

**CURRICULUM VITAE FOR PROPOSED PROFESSIONAL STAFF**

**Bishnu Maharjan** (GIS and Remote Sensing Expert)

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With over 9 years of exemplary expertise in the realms of Geographic Information Systems (GIS), Remote Sensing (RS) and Environment, I am a seasoned professional dedicated to driving positive impact in environmental conservation and disaster management. My multifaceted experience encompasses roles as an Environmentalist and GIS Specialist, where I've excelled in environment modelling, spatial analysis, species distribution modelling, watershed delineation, vulnerability analysis, and flood hazard assessment. Adeptly applying GIS and Remote Sensing technologies, I've pioneered innovative forecast-based Anticipatory Action strategies, aiding in disaster preparedness and response. My career trajectory includes pivotal contributions as a valued member of the United Nations World Food Programme, where I have orchestrated geospatial solutions for complex challenges. Additionally, my tenure as a consultant for the World Bank showcased my commitment to sustainable development through precise environmental impact assessments. I have also imparted knowledge as a GIS Instructor, empowering future professionals with practical skills. My track record underscores a profound dedication to harnessing geospatial insights for the betterment of society, aligning seamlessly with global sustainability goals. My collaborative spirit, analytical acumen, and dynamic problem-solving prowess have consistently translated into tangible outcomes. As an individual who thrives in dynamic environments, I am poised to continue pioneering advancements at the intersection of GIS, environmental science, and humanitarian efforts, all the while remaining steadfastly committed to creating a resilient and ecologically harmonious world.

**Education:**

- **M.Sc. in Geographic Information Science and System (GIS) and Remote Sensing (RS)** from Salzburg University, Austria 2016. The major subjects are Geographic Information Systems (GIS), Remote Sensing, Cartography, Spatial Analysis, Geospatial Data Management, Environmental Monitoring and Management, Urban and Regional Planning, Disaster Management, Natural Resource Management, GIS Programming and Automation, Geodatabase Design and Spatial Modelling.
- **B.Sc. in Environment Science**, University Level (**Undergraduate**) Patan Multiple Campus, Patandhoka, Lalitpur, Nepal, 2011. The major subjects are Environmental Pollution, Climatology, Plant Sampling, Environmental Chemistry, Microbiology etc.

- **Intermediate Level** from Higher Secondary Education Board (HSEB) from Caspian Valley College. 2006. The major subjects are Physics, Chemistry, Biology, Maths and English.

#### **A. Professional Experience:**

**Organization:** Nepal Open University

**Date:** 5<sup>th</sup> Jan 2024 till date

**Title / Position:** GIS Lecturer

**Reference:** Satya Ram Suwal (Master Geo-Informatics Coordinator)

**Phone No:** 9851205510

##### **Major Task:**

1. Understanding the principles and significance of land use policy in Nepal
2. Introduction to Geographic Information Systems (GIS) and Remote Sensing (RS) technologies
3. Exploration of GIS and RS tools for land use analysis and planning
4. Analysis of land use change dynamics using satellite imagery and spatial data
5. Assessment of environmental impacts and socio-economic factors influencing land use decisions
6. Case studies and examples relevant to land use policy in Nepal
7. Integration of GIS and RS in land use policy formulation and implementation
8. Hands-on exercises and practical assignments using GIS software and remote sensing techniques
9. Guest lectures from experts in land use planning and policy development
10. Opportunities for field visits and real-world applications of GIS and RS in land use management

**Organization:** Institute of Crisis Management Studies Samarpan Academy

**Date:** 5<sup>th</sup> Feb 2024 till date

**Title / Position:** GIS Lecturer

**Reference:** Prakash Rawal (Master Coordinator)

**Phone No:** 9841233552

##### **Major Task:**

1. GIS and Remote Sensing Course offered by Institute of Crisis Management Studies Samarpan Academy College
2. Comprehensive coverage of Geographic Information Systems (GIS) and Remote Sensing (RS) technologies
3. Hands-on training on industry-standard GIS software such as ArcGIS and QGIS
4. Practical application of RS techniques for crisis management and disaster response
5. In-depth understanding of spatial data analysis and visualization
6. Exploration of advanced topics including satellite imagery interpretation and geospatial modeling
7. Integration of GIS and RS for effective decision-making in crisis situations
8. Experienced instructors with expertise in GIS, RS, and crisis management
9. Small class sizes to facilitate personalized learning and interaction

**Organization:** National Animal Science Research Center (NASRI)

**Date:** 28<sup>th</sup> Dec 2023 to Jan 1<sup>st</sup> 2024

**Title / Position:** GIS Lead Instructor

**Reference:** Nawaraj Paudel (Senior Scientist)

**Phone No:** 9841054132

##### **Major Task:**

1. Understanding the fundamental concepts of GIS, including spatial data, layers, and maps.
2. Introduction to key GIS software (e.g., ArcGIS, QGIS) and their basic functionalities.
3. Understanding the types of spatial data, such as remote sensing imagery, GPS data, and topographic maps.
4. Techniques for cleaning and organizing spatial data for analysis.
5. Basic data manipulation skills, including attribute table operations and spatial data integration.
6. Introduction to habitat suitability concepts and factors influencing livestock habitat.
7. Overview of common modelling techniques used in GIS for assessing habitat suitability.
8. Hands-on exercises using GIS software to perform habitat suitability analysis for specific livestock species.
9. Interpretation of results and understanding the implications for livestock management and planning.

