International Geographical Union - Union Géographique Internationale
Commission on Biogeography and Biodiversity C12.03

REPORT OF COMMISSION ACTIVITIES 2020

Submitted to the Secretary-General and Treasurer
International Geographical Union (IGU)
Prof. Dr. R.B. Singh

by

Dr. Suraj Mal
Chair: Commission on Biogeography and Biodiversity
Dr. Maria Bobrowski
Vice-Chair: Commission on Biogeography and Biodiversity

Supported by the steering committee of the
IGU Commission on Biogeography and Biodiversity

Officers:
Chair: Prof. Dr. Suraj Mal, Shaheed Bhagat Singh College, University of Delhi, India, suraj.mal@sbs.du.ac.in
Vice-Chair: Dr. Maria Bobrowski, University of Hamburg, Germany, maria.bobrowski@uni-hamburg.de

Outline

The annual report of our commission, i.e., Biogeography and Biodiversity, is presented in the following five sections:

1. Membership
2. Meetings
3. Networking
4. Publications
5. Archival contributions
6. Productive use of previous IGU grants and continuation

1. Membership

1.1 Steering Committee Members

The following colleagues had been appointed as steering committee members of the IGU Commission on Biogeography and Biodiversity for the period 2016-2020:

Dr. Suraj Mal (Chair), Department of Geography, Shaheed Bhagat Singh College University of Delhi, India. Email: suraj.mal@sbs.du.ac.in

Dr. Maria Bobrowski (Vice-Chair), Department of Geography, University of Hamburg, Bundesstr. 55, 20146 Hamburg, Germany, Ph.: +49 428384911, Email: maria.bobrowski@uni-hamburg.de

Prof. Dr. Kazuharu Mizuno, Department of Geography, Graduate School of Letters, Kyoto University, Japan, Ph. Email: mizuno.kazuharu.7n@kyoto-u.ac.jp.

Prof. Dr. Zerihun Woldu, Department of Plant Biology and Biodiversity Management, Director of Research of Addis Ababa University, College of Natural Sciences, Addis Ababa University, Ethiopia. Email: zerihun_woldu@yahoo.com.

Prof. Dr. Ram Prasad Chaudhary, Emeritus Professor, Tribhuvan University, Kirtipur (TU), Kathmandu, Nepal. Coordinator, MAB Committee, Nepal National Commission for UNESCO. Email: am@cdbtu.wlink.com.np

Prof. Dr. John Sinclair, Natural Resources Institute, University of Manitoba, Winnipeg, Manitoba, Canada, Ph. Email: john.sinclair@umanitoba.ca.

Dr. Harald Pauli, Head of the GLORIA coordination; Austrian Academy of Sciences, Institute for Interdisciplinary Mountain Research & University of Natural Resources and Life Sciences, Vienna (BOKU), Center for Global Change and Sustainability, Vienna, Austria. Email: harald.pauli@oeaw.ac.at.

Prof. Dr. Arkady Tishkov, Russian Academy of Sciences, Institute of Geography, Staromonetny per., 29, Moscow 119017, Russia. E-mail: tishkov@biodat.ru.

Prof. Dr. Monica Dumitrascu, Institute of Geography, Romanian Academy 12, Dimitrie Racovita, sect. 2, Bucharest. Email: stefania_dumitrascu@yahoo.com.

Dr. Ana Sabogal, Pontifical Catholic University of Peru | PUCP, Faculty of Liberal Arts and Humanities, Lima, Lima, Peru, Director Maestria Desarrollo Ambental, Coordinador Sección Geografía en Pontificia Universidad Catolica del Perú, E-mail: asabogal@pucp.pe.

Dr. Maksim Kulikov, University of Central Asia, 138 Toktogul Street, 720001, Bishkek, Kyrgyz Republic, Kyrgyzstan. Email: maksim.kulikov@ucentralasia.org

Dr. Antje Burke, Enviroscience Namibia, Windhoek Namibia. Email: enviroscience@gmx.com

Prof. B.W. Pandey (Secretary), Department of Geography, Delhi School of Economics, University of Delhi, India. Email: bwpdsegeo@gmail.com

IGU Liaisons

Prof. R.B. Singh, Secretory General, International Geographical Union, Department of Geography, Delhi School of Economics, University of Delhi, Delhi-110007, India, Email: rbsgeo@hotmail.com

Prof. Dr. Udo Schickhoff, Department of Geography, University of Hamburg, Bundesstr. 55, 20146 Hamburg, Germany, Ph.: +49 428384911, Email: udo.schickhoff@uni-hamburg.de

Current Corresponding Members

Current corresponding members of the Commission on Biogeography and Biodiversity are listed below, arranged by countries. This membership list has more than 260 members currently but does not include numerous delegates from respective host countries attending the annual meetings.

Argentina

Alessandro, M.B., Mendoza

Australia

Kull, C.A., Clayton; Millington, A., Adelaide, Carter, J., Queensland.

Austria

Geitner, C., Innsbruck; Grabherr, G., Vienna; Pauli, H., Vienna

Brazil

Melo e Souza, R., Aracaju; Rezende da Silva, S., Sao Paulo; Tavares Rocha, Y., Sao Paulo

Canada

Mitchell, S., Ottawa; Sinclair, J., Winnipeg; Tews, J., Ottawa

Chile

Cabalar Fuentes, M., Santiago; Quintanilla, V., Santiago; Rojas, C., Concepcion

China

Cai, Y., Shanghai; Chen, R., Shanghai; Ming, J., Zhangye; Ren, Z., Beijing; Venevsky, S., Beijing; Zhang, X., Beijing;

Egypt

Moatamed, A., Egypt

Ethiopia

Bekele, T., Shashemene; Desta, H., Addis Ababa; Woldu, Z., Addis Ababa

Finland

Hietala, R., Turku

Georgia

Gegechkori, A., Tbilisi

Germany

Albrecht, C., Giessen; Anhuf, D., Passau; Audorff, V., Bayreuth; Baranova, A., Hamburg; Becht, M., Eichstätt; Beierkuhnlein, C.; Bayreuth; Bittner, T., Bayreuth; Block, J., Erlangen; Block, M., Erlangen; Bobrowski, M., Hamburg; Böhling, N., Kirchheim u. Teck; Böhmer, H.J., Bonn; Borchardt, P., Hamburg; Bräuning, A., Erlangen; Bürzle, B., Hamburg; Chmielewski, F.M., Berlin; Cikovac, P., Köln; Deil, U., Freiburg; Dlugosz, A., Trier; Dotter, D., Regensburg; Dulamsuren, C., Göttingen; Ehlkes, L., Hamburg; Engwald, S., Frankfurt a.M.; Fartmann, T., Münster; Faude, U., Bonn; Feilhauer, H., Erlangen; Filz, K., Trier; Finch, O.D., Oldenburg; Fränzle, O., Kiel; Friedmann, A., Augsburg; Gawlik, J., Erlangen; Gebel, M., Dresden; Gebhardt, H., Karlsruhe; Glawion, R., Freiburg i.Br.; Gleich, A., Erlangen; Griessinger, J., Erlangen; Hahn, I., Münster; Harter, D., Bayreuth; Hochhut, E.S., Mainz; Hohnwald, S., Göttingen; Holler, S., Hamburg; Hölzel, N.,

