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The Utilisation of International Watercourses from an International Environmental Law Perspective

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Abstract

The international watercourse concept is one of the multilateral commitments to maintain water quality and control the utilisation of water. This concept aims to provide preventive measures for water pollution caused by the international community. With the importance of industrialisation, economic activities and uncontrolled use of water significantly impact water quality being polluted and resulting in reduced water discharge. Problems and conflicts will arise if there is an action from one of the States or the international community that violates international provisions. This research uses the normative legal research method. This study aims to examine and criticise forms of violations against international watercourses and discuss them from a legal perspective related to dispute settlement. The findings show that States must act in a fair and equitable manner in the utilisation of international watercourses, and prevent significant harm. Breaches of such obligations require compensation as a form of responsibility.

Author keywords

international environmental law; international watercourses; legal perspective; Water utilisation

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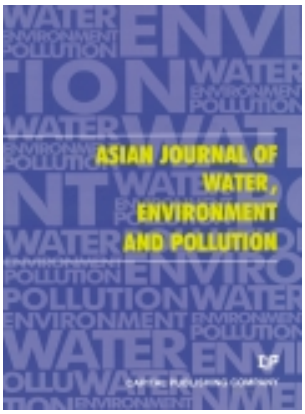

Asia, as a whole region, faces severe stress on water availability, primarily due to high population density. Many regions of the continent face severe problems of water pollution on local as well as regional scale and these have to be tackled with a pan-Asian approach. However, the available literature on the subject is generally based on research done in Europe and North America. Therefore, there is an urgent and strong need for an Asian journal with its focus on the region and wherein the region specific problems are addressed in an intelligent manner.

In Asia, besides water, there are several other issues related to environment, such as; global warming and its impact; intense land/use and shifting pattern of agriculture; issues related to fertilizer applications and pesticide residues in soil and water; and solid and liquid waste management particularly in industrial and urban areas. Asia is also a region with intense mining activities whereby serious environmental problems related to land/use, loss of top soil, water pollution and acid mine drainage are faced by various communities.

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Abstract: During refining operations, desalting wastewater provides 10-30% of the total wastewater volumes and contains 40-70% of the pollutants in the wastewater treatment unit. Desalting consists of removing impurities from the crude oil with washing water. The discharge of treated water into the receptor environment is controlled according to standards regulation. However, due to human health and environmental risks, a multi-criteria and multi-stage analysis must be carried out. This present study aims to identify critical sources of wastewater treatment impacts from desalting operations. Life cycle assessment (LCA) with LCIA methods namely Recipe, CML-IA, TRACI, and USETOX were used in Gabi Software. ... Show more

Keywords: Life cycle assessment, wastewater, desalting process, refinery

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Article Type: Research Article

Abstract: Tea gardens are facing water scarcity; moreover, their irrigation utilises overhead sprinklers, which lack uniformities and controlled irrigation methods. Evaluating the performance of drip irrigation is an important research area for better water resources management. To address these issues different drip irrigation methods have been experimented with having different combinations of drippers. Two plots are online drip systems while the other two are inline systems operated at the same pressure on water application uniformity while other conditions remain similar. Earlier studies witnessed experimentation of drip irrigation with only the same emitter flow. While in this research, the uniformity coefficient, emission ... Show more

Keywords: Drip irrigation, uniformity coefficient, emission uniformity, performance, flow rate

DOI: 10.3233/AJW230003

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Article Type: Research Article

Abstract: Floods are the most dangerous and detrimental hazards in Nepal. Communities inhabiting the Narayani basin are getting affected by floods every year. However, no studies have been conducted to analyze the existing early warning system's functional capacity and community feedback. Literature on disasters and calamities indicates that an efficient and effective flood early warning system is crucial for making communities flood resilient but we note that unless 'community capacity for response' is also strengthened, early warning technology alone cannot protect against losses and damages. Employing a qualitative approach, we explored the existing status of a community-based flood early warning system, ... Show more

Keywords: Flood, climate, EWS, Nepal

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IoT Based System for Sewage Overflow Prevention using Heterogeneous Communication Networks (https://content.iospress.com:443/articles/asian-journal-of-water-environment-and-pollution/ajw230005)

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Article Type: Research Article

Abstract: The increasing population along with water scarcity give rise to water management practices. Water scarcity can be eradicated by wastewater treatment that would in turn prevent contamination of water bodies. One of the challenges in wastewater treatment is to efficiently transport and treat the sewage in a Sewage Treatment Plant (STP). Most of the existing STPs in closed campuses of Indian scenarios such as

academic institutions, industries, and residential apartments employ several pumping stations in a campus and pump motors in each station that pump sewage to STP for treatment. Manual operation of such motors would lead to sump overflows ... Show more

Keywords: IoT, sewage treatment plant, sewage overflows, communication networks, cloud storage, gateway

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The Utilisation of International Watercourses from an International Environmental Law Perspective (https://content.iospress.com:443/articles/asian-journal-of-water-environment-and-pollution/ajw230006)

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Keywords: Water utilisation, international watercourses, international environmental law, legal perspective

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Enviro-Health Dimensions of Environment Impact Assessment (EIA) Draft Notification 2020 and COVID-19 Pandemic (https://content.iospress.com:443/articles/asian-journal-of-water-environment-and-pollution/ajw230007)

Authors: Nomani, M.Z.M. (https://content.iospress.com:443/search?q=author%3A%28%22Nomani%2C+M.Z.M.%22%29)