**Organization:** Mid-West University, Graduate School of Science and Technology

**Date:** 22<sup>nd</sup> Sep to 25<sup>th</sup> Nov 2023

**Title / Position:** GIS Lead Instructor

**Reference:** Dr Sudeep Thakuri (DEAN)

**Phone No:** 9851101011

Mid-West University, Graduate School of Science and Technology

Mid-West University, Graduate School of Science and Technology (MU-GSST) is implementing a capacity building project titled "Integrating Geospatial Technologies in Climate-Smart Agriculture Planning and Management in South Asia (CBA2020- 13MYThakuri)" in collaboration with Bhutan, Nepal, and Pakistan, funded through Asia Pacific Network for Global Change Research (APN-GCR) Japan, with Nepal as the lead country.

**Major Task:**

1. Provide the professional training for the relevant stakeholders working on climate change and agriculture planning and management in Nepal.
2. Facilitate exchange of knowledge and expertise on the site-specific issues, options and best practices for geospatial applications in climate-smart agriculture planning.
3. Management for improving livelihood of farming communities in Nepal.
4. Crop Suitability Analysis using Climatic Data.
5. Hands on Exercise on key software for integration crop mapping.

**Organization:** United Nations World Food Programme (UNWFP)

**Date:** 15<sup>th</sup> Mar 2018 to 28<sup>th</sup> Feb 2022

**Title / Position:** GIS Expert

**Reference:** Sridhar Thapa, Ph.D. (Officer EPI Unit)

**Phone No:** 9841940948

**Evidence based Policy Unit (EPI)**

**Major Task:**

1. Preparation of population database, analysis of population database like World Pop, Land scan, modelling, mapping, data acquisition, data visualization using Geographic Information System and Remote Sensing techniques
2. Preparing GIS database of Nepal
3. GIS Mapping in emergency and during disaster
4. Organizing training as per needed in office
5. Flood risk zonation and inundation mapping of downstream in Terai region.
6. Deployment of radar satellite imagery to monitor flood extent and dynamics.
7. Identification of flood-prone areas through radar-based remote sensing techniques.
8. Mapping of flood inundation extents to facilitate emergency response and disaster management.

9. Prepare database and mapping of Priority Areas Based on Flood Affected Population and Prevalence of Wasting in Districts, Mapping of Flood Inundation Area by using Remote Sensing Techniques, Mapping of Population Density, Market Functionality, Inaccessible Palikas, Children less than 2 and 5 years, Pregnant and Lactating Women in Flood Affected Terai Districts, and so on.
10. Assistance in creating project and financial proposals and making any corrections if needed.
11. Open-source data collection platform like ODK/KOBO/SurveyCTO collect were used for conducting these surveys.
12. Training and capacity building initiatives to empower communities in taking timely actions before flood disasters occur.
13. Coordination with local authorities, NGOs, and communities to establish response protocols.
14. Facilitated group discussions involving stakeholders from different sectors and communities.
15. Exploration of perspectives, experiences, and concerns related to watershed management and flood risk.
16. Implementation of pre-defined actions based on forecasted flood risks to minimize damage and protect communities.
17. Examination of hydrological processes within a watershed to understand water flow, erosion, and sediment transport.
18. Identification of land use patterns, soil types, and vegetation cover impacting water resources.
19. Semi-structured interviews conducted with key stakeholders and experts in watershed management.
20. In-depth exploration of specific issues, challenges, and opportunities within different watersheds.
21. Collection of expert opinions and insights to inform policy formulation, planning, and implementation.
22. Integration of geographic information systems (GIS) and remote sensing to analyze spatial data for watershed management.
23. In order to conduct a field survey, a questionnaire was created and placed inside an ODK/KOBO/SurveyCTO collect tool box.
24. Help in preparing crop yield forecasting and prediction map of different districts of Nepal.
25. Preparing different socioeconomic and demographic geodatabase of Nepal with spatial and temporal analysis using different GIS and spatial statistics software.

**Organization:** United Nations World Food Programme (UNWFP)

**Date:** 28<sup>th</sup> Oct 2022 to 18<sup>th</sup> Nov 2022

**Title / Position:** GIS Expert

**Reference:** Kanta Khanal (Policy and Programme Officer, Monitoring and Evaluation (M&E) Unit).

**Phone No:**

**Evidence based Policy Unit (EPI)**

**Major Task:**

1. To assess the effects of the flood on local residents' homes, livelihoods, property losses, food shortages, etc.
2. To identify the community's more vulnerable members, such as pregnant women, nursing mothers, members of underserved populations, persons with impairments, and youngsters.
3. To assess the community's preparedness for disasters and early warning systems.
4. Knowing how to lessen the effects of flooding with the help of the WFP and other UN agencies.
5. To understand how cash distribution is used, supported, and spent.

6. Collection of expert opinions and insights to inform policy formulation, planning, and implementation.
7. Open-source data collection platform like ODK/KOBO/SurveyCTO collect were used for conducting these surveys.
8. In order to conduct a field survey, a questionnaire was created and placed inside an ODK/KOBO/SurveyCTO collect tool box.
9. Maintaining good coordination with field personnel and partner organizations, national and international agencies, and other programs relating to food security and vulnerability analyses.

**Organization:** United Nations World Food Programme (UNWFP) and Food and Agriculture Organization (FAO)

**Date:** 09<sup>th</sup> Aug 2022 to 07<sup>th</sup> Sep 2022

**Title / Position:** GIS Expert

**Reference:** Sridhar Thapa, Ph.D. (Officer EPI Unit)

**Phone No:** 9841940948

Evidence based Policy Unit (EPI)

**Major Task:**

1. This evaluation was completed in collaboration with WFP and FAO to determine the impact of the flood and landslide caused by the unusually strong rains.
2. Utilization of satellite imagery and remote sensing technologies to monitor agricultural areas
3. Identification of regions affected by natural disasters, pests, diseases, or adverse weather conditions
4. Assessment of crop damage extent and severity through remote sensing analysis
5. Integration of ground-truth data and field surveys to validate remote sensing findings
6. Estimation of crop yield losses and impact on food security and livelihoods
7. Generation of reports and maps to support emergency response and aid distribution efforts
8. Collaboration with local authorities and partners to prioritize assistance and recovery interventions
9. Implementation of early warning systems and risk mitigation strategies to minimize future crop losses
10. Capacity building initiatives to strengthen local institutions in crop loss assessment and monitoring.

