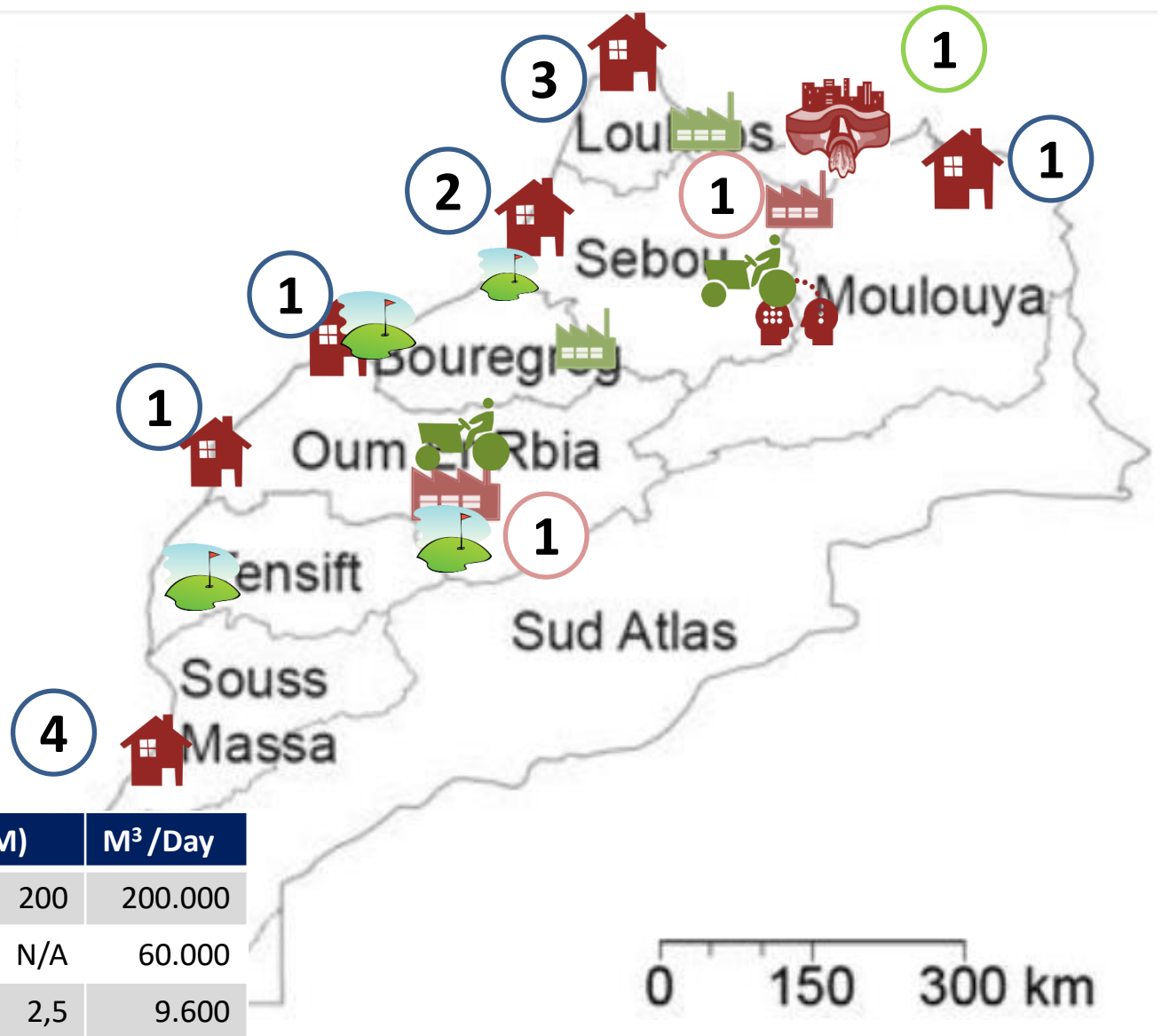
# There are a number of project opportunities in Morocco for both industrial and Domestic waste water reuse.

## Projects opportunities

-  Domestic WWTP
-  Industrial WWTP
-  Sludge management
-  Training center

## Reuse Opportunities

-  Reuse in Industries
-  Reuse in golf courses
-  Reuse in Agriculture



Project	No.	Costs (€ M)	M <sup>3</sup> /Day
Domestic WWTP	12	200	200.000
Industrial WWTPs	2	N/A	60.000
Sludge Management	1	2,5	9.600

# Thank you