Münster; Hoppe, F., Hamburg; Jaeschke, A., Bayreuth; Jahan, R., Hamburg; Jedicke, E., Karlsruhe; Jentsch, A., Bayreuth; Jungkunst, H., Göttingen; Jurasinski, G., Rostock; Kappas, M., Göttingen; Karl, H.V., Göttingen; Kiehl, K., Freising; Kreft, H., Göttingen; Kreyling, J., Bayreuth; Krummel, T., Göttingen; Kuhlmann, M., Münster; Kuhn, E., Gackenbach; Küster, H., Hannover; Lange, J., Greifswald; Lembeck, R., Hamburg; le Mellec, A., Göttingen; Lingenhöhl, D., Erlangen; Link, M., Gießen; Löffler, J., Bonn; Loos, G.H., Oberhausen; Lötters, S., Trier; Löw, A., Hamburg; Mahecha, M., Jena; Menz, G., Bonn; Metzing, D., Oldenburg; Meyn, A., Potsdam; Miehe, G., Marburg; Mühlner, S., Leipzig; Müller-Hohenstein, K., Bayreuth; Nagy, L., Bayreuth; Najmi, U., Greifswald; Neff, C., Karlsruhe; Nezadal, W., Erlangen; Nüsser, M., Heidelberg; Nutz, L., Karlsruhe; Pape, R., Bonn; Peters, M., München; Peters, T., Erlangen; Platten, H., Koblenz; Poschwitz, H., Frankfurt a.M.; Pott, R., Hannover; Reimer, F., Bonn; Reiss, M., Marburg; Reu, B., Leipzig; Richter, M., Erlangen; Rödder, D., Bonn; Rollenbeck, R., Mannheim; Runkel, U., Trier; Russow, F., Bensheim; Samimi, C., Bayreuth; Sattler, D., Leipzig; Scheid, A., Karlsruhe; Schickhoff, U., Hamburg; Schiller, H., Eitorf; Schlütz, F., Göttingen; Schmidtlein, S., Karlsruhe; Schmitt, T., Bochum; Schmitt, E., Giessen; Schröder, H., Erlangen; Schröder, B., Mannheim; Schröder, B., Rostock; Schulz, E., Würzburg; Schulz, N., Erlangen; Schwab, N., Hamburg; Schwabe, B., Erlangen; Siewert, A., Hamburg; Steinbauer, M., Bayreuth; Steinecke, K., Bremen; Stenzel, S., Bonn; Strewe, R., Bad Zwischenahn; Sturm, H.J., Frankfurt a.M.; Szarzynski, J., Mannheim; Thannheiser, D., Hamburg; Treter, U., Erlangen; Vanselow, K.A., Erlangen; Vater, G., Berlin; Venzke, J.F., Bremen; Veste, M., Hamburg; Völkel, J., Regensburg; Wehberg, J.-A., Hamburg; von Wehrden, H., Halle/Saale; Wagner, F., Bremen; Wallossek, C., Köln; Weiß, W., Erlangen; Weis, M., Freiburg; Wellstein, C., Bayreuth; Werner, W., Heidelberg; Werner, M., Mainz; Wesenberg, J., Leipzig; Wilmking, M., Greifswald; Wollesen, D., Bochum; Zemmrich, A., Greifswald; Kurse, L., Hamburg.

Great Britain
Hill, J., Bristol; Jones, B., Oxford; Syfert, M., Cambridge

Hungary
Szemethy, L. Hungary.

India
Bhardwaj, M., Lucknow; Bhat, M.S., Srinagar; Chauhan, D., Jaipur; Chauhan, G.S., Bhopal; Das, S.A., Mysore; Deka, D., Guwahati; Eswarappa, B., Bangalore; Fazal, S., Aligarh; Jana, N., Bardwan; Jayakumar, K.V., Kozhikode; Jeet, I., Jammu; Kala, C.P., Kosi-Katarmal; Kanth, T.A., Srinagar; Khuroo, A., Srinagar; Kishan, B., Hyderabad; Kumar, A., Delhi; Kumria, P., Delhi; Maithani, D.D., Srinagar (Garhwal); Mal, S., Delhi; Dehradun; Nagabhushanam, N., Tirupati; Nandeshwar, M.D., Kozhikode; Negi, V.S., Delhi; Pandey, U.N., Bilaspur; Panwar, M.S., Srinagar (Garhwal); Pathak, M., Bhurkura; Prasad, R., Jaipur; Rahman, M.; Gauhati; Sarkar, A., Delhi; Sharma, P., Gauhati; Sharma, V.R., Delhi; Singh, M., Rohtak; Singh, P.K., Lucknow; Singh, R.B., Delhi; Sreekesh, S., Delhi; Srinagesh, B., Hyderabad; Suresh, M., India; Tiwari, V.K., Bilaspur; Wodeyar, A.K., Bangalore; De, J., Calcutta; Shah, M.B., Imphal; Singh, B.V.R., Rajasthan; Biswasroy, M. West Bengal; Upadhyaya, H. Lucknow; Varghese, N. Delhi; Dutta, S. West Bengal; Praveen, U., Delhi;

Hungary
Szemethy, L., Hungary;

Ireland
Taylor, D., Dublin

Japan
Fujita, T., Kyoto; Kimoto, K., Hiroshima; Koarai, M., Tsukuba; Mizuno, K., Kyoto; Teshirogi, K., Tokyo; Kazuharu, K., Kyoto; Wang, R. Tsukub;
Kyrgyzstan
Kulikov, M., Bishkek; Laskov, G., Bishkek; Usupbaev, A., Bishkek

Mexico
Patricia, P., Guadalajara; Velázquez, J.A., Mexico City
Mongolia
Damdinsuren, O., Khovd

Myanmar
Mar Yee, K., Yangon

Namibia
Bethune, S., Windhoek; Curtis, B., Windhoek; Joubert, D.F., Windhoek

Nigeria
M. Fasona, Lados;

Neatherlands
Clec'h, S.C. Wageningen;

