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**The Ganges–Brahmaputra–Meghna delta system:
biophysical models to support analysis of ecosystem
services and poverty alleviation**

Robert J. Nicholls, Paul Whitehead, Judith Wolf,
Munsur Rahman and Mashfiqus Salehin

Introduction to the ESPA deltas themed issue of
Environmental Science: Processes & Impacts.

1018

**Agricultural livelihoods in coastal Bangladesh under
climate and environmental change – a model framework**

A. N. Lázár,* D. Clarke, H. Adams, A. R. Akanda, S. Szabo,
R. J. Nicholls, Z. Matthews, D. Begum, A. F. M. Saleh,
Md. A. Abedin, A. Payo, P. K. Streatfield, C. Hutton,
M. S. Mondal and A. Z. Md. Moslehuddin

We describe a novel integrated modelling system aiming to
approximate the impact of environmental change on farmers'
livelihoods in Bangladesh.

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A review of arsenic and its impacts in groundwater of the Ganges–Brahmaputra–Meghna delta, Bangladesh

W. M. Edmunds,* K. M. Ahmed and P. G. Whitehead

Arsenic in drinking water is the single most important environmental issue facing Bangladesh; between 35 and 77 million of its 156 million inhabitants are considered to be at risk from drinking As-contaminated water.

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Temperature and precipitation projections over Bangladesh and the upstream Ganges, Brahmaputra and Meghna systems

J. Caesar,* T. Janes, A. Lindsay and B. Bhaskaran

High resolution climate change simulations for south Asia are evaluated and show the changes projected during the 21st century.

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Impacts of climate change and socio-economic scenarios on flow and water quality of the Ganges, Brahmaputra and Meghna (GBM) river systems: low flow and flood statistics

P. G. Whitehead,* E. Barbour, M. N. Futter, S. Sarkar, H. Rodda, J. Caesar, D. Butterfield, L. Jin, R. Sinha, R. Nicholls and M. Salehin

The potential impacts of climate change and socio-economic change on flow and water quality in rivers worldwide is a key area of interest.

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Rainfall runoff modelling of the Upper Ganga and Brahmaputra basins using PERSiST

M. N. Futter,* P. G. Whitehead, S. Sarkar, H. Rodda and J. Crossman

While tensions exist between parsimony and completeness, it appears that structural uncertainty is more important than parameter equifinality in controlling rainfall-runoff model performance.

Dynamic modeling of the Ganga river system: impacts of future climate and socio-economic change on flows and nitrogen fluxes in India and Bangladesh

P. G. Whitehead,* S. Sarkar, L. Jin, M. N. Futter, J. Caesar, E. Barbour, D. Butterfield, R. Sinha, R. Nicholls, C. Hutton and H. D. Leckie

This study investigates the potential impacts of future climate and socio-economic change on the flow and nitrogen fluxes of the Ganga river system.

Assessing the impacts of climate change and socio-economic changes on flow and phosphorus flux in the Ganga river system

L. Jin,* P. G. Whitehead, S. Sarkar, R. Sinha, M. N. Futter, D. Butterfield, J. Caesar and J. Crossman

Anthropogenic climate change has impacted and will continue to impact the natural environment and people around the world.

Changes in mangrove species assemblages and future prediction of the Bangladesh Sundarbans using Markov chain model and cellular automata

Anirban Mukhopadhyay,* Parimal Mondal, Jyotiskona Barik, S. M. Chowdhury, Tuhin Ghosh and Sugata Hazra

The composition and assemblage of mangroves in the Bangladesh Sundarbans are changing systematically in response to several environmental factors.

Simulating yield response of rice to salinity stress with the AquaCrop model

M. Shahjahan Mondal,* Abul Fazal M. Saleh, Md. Abdur Razzaque Akanda, Sujit K. Biswas, Abu Zofar Md. Moslehuddin, Sinora Zaman, Attila N. Lazar and Derek Clarke

The AquaCrop model is parameterized and tested under a saline environment to evaluate the potential impact of hydro-climatic changes on rice production.

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Projections of on-farm salinity in coastal Bangladesh

D. Clarke,* S. Williams, M. Jahiruddin, K. Parks
and M. Salehin

Salty soil in Bangladesh.

1137

Research highlights: natural passive samplers – plants as biomonitors

Vivian S. Lin*

This Highlight presents several recent publications that demonstrate how plant biomonitoring can be used to map the distribution of a variety of pollutants and identify their sources.

1141

On-water remote monitoring robotic system for estimating the patch coverage of *Anabaena* sp. filaments in shallow water

E. Romero-Vivas, F. D. Von Borstel, C. J. Pérez-Estrada,
D. Torres-Ariño, J. F. Villa-Medina and J. Gutiérrez*

An on-water remote monitoring system is implemented to estimate the patch coverage of *Anabaena* sp. preventing damage in shallow water.

1150

The potential effects of phytoplankton on the occurrence of organochlorine pesticides (OCPs) and polycyclic aromatic hydrocarbons (PAHs) in water from Lake Taihu, China

Zhonghua Zhao, Lu Zhang,* Jianming Deng
and Jinglu Wu

Seasonal distribution of organochlorine pesticides (OCPs) and polycyclic aromatic hydrocarbons (PAHs) and their possible interactions with phytoplankton species in water from Lake Taihu were investigated.

1157

Export of radioactive cesium from agricultural fields under simulated rainfall in Fukushima

Phong K. Thai, Yuma Suka, Masaru Sakai, Kazuki Nanko, Jui-Hung Yen and Hirozumi Watanabe*

The first detailed investigation of the radioactive cesium export process from upland fields under simulated rainfall in Fukushima.

1164

Submicron fungal fragments as another indoor biocontaminant in elementary schools

SungChul Seo, Yeong Gyu Ji, Young Yoo, Myung Hee Kwon and Ji Tae Choung*

There has been great concern about mold in school environments, but few comprehensive assessments of mold have been performed in such settings.

1173

Impact of activated carbon on the catabolism of ¹⁴C-phenanthrene in soil

Ayodeji O. Oyelami, Uchenna Ogbonnaya, Chitom Muotoh and Kirk T. Semple*

Activated carbon amendment to contaminated soil has been proposed as an alternative remediation strategy to the management of persistent organic pollutant in soils and sediments.

1182

Prevalence of antibiotic-resistant bacteria in a lake for the storage of reclaimed water before and after usage as cooling water

Yu-Chen Pang, Jin-Ying Xi,* Guo-Qiang Li, Xiao-Jie Shi and Hong-Ying Hu*

Wastewater reclamation and reuse is a promising way to relieve water scarcity by substituting for natural water consumption by industrial cooling.

1190

Passive sampling for volatile organic compounds in indoor air-controlled laboratory comparison of four sampler types

Todd McAlary,* Hester Groenevelt, Stephen Disher, Jason Arnold, Suresh Seethapathy, Paolo Sacco, Derrick Crump, Brian Schumacher, Heidi Hayes, Paul Johnson and Tadeusz Górecki