**Organization:** Smart City Builders

**Date:** 05<sup>th</sup> Feb 25<sup>th</sup> June 2023.

**Title / Position:** Senior GIS Analyst

**Reference:**

**Phone No:**

**Major Task:**

1. Acquiring cadastral maps or data for Bardibas and Inaruwa Municipality from respective municipal authorities or land management agencies.
2. Georeferencing cadastral maps to ensure spatial alignment with a common coordinate system.
3. Digitizing cadastral boundaries to create digital cadastral layers for Bardibas and Inaruwa Municipality.
4. Overlaying the digital cadastral layers using geographic information system (GIS) software to create a composite map.
5. Analyzing the overlapping areas to identify discrepancies or inconsistencies in land parcel boundaries.

6. Resolving any discrepancies through field verification or consultation with landowners and authorities.
7. Generating a final cadastral superimposition map depicting land parcel boundaries for both municipalities.

**Organization:** **Institute of Forestry (IOF), Hetauda**

**Date:** 25<sup>th</sup> Aug 2022 to till Date

**Title / Position:** GIS Instructor

**Reference:** Mr. Shailendra Kumar Yadav (MSc Forestry Coordinator)

**Phone No:** 9862845330

**Major Task:**

1. Introduction to GIS principles, spatial data types, and coordinate systems.
2. Basics of remote sensing technology, sensors, and satellite imagery.
3. Understanding the integration of GIS and RS in forestry applications.
4. Spatial data manipulation, analysis, and visualization using GIS software.
5. Advanced techniques such as spatial interpolation, overlay analysis, and network analysis.
6. Applications of spatial statistics and modeling in forestry research and planning.
7. Use of remote sensing for forest inventory and assessment of forest resources.
8. Techniques for forest change detection, deforestation monitoring, and forest health assessment.
9. Field data collection methods and ground-truthing procedures for validating remote sensing data.
10. Mapping of forest habitats and biodiversity hotspots using GIS and RS techniques.
11. Assessment of species distribution, habitat suitability, and ecological niche modeling.
12. Conservation planning and management strategies based on spatial analysis of biodiversity data.
13. Integration of GIS and RS in forest management planning processes.
14. Land use planning, forest zoning, and optimization of resource allocation.
15. Monitoring and evaluation of forest management activities using spatial analysis tools.
16. Use of GIS and RS for disaster risk assessment, early warning systems, and emergency response planning.
17. Analysis of forest fire risks, landslide susceptibility, and flood modeling.
18. Incorporation of spatial data into forest disaster management strategies.

**Organization:** **Institute of Forestry (IOF), Tribhuvan University**

**Date:** 25<sup>th</sup> Aug 2022 to till Date

**Title / Position:** GIS Instructor

**Reference:** Dr. Menuka Maharjan (MSc Forestry Coordinator)

**Phone No:** 9841904369

**Major Task:**

1. Introduction to GIS principles, spatial data types, and coordinate systems.
2. Basics of remote sensing technology, sensors, and satellite imagery.
3. Understanding the integration of GIS and RS in forestry applications.
4. Spatial data manipulation, analysis, and visualization using GIS software.
5. Advanced techniques such as spatial interpolation, overlay analysis, and network analysis.
6. Applications of spatial statistics and modeling in forestry research and planning.
7. Use of remote sensing for forest inventory and assessment of forest resources.
8. Techniques for forest change detection, deforestation monitoring, and forest health assessment.
9. Field data collection methods and ground-truthing procedures for validating remote sensing data.

10. Mapping of forest habitats and biodiversity hotspots using GIS and RS techniques.
11. Assessment of species distribution, habitat suitability, and ecological niche modeling.
12. Conservation planning and management strategies based on spatial analysis of biodiversity data.
13. Integration of GIS and RS in forest management planning processes.
14. Land use planning, forest zoning, and optimization of resource allocation.
15. Monitoring and evaluation of forest management activities using spatial analysis tools.
16. Use of GIS and RS for disaster risk assessment, early warning systems, and emergency response planning.
17. Analysis of forest fire risks, landslide susceptibility, and flood modeling.
18. Incorporation of spatial data into forest disaster management strategies.

**Organization:** Kathmandu Forestry College (KAFCOL)

**Date:** 25<sup>th</sup> Aug 2016 to 1<sup>st</sup> Feb 2017

**Title / Position:** GIS Instructor

**Reference:** Shiva Shankar Neupane (Diploma Coordinator)

**Phone No:** 015147046

**Major Task:**

1. Overview of Geographic Information Systems (GIS) and Remote Sensing (RS) technologies.
2. Importance of GIS and RS in forestry management, conservation, and planning.
3. Basic principles and concepts of spatial data analysis and interpretation.
4. Understanding spatial data types: vector and raster data.
5. Introduction to GIS software: ArcGIS, QGIS, and their functionalities.
6. Data acquisition methods: GPS, satellite imagery, aerial photography.
7. Hands-on exercises using GIS software to analyze forestry data.
8. Field trips for data collection, GPS surveying, and ground-truthing.
9. Project work: application of GIS and RS techniques in forestry projects or case studies.