New Zealand
Wearing, A., Dunedin

Nigeria
Aweto, A., Ibadan

Norway
Lundberg, A., Bergen, Vetaas, O., Bergen

Poland
Bokwa, A., Krakow; Dudek, A., Warsaw

Romania
Baltescu-Socol, O., Bucarest; Grigorescu, I., Bucarest; Romanescu, G., Iasi

Russia
Alekseeva, N., Moscow; Belonovskaya, E., Moscow; Dikareva, T.V., Moscow; Kharuk, V. I., Krasnoyarsk; Makhinov, A.N., Khabarovsk; Milanova, E., Moscow; Petrushina, M., Moscow; Sorokin, L. V., Moscow; Tishkov, A.A., Moscow; Zolotov, D., Barnaul., Dmitry Ganyushkin, St Petersburg; Marina Petrushin, Moscow;

Slovenia
Valjavec, M.W. Koper; Ribeiro, D. Koper; Zupan, S, Koper

South Africa
Mukwada, G., Phuthaditjhaba

Spain
Infante Fabres, N.O., Barcelona; Lozano Valencia, P.J., San Sebastian

Switzerland
Beck, J., Basel; Brügger, R., Bern; Jeanneret, F., Bern; Nagel, P., Basel; von Fumetti, S., Basel; Vonlanthen, C., Bern; Wolf, S., Zürich, Simon K Allen, Zurich.

Thailand
Schmidt-Vogt, D., Bangkok

Tunisia
Ayache, F., Sousse; Mondher, C., Manouba

Uganda
Benita, R., Kampala

Ukraine
Gerasimenko, N., Kiev

Uruguay
Gonzalez-Gervasio, A., Montevideo

USA
Blumler, M., Binghamton; Hessing-Lewis, M., Corvallis; Mishra, N. B., Wisconsin

Vietnam
Pham Binh, T., Ha Noi

West Indies
J. Jacob, Jamaica

2. Meetings

2.1 Meetings 2020

Details of the scientific meetings supported/participated by our commission (Biogeography and Biodiversity) have been provided in the annual report submitted last year.

2.2 Meetings (Conferences/Seminars) 2020

2.2.1 X1V IGU- INDIA CONFERENCE ON AGRICULTURE, FOOD, WATER, BIODIVERSITY AND HEALTH IN CHANGING CLIMATE, BURDWAN, INDIA 6th-8th MARCH 2020.

The Commission on Biogeography and Biodiversity continues to participate and support IGU activities in India. Therefore, the commission actively participated in the XIV IGU Conference on Agriculture, Food, Water, Biodiversity, and Health in Changing Climate, organized by the Department of Geography, The University of Burdwan, West Bengal in the Association of the Bengal Geographers, India during 6-8 March 2020. The conference focused on critically emerging issues in the developing world, including agriculture-irrigation, ecosystem, and associated modifications in the

changing climatic conditions. Besides, IGU Commission on Biogeography and Biodiversity, Commission on Land use and Land Cover Change, Commission on Geo-Heritage, Commission on Hazard and Risk and Commission on Climatology and IGU *Taskforce for Young and Early Career Geographers* also collaborated/supported the conference. Many Indian and International universities, research institutions, NGOs and government official attended the conference and was financially supported by many national and regional level governmental organisations.

Inaugural Session of XIV IGU-INDIA International Conference (Source: Conference report)

Following are the sessions closely related to our commission and their presented papers as per the conference program

Sub-theme 3: Ecosystem Management, Monitoring, and Modeling

- Establishing Relationships of Cellular Communication Coverage Provided by Governmental and Non-Governmental Companies as a Function of Digital Elevation, Population Density, and Transport Infrastructure in Jodhpur District, Rajasthan by A. Puthukkulam, S. Gaur, T. R. Vinod and A. Plappally
- Spatial Modelling of Landslide Susceptibility Zone of Kurseong in Darjeeling Himalaya, India Using Probabilistic and Machine Learning Techniques by Anik Saha and Dr. Sunil Saha
- Assessment of Forest Landscape's Capacity to Supply-Demand of Ecosystem Services: A Case Study of Kulik Forest (Raiganj Bird Sanctuary) of West Bengal, Eastern India by Arijit Das
- Paleohydrology in the Gandheswari River of Western Upland region (West Bengal): Emerging Perspectives for Flood Risk Assessment and Management by Arup Kumar Roy and Asraful Alam
- Impacts of Ayodhya Dam on Ecology, Economy and People by Golam Mostafa, Prasenjit Pal and Tanmoy Dhibor
- Spatial Modelling of Female Male Ratio of West Bengal by Indrita Saha and Ashis Sarkar
- Spatial gully erosion susceptibility mapping using machine learning algorithms in Hinglo River Basin, India by Jagabandhu Roy & Sunil Saha

- A Novel Approach to Modeling Land use Land cover using Image Fusion and Machine Learning Techniques in Siliguri Jalpaiguri Planning Area, West Bengal by Jayant Mondal and Arijit Das
- Hazard and Vulnerability Profile of Coastal India - A Comprehensive Review for Effective Coastal Risk Management by Leo George S. and Balasubramani K.
- Landscape Ecological Analysis and Characterization of Elephant Migration through GIS Application by Nilanjana Das Chatterjee
- Alternative Economy in Wetland: A Study in Purbasthali I and II Blocks of Purba Barddhaman District, West Bengal, India by Payel Das, Sutapa Mukhopadhyay
- An Assessment of Soil Erosion Models in the Gullies of Dwarka-Brahmani Lateritic Interfluve by Sandipan Ghosh
- Water quality parameters driving the structural variation of zooplankton in selected tidal creeks of Sagar Island, Sundarbans, India by Sanghamitra Basu, Pranab Gogoi and Subarna Bhattacharyya
- Forest health monitoring in the parts of South-Western West Bengal, India using Analytical Hierarchy Process by Shyamal Dutta and Sufia Rehaman
- Modeling Soil Erosion Dynamics in a Rain-Fed River Basin to Identify Priority Areas for Conservation by Sudipa Halder, Malabika Biswas Roy and Pankaj Kumar Roy
- Environmental, Ecological, Socio-economic Study of Khatia: A small Village under Kanha National Park, India by Ujjal Adhikary, Dhrubajyoti Pahari and PijusKanti Samanta

