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Statistics

For all statistical analyses, confirm that the following items are present in the figure legend, table legend, main text, or Methods section.

n/a | Confirmed
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☐ | The exact sample size (n) for each experimental group/condition, given as a discrete number and unit of measurement
☐ | A statement on whether measurements were taken from distinct samples or whether the same sample was measured repeatedly
☐ | The statistical test(s) used AND whether they are one- or two-sided
*Only common tests should be described solely by name; describe more complex techniques in the Methods section.*
☐ | A description of all covariates tested
☐ | A description of any assumptions or corrections, such as tests of normality and adjustment for multiple comparisons
☐ | A full description of the statistical parameters including central tendency (e.g. means) or other basic estimates (e.g. regression coefficient) AND variation (e.g. standard deviation) or associated estimates of uncertainty (e.g. confidence intervals)
☐ | For null hypothesis testing, the test statistic (e.g. F, t, r) with confidence intervals, effect sizes, degrees of freedom and P value noted
*Give P values as exact values whenever suitable.*
☐ | For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings
☐ | For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes
☐ | Estimates of effect sizes (e.g. Cohen’s d, Pearson’s r), indicating how they were calculated

Our web collection on [statistics for biologists](https://www.nature.com/learning/statistics-for-biologists) contains articles on many of the points above.

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Data collection | Not applicable
---|---
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For manuscripts utilizing custom algorithms or software that are central to the research but not yet described in published literature, software must be made available to editors/reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Research guidelines for submitting code & software for further information.

Data

Policy information about [availability of data](https://www.nature.com/natureresearch/policies/software-and-data)

All manuscripts must include a data availability statement. This statement should provide the following information, where applicable:

- Accession codes, unique identifiers, or web links for publicly available datasets
- A list of figures that have associated raw data
- A description of any restrictions on data availability

The data that support the findings of this study are available from the corresponding author on reasonable request.

Field-specific reporting

Please select the one below that is the best fit for your research. If you are not sure, read the appropriate sections before making your selection.

☐ Life sciences
☐ Behavioural & social sciences
☒ Ecological, evolutionary & environmental sciences

For a reference copy of the document with all sections, see nature.com/documents/nr-reporting-summary-fat.pdf
ECOLOGICAL, EVOLUTIONARY & ENVIRONMENTAL SCIENCES STUDY DESIGN

All studies must disclose on these points even when the disclosure is negative.

**Study description**  
In this study, 20,000 sq ft floating treatment wetlands (FTWs) were installed in wastewater stabilization ponds of Faisalabad city, Pakistan, for the remediation of sewage and industrial wastewater. These FTWs comprised of five selected plants species. The applied FTWs efficiently removed both organic and inorganic pollutants from the wastewater and treated water met the national wastewater discharge standards of Pakistan. These FTWs are in operation even after five years of their installation. This study demonstrates that application of FTWs is low cost and sustainable ecotechnology for large-scale cleanup of sewage and industrial wastewater.

**Research sample**  
The FTWs were applied in the wastewater stabilization ponds at Chokera, Faisalabad, Pakistan. Influent and effluent grab samples were collected from the inlets and outlets of the ponds.

**Sampling strategy**  
Sampling was done every three months for three years and always at the same time of the day (morning), and all of the samples were cooled and immediately transported to the lab.

**Data collection**  
Wastewater samples were collected and analyzed by the authors working at Wastewater Treatment & Phytoremediation Laboratory of National Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad. Wastewater samples were analyzed for physicochemical parameters as per established protocols. This encompassed TSS, TDS, pH, DO, BOD, COD, oil and grease, nitrate, sulfate, TP, Cd, Cr, Fe, Ni, and FC.

**Timing and spatial scale**  
The study was conducted over a period of more than 3 years (June 2014 – August 2017). Influent and effluent grab samples were collected from the inlets and outlets of the ponds, respectively every three months and analyzed.

**Data exclusions**  
No data were excluded from the analyses.

**Reproducibility**  
All the tests were performed according to standard methods described by American Public Health Association (APHA, 2005) and reproducibility is checked on regular basis. The wastewater samples were analyzed in triplicates.

**Randomization**  
As FTWs were installed in two wastewater stabilization ponds, therefore influent and effluent grab samples were collected from the inlets and outlets of these ponds and randomization was not required.

**Blinding**  
There is no blinding as all the results obtained from the experiment are reported.

**Did the study involve field work?**  
☑ Yes  ☐ No

**Field work, collection and transport**

**Field conditions**  
The FTWs were applied in the wastewater stabilization ponds at Chokera, Faisalabad, Pakistan. Average temperatures varied between 26.9°C and 40.5°C in summer and 4.1°C and 19.4°C in winter. The climate is semi-arid with hot and humid summers and dry cool winters. Rainfall pattern was similar each year throughout the treatment period, with two rainy seasons, i.e., Monsoon during summer (June – August) and Western Disturbances during winter (December – February). The average rainfall over the study period was 346 ± 68 mm.

**Location**  
The FTWs were applied in the wastewater stabilization ponds at Chokera, Faisalabad, Pakistan. Geographically Faisalabad is situated between 73° to 74° E and 30° to 31.5° N with an elevation of 604 feet above sea level. The primary and secondary ponds have 26,460 and 149,666 m² area, 2.5 and 1.5 m depth, 2.5- and 4.86-days of hydraulic retention time, 0.05 and 0.035 m s⁻¹ water flow, and 66,150 and 224,199 m³ capacity, respectively.

**Access and import/export**  
The FTWs were applied in the wastewater stabilization ponds at Chokera, Faisalabad, Pakistan. All the analyses were carried out in our labs at NIBGE, located in the same city and no import/export of samples was made.

**Disturbance**  
There was no disturbance by this study as our applied FTWs were floating in nature, it does not disturb the flow of water. Moreover, the ratio of FTWs to pond surface area was 0.035, it does not affect the aeration and sunlight penetration in ponds. Also application of FTWs improved the beautification of the site.

**Reporting for specific materials, systems and methods**

We require information from authors about some types of materials, experimental systems and methods used in many studies. Here, indicate whether each material, system or method listed is relevant to your study. If you are not sure if a list item applies to your research, read the appropriate section before selecting a response.
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