



ИННОВАЦИОННЫЕ ПОДХОДЫ К РЕШЕНИЮ СОВРЕМЕННЫХ ПРОБЛЕМ: КОМПЛЕКСНЫЙ АНАЛИЗ И ПРАКТИЧЕСКАЯ РЕАЛИЗАЦИЯ

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[14]. Vandenhove H, Olyslaegers G, Sanzharova N, Shubina O, Reed E, Shang Z, Velasco H (2009) Proposal for new best estimates of the soil to plant transfer factor of U, Th, Ra, Pb and Po. *Journal of Environmental Radioactivity* 100: 721–732.

[15]. Luu Viet Hung (2014), Research on the process of accumulation of uranium, thorium and some other radioactive isotopes from soil into plants, Doctoral thesis in Environmental Science, University of Natural Sciences, National University Hanoi family.

[16]. Pew Basu, R. Sarangapani, K. Sivasubramanian, B. Venkatraman (2015), "Estimation of annual effective dose rate due to the ingestion of the primordial radionuclide ^{40}K for the population around the Kalpakkam nuclear site, Tamil Nadu, India", *Radiation Protection and Environment*, 38(1&2), 14 - 22.

[17]. Yadav P., Garg V. K., Balvinder Singh, Vandana Pulhani, Suman Mor (2017), Transfer Factors and Effective Dose Evaluation Due to Natural Radioactivity in Staple Food Grains from the Vicinity of Proposed Nuclear Power Plant, *Exposure and Health*, 10(1), 27–39.

[18]. Tettey - Larbi, L., Darko, E. O., Schandorf, C. & Appiah, A. A. (2013), "Natural radioactivity levels of some medicinal plants commonly used in Ghana", *Springer Plus*, 2(1), 157.

[19]. L.T. Anh, P.V. Cuong, N.C. Tam, N.H. Ha, H.T. Thao, H.H. Duc, S. Leuangtakoun, L.Q. Viet, B.V. Loat, A development for determining the activity of radionuclides in the environmental sample by HPGe γ - spectroscopy using only one absolute efficiency value and an intrinsic efficiency curve, *Nuclear Inst. and Methods in Physics Research*, A. (941) (2019) 162305.

[20]. IUR. International Union of Radioecologists: VIth annual report of the working group on soil - to - plant transfer, Published by RIVM, Bilthoven, 1989, the Netherlands.

[21]. Mortvedt J.J. Plant and soil relationships of uranium and thorium decay series radionuclides - A review. *Journal of Environmental Quality*, 1994, 23, 643–650.

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APPLICATION OF CLOUD COMPUTING TECHNOLOGY IN THE ASSESSMENT AND MANAGEMENT OF WATER QUALITY IN THE BA CHE RIVER, BA CHE DISTRICT, QUANG NINH PROVINCE

Annotation

In the context of rapid urbanization and industrialization occurring in Ba Che District, the water quality of the Ba Che River has been increasingly affected by wastewater from

both industrial activities and daily domestic use. In recent years, reports on the water quality of the Ba Che River from Quang Ninh Province have indicated signs of pollution, with consistently high concentrations of organic substances exceeding national standards. In addition to conventional monitoring systems, remote sensing technology has emerged as an effective tool for studying and assessing water quality, offering continuous, standardized, and spatially extensive data. Therefore, this study applied cloud computing technology using the Google Earth Engine (GEE) platform to evaluate the water quality of the Ba Che River through the assessment of the Biological Oxygen Demand (BOD) index. The results show that the downstream area of the Ba Che River has higher BOD levels compared to the midstream and upstream sections.

Keywords

BOD, Ba Che River, Water Quality, Remote Sensing

1. Introduction

Water is an essential element indispensable to the biochemical processes of living organisms. It also plays a critical role in various socio - economic activities such as agriculture, industry, and animal husbandry. However, with the advancement of human development, the water demand has been steadily increasing, accompanied by the discharge of large volumes of pollutants into water sources. This has led to significant changes in the chemical, physical, and biological properties of water, rendering it unsuitable for many intended uses.

In many countries worldwide—particularly in Asia—surface water pollution is becoming increasingly severe. Vietnam is among the Asian countries identified by UNICEF as facing serious river pollution [1]. Pollution in urban rivers, particularly in major cities such as To Lich River, Kim Nguu River (Hanoi), Ngu Huyen Khue River in Cau River basin, Tan Hoa - Lo Gom Canal, Tau Hu - Ben Nghe Canal in Dong Nai River basin, has become a significant environmental concern [2]. Environmental pollution in these rivers primarily stems from organic and eutrophic contaminants. Heavy metals, pesticides, high total suspended solids (TSS), and turbidity have also been detected in certain areas, exceeding the permissible standards.

