



Sudan

Sudan, officially the Republic of the Sudan, is also known as Sudan or North Sudan (since South Sudan's independence). Sudan is located in North Africa, but is also considered part of the Middle East politically as well as geographically. It is one of the largest countries in Africa (1,861,484 square kilometres in size) and has a population of 40.53 million. The capital city is Khartoum, which is also the largest city. Sudan is divided into 18 states (wilayat, sing. wilayah) that are further divided into 133 districts.*

Uncontrolled sprawl, chronic solid waste management problems, and the lack of wastewater treatment are the leading environmental problems facing Sudan's urban centres (waste generation amount of 18,000 tons/day). Sewage treatment is grossly inadequate in all of Sudan's cities, and solid waste management practices throughout the country are uniformly poor. The main mode of waste disposal is open dumping, and there is hardly any waste collection system in many towns and villages. Public awareness of SWM issues is limited, and open burning is a common method to deal with the growing amounts of waste. At the national level, there is no law/strategy/plan of municipal SWM. However, there is some municipal SWM system in some larger states, such as Khartoum and Gadarif (controlled final disposal). Khartoum State has an Environmental Protection Law 2008 issued by the Khartoum State Ministry (which regulates the waste management at the state level) and a Master Plan for waste management was prepared in 2013. Khartoum has a Cleaning Corporation.

Sources: * Wikipedia, Sudan, accessed 15 March 2019, <<https://en.wikipedia.org/wiki/Sudan>> and World Bank, Sudan, accessed 15 March 2019, <<https://databank.worldbank.org/reports.aspx?source=2&country=SDN>>

Information

Population*	40.53 million (2017)
Population growth (annual %)*	2.4 (2017)
Area (km ²)**	1,861,484
Climate	Hot desert (mainly)
GDP (current USD)*	117.49 billion (2017)
GDP growth (annual %)*	4.3 (2017)
GNI per capita, Atlas method (current USD)*	2,380 (2017)
Main industries	Pollutant industries include petroleum refining, textile and food processing. There is significant horticultural and livestock-rearing activity within the urban areas.
Currency***	USD 1 : SDG 47.50 (Sudanese pound) (February 2019)

Sources: * World Bank, Sudan, accessed 15 March 2019, <<https://databank.worldbank.org/data/reports.aspx?source=2&country=SDN>>

** Central Intelligence Agency, Sudan, accessed 15 March 2019, <<https://www.cia.gov/library/publications/the-world-factbook/geos/su.html>>

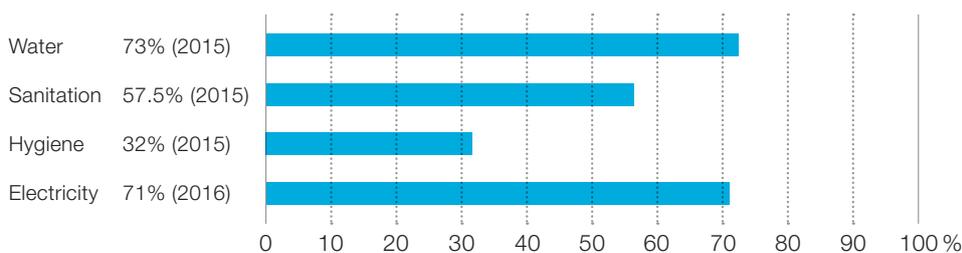
*** Oanda.com

Current SWM Situation

Item	Outline
Legal system	<ul style="list-style-type: none"> ● There is no legal document on water and air pollution protection and waste management.
Policy/Plan	<ul style="list-style-type: none"> ● No national level policy or strategy on SWM.
Implementation system	<ul style="list-style-type: none"> ● At the national level, the Ministry of Environment, Natural Resources and Physical Development is responsible for waste management. ● Municipalities are responsible for waste collection under the supervision of the state government. ● Environmental impact assessments (EIA) are supposed to be applied to final disposal sites in general but actual implementation is only in Khartoum (in Khartoum, 'closed' final disposal sites are being considered in order to minimise negative health impact on citizens).
Financial system	<ul style="list-style-type: none"> ● Fee collection from business establishments, which does not cover the costs. The balance is covered by budget of the state government and the national government. ● Tax on waste disposal: none.
Donor support	<ul style="list-style-type: none"> ● JICA Project for Strengthening Solid Waste Management 2014–2017 <ul style="list-style-type: none"> » Technical cooperation for institutional capacity development, management of transfer stations, and landfill. » Grant aid of equipment for waste collection and transport.

Item	Outline
Areas for improvement	<ul style="list-style-type: none"> ● A strategic plan needs to be developed. The linkage between the government at the national level and the state just started with a national workshop in 2018. This needs to be developed. ● Database needs to be developed. ● Staff/institutional capacity needs to be developed. ● The national government is calling upon the state governments to establish Cleaning Corporations. ● Collection and transportation capacity (equipment) need to be enhanced. ● Technology needs to be developed (along with capacity development to utilise new technology) in the following areas: recycling technology, landfill technology, transfer station technology, and maintenance.

Status of Access to Basic Services* (in urban area)



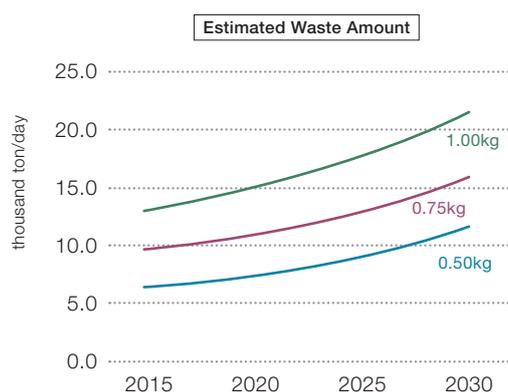
*The definition of each basic service is on page 1 of ANNEX.

Estimated Waste Amount

The future amount of waste generation is estimated based on the projection of urban population at three waste generation rates, i.e. 0.5, 0.75, and 1.0 kg/person/day.

		unit: thousand persons			
Population	Year	2015	2020	2025	2030
	Total		38,648	43,541	49,000
Urban		13,099	15,349	18,220	21,775

		unit: thousand ton/day			
Waste Amount	Generation rate	2015	2020	2025	2030
	0.50 kg/pers/day	6.5	7.7	9.1	10.9
	0.75 kg/pers/day	9.8	11.5	13.7	16.3
	1.00 kg/pers/day	13.1	15.3	18.2	21.8



$$\text{Waste Amount} = (\text{generation rate}) \times (\text{urban population})$$

Source for population: United Nations, Department of Economic and Social Affairs, Population Division (2018). World Urbanization Prospects: The 2018 Revision, Online Edition.

Photographs:



Disposal site



New vehicles provided by JICA