**Organization:** Greenhood International Nepal

**Date:** 25<sup>th</sup> Sep 2016 to 1<sup>st</sup> Feb 2017

**Title / Position:** GIS Expert

**Reference:** Kumar Poudel

**Phone No:** 9851127608

**Major Task:**

1. GIS mapping of Hadi Khola Sunkoshi "A" and Chisang Khola Small Hydropower Project of Sindhupalchowk District which was interconnected with the Integrated Nepal Power System (INPS).
2. Mapping of Water Sampling, Sound Sampling, Air Quality Sampling Site of Project Site.
3. Land use change and Deforestation Trend Analysis (DTA) of different time series and its site-specific impact of project site.
4. Mapping of landslide, slope stability, prone areas with its rugged landscapes and fragile soils regards its field verification consulting with geological expert.

**Organization:** United Nations World Food Programme (UNWFP)

**Date:** 25<sup>th</sup> July to 30<sup>th</sup> Aug 2019

**Title / Position:** GIS Expert

**Reference:** Man Bahadur Kshetri (United Nations World Food Programme)

**Phone No:** 9851150640

**Major Task:**

1. Trained to local government officials and stake holders about Open Street Mapping (OSM) in "Mapathon" workshop.

2. GIS data preparing and updating using Open Street Map (OSM) tool.
3. Trained online digitization and separation of land use classes from OSM Satellite Imagery on the basis of visual image interpretation.

**Organization:** Golden Gate International College (GGIC)

**Date:** 25<sup>th</sup> Aug 2016 to 20<sup>th</sup> Feb 2018

**Title / Position:** GIS Lecturer

**Reference:** Prakash Chandra Aryal (Coordinator MSc. Environmental Science Program)

**Phone No:** 9851102256

**Major Task:**

1. Integration of GIS (Geographic Information Systems) and Remote Sensing (RS) in environmental research and analysis
2. Core courses in environmental science including ecology, conservation biology, environmental policy, and sustainability
3. Specialized courses focusing on GIS and RS applications in environmental management, land use planning, and natural resource assessment
4. Hands-on training in GIS software such as ArcGIS, QGIS, and ENVI for spatial data analysis and visualization
5. Utilization of remote sensing techniques for monitoring environmental changes, biodiversity assessment, and habitat mapping
6. Fieldwork opportunities for data collection, validation, and application of GIS and RS in real-world environmental projects
7. Capstone research project integrating environmental science concepts with GIS and RS methodologies
8. Expert faculty members with expertise in environmental science, GIS, and remote sensing
9. Collaboration with industry partners and environmental organizations for internships and practical experience
10. Graduates equipped with the skills and knowledge to address complex environmental challenges using cutting-edge geospatial technologies.

**Organization:** Resources Himalaya Foundation (RHF)

**Date:** Oct 2017 to Feb 2018

**Title / Position:** GIS Specialist

**Reference:** Dr. Kamal Adhikari (Director Resources Himalaya Foundation (RHF))

**Phone No:** 9841251625

Worked as a GIS Specialist in the project "F.I.S.H" for Climate Resilient Livelihoods in the Middle Karnali Watershed and River Basin" funded by USAID-PAANI Programme at Resources Himalaya Foundation (RHF).

**Major Task:**

1. Utilized GIS (Geographic Information Systems) tools and techniques to support the objectives of the F.I.S.H project.
2. Conducted spatial analysis and mapping to assess climate vulnerabilities and identify areas for climate-resilient livelihood interventions.
3. Developed geospatial databases and integrated diverse datasets related to land use, hydrology, demographics, and climate.
4. Collaborated with project team members to design and implement GIS-based monitoring and evaluation frameworks.
5. Produced maps, charts, and other visualizations to communicate project findings and support decision-making processes.
6. Provided technical assistance and capacity building support to project staff and partners on GIS applications and tools.



7. Contributed to the development of GIS-based models and simulations to analyze climate change impacts on livelihoods and ecosystems.
8. Conducted field surveys and data collection activities to validate and update GIS datasets.
9. Engaged with local communities and stakeholders to incorporate indigenous knowledge and perspectives into GIS analysis and planning.
10. Participated in project meetings, workshops, and reporting activities to share GIS insights and contribute to project progress tracking.

**Organization:** Surkhet Training and Research Development Centre

**Date:** 7<sup>th</sup> Aug 2021 to 7<sup>th</sup> September 2021

**Title / Position:** GIS Expert

**Reference:** Mr. Surya Prakash Kandel

**Phone No:** 9858041870

**Major Task:**

1. Gather information about higher education institutions in Karnali Province, including their names, locations (latitude and longitude coordinates), types of institutions, contact information, and other relevant attributes.
2. Obtain spatial data such as shapefiles or GeoJSON files representing the administrative boundaries of Karnali Province.
3. Compile the collected data into a structured format suitable for GIS analysis and mapping.
4. Organize the data into categories or layers based on institution types (e.g., universities, colleges, technical schools).
5. Develop a web application using HTML, CSS, and JavaScript frameworks like Leaflet for interactive mapping.
6. Use Leaflet's functionalities to create dynamic, responsive maps that allow users to interact with the data.
7. Display the higher education institutions as points on the map, with pop-up windows showing detailed information when clicked.
8. Implement features such as search and filtering to facilitate navigation and exploration of the map.
9. Incorporate additional layers or overlays to provide context, such as administrative boundaries or satellite imagery.
10. Test the dynamic mapping application thoroughly to identify and resolve any bugs or issues.
11. Deploy the application to a web server or hosting platform to make it accessible to users

**Organization:** Geo-Com International Private Limited

**Date:** 04<sup>th</sup> Jan to 01<sup>st</sup> Mar 2018

**Title / Position:** GIS Expert

**Reference:** Er. Ravi Bhusan Jha

**Phone No:** 9851107724

**Major Task:**

1. Preparing the database of households of project site
2. Internal Environment Examination (IEE) of Ridi Balkot Road (Gulmi and Argakhanchi District), Suryapura Murgiya and Ramapura Lumbini Road of Rupandehi District, Belbas Bethari Road, Rupandehi District, Parasi
3. Jhunga Road, Rupandehi District, Gauraha River Bridge, Dhangadi (Kailali District), Fulbari Rural Road section in Kailari Rural Municipality etc.
4. Land Use and Land Mapping Map of Project Site
5. Project Alignment Map
6. Calculating forest cover within the project alignment.
7. Hot spot mapping of project alignment.