Ba Che River is one of the major rivers of Quang Ninh province. Originating from Dong Son commune, Hoanh Bo district (now Dong Son commune, Ha Long city), the river meanders northeast through Ba Che district and flows into the sea. It spans approximately 80 kilometers in length. Ba Che River plays an important role in supplying water for domestic use, agriculture, and industrial activities. The river also supports the development of waterway transport, contributes to flood control during the rainy season, and serves as a natural conduit for wastewater discharge in the Ba Che district. Ba Che district has significant potential for economic development and serves as a candidate location for the relocation of industrial facilities from Cam Pha city and Ha Long city. The district has recently experienced population growth and a structural shift from agriculture to non - agricultural sectors. Furthermore, the local government is actively developing and expanding three industrial clusters (ICs), including Nam Son IC, Dap Thanh IC,

and Thanh Lam IC. According to the 2024 socio - economic report, the industry - construction sector increased by 26,3 %, the agriculture–forestry–fishery sector by 14,7 %, and the service sector by 18,2 %.

However, the process of urbanization and industrialization of economic development often entails adverse environmental impacts, particularly from pollutants released through domestic, industrial, and commercial wastewater. The results of periodic monitoring of the water quality in the Ba Che, specifically at surface water monitoring stations located downstream from the confluence with the Nam Kim River in Nam Son Commune, have revealed exceedances of environmental standards. At least one parameter of TSS, COD, or Chloride (Cl⁻) exceeds 1,1 to 9 times the permissible concentration limit according to QCVN 08:2023 / BTNMT [4].

Thus, it can be seen that the water quality of Ba Che River is deteriorating and showing signs of pollution. Therefore, the monitoring and management of water quality, as well as the evaluation of pollutant dynamics and their environmental impacts on the Ba Che River, are critically important. Water quality monitoring includes collecting and assessing chemical, physical, and biological parameters of water sources and the causes of changes in water quality [5]. This water quality monitoring can be done using many different techniques, such as observation methods, sampling, and analysis at the scene. This method can allow the generation of accurate data but is time - consuming, laborious, costly, and discontinuous, limited by the choice of the number of sampling points and locations [6]. Remote sensing technology is a solution to help solve these limitations due to its ability to provide continuous information, as well as the ability to calculate basic water quality parameters through empirical algorithms. Currently, developed countries are using this method effectively to monitor water quality parameters [7].

The objective of this study is to use the Sentinel - 2 remote sensing image dataset based on the Google Earth Engine cloud computing platform to estimate the BOD index based on the empirical equation [8], thereby zoning and assessing the water quality of Ba Che River, the section flowing through Ba Che district.

2. Research Methods

2.1 Study Area and Research Data

The selected study area is Ba Che District, located in the northeastern part of Quang Ninh province, Vietnam, with geographic coordinates from 20°7'40" to 21°23'15" North latitude and 107°58'5" to 107°22'00" East longitude. The research focuses on the Ba Che River segment that flows through Ba Che District. This is the principal and largest watercourse within the district's river and stream system. The water quality of the Ba Che River not only directly affects the health and livelihoods of local residents but also has significant implications for the regional ecosystem and the sustainable development of the area.

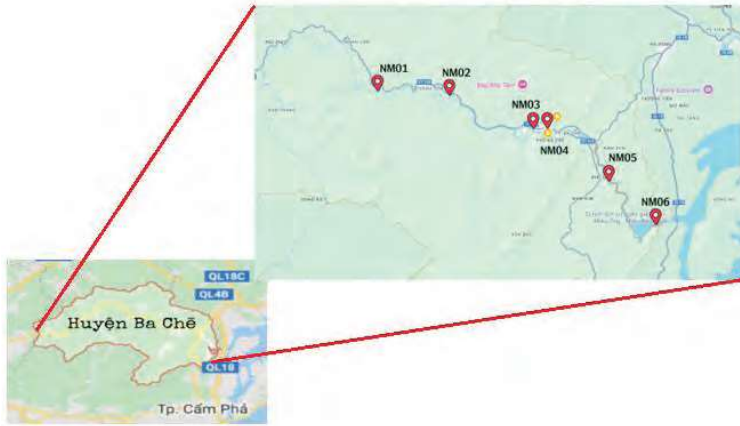


Figure 1. Map of the study area and the Ba Che river basin

The data used in this study consists of the Sentinel - 2 satellite imagery dataset that has undergone radiometric, atmospheric, and geometric corrections. The images are projected onto the UTM / WGS84 coordinate system, with spatial resolutions available at 10 m, 20 m, and 60 m across different spectral bands.

