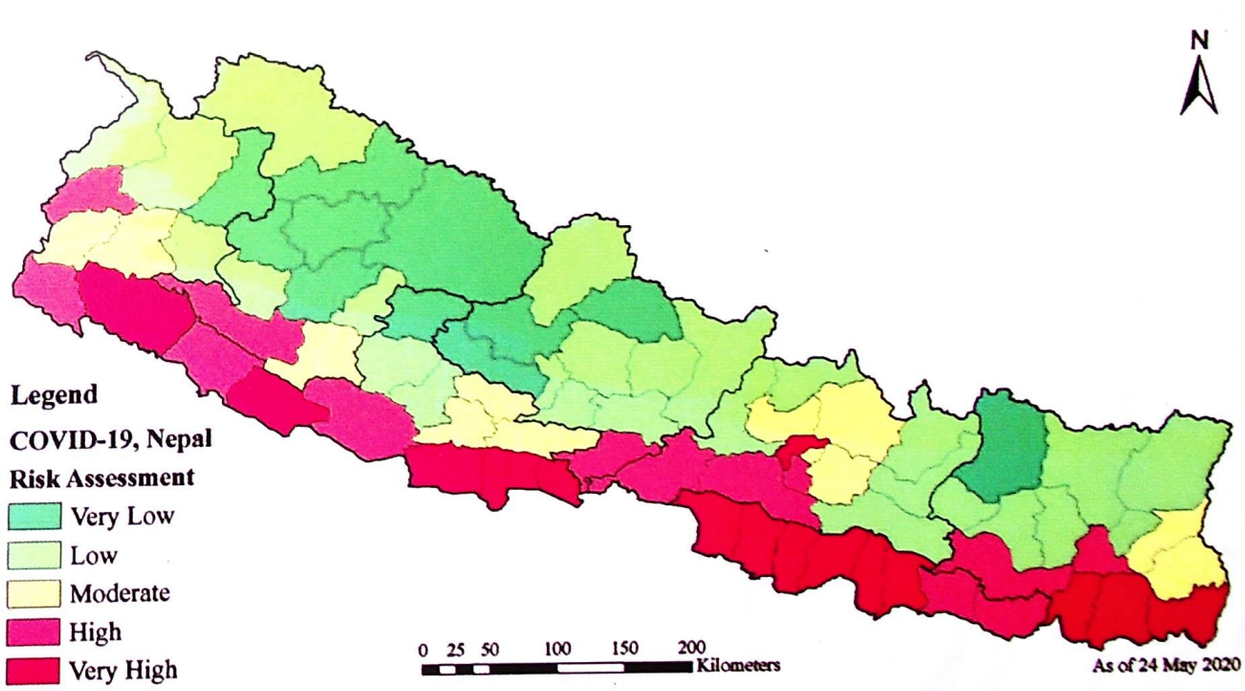
ISSN: 2717-5014 (Print)

An Official Peer-Reviewed and Open Access Journal of Research Centre for Applied Science and Technology, Tribhuvan University, Kathmandu

APPLIED SCIENCE AND TECHNOLOGY ANNALS

Volume 1. Number 1. June 2020



COVID – 19 SPECIAL ISSUE

Published by

Research Centre for Applied Science and Technology (RECAST)
Tribhuvan University, Kirtipur, Kathmandu, Nepal
www.recast.edu.np; E-mail: asta@recast.edu.np, asta@yahoo.com

Applied Science and Technology Annals
Volume 1. No. 1 (COVID-19 Special Issue), June 2020

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Applied Science and Technology Annals. Vol.1, No.1 (2020); 01–08
ISSN: 2717-5014 (Print). Available online at www.recast.tu.edu.np
https://doi.org/10.3126/asta.v1i1.30263

Applied Science & Technology Annals

Research Article

Geospatial mapping of COVID-19 cases, risk and agriculture hotspots in decision-making of lockdown relaxation in Nepal

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Received: May 23, 2020; Accepted: June 14, 2020; Published: June 25, 2020