8. Land use and Land cover map of project alignment

**Organization:** Ministry of Land Management, Agriculture & Cooperative (MoLMAC), Bagamati Province, Hetauda

**Date:** 07<sup>th</sup> Jan to 13<sup>th</sup> Jan 2020

**Title / Position:** GIS Expert

**Reference:** Nirmal Poudel (Senior Officer)

**Phone No:** 9855053921

**Major Task:**

1. Introduction to GIS principles and applications
2. Overview of GIS software (e.g., ArcGIS, QGIS)
3. Basic GIS functions: data input, manipulation, analysis, and visualization
4. Spatial data management and organization
5. Hands-on exercises and practical demonstrations
6. Application of GIS in land management, agriculture, and cooperative sectors
7. Case studies and examples relevant to Bagamati Province
8. Enhance participants' understanding of GIS concepts and tools
9. Build practical skills for GIS data handling and analysis
10. Demonstrate the potential applications of GIS in ministry tasks and projects
11. Increased capacity of MoLMAC staff in utilizing GIS for decision-making and planning
12. Improved efficiency and effectiveness in land management, agriculture, and cooperative activities through GIS integration

**Organization:** Kathmandu Upatyaka Khanepani Limited (KUKL), Kathmandu

**Date:** 25<sup>th</sup> Feb 2018 to 30<sup>th</sup> April 2018

**Title / Position:** GIS Expert

**Reference:** Mr. Rikesh Chitrakar (Environmental Consultant)

**Phone No:** 9841357206

This project was funded by Asian Development Bank (ADB) for the improvement and distribution of water supply in Kathmandu.

**Major Task:**

1. GIS Mapping of pipelines and its network in project site.
2. Preparing the file geodatabase of pipelines and its distribution.
3. Preparing the database of households of project site

**Organization:** Resources Himalaya Foundation (RHF)

**Date:** 03<sup>rd</sup> Feb 2018 to 13<sup>th</sup> Feb 2018

**Title / Position:** GIS Expert

**Reference:** Dr. Dinesh Raj Bhujju, Former Academician, Nepal Academy of Science and Technology (NAST)

**Phone No:** 9841992216

**Major Task:**

1. Introduction of GIS
2. GPS Handling Techniques
3. Map Layout
4. Spatial Statistics
5. Spatial Database Management
6. Geographical Analysis
7. Visualization and Cartography
8. Online Map Concepts

**Organization: Resources Himalaya Foundation (RHF)****Date:** 05<sup>th</sup> Nov 2017 to 01<sup>st</sup> Mar 2018**Title / Position:** GIS Expert**Reference:** Dr. Dinesh Raj Bhujju, Former Academician, Nepal Academy of Science and Technology (NAST)**Phone No:** 9841992216**Major Task:**

1. Monitoring and Implementation Protocol of Ecosystem Based Adaptation (EbA) Interventions, on behalf of Ministry of Population and Environment (MoPE) funded by Nepal Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (IGSNRR-CAS)
2. Mapping of different Crop Diversification sites, Resilience of Priority, Planted Seedling Sites of Project Sites.
3. Mapping of different Ecosystem Based Adaptation (EbA) of districts which include Tanahun, Lamjung and Gorkha.
4. Monitoring and Implementation Protocol of Ecosystem Based Adaptation (EbA) Interventions, on behalf of Ministry of Population and Environment (MoPE) funded by Nepal Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (IGSNRR-CAS)

**Organization: Environment & Resources Management Consultant (ERMC)****Date:** 05<sup>th</sup> Nov 2017 to Feb 2018**Title / Position:** GIS Expert**Reference:** Dr. Elena Kruezeberg, Biodiversity and Environmental Expert**Phone No:** 9808428168**Major Task:**

1. Perform duties under the guidance of Team Leader (TL) and Deputy Team Leader (DT)L.
2. Prepare Land Use Map of Kathmandu Naubise Muglin (KNM) and Kakarvitta to Pathlaiya (KP) road section which includes Right of the Way (ROW), Direct Impact Area (DIA) and Indirect Impact Area (IIA) with area of forest cover extraction in all these.
3. Prepare different Road Alignment of Existing Highway from Kathmandu to Muglin.
4. Mapping of Water Sampling, Sound Sampling, Air Quality Sampling Site of Project Site.
5. Hot spot mapping of wildlife crossings along the highways.
6. Land use change and Deforestation Trend Analysis (DTA) of different time series and its site-specific impact of project site.
7. Perform duties under the guidance of Team Leader (TL) and Deputy Team Leader (DT)L.
8. Prepare Land Use Map of Kathmandu Naubise Muglin (KNM) and Kakarvitta to Pathlaiya (KP) road section which includes Right of the Way (ROW), Direct Impact Area (DIA) and Indirect Impact Area (IIA) with area of forest cover extraction in all these.
9. Mapping of Water Sampling, Sound Sampling, Air Quality Sampling Site of Project Site.
10. Prepare Land Use Map of Kathmandu Naubise Muglin (KNM) and Kakarvitta to Pathlaiya (KP) road section which includes Right of the Way (ROW), Direct Impact Area (DIA) and Indirect Impact Area (IIA) with area of forest cover extraction in all these.
11. Mapping of Water Sampling, Sound Sampling, Air Quality Sampling Site of Project Site.
12. Hot spot mapping of wildlife crossings along the highways.

