



Emerging Pollutants: Protecting Water Quality for the Health of People and the Environment

Assessment of Harmful Algae as an Emerging Pollutant of Domestic Water Supply from
Rainwater Harvesting Facilities in Sudan

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- The rural population in Sudan represents around 67.1% of the total population and 55% lives in areas apart from the Nile system.
- Considerable percentage of this population depends on surface rainwater harvesting from Hafir (Shallow Water Pond) and earth dam reservoirs for domestic and drinking water supply.
- These sources are susceptible to contamination according to the surrounding livelihood activities.
- Certain environmental conditions; like warming and excess nitrogen and phosphorus in water bodies can intensify algae growth, causing algal blooms.
- When some types of algae blooms are large and produce chemicals, or **toxins**, the event is called a harmful algal blooms (HABs).

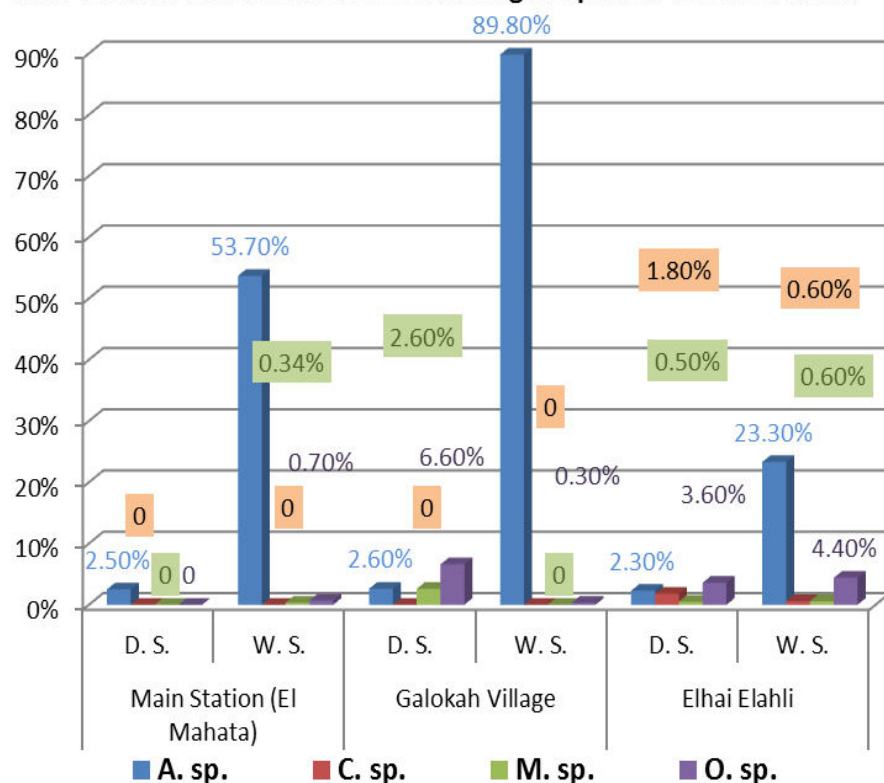


Results : Distribution Pattern and % Content of Harmful Blue- Green Algae (B.-G. A.)

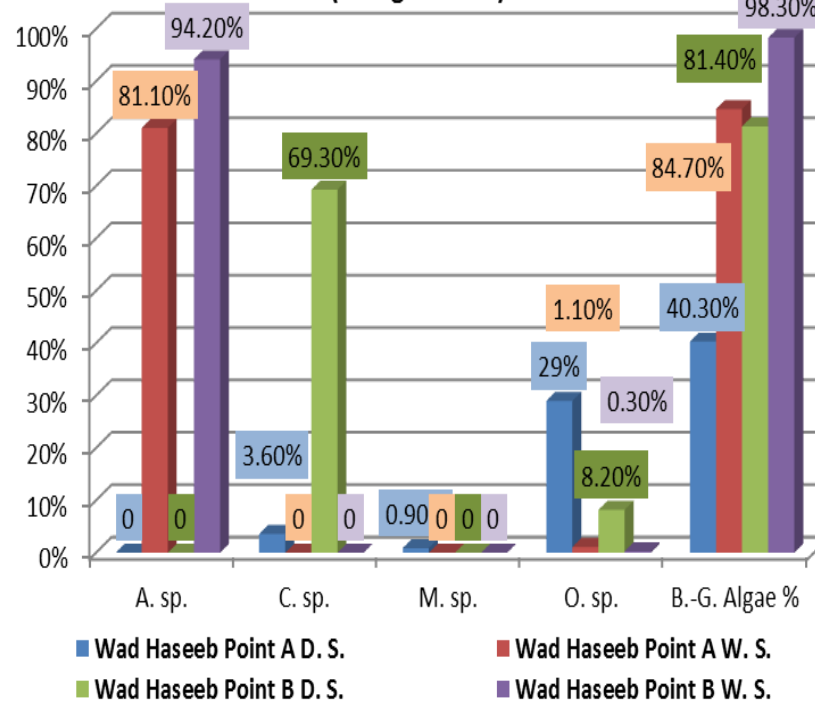
D.S. = Dry Season (November - May)