Abstract: The study has explored the risk scenario *via* geospatial mapping of temporal transmission trend of COVID-19 in 77 districts of Nepal focusing on the district-wise risk analyses based on present active cases, population density and land entry points from neighboring countries. In overall, low to very high risk zones have been identified. Jhapa, Morang and Sunsari districts of Province 1; Dhanusa, Mahottari, Sarlahi, Rautahat, Bara and Parsa districts of Province 2; Kathmandu district of Bagmati Province, Nawalparasi West, Rupandehi, Kapilbastu and Banke districts of Province 5, as well as Kailali of Sudurpanchim Province are identified to have very high risk for COVID-19 spread. The rapid growth in the number of cases has made many districts remarkably susceptible to the infection. The vulnerability analysis has been then followed by identification of agriculture hotspots across the country in terms of major crops. 42 districts with moderate to high crop productivities have been recognized as being not in very high risk zones where the government should allow farmers to do their agriculture activities with well-maintained social distance and other safety precautions. The results when combined would suggest an urgent decision by the Government for gradual lockdown relaxation for agro-economic reinstatement what is commonly called the latent comparative advantage for Nepalese economy after tourism.

Keywords: *COVID-19, GIS, risk analysis, agriculture, lockdown relaxation, agro-economy*

सारांश: यो अनुसन्धानपत्रमा भौगोलिक सूचना प्रणाली (GIS) को प्रयोगद्वारा नेपालका ७७ जिल्लाहरुमा कोभिड - १९ रोगको संक्रमणको आवधिक प्रवृत्तिको लेखाजोखा गरेर संभावित जोखिमको परिदृश्यको आकलन गर्ने प्रयास गरिएको छ । विभिन्न जिल्लामा हाल जानकारीमा रहेका बिरामीको संख्या, जनघनत्व र छिमेकी देशहरुबाट नेपाल आउने प्रवेश बिन्दुमा आधारित भएर जिल्लागत जोखिमको विश्लेषण गरिएको छ । समग्रमा कमदेखि उच्च जोखिममा पर्न सक्ने जिल्लाहरूको पहिचान गरिएको छ । प्रदेश १ मा अवस्थित झापा, मोरंग तथा सुनसरीस प्रदेश २ का धनुषा, महोत्तरी, सर्लाही, रौतहट, बारा र पर्सास वागमती प्रदेशको काठमाडौं तथा प्रदेश ५ का नवलपरासी, रुपन्देहा पश्चिम, कपिलवस्तु र बाँके तथा सुदुर पश्चिम प्रदेशको कैलाली कोभिड (१९ संक्रमणको धेरै उच्च जोखिमको पहिचान गरिएको छ । संक्रमणको संख्यामा भएको द्रुत वृद्धिले धेरै जिल्लाहरूलाई उल्लेखनिय रुपमा जोखिमयुक्त बनाएको छ । अध्ययनको दोस्रो खन्डमा देशको प्रमुख वालीको सन्दर्भमा देशभरिका कृषि हटस्पटहरूको पहिचान गरेर बालीनालीको अवस्थाको विश्लेषण प्रस्तुत गरिएको छ। मध्यमदेखि उच्च मात्रामा फसल उत्पादकत्व सामर्थ्य भएका तर कोभिड१९ संक्रमणको हिसावले साह्रै उच्च जोखिममा नपर्ने ४२ वटा जिल्ला पहिचान गरिएको छ जहां सरकारले किसानहरूलाई भौतिकसामाजिक दूरी कायम गरी सुरक्षा र सावधानीका साथ कृषि गतिविधि संचालन गर्न सहज गराउनु पर्ने देखिन्छ । नेपालको अर्थतन्त्रमा पर्यटन पछि तुलनात्मक लाभको दृष्टिले धेरै योगदान पुराउने कृषिजन्य कृयाकलापको पुनर्स्थापनाको लागि सरकारले क्रमिक रुपमा लकडाउनलाई खुकुलो बनाउने निती लिनु लाभदायी हुने यो अनुसन्धानको निस्कर्ष छ ।

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