**Organization: Resources Himalaya Foundation (RHF)****Date:** 05<sup>th</sup> Nov 2017 to Feb 2018**Title / Position:** GIS Database Management Expert**Reference:** Dr. Jefferson Fox, Senior Fellow**Phone No:**

**Major Task:**

1. Preparing forest cover database related to mid hill of Nepal.
2. GIS population census data, livelihood zonation, economic census, forest cover area per district, household per wards in districts and another related database of mid hill Nepal.
3. Forest cover extraction of mid hills by using satellite image classification or remote sensing technique. Preparing forest cover database related to mid hill of Nepal.
4. GIS population census data, livelihood zonation, economic census, forest cover area per district, household per wards in districts and another related database of mid hill Nepal.
5. Forest cover extraction of mid hills by using satellite image classification or remote sensing technique.

**Organization:** Nepal Agricultural Research Council (NARC), Gene Bank

**Date:** 01<sup>st</sup> Dec 2016 to 30<sup>th</sup> July 2017

**Title / Position:** GIS Database Management Expert

**Reference:** Dr. Deepa Singh Shrestha, Ph.D. (Senior Scientist)

**Phone No:** 9849189955

**Major Task:**

1. Mainly focused on Habitat Suitability Index (HSI) Mapping of different indigenous plant species of Nepal. Habitat Suitability modelling, predictive habitat distribution modelling, and climate envelope modelling refers to the process of using computer algorithms to predict the distribution of indigenous species in geographic space on the basis of a mathematical representation of their known distribution in environmental space of Nepal using MaxEnt Entropy Distribution Modelling.

**Organization:** Eptisa Servicios De Ingenieria S.L Madrid Spain / VKS Infratech Management Pvt. India / Geocom International Pvt. Ltd Nepal

**Date:** 1<sup>st</sup> Sep 2016 to 28<sup>th</sup> Feb 2017

**Title / Position:** GIS Database Management Expert

**Reference:** Dr. Elena Kruezberg, Biodiversity and Environmental Expert

**Phone No:** 9849189955

This project was collaboration with Department of Road (DOR) with the World Bank (WB).

**Major Task:**

1. Perform duties under the guidance of Team Leader (TL) and Deputy Team Leader (DTL).
2. Mapping of Land Use Change and Deforestation Trend Analysis (DTA) for road corridor development in TeraiChuria Region of Nepal.
3. Make a road network map for the region of Terai - Churia Region
4. Mapping on hotspot for traffic incidents involving Wildlife-Vehicles Collisions (WVC) in major highways of Terai - Churia Region.
5. Mapping of corridors in Terai Churia regions.
6. Technically support to Hydrological Mapping and identify flood, prone zone by spatial modelling.
7. Mapping of landslide, slope stability, prone areas with its rugged landscapes and fragile soils regards its field
8. verification consulting with geological expert.
9. Other miscellaneous mapping like Annual Mean Temperature, Annual Mean Precipitation, Annual Mean Rainfall, Normalized Difference Vegetation Index (NDVI), Normalized Difference Water Index (NDWI) and others by using Geographical Information System and Remote Sensing technique.

**Organization:** Intrepid Geoinformatics Pvt Ltd.

**Date:** 3<sup>rd</sup> Aug 2016 to 30<sup>th</sup> Dec 2017

**Title / Position:** GIS Officer

**Reference:** Shailendra Bajracharya, CEO, Intrepid Geoinformatics

**Phone No:** 9841278655

**Major Task:**

1. Develop and maintain GIS databases by collecting, editing, and updating spatial data using GIS software such as ArcGIS, QGIS, or similar tools.
2. Conduct spatial analysis and generate maps, reports, and visualizations to support decision-making processes within the company.
3. Collaborate with other departments to integrate GIS data into various projects and applications.
4. Assist in the design and implementation of GIS projects, including data acquisition, quality control, and project management.
5. Provide technical support and training to staff members on GIS software, data interpretation, and spatial analysis techniques.
6. Stay updated with the latest GIS technologies, trends, and best practices to enhance the company's geospatial capabilities.
7. Ensure data accuracy, integrity, and security within GIS databases and systems.
8. Participate in field data collection activities using GPS devices and other data collection tools.
9. Communicate effectively with stakeholders to understand their GIS requirements and deliver solutions that meet their needs.
10. Contribute to the development of GIS policies, standards, and procedures to maintain consistency and efficiency in GIS operations.

**Organization:** **Research Enclave Pvt Ltd.**

**Date:** 5<sup>th</sup> Mar2020 25<sup>th</sup> April 2022

**Title / Position:** GIS Expert (Part Time)

**Reference:** Durga Prashad Dahal, CEO

**Phone No:** 9851097036

**Major Task:**

1. GIS Mapping- (Land Use Pattern, Settlement, River, Road, Forest etc) of Sundarharaicha Municipality- Morang.
2. GIS Mapping- (Land Use Pattern, Settlement, River, Road, Forest etc) of Tamakoshi Rural Municipality-Dolakha.
3. GIS Mapping- (Land Use Pattern, Settlement, River, Road, Forest etc) of Mahabharat Rural Municipality-Kavre.
4. GIS Mapping- (Land Use Pattern, Settlement, River, Road, Forest etc) of Kakani Rural Municipality-Nuwakot.
5. GIS Mapping- (Land Use Pattern, Settlement, River, Road, Forest etc) of Bidur Municipality-Nuwakot.