Sub-theme 6: Land Use Land Cover and Climate Change

- Understanding Climate Variability and Trends in Imphal Valley, Manipur by Abuajma Manglems Singh
- Climate change, food insecurity and migration: A case study of sinking Ghoramara island of Sundarbans by Aditi Matilal
- Statistical Trend Analysis of Rainfall of Lakshadweep Meteorological Subdivision by Amartya Bhattacharya, Iman Pal and Tapati Banerjee
- Urban Land Use Land Cover Change Detection and its Impact on Rajganj Block, Jalpaiguri District, West Bengal by Amit Kumar Adhikari, Tamal Basu Roy and Ranjan Roy
- A Geospatial Investigation of Spatio Temporal Dynamics of Land Use Change in the Context of Climate Change in the Coastal Plain East Medinipur District, West Bengal by Anirban Kundu and Sayani Mukhopadhyay
- Dynamics in Earth Surface Utilization and its Implication on Land Surface Temperature in Lucknow City by Anish Kumar Rai
- Identification of Onset and Duration of Agricultural Drought through Hyper-temporal Satellite Datasets by Arnab Kundu and K. K. Chattoraj
- Challenges of Climate Resilient Livelihoods and an Inquiry of Mitigation Strategies in India by Babita Chatterjee and Amrita Dwivedi
- Climate Change, Tourism and Threat to Indigenous Natural Resource Base by Bela Das
- Land use and Land Cover Change Detection using Remote Sensing: A Case Study of Some Selected parts of Rajpur-Sonarpur Municipality by Bijay Halder and Papiya Banik
- Land Use and Land Cover Change Dynamics: A Case Study of Pachnoi Watershed, North-East India by Borah Debashree, Lahon Durlov and Bora A.K.
- Intervention of artificial glacier to combat climate change and enhancement of rural livelihoods: An adaptive strategy in the Ladakh Trans- Himalayan Region of Ladakh Union Territory by Chhering Tandup
- Assessment of Land use Land cover changes over time in Asansol City by Disha Sengupta
- Pattern and Trend of Tropical Cyclones in Indian Sub-continent by Deshraj Meena
- Global Warming and Its Impacts on Sea level by D.P. Kuity
- Landslide Susceptibility Assessment Using GIS-Based Frequency Ratio Model of Lachung River Basin, North Sikkim, India by Indrajit Chowdhuri, Subodh Chandra Pal, Rabin Chakrabortty, Sadhan Malik, Biswajit Das, Paramita Roy and Manasree Sarkar
- Temperature and Precipitation Trends in Northern Kazakhstan from 1980-2018 by Ishfaq Farooq, Mujtaba Ismail, Mehraj Ahmad Teeli, NahidaYousuf, Harmeet Singh and Abdul Rauf Shah

- Resilience in the Face of Natural Hazards: A Case Study of Ghoramara Island, Sundarban, India by Karabi Das and Kanailal Das
- Perception and Adaptive Attitudes of Forest Villagers to Climate Change in Himalayan Foothills by Koyel Sam and Namita Chakma
- Assessing the Impact of Climate Variability on Landuse Landcover Change in Jammu District of India by Mansoor Ahmad, Md Masroor and Sarita Nagari
- Land Use Land Cover Assessment Changes in Budgam District, J&K, India by Nusrat Rafique, Durdanah Mattoo and Bilquis Shah
- Effects of Coastal Erosion on Coastal Environment in Coastal Belt between Kalu River mouth and Bologoda River mouth, Sri Lanka by P. Kirishanthan
- Assessing the Landuse Change in Flood Affected Areas of Morigaon District, Assam using Geospatial Technology by Pompi Bora
- Land Use-Land Cover Studies of BAKU Micro-watershed Project of Ausgram- II Block, Purba Barddhaman District, West Bengal by Raj Kumar Samanta and N. C. Jana
- Detection of Land Use Land Cover Changes of Irga River Basin, Part of North-Eastern Fringe of Choto Nagpur Plateau, Jharkhand, India by Ratan Pal and N. C. Jana
- Land Transformation due to Land Use Land Cover Changes in the NCT of Delhi by Sandesh Yadav, Haseena Hashia
- An Analysis of Landuse and Cropping Pattern Change in Kochbihar District by Sangita Karmakar and Ranjan Roy
- A Geographical Analysis of Land use Dynamics and its Determinants: An Ecological Perspective by Shahab Fazal
- Estimation of Temperature and Rainfall over Coastal Areas of Bangladesh in a Predicted Climate Change Condition by Shahana Islam, Md. Moniruzzaman and Md. Abdul Mannan
- Drought Induced Human Mobility in Bankura District, West Bengal: A Geographical Analysis by Shrinwantu Raha and Shasanka Kumar Gayen
- Relationship between Climatic variation and Standard of living through the window of Agricultural economics: A Study on Indian Sub-Continent by Somnath Mandal, Subrata Haldar, Anupam Biswas, Sanjit Kundu, Dr. Suman Paul, and Subhasis Bhattacharya
- Impacts of Changing Landuse on the Evolution of Urban Thermal Fields in the Tropical City of Kolkata by Soumendu Chatterjee, Ansar Khan and Apurba Dinda
- Statistical Analysis of Rainfall as a Component of Climatic Variability of the District of Purba Bardhhaman, West Bengal by Soumita Banerjee and Gupinath Bhandari
- Impact of EL-NINO and LA-NINA on the Marine Fisheries in Coastal West Bengal by Suvasree Dutta (Dasgupta) and Dinabandhu Kumbhakar
- Perceptions of Climate Change: A Study on Farmers of MurshidabadDistrict of West Bengal by Swati Mollah and Satarupa Dasgupta
- Impact of Landuse and Landcover Changes on Land Surface Temperature: A Study on Asansol Sub-division, Paschim Burdwan, West Bengal by Tanushree Paul and Niladri Das
- Land Use Dynamics and Variability of Local Climate in the Central Region of Bangladesh by Umme Kulsum and Md. Moniruzzaman

Sub-Theme 7: Land Use Land Cover Change and Biodiversity

- Estimating Above-ground Biomass in Bankura North Forest Area by Integrating Multisource Remote Sensing and Ground Data by Abira Dutta Roy and Santanu Mandal
- Impact of Biodiversity on Land Cover Change of Navegaon National park and Nagzira Wildlife sanctuary by Alka Dudhbure
- Statistical Downscaling for Improving Global Model Rainfall Forecasts of Seasonal Rainfall over West Bengal (WB), India by Aminuddin Ali and Tirthankar Ghosh
- Climatic Variability and its Impact on Altitudinal Shifting of Vegetation Cover in Kalpa Tehsil, Himachal Pradesh, India by Amir Khan, Arunava Das, L. N. Satpati and Sk Mafizul Haque
- Determination of the Length of Growing Period and Agroclimatic Potentiality of Gosaba CD Block of Indian Sundarban by Argha Ghosh, Manoj Kumar Nanda, Debolina Sarkar, Sukamal Sarkar and Kaushik Brahmachari
- Assessing Land Surface Temperature Responses to Land Use Land Cover Dynamics Using Landsat Data by Ashique Vadakkuveettil and Aakriti Grover

