

## Description of Additional Supplementary Files

File name: Supplementary data 1

Description: ASV table of river samples and correlation with ARG abundance.

File name: Supplementary data 2

Description: ASV table of soil samples and correlation with ARG abundance.

File name: Supplementary data 3

Description: Soil sample dataset.

File name: Supplementary data 4

Description: River sample dataset.

File name: Supplementary data 5

Description: List of target genes screened through HT-qPCR.

File name: Supplementary data 6

Description: Pairwise Bray-Curtis dissimilarity of soil samples sorted by total ARGs

File name: Supplementary data 7

Description: Pairwise Bray-Curtis dissimilarity of river samples sorted by total ARGs

.

.