**Organization:** **Himalayan College of Agricultural Science and Technology (HICAST)**

**Date:** 18<sup>th</sup> Aug 2022 to 20<sup>th</sup> Aug 2022

**Title / Position:** GIS Instructor

**Reference:** Subekshya Shrestha Bajimaya, Coordinator

**Phone No:**

The training was focused to faculty members of Himalayan College of Agricultural Science and Technology (HICAST) and the tasks are as follows

**Major Task:**

1. Introduction to GIS principles and concepts
2. Overview of GIS software (e.g., ArcGIS, QGIS)
3. Basics of spatial data acquisition, processing, and analysis

4. Application of GIS in agriculture, forestry, environmental science, and natural resource management
5. Hands-on exercises and practical demonstrations
6. Case studies and examples relevant to agricultural sciences and rural development
7. To familiarize participants with GIS tools and techniques applicable to agricultural research and practice
8. To build practical skills for handling spatial data and conducting GIS analysis in agricultural contexts
9. To demonstrate the potential applications of GIS in addressing challenges and opportunities in agriculture and rural development
10. Enhanced capacity of participants in utilizing GIS for data-driven decision-making in agricultural and environmental contexts
11. Improved understanding of the role of GIS in addressing agricultural challenges such as land use planning, crop monitoring, and natural resource management

**Organization:** Department of Zoology, Tribhuwan University

**Date:** 3<sup>rd</sup> July 2017 to 11<sup>th</sup> July 2017

**Title / Position:** GIS Instructor

**Reference:** Prof. Dr. Nanda Singh Thakuri, PhD. (Vice Chancellor of Mid-Western University)

**Phone No:** 9851155775, 9813920757

The training was focused to professors, PhD scholars, Assistant professors, Associate professors of Department of Zoology, Tribhuwan University and the tasks are as follows.

#### Major Task:

1. Introduction to GIS fundamentals and concepts
2. Overview of GIS software (e.g., ArcGIS, QGIS) and their basic functionalities
3. Basics of spatial data acquisition, processing, and analysis relevant to zoological research
4. Application of GIS in wildlife conservation, habitat mapping, biodiversity assessment, and ecological modeling
5. Hands-on exercises and practical demonstrations tailored to zoological applications
6. Case studies and examples showcasing GIS applications in zoological studies and conservation projects
7. To introduce participants to the role of GIS in zoological research and conservation
8. To provide practical skills for utilizing GIS tools and techniques in studying animal habitats, migration patterns, and biodiversity
9. To empower participants to integrate GIS into their research projects and fieldwork in the Department of Zoology
10. Enhanced capacity of participants in applying GIS for spatial analysis and mapping in zoological studies
11. Increased awareness of the potential of GIS in addressing conservation challenges and understanding animal behavior

#### Trainings

1. 07 – 13 January 2020 “As GIS Instructor” has successfully completed the training in Ministry of Land Management, Agriculture & Cooperative Bagmati Province, Hetauda. This training was targeted to the technical/professional staff from government officials as well as interested individuals, university graduates and, undergraduate level students with working knowledge of computer and preferably with some prior exposure of GIS.





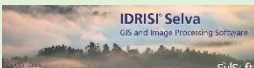




2. 04 – 08 November 2019 “As Trainee” has successfully completed the training on UAS Training on Coordination of Drones in Humanitarian Action supported by Belgium (partner in development), United Nations World Food Programme (UNWFP) and Ministry of Home Affairs Nepal.
3. 06 – 12 September 2019 “As a Trainee” has successfully completed the training on Visual Analytics using Tableau training organized by United Nations World Food Programme (UNWFP) Regional Bureau for Asia and the Pacific
4. 25–26 April 2019 “As a Trainee” has successfully completed the training on CCAFS’s Regional Agricultural Forecasting Toolbox order to increase the capacity of developing regions for within season regional yield forecasting, impacts of climate fluctuations on crop production and projected impacts of future climate change the CGIAR research program on Climate Change, Agriculture and Food Security (CAAFS) Program convened a workshop on “Seasonal Weather Forecasts Linked Pre-Harvest Estimates of Crop Production: Methodological Approaches” held at Bangkok 10330, Thailand.
5. January 14 – 18 2019 “As a Trainee” has successfully completed the Seminar and Workshop on Global Navigation Satellite System (GNSS) Course: T151-30 jointly organized by Geo – informatics Centre, Asian Institute of Technology (GIC/AIT), Centre for Spatial Information Science, The University of Japan (CSIS/UT) and International Committee on Global Navigation Satellite System (ICG) held at Bangkok, Thailand.
6. September 7, 2017 “As Competitor” organized by USAID collaboration with Microsoft Innovation Center Nepal, CIMMYT International Maize and Wheat Improvement Center, Integrated Center for Mountain Development Center (ICIMOD) on the behalf of Intrepid Geoinformatics Pvt. Ltd entitled “Data Driven Farming Prize” at Raddison Hotel, Kathmandu.
7. March 09 – March 19, 2015 “Wildlife Training to Graduates” organized by the Environmental Graduates in Himalayas (EGH) in collaboration with Resources Himalaya Foundation (RHF), Bird Conservation Nepal (BCN), National Trust for Nature Conservation (NTNC), Wildlife Conservation Nepal (WCN) and World Wildlife Fund (WWF) Nepal.
8. August 10, 2017 “As Guest Lecturer” in Geography Department of Tribhuvan University (TU) organised by Eurasia – Pacific Uninet Faculty Development on the Topic “GI Science Assessing Feasibility of Agricultural Diversification in the Himalayas” with collaboration GI Science, Department of Geography, Salzburg University, Agri HIMAL and UNINET.
9. December 15 – December 23 “Qualitative Data Analysis in MS-Office” which was organized by Precise Geospatial Solution Pvt. Ltd. Which deals with qualitative data tools and techniques, data collection and analysis methods, consistency and reliability, prepare organization of data, reviewing and exploring collected data, thematic analysis and finally data visualization and presentation.