- Impact of Water Reservoir and Irrigation Canals on Land Use and Land Cover Changes: A Case Study by Piya Bhattacharjee and Debasish Das
- Land Use Change and its Implications on Environment- A Case Study of Giladhari River Basin of North East India by Prasenjit Das
- Unfolding Relation between Soil Salinity and Agriculture: A Case Study of Firozpur, Punjab Ratan Priya and Padmini Pani
- Landuse-Landcover Change along PMGSY Road in Murshidabad District by Rentu Biswas and A K M Anwaruzzaman
- Assessing Anthropogenic Impacts in Coastal Areas through Land Use and Land Cover Changes from 1980 to 2019 Using Remote Sensing and GIS Techniques: A Case Study of Southern Coastal Gujarat, India by Ritika Prasad
- Spatial Detection and Mapping of Land Degradation Status in A Plateau Fringe River Basin: Role of Geo-Environmental and Anthropogenic Parameters by Tusar Kanti Hembram and Sunil Saha

Sub-Theme 11: Tourism Potential of Geo-Heritage Sites in South Asia

- Sustainable Socio-Economic Development through Tourism: An Investigative Study for the Himalayan State Sikkim, India by Debasish Batabyal and Dillip Kumar Das
- Geomorphosite Tourism and its Prospects in Sundarban Delta by Jayanta Gour
- Authoritarianism for the Sustainability of Built-Up Eco-Space of Raj Dynasty in Burdwan Town by Koyel Sarkar and Sanat Kumar Guchhait
- Potential of Tourism in Bangladesh by K. M. Rezaul Karim
- Rural Tourism Favours Societal Development: A Case Study at Amkhoi Village of Illambazar C.D. Block in Birbhum District by Mahuya Sen
- Potentials in Achieving Socio-Cultural Sustainability through Rural Homestay Tourism: An Overview on Chuikhim Village of Bengal Himalaya by Mithun Ray
- Potentials of Tourism Development in the East Sikkim Himalaya along the Old Silk Route by Monikiran Dattagupta
- Application of Multiple Regressions in Prediction of Tourism Behaviour: A Study in Manali Town, India by Partha Das
- Community Perception and Attitudes towards Agriculture at the New Eco-Tourism Centres: A Case Study of Sillery Gaon, West Bengal by Pranab Kr. Das
- Tourism Potentials of Fossil Parks as Geoheritage Sites: A Study in West Bengal by Rahul Mandal and Premangshu Chakrabarty
- Potentiality of Temple Centric Tourism in Indian Sundarbans: A Transport Perspective by Sajal Ghosh and Eshita Boral
- Sustainable Pilgrimage and Religious Tourism: A Case Study in Nabadwip Town, West Bengal by Saswati Das and Premangshu Chakrabarty
- Community based 'Responsible' Tourism Initiatives in the Ziro Valley of Arunachal Pradesh: Scope and Challenges by Soma Sarkar
- Tourism in Ruralscape and Embedded Stakeholders' Power Structure- A Study on Old Silk Route, Sikkim by Subhajit Das1 and Arunima Karali
- Understanding the Environmental Impact and Change in Coastal Ecology for the Promotion of Popular and Eco-Tourism in the Coastal Areas of East-Midnapore by Tahamina Khatun and Sanat Kumar Guchhait
- Analysis of Tourism Potential: A Study of Darjeeling District by Tuhin Kanti Ray
- Development of Rural Craft Hubs and its Impact on Socio Economic Life - A Case Study of Notungram, Purba Bardhaman by Tuhin Singha
- Heritage and Scope of Tourism Development in Paschim Medinipur District of West Bengal by Uday Chatterjee

2.3.2 INTERNATIONAL CONFERENCE ON GEOGRAPHICAL SCIENCE FOR RESILIENT COMMUNITIES, ECOSYSTEMS AND LIVELIHOODS UNDER GLOBAL ENVIRONMENTAL CHANGE (GORILLA), KAMPALA, UGANDA, 3-5 DECEMBER, 2020 KAMPALA, UGANDA 2020.

As part of our continued efforts to popularize the Geography and IGU in less developed regions of the world, our commission also actively supported and participated in the GORILLA conference since its

planning phase. The conference was originally planned to be organized during 28-30 May 2020. However the conference was rescheduled for the first week of December 2020 amid Covid-19 Pandemic and was hosted by Makerere University, Kampala, Uganda. Besides our commission, the GORILLA was supported by IGU, and its commissions on African Studies, commission on Geography of Future Earth Commission, International Association of Landscape Ecology (IALE), Uganda Geographical Association. In addition, the conference partners and sponsors were Government of Uganda, Makerere University-Kampala, Uganda, National Environment Management Authority, Uganda, Embassy of Sweden etc. As a complete offline conference was not possible, it was organized in a hybrid mode. Prof. Dr. Udo Schickhoff delivered a key note presentation on "Mountains of the world: Landscapes in Transition.

The main sessions and their presentations of the GORILLA conference that were related to IGU Commission on Biogeography and Biodiversity were.

Session 4: Biogeography, Biodiversity and Ecosystem change

- Trends in Extreme Temperature and Rainfall Indices in the Semi-Arid Areas of Western Tigray, Ethiopia - *Abadi Berhane Girmay*
- Agro - Climatic changes under projected climate scenarios in the Great Rift Valley Basins of Ethiopia - *Fitih Ademe Mamo*
- Introgression of late leaf spot gene into elite groundnut varieties in Ghana – *Franklin Bosompem*
- Ecological Assessment of Performance of Tree Species Used in Rehabilitating Degraded Areas of Turkana County, Kenya - *Jesse O. Owino*
- Ecology and Biogeography of macrophytes in the East African freshwater lakes: From the basic to the applied knowledge - *Konrad Hentze*
- Above-ground carbon gains in previously logged tropical forests: carbon accumulation rates and the economic case for restoration - *Mark E.J. Cutler*
- Evaluating land use and land cover change in Mt Kenya and Ngare Ndare wildlife corridor - *Mary Kageni*
- Floristic composition and structure of the Kibate Forest along environmental gradients in Wonchi, Southwestern Ethiopia - *Misganaw Meragiaw Mollaw*
- Local Community Perception on the Effectiveness of Ecosystem in Regulating Coastal Disaster Protection in Brebes - *Muh Aris Marfai*
- Land Use Land Cover Changes and impacts on Ecosystems Services (ESS) n the Nzhelele Catchment Area, South Africa - *Nesisa Analisa Nyathi*
- Molecular genetic diversity and differentiation of Nile tilapia (Oreochromis niloticus, L. 1758) in East African natural and stocked populations - *Papius Dias Tibihika*
- Seed Predation and Dispersal of Acacia seyal (Mimosaceae) by Olive baboons Papio Anubis (L) and its Implication for Tree Regeneration, Sustainable City and Land Management in Sahel, West Africa - *Pasquale Moilinga*
- Climate Change in Bangladesh: Evidence from Temperature, Precipitation and Rainfall –*Syed Shoyeb Hossain*
- Population genetics of elephants in Nimule National Park, South Sudan - *Thams Lado*
- Influence of paper mulberry presence on natural tree species in Mabira central forest reserve - *Yamungu Alongo Boniface Byamalong*

