



Conference Abstract

9th Holy Qur'an and Science Conference, Mini Conference (Virtual) - 2022

Saturday, December 31, 2022 11:00 AM to 1:10 PM

Mississauga ON Canada.



Conference Abstract

CLIMATE CHANGE IMPACTS ASSESSMENTS AND MIGRATION STRATEGIES FOR SUSTAINABLE AGRICULTURAL MANAGEMENT IN THE PRINCE EDWARD ISLAND

Ahmad Zeeshan Bhatti

Postdoctoral Fellow/Sessional Instructor, University of Prince Edward Island, Charlottetown, PE, C1A 4P3, Canada

The phenomenal speaker present this research in 9th International The Holy Quran & Science Conference and Exhibition-2022, held in Mississauga ON Canada. The Conference Abstract is published on behalf of the decision of accepting and approval of Conference Organizing Committee.

History:

Received: December 16, 2022
Reviewed: December 21, 2022
Accepted: December 27, 2022
Published: December 30, 2022
Collection year: 2022
Status: Published

Identifiers and Pagination:

Year: 2022
Volume: 7
First Page: 18
Last Page: 19
Publisher ID: 1925-7430.13.19
doi:
<http://dx.doi.org/10.21065/1925-7430.13.18>

Correspondence:

Ahmad Zeeshan Bhatti PhD,
Postdoctoral Fellow/Sessional
Instructor, University of Prince
Edward Island, Charlottetown, PE,
C1A 4P3, Canada +1 (647) 778-
5692, E.:
national.talim.department@gmail.com

ABSTRACT

Rainfed agriculture in Prince Edward Island is affected by climatic changes like warming, seasonal shifts, varying precipitations, and reduced water availabilities; all questioning its sustainability. Projecting future scenarios was critically important. Therefore spatiotemporal variations in Potential Evapotranspiration (PET), Crop Water Requirements (CWR), Effective Rainfall (ER), Supplemental Irrigation Requirements (SIR), and Sustainable Water Availabilities (SWA) were analyzed. Average annual PET was predicted to insignificantly increase (3–6%) under RCP4.5 during the next 30–60 years, with a 2–4 times increase in colder months (January–April) and a significant reduction during August–December. Accordingly, the historical CWR of potatoes (currently ~425 mm) would decrease by 5-9%, except for the least likely RCP8.5 scenario, which projects a ~10% increase in 2051–2080. That, and changes in ER, would cause SIR to decrease to 50–90 mm in normal years but 2–3 times higher during dry years and almost no SIR in wet years. Spatially, SIR increases by ~40 mm from east to west and is expected to be higher in 2021–2050 than in 2051–2080. Monthly SIR ranges in normal years would be July: 02–36 mm, August: 31–48 mm, and September 04–20 mm. The existing water policy allows pumping up to 20% of yearly recharges (annual-SWA) and up to 35% of summer's stream baseflows (summer-SWA). Despite insignificant reductions in annual-SWA (3-17%) for the next 30-60 years, summer-SWA may be reduced by 38-50% due to temporal redistribution. Even in dry years, the reduced amounts would still be sufficient to fulfill SIR in the eastern forest-dominated Bear River watershed and SIR in normal years in the central zone; however, they would not be enough to enable the entire cultivated area of the western zone. In normal years, SIR would consume 5-6%, 27-37%, and 63-79% of annual-SWA in the eastern, central, and western zones, respectively. Sprinkler irrigation to meet SIR is challenging, and more economic evaluations and policy adaptations are needed for

Citation:

Ahmad Zeeshan Bhatti. Climate change impacts assessments and migration strategies for sustainable agricultural management in the Prince Edward Island. 9th The Holy Quran & Science Conference; 2022: Adv J Biomed Sci. Vol. 7: 2022. p. 27-28. doi <http://dx.doi.org/10.21065/1925-7430.13.18>

Conference Secretariat:

10610 Jane Street Maple, ON L6A 3A2 Canada.

Competing Interest

The authors declare no competing interests.

Additional information is available at the end of the article.

sustainable agricultural management.

Keywords: Climate, Migration strategies, Sustainable agricultural management, Prince Edward Island.

Ethics approval and consent to participate: No ethical approval needed for this research work.

Consent for publication: Author is agreed to submit this abstract for publication in this research journal.

Availability of data and materials: The information and data collected and/ or incorporated in this study is included in this manuscript.

Declaration: The abstract is reviewed and accepted by the Conference Organization Committee of 9th The Holy Quran & Science Conference; 2022. The presenter was permitted to share his research after final approval of the committee. The scientific research information was presented at aforesaid event held virtually on December 31, 2022 in Canada. Hence, the journal is publishing this abstract on behalf of the Conference Organization Committee.



© 2022 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

You are free to: Share — copy and redistribute the material in any medium or format. Adapt - remix, transform, and build upon the material for any purpose, even commercially. The licensor cannot revoke these freedoms as long as you follow the license terms. Under the following terms: Attribution - You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any

reasonable manner, but not in any way that suggests the licensor endorses you or your use. No additional restrictions. You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.