2.2 Remote sensing image processing

For the study area, a full set of satellite images covering Ba Che District was selected annually from 2020 to 2022. The imagery was filtered based on cloud cover (less than 10 %) and clipped to the administrative boundaries of Ba Che District. The selected images for each year were composited into a single representative image, where the pixel values were calculated using the median function—representing the median pixel value across all selected scenes. All spectral bands in the composite image were resampled to a unified spatial resolution of 10 meters and projected in the UTM coordinate system.

The Modified Normalized Difference Water Index (MNDWI), which is used to assess the spatial distribution of surface water, was calculated using the following formula:

$$MNDWI = \frac{GREEN - SWIR1}{GREEN + SWIR1} \quad (1)$$

In which:

- GREEN - the reflectance value of the green band (Band 3);
- SWIR1 - the reflectance value of the shortwave infrared band (Band 11).

The river area was delineated based on the condition $MNDWI > 0$.

The Biochemical Oxygen Demand (BOD) in surface water was estimated using the empirical formula developed by Wang et al. [8], as follows:

$$BOD = 1.79 - 0.789 * BLUE + 52.36 * GREEN - 3.28 * RED \quad (2)$$

Where:

- BLUE is the reflectance value of the blue band (Band 2);
- GREEN is the reflectance value of the green band (Band 3);
- RED is the reflectance value of the red band (Band 4).

3. Results and Discussion

The study analyzed changes in BOD levels using Sentinel imagery for the years 2020 and 2022. In addition, satellite image processing and BOD estimation were conducted for specific time intervals: January and February 2022, corresponding to the first water quality monitoring campaign 2022, and June to August 2022, corresponding to the second water quality monitoring campaign of the same year.

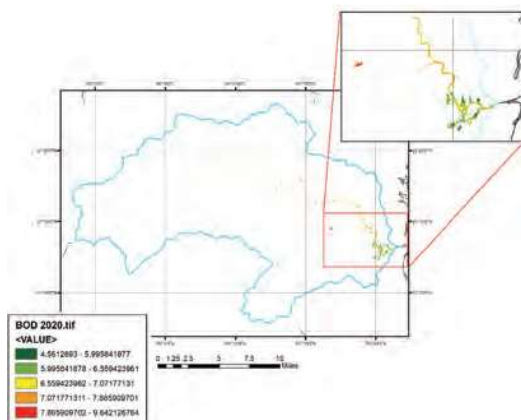


Figure 2. BOD Index of the Ba Che River in Ba Che District, 2020

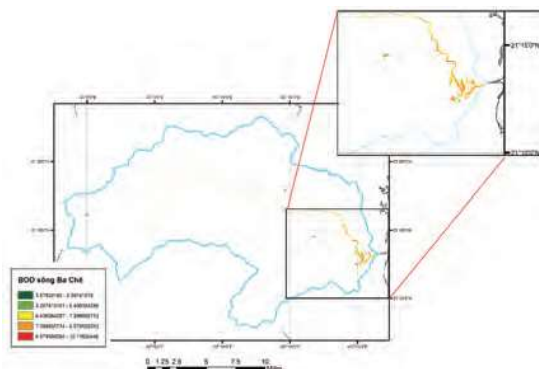


Figure 3. BOD Index of the Ba Che River in Ba Che District, 2022

The results of BOD concentration estimation using Sentinel - 2 satellite imagery indicate acceptable levels of accuracy and consistency. The coefficient of determination (R^2) reached 0,54, while the root mean square error (RMSE) was 1,83. A comparison between satellite - derived estimates and actual in - situ water quality monitoring data shows reasonable agreement.

The findings reveal that the BOD₅ index in 2022 exhibits an increasing trend compared to 2020, particularly in the middle and lower reaches of the Ba Che River. Multiple times, BOD₅ concentrations exceeded the permissible limits specified in QCVN 08:2023 /

BTNMT – Vietnam Technical Regulation on Surface Water Quality, Table 2, Column A. This trend may be attributed to the region's economic development, as these areas serve as the district's primary hubs for socioeconomic activities.

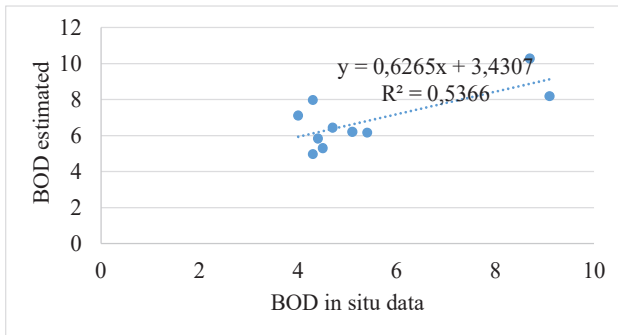


Figure 4. The statistical relationship between estimated BOD and in situ data

$$RMSE = \sqrt{\frac{1}{n} \sum_{i=1}^n (x - \hat{x})^2} = 1,83$$

It can be observed that spatial modeling in relation to current water quality conditions has not yet been widely adopted and remains a technique with certain limitations in terms of accuracy. The processing of satellite imagery over a defined time period also faces constraints due to objective factors such as image quality and cloud cover. However, by integrating in - situ monitoring data with satellite - derived information, this study demonstrates the potential application of spatial modeling—specifically in assessing biochemical oxygen demand (BOD)—in the context of the Ba Che River area, Quang Ninh Province. The results indicate that combining experimental methods with spatial modeling can provide more detailed evaluations, as well as a continuous and visualized source of data for assessing and monitoring water quality in the Ba Che River. Furthermore, future research may incorporate deeper investigations into parameters such as temperature, dissolved oxygen, and total suspended solids, or employ machine learning techniques to evaluate and monitor water quality indicators.

4. Conclusion

The Ba Che River plays a vital role in providing water for domestic use, agricultural, and industrial production. It also contributes to the development of waterway transport, regulates water flow during the rainy season, and facilitates wastewater drainage within Ba Che District. Socio - economic activities in the region are concentrated in the lower reaches of the Ba Che River, leading to water pollution, as evidenced by data obtained from actual monitoring observations.

This study analyzed variations in biochemical oxygen demand (BOD) using remote sensing methods, specifically employing Sentinel - 2 satellite imagery and cloud computing technologies to estimate BOD values based on the empirical formula developed by Wang et al. A coefficient R^2 was 0,54 and a root mean square error (RMSE) was 1,83 between the estimated BOD values and the in situ data.

Based on the research findings, we advocate for the application of remote sensing techniques in water quality monitoring. This approach offers a comprehensive and continuous perspective, with accessible online datasets that can be seamlessly integrated with satellite imagery.

References

1. Hanoi Department of Health, Report on Water Quality at Centralized Water Supply Stations in Suburban Districts of Hanoi. 2010: Hanoi.
2. Environment, M.o.N.R.a., National Environmental Status Report for the Period 2016–2020. 2020: Dan Tri Publishing House. p. 191.
3. UNICEF, Policy Brief on Water, Sanitation and Hygiene in Viet Nam. 2020.
4. Office, Q.N.P.S., Quang Ninh Statistical Yearbook 2023. 2024, Statistical Publishing House: Quang Ninh.
5. Abdullah, H.S., M.S. Mahdi, and H.M. Ibrahim, Water quality assessment models for Dokan Lake using Landsat 8 OLI satellite images. Journal of Zankoy Sulaimani, Pure and Applied Sciences, 2017. 19(4): p. 25 - 44.
6. Hajigholizadeh, M., A. Moncada, S. Kent, and A.M. Melesse, Land-lake linkage and remote sensing application in water quality monitoring in lake okeechobee, florida, usa. Land, 2021. 10(2): p. 147.
7. Gholizadeh, M.H., A.M. Melesse, and L. Reddi, A comprehensive review on water quality parameters estimation using remote sensing techniques. Sensors, 2016. 16(8): p. 1298.
8. Wang, Y., H. Xia, J. Fu, and G. Sheng, Water quality change in reservoirs of Shenzhen, China: detection using LANDSAT / TM data. Science of the total Environment, 2004. 328(1 - 3): p. 195 - 206.

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ASSESSING VULNERABILITY TO LANDSLIDE, SUBSIDENCE, AND FLOOD HAZARDS: A REVIEW OF METHODS AND RESEARCH TRENDS

Annotation

Landslides, ground subsidence, and floods pose growing threats to human life and infrastructure, particularly under the accelerating impacts of climate change. This study

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