Session 7 (a & b): Sustainable Land Use Management and Livelihoods

- Catchment-scale soil carbon stock assessment using depth distribution functions, surface measurements and machine learning algorithms in afforested grasslands of Kwa-Zulu Natal, South Africa - *Andrey Rozanov*
- Good Practices in Development of Adaptive Integrated Sustainable Livelihood and Social Service Systems Strategies for Prospective Risk Management - *Bob Alexander*
- Soil properties as affected by continuous application of fertilizer microdosing in traditional leafy vegetable production - *Dagnon Didier Llikpete*

- Influence of Indigenous Tree Species on Soil and Pasture Nutrient Profiles in Open Grazing Systems in South Western Uganda - *Dina Nabasumba*
- KRIFS quartet model improving livelihoods and fueling tourism in Kitagwenda district, Western Uganda - *Fredrick Ruguma Tumwine*
- An Approach to Environmental Conservation and Land Use Planning using PGIS: The case of Animal ‚Äì Human Conflict in Elegu Parish - *Geoffrey Olok Tabo*
- Assessment of the Effects of Land use/cover change on Household Food Security in Mount Elgon slopes; Eastern Uganda - *Goretty Mary Nagawa*
- Understanding the role of Land uses and cover changes on water level fluctuations in Nyumba ya Mungu Dam Catchment, Tanzania -*Halima Omari Mangi*
- The Role of Cultural Practices in Climate Change Mitigation and Adaptation in Mountain Elgon Region - *Hisinya Fatuma*
- RUSLE estimation of the extent to soil erosion risk at micro catchment scale in upper Rwizi catchment, Lake Victoria Basin - *Hosea Opedes*
- Agro-Ecological framework GIS-DSS for predicting crop yield in Uganda - *Ivan I. Vasenev*
- Assessing local community opinions towards management regimes for balancing human need and conservation goals in Pendjari Biosphere Reserve (West Africa) -*Jesugnon Esther Aldegonde Kpodo*
- Community perception of dynamics and drivers of land cover change around Pendjari Biosphere Reserve in northern Benin (West Africa) - *Jesugnon Esther Aldegonde Kpodo*
- Forest governance and deforestation in Uganda: The role and performance of different forest governance systems - *Jon Geir Petursson*
- Impacts of REDD+ activities to rural communities: livelihood analysis of Kondoa advancing REDD+ in Kolo Hills Forests (ARKFor) Project in Tanzania - *Jumanne Moshi Abdallah*
- Effectiveness of Climate Variability Adaptation Strategies on Smallholder Farmers Well-Being - *Justin Kalisti Urassa*
- Levels and performance outcomes of governance in community-based tourism projects in the coastal region of Kenya - *Osebe David Abel magiya*
- Cleaning the City, Greening the Land: Sustainable City and Land Management in Sahel, West Africa - *Oyama Shuich*i
- Women farmers in Uganda: Constraints and ways forward - *Penninah Twinorugyendo*
- Livelihood sustainability under climate change - *Sidra Shafaqat*
- Feasibility study for a UNESCO biosphere reserve Desa'a Forest – Improved protection of dry Afromontane forests through participatory forest management, stronger integration of local interests and community-based raising of environmental awareness in Ethiopia - *Simon Strobelt*
- Achieving land degradation neutrality for Shire river catchment area in Malawi – *Thokozani Kapichi*
- Baseline Information about Agroforestry Practices, Production Constraints and Opportunities in the Eastern Agro-Ecological Zone of Uganda - *Twaha Ateenyi*
- Impacts of anthropogenic activities on Ewaso Narok wetland ecosystem in Laikipia County, Kenya - *Walter Owuor Nyamolo*
- How to promote Geography for Sustainability? - *Wenwu Zhao*
- Spatial distribution of factors affecting the adoption of soil organic carbon enhancements technologies among small scale farmers of Kenya and Ethiopia - *Wilson Nguru*
- Environmental conservation strategies and sustainability of Community Based Tourism projects in Kenya: A case of Maasai Mara Conservancies - *Winnie Tubey*
- The Influence of Monitoring and Evaluation Practices on the Sustainability of Community Based Tourism Projects in Kenya - *Winnie Tubey*

Session 10: Environmental Geography

- Calibration and Evaluation of the CERES- Sorghum Crop Model in the Semi-arid Northeast Ethiopia – *Abebe Misganaw Gedamu*
- Characterizing precipitation and stream flow trends of the Great Kei River - Eastern Cape, South Africa - *Francis Wasswa Nsubuga*
- Vulnerability of smallholder sorghum farmers to climate variability in a heterogeneous landscape of Kigezi Highlands, South Western Uganda - *Frank Mugagga*

- An appraisal of the Efficacy of Adaptation Measures to Climate Variability by Smallholder Irish Potato Farmers in Rubanda District, South Western Uganda - *Frank Mugagga*
- Assessment of the carbon sequestration impacts associated with wetland diminution in the Kampala–Mukono Corridor (KMC) wetlands of Uganda - *Hannington Wasswa*
- Spatial land use pattern analysis and wetland regulatory function recovery: Evaluation of
- Lugogo Catchment in Central Uganda - *James Mbaziira*
- Spatial Vulnerability Assessment of River Mitano Catchment to Degradation in SW Uganda-Congo Border - *Patrick Musinguzi*
- The role of Traditional Authorities, community trustees and local communities in the
- management and governance of natural resources in South Africa -*Sakhile Bongamandla Nsukwini*
- Effect of Selective Logging on the Structure and Regeneration of Kakasi Forest in Western Uganda - *Twaha Ateenyi*

Session 12 (a & b): Technology and innovations for resilient ecosystems and livelihoods and ICTs for

- Malo Solid Waste Allocation Application (MALO-APP) - *Abel Wilson Walekhwa*
- Towards a Predictive Model for Drought Occurrence in Uganda -*Aminah Zawedde*
- System for tracking breeding traits of improved crops - *Basheija Henry*
- Identifying Vegetation Changes and Main Drivers over the Agro Pastoral Ecotone of Northern China -*Chansheng He*
- A Web-based Decision Support Tool for Estimating Above-Ground Carbon Stock in Mabira Central Forest Reserve - *Juma Katongole*
- Examining Geo-Enablement as Performance Evaluation Factors for Electronic Health Information Systems: Case of Developing Countries - *Margaret Nagwovuma*
- The Tigani community adaptability to changes in rural Romania - *Mihai Voda*
- Towards Climate Resilient Village: SWAC Model, A Reality - *Muhammad Abdur Rahaman*
- The politics of introducing new sanitation technologies in Kampala: Legitimacy, Access and Benefits of the Gulper - *Nakyagaba Gloria Nsangi*
- Farmers' resilience under climate change - *Pawan Kumar Sharma*
- Scarps geological and geomorphological assessment implications in geo-education and geoconservation (case studies in Kyrgyzstan and Romania) - *Radu Negru*
- Investigating socio-economic impacts on sustainable mountain freshwater ecosystem services in Mt. Elgon watersheds under a changing climate - *Susan Wasubire Khaitsa*

Session 13: Sustainable Agricultural Landscape

- Sustainable agriculture landscape, case study of Amazonian space, Peru - *Ana Sabogal*
- Nitrogen deficiency estimation by using free multispectral data in banana cropping system of Eastern DR Congo - *Bagula Mukengere Espoir*
- Reduced vegetation productivity and flash floods. A long term effect of wetland encroachment and manipulation quantified by hyper-temporal image analysis - *Ellen Jessica Kayendeke*
- Sustainable cropping systems for pollinator conservation - *Gugulethu Tarakini*
- Suitability analysis of neglected and underutilized crop species in South Africa – *Hillary Mugiyo*
- Patterns of infiltration on a bench terraced hillslope of Kigezi highlands - *Kisira Yeeko*
- Diversity and Distribution of Herptiles and Small Mammals in Namulonge Wetland Agricultural Landscape - *Lukwago Wilber*
- Modelling infiltration characteristics to improve soil and water conservation in the Lake Victoria Basin of Uganda – Nadhomi Daniel
- Enhancing integrated soil management technologies for increased crop production in Uganda - *Pavel Krasilnikov*
- Effect of wood ash treated irrigation water on qualities of selected soil chemical properties and yield of maize (Zea mays) in Dura Tabia, Central Tigray, Northern Ethiopia – *Samuel Tesfay*
- Climate-smart agriculture practices for sustainable maize-wheat production: Effects on crop productivity, profitability and irrigation water use - *SK Kakraliya*

- Local People's Attitude and the Impact of Community-based Conservation Practice at Menz-Guassa Community Conservation Area, Ethiopia - *Tilaye Wube Hailemariam*
- Assessing resilience of Agricultural Landscapes to Climate Change in Luwero District, Central Uganda - *Twaha Ateenyi*
- Suitability of arable soils for Maize (Zea mays L.) and Cassava (Manihot esculenta) Production - *Twaha Ateenyi*
- Improving Soil Nitrogen Management Under Rice Production in Lowland Eastern Rwanda - *Twaha Ateenyi*
- Assessment of farmers' understanding of the sustainable land management technologies that were implemented in Mabona Ward, Isingiro town Council, Isingiro District - *Twaha Ateenyi*
- Conceptualizing trade-offs of water conservation strategies in agriculture and unintended consequences using system dynamics approach - *Vincent Omondi Odongo*

2.3.3 34th INTERNATIONAL GEOGRAPHICAL CONGRESS (IGC) CONFERENCE ON GEOGRAPHY: BRIDGING THE CONTINENTS, ISTANBUL, TURKEY DURING 17-21 AUGUST, 2020.

This conference could not take place amid COVID-19 global pandemic, hence was postponed to August 2021.

2.3.4 IGU India International Conference (Virtual), 2020 on Global to Local Sustainability and Future Earth, 18-20 December 2020.

The Commission on Biogeography and Biodiversity also participated in this conference as our continued efforts to support and popularize Geography discipline in general and Biogeography and Biodiversity in particular. Other IGU Commissions that participated were, 1) commission of Geography for Future Earth: Coupled Human-Earth Systems for Sustainability, 2) Commission on Local and Regional Development, 3) Commission on Geo-heritage, 4) Commission on Mountain Studies 5) Commission on Karst and 6) Commission on Tourism. As the offline mode for this conference was not possible, it was organized in an online mode. As per the conference report, the conference was joined/attended by about 900 participants from 40 countries. Natural resource management, Biodiversity conservation and eco-tourism, mountain ecosystem and highland and low land interactions were some of the sessions that were closely related to our commission long term study goals. Our commission also organized a panel discussion on the role of sustainability in biodiversity for the future earth (https://www.youtube.com/watch?v=T1kSuXjbB5c).

TRAINING / CAPACITY BUILDING PROGRAM TO BE SUPPORTED/COLLABORATED BY OUR COMMISSION

2.3.5 TWO-DAYS TRAINING ON SNOW COVER DYNAMICS AND GLACIER FLUCTUATIONS IN THE HIMALAYA, 7-8 MARCH 2020 SUPPORTED BY IGU COMMISSION ON BIOGEOGRAPHY AND BIODIVERSITY, DURING X1V IGU-INDIA CONFERENCE ON AGRICULTURE, FOOD, WATER, BIODIVERSITY AND HEALTH IN CHANGING CLIMATE, BURDWAN, INDIA.

The commission on Biogeography and Biodiversity organized a two-day snow cover and glacier related training for the early stage MPhil/Ph.D. and Master's final semester students given its long term study field 'ecosystem response to the global change'. Prof. R.B. Singh opened the training with his opening remarks, while the hands on training was given by Dr. Pankaj Kumar on snow cover dynamics and by Dr. Suraj Mal on glacier fluctuations in the Himalayas. The hand-on training with some individual case studies and examples allowed learning of state of the art methods to understand

high altitude system changes, which lead to cascading impacts downstream. 14 research students and master's students participated in the training program.

Dr. Suraj Mal and Dr. Pankaj Kumar (Trainer) with the participants of Training Programme (Source: Conference Report).

2.3.6 International Winter School 2020 on Modelling Challenges for Mountain Ecosystems, Hamburg, Germany during 23-28th Feb 2020.

