

The threat of red-billed quelea to food security in Africa

Red-billed quelea (RBQ) populations need urgent management because they are

Damaging to cereal crop seed



10g

seed consumed daily by each bird¹

Superabundant



1.5 billion

bird population size, the largest globally¹

Widespread



up to 3000km

migration distance, tracking food abundance²

\$88.6 million

crop damage per year³

↓15-20%

yield losses when RBQ are present^{1,4}



Future climate change will intensify this threat to food security

Cereal crop yields are predicted to fall across Africa, compounding with RBQ damage.

↓2%
sorghum yield by 2050⁵

↓35%
wheat yield by 2050⁵



RBQ could enter new regions that are unprepared to manage them, following changing rainfall and crop production patterns under CC.

How can we prepare for this?

- Analysing historic climate, land-use and RBQ distribution data may reveal drivers of quelea movements.
- This understanding could be used to forecast future RBQ distribution under climate change to inform crop pest management.

1 Elliott, C.C.H. and Bruggers, R.L. (1989) The pest status of the quelea.

2 Oschadleus, H.D. (2000) Red-billed Quelea movements in Southern Africa shown by ringing recoveries in the SAFRING database. 2000.

3 Cheke, R.A. and El Hady Sidatt, M. (2019) A review of alternatives to fenthion for quelea bird control. Crop Protection, 116: 15–23.

4 De Mey, Y., Demont, M. and Diagne, M. (2012) Estimating Bird Damage to Rice in Africa: Evidence from the Senegal River Valley. Journal of Agricultural Economics, 63: 175–200.

5 Niang, I., Ruppel, O.C., Abdrabo, M.A., et al. (2014) Africa Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1199-1265.