W.S.= Wet Season (June – October)

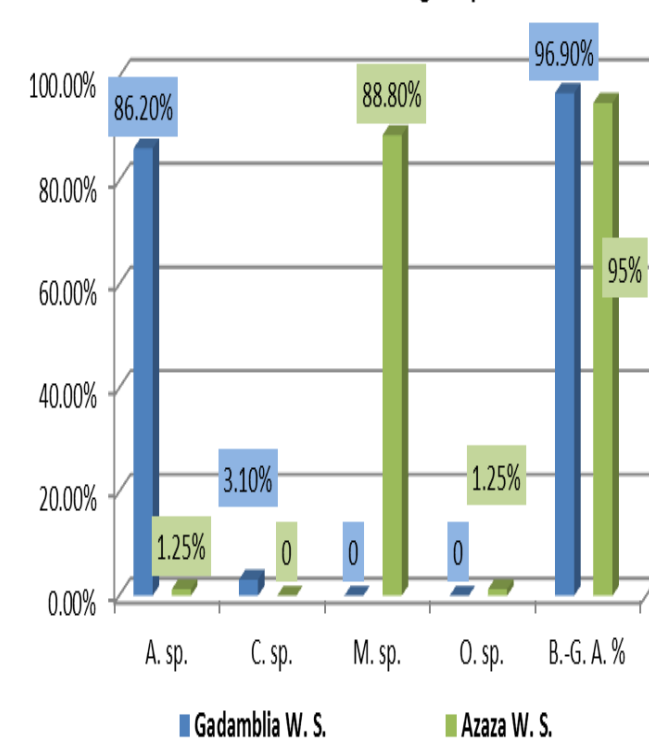
% of Content of Harmful Blue-Green Algae Species at Gazira State



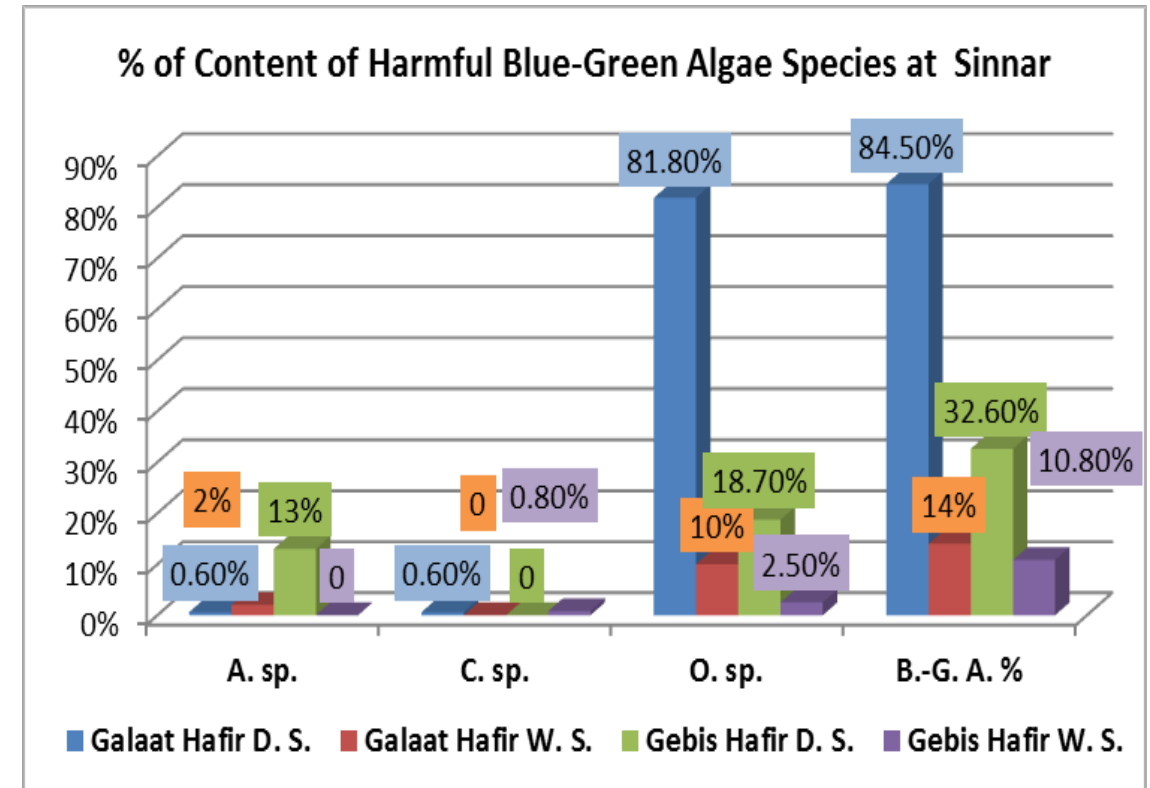
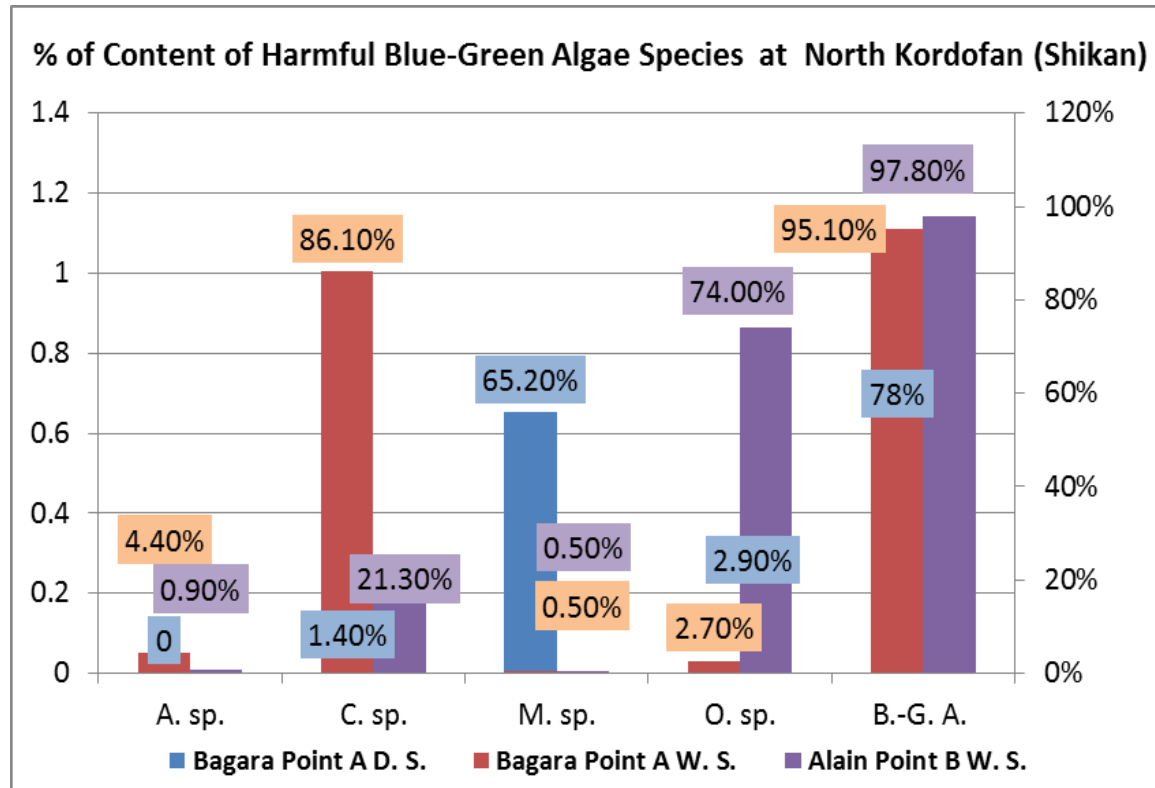
% of Content of Harmful Blue-Green Algae Species at Khartoum (Sharg Al Neel)



% of Content of Harmful Blue-Green Algae Species at Gadarif



Results



Conclusions and Recommendations

- **The Sudanese are at high risks for contracting waterborne diseases.**
- **Protection of surface rainwater harvesting facilities from pollution by establishing onsite water treatment units is a must.**
- **Comprehensive water quality monitoring is necessary to improve natural resource management, maintain sustainable ecosystems, and protect public health.**
- **Monitoring of Toxins produced by Blue-Green Algae (Cyanotoxins) is very important.**
- **Collaborative efforts are encouraged at both the international and national levels to be exerted for healthy water sources , healthy people and healthy environment.**
- **Sustainable water resources management and development through capacity development, community engagement, political wills will accelerate achieving the SDG6 by 2030.**

Thanks

THANK YOU