The Institute of Geography, University of Hamburg, Germany, organized second winter school on "modelling challenges for mountain ecosystems" during 23-28 Feb. 2020, following a great satisfaction from its first such program in 2019. Our IGU commission also supported/collaborated in this training program. The basic idea of this winter school is to provide hands-on training and exposure to early-career students about the latest datasets and methods using a freely available highly powerful statistical software R regarding climate and ecology and associated challenges in the Himalayas. The training program was led by the researchers (Dr. Maria Bobrowski, Dr. Niels Schwab and Johannes Weidinger) of the Institute of Geography, Hamburg University. Prof. Dr. Jürgen Böhner and Prof. Dr. Udo Schickhoff delivered the keynote lectures in the program. The major topics covered in the training program were 1) statistical modelling of climate parameters and 2) modelling the ecological niche of a treeline species in the Himalayan mountains. About 20 students from 7 countries successfully attended the training program.

Organizers, participants, of the winter school 2020 at the Institute of Geography at the University of Hamburg, Hamburg, Germany (Source: Training program report by Dr. Maria Bobrowski)

2.3.7 IGU Commission on Biogeography and Biodiversity – Google Earth Engine Webinar, 11 May 2020 (https://www.youtube.com/watch?v=xqyUrPyT0QQ)

We organized a webinar on the application of Google Earth Engine in Geography, Biogeography and Biodiversity applications and many other applications as well. The webinar was well attended by number of participants from across the world in general and from the south Asian countries in particular. Main focus of the webinar was time series analysis, UN sustainable development goals and some key case studies.

2.3.8 FORTHCOMING CONFERENCES/EVENTS/CAPACITY BUILDING TRAINING PROGRAMS

2.3.8.1 34th INTERNATIONAL GEOGRAPHICAL CONGRESS (IGC) CONFERENCE ON GEOGRAPHY: BRIDGING THE CONTINENTS, ISTANBUL, TURKEY DURING 17-21 AUGUST, 2021.

Our commission has been actively participating in the IGC conferences, which are organized every four years. The conference is to be jointly organized by Istanbul University, Turkish Geographical Society and, IGU with a focus on the Geography: Bridging the Continents. This IGC was planned in 2020, but could not be organized amid COVID-19 pandemic situation and hence was rescheduled to 16-20 August 2021 with the hope that the conditions will be better. However, the COVID-19 still continues and thus it is decided to organize this conference purely online.

Our commission has proposed five scientific sessions, which are well accepted in the conference program, the information which can be assessed from the conference website (https://www.igc2020.org).

1 Biodiversity and Land Degradation Neutrality: Dmitry V Zolotov.
2 Challenges of Biodiversity Conservation in the Changing World: RB Singh and Suraj Mal
3 Land use/cover change impacts on the mountain landscape: Udo Schickhoff and Monica Dumitrascu
4 Mountain Ecosystem Responses to Climate Change: Suraj Mal and Udo Schickhoff
5 Recent Developments and Expansion in Biogeography: Udo Schickhoff and Niels Schwab.

2.3.8.2 IGC Paris is scheduled be held in Paris-France on 18-22 July 2022. Our commission is planning to participate in the conference.

2.3.8.3 The planning for IGU India Conference at Prayagraj in 2021 is underway.

In addition we are exploring the possibilities to organize capacity building programs, however as we understand that such training workshops produce better results in an offline mode, we have not been very successful in this regard in 2021 so far due to COVID-19 situations. However, we are looking forward for online mode programs.

3 Networking

During 2020, the Commission on Biogeography and Biodiversity cooperated and supported with other IGU Commissions as well as with other international, regional and national scientific and academic organisations/groups. Or commission was engaged in three international conferences in 2020, where many IGU commissions and other scientific bodies participated. In addition, two capacity building programs for students and early career researchers were completed, which provided to engage with emerging young geographers, many of whom desired to be corresponding members of our commission. We are continuously working to engage and collaborate with new scientific

organisations, particularly in developing and under-developed countries e.g. in Africa.

4 Publications

4.1 A volume titled "Mountain Landscapes in Transition: Effects of Land use and Climate Change, is under publication and should be released soon by the Springer. This volume explores the Climate and Land use effects on the world mountains with specific case studies from across the world mountains. The volume is co-edited by Udo Schickhoff, SB Singh and Suraj Mal. Further information about the publication can be found at https://www.springer.com/gp/book/9783030702373

4.2 We are also in the process of a special issue on Sustaining Himalayan Environment and Future Earth with International Journal of Ecology and Environmental Sciences, where RB Singh, Suraj Mal and Pankaj Kumar are the guest editors. The call for papers will be available soon on the webpage of Journal.

5 Archival contributions

The commission each year prepares and provides an annual report to the Secretary, IGU. Besides, we request the lead or contact person of the scientific activities, conferences, and trainings we support to provide short reports, which are archived on the commission website. These reports can be accessed from the conference website (http://www.igubiogeography.com/index.html)

6 Continuation and Productive use of previous IGU grants

The IGU Commission on Biogeography and Biodiversity plans to continue to work with a particular focus on the less developed parts of the world during the period 2021-2024. Besides, the scientific meetings and conferences, we have started to engage in training and workshops for early-career scientists from across the world. Our prime objective is to promote biogeography teaching, research, and scholarships with particular focus on the high mountains, e.g., Himalayas. Also, we plan to contribute to research and development in the field of biogeography. In continuation with our long term goals, we aim at particularly three aspects 1) Developments and Expansions in Biogeography, 2) Response of Mountain Ecosystems to Climate Change, and 3) Conservation of Biodiversity, which have been core themes of the scientific meetings and conferences we participate. The research themes of our commission are rather integrative, bridging the gaps between physical and human geography, addressing nature, culture, ecological and socio-economic aspects of biogeography, land use and land cover change, resources and sustainable development, high altitude environment, high-low land interactions, system approaches, etc.

Continuation of the Objectives for 2020-2024

1. To continue to explore and exploit the diversity of Biogeography as a discipline within Geography, Biology, and allied disciplines, thereby promoting biogeographical teaching, research, and scholarship
2. To organize scientific meetings and discussions (i) within the IGU structures, (ii) by group meetings with national geographical bodies, other IGU commissions and other allied disciplines, and (iii) to promote biogeographical research and scholarship by geographers within other international organizations such as the International Biogeography Society (IBS), the International Association for Vegetation Science (IAVS), and other ICSU/IUBS organizations.
3. Although, not much progress was made during last years amid COVID-19 pandemic situation, we still managed to hold online meetings and engaged with a large number of scientists across the globe.

During last year, we have directly and indirectly and through limited funding supported several activities e.g.

1. Winter School 2020 on Modelling Challenges for Mountain Ecosystems, Hamburg, Germany.
2. X1V IGU- INDIA BURDWAN, INDIA, has been already supported with limited funding.