Article Type: Research Article

Abstract: The enviro-health dimensions of the Environment Impact Assessment (EIA) Draft Notification 2020 and the COVID-19 pandemic in India needs dispassionate reading despite its criticism of being medically motivated and relaxing public scrutiny of B2 projects. The EIA law began in 1994 has finished 25 years of its authorisation and work in 2019. The EIA law encouraged excellent administration and ecological equity. The EIA law is in the constant deluge of experimentation, as evident from the 55-time changes and 230 government circulars from 2006-2021. The EIA Notification, 2006, has intensified the disarray and alteration in EIA law arrangement. The salubrious enactment ... Show more

Keywords: Enviro-health, EIA law, environmental benchmarking, medicinal projects, fast track clearances, COVID-19

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Reduction of Chromium in Waste Water From Hard Chrome Plating Processes: A Review (https://content.iospress.com:443/articles/asian-journal-of-water-environment-and-pollution/ajw230008)

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Abstract: Waste water from hard chrome is considered to be highly toxic due to the presence of chromium ions in hexavalent form and this hexavalent state of chromium is more toxic to animals and humans due to its ability to produce reactive oxygen species in cells. Such heavy metals are considered as carcinogenic to living organisms and hence either reduction of ions to trivalent chromium or removal of ions has to be done before ejecting the waste water into the environment. Many processes for reduction, neutralisation and removal of hexavalent chromium have been investigated and reviewed extensively. In the present review, ... Show more

Keywords: Hexavalent chromium, waste water, hard chrome, chrome plating, adsorbents

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Article Type: Research Article

Abstract: As the world's population is increasing, the demand for food is also increasing. Drying techniques increase the life and quality of crop and industrial food products. It also improves the economic condition of farmers. Drying reduces the water stored within the product by evaporation. It can be done by the use of conventional energy and different methods. Sun radiation is used for open sun drying around the globe. Open sun drying has many disadvantages in comparison to other drying techniques. Solar drying is comparatively clean and effective. Solar dryers are of mainly four types: 1) direct solar dryer; 2) indirect ... Show more

Keywords: Drying, solar dryers, greenhouse drying, photovoltaic thermal (PVT), conventional PVT systems

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Measurement of Tritium Activity Concentrations in Water Samples of Al-Amara City in Misan Province-Iraq, using Liquid Scintillation Counter (https://content.iospress.com:443/articles/asian-journal-of-water-environment-and-pollution/ajw230010)

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Article Type: Research Article

Abstract: This research work aims to measure the concentration of tritium activity in the Tigris river and samples of tap water collected from different places of Al-Amara city in Misan province using a Tri-Carb 3110TR liquid scintillation counter (LSC) and to calculate an annual effective dose due to the ingestion of water samples. The mean values of the tritium activity concentrations measured in the water samples were 0.562 ± 0.126 Bq/L (4.763 ± 1.075TU) and 0.521 ± 0.060 Bq/L (4.422 ± 0.512TU) for Tigris River and tap water samples, respectively. The mean annual effective doses are given to the infants, children ... Show more

Keywords: Tritium, LSC, Tigris river water, tap water, annual effective dose, Al-Amara City

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The Utilisation of International Watercourses from an International Environmental Law Perspective

Article type: Research Article

Authors: Trihastuti, Nanik (https://content.iospress.com:443/search?q=author%3A%28%22Trihastuti, Nanik%22%29)[*] | Hananto, Pulung Widhi Hari (https://content.iospress.com:443/search?q=author%3A%28%22Hananto, Pulung Widhi Hari%22%29) | Kandou, Daniel Rene (https://content.iospress.com:443/search?q=author%3A%28%22Kandou, Daniel Rene%22%29)

Affiliations: Faculty of Law, Universitas Diponegoro, Semarang, Indonesia

Correspondence: [*] Corresponding Author. naniktrihastuti@gmail.com (mailto:naniktrihastuti@gmail.com)

Abstract: The international watercourse concept is one of the multilateral commitments to maintain water quality and control the utilisation of water. This concept aims to provide preventive measures for water pollution caused by the international community. With the importance of industrialisation, economic activities and uncontrolled use of water significantly impact water quality being polluted and resulting in reduced water discharge. Problems and conflicts will arise if there is an action from one of the States or the international community that violates international provisions. This research uses the normative legal research method. This study aims to examine and criticise forms of violations against international watercourses and discuss them from a legal perspective related to dispute settlement. The findings show that States must act in a fair and equitable manner in the utilisation of international watercourses, and prevent significant harm. Breaches of such obligations require compensation as a form of responsibility.

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IoT Based System for Sewage Overflow Prevention using Heterogeneous Communication Networks

Article type: Research Article

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Affiliations: Department of CSE, Sri Sivasubramaniya Nadar College of Engineering, Chennai, Tamil Nadu, India

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Abstract: The increasing population along with water scarcity give rise to water management practices. Water scarcity can be eradicated by wastewater treatment that would in turn prevent contamination of water bodies. One of the challenges in wastewater treatment is to efficiently transport and treat the sewage in a Sewage Treatment Plant (STP). Most of the existing STPs in closed campuses of Indian scenarios such as academic institutions, industries, and residential apartments employ several pumping stations in a campus and pump motors in each station that pump sewage to STP for treatment. Manual operation of such motors would lead to sump overflows that negatively impact public health and sanitation. Therefore, an IoT-based system for monitoring and controlling sewage flow is proposed in this paper that uses water level sensors and prevents sewage overflows in pumping station sumps, resulting in the utilisation of all the collected sewage for treatment. Since each campus might have different communication networks such as GPRS, WiFi, RF, or Ethernet, the proposed system is designed to work with any network. The proposed system was tested in the college campus with three pumping stations. Moreover, a test bed was simulated and tested with 100 pumping stations. It is observed that the proposed approach prevents sewage overflows in various scenarios with different constraints.

Keywords: IoT, sewage treatment plant, sewage overflows, communication networks, cloud storage, gateway

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What is it about?

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