**Membership in Professional Association and Publication:**

- Life member of Nepal GIS Society (NGISS).

**Key Qualification in Software**

Languages Skills:	<i>Speaking</i>	<i>Reading</i>	<i>Writing</i>
English	Excellent	Excellent	Excellent
Nepali	Excellent	Excellent	Excellent
Hindi	Fair	Fair	Fair
German	Good	Good	Good

Software	Uses
<p><b>ArcMap</b> 10.8</p> 	<p>It is used for creating and using maps, compiling geographic data, analysing mapped information, sharing, and discovering geographic information, using maps and geographic information in a range of applications, and managing geographic information in a database.</p>
<p><b>R</b></p> 	<p>R is a language and environment for statistical computing and graphics. R provides a wide variety of statistical (linear and nonlinear modelling, classical statistical tests, time-series analysis, classification, clustering ...) and graphical techniques, and is highly extensible.</p>
<p><b>Erdas Imagine</b></p> 	<p>ERDAS Imagine is a remote sensing application with raster graphics editor abilities designed by ERDAS for geospatial applications.</p>
<p><b>E-Cognition</b></p> 	<p>E - Cognition software is a powerful development environment for object-based image analysis. It is used in earth sciences to develop rule sets for the automatic analysis of remote sensing data.</p>
<p><b>Selva</b></p> 	<p>IDRISI is a raster-based GIS &amp; image processing software serving a broad range of tasks. Its file structure is simple and transparent such making it easy to cope with.</p>
<p><b>Statistical Package for Social Science (SPSS)</b></p> 	<p>The Statistical Package for the Social Sciences (SPSS) is a software package used in statistical analysis of data. It was developed by SPSS Inc. and acquired by IBM in 2009. In 2014, the software was officially renamed IBM SPSS Statistics.</p>
<p><b>Land Serf</b></p> 	<p>Land Serf is a freely available Geographical Information System (GIS) for the visualization and analysis of surfaces. It includes visualization of landscapes; geomorphological analysis; gaming development; GIS file conversion; map output; archaeological mapping and analysis; surface modelling and many others.</p>
<p><b>QGIS</b></p> 	<p>QGIS (previously known as Quantum GIS) is a cross-platform free and opensource desktop geographic information system (GIS) application that supports viewing, editing, and analysis of geospatial data.</p>
<p><b>Python Programming</b></p> 	<p>Python is a general-purpose interpreted, interactive, object-oriented, and highlevel programming language. It was created by Guido van Rossum during 1985- 1990. Like Perl, Python source code is also available under the GNU General Public License (GPL).</p>



### Technical Report Submission

1. Kreuzberg, E., Khadka, R., Maharjan, B., Ghimire, S., Shrestha, P., Ghimire, M., and Timseena, B. (2016). Strategic Options Analysis of Alternatives Strategic Environmental and Social Assessment (SESA)/Sustainability Study for Birgunj to Kathmandu Trade Corridor.
2. Kreuzberg, E., Khadka, R., Maharjan, B., Ghimire, S., Shrestha, P., Ghimire, M., and Timseena, B. (2017). Landscape Use Change and Deforestation Trend Analysis in the Birgunj to Kathmandu Trade Corridor.
3. Kreuzberg, E., Maharjan, B., Chitrakar, R., Ghimire, S., Panday, P., and Tamrakar, P.R. (2017). The Environmental and Social Impact Assessment (ESIA) Kathmandu (Naghdhunga) - Naubise - Munglin section of Roads (KNM), Nepal India Regional Trade and Transport Project (NIRTTP).
4. Kreuzberg, E., Maharjan, B., Shrestha, N., Malla, D., Tamrakar, P.R., Ulak, P.D., Regmi, R., Shrestha, I., Shrestha, R.B., and Upreti, A.R. (2017). The Environmental and Social Impact Assessment (ESIA) Kakarvhitia and Pathlaiya section of Roads (KP), Nepal India Regional Trade and Transport Project (NIRTTP).

### Research Grant

- This grant is being awarded by Rufford Grant for the research entitled "Assessment of Suitable Habitat of Common Leopard (*Panthera pardus*) and its conflict with Human in Shivapuri Nagarjun National Park using Geographic Information" for conducting research who's worth £5000.

### Published Papers

1. Bishnu Maharjan, Shahnawaz, Tej B. Thapa, Purna Man Shrestha (2017). Geo-spatial Analysis of
  - a. Habitat Suitability for Common Leopard (*Panthera pardus* Linnaeus, 1758) in Shivapuri Nagarjun National Park, Nepal. *Environment and Ecology Research*, 5, 117 - 128. doi: 10.13189/eer.2017.050206.
  - b. 10.13189/eer.2017.050206.
2. Raju Chhetri, Pramod Prasad Dahal, Kalpana Pokhrel, Bishnu Maharjan, Saurav Suman (2018). Expedition from Slash and Burn to Agroforestry Plantation, Livelihood upliftment Sub sequences of "Bankariya Ethnics": A Case Study of „Manahari Rural Municipality" within Central Nepal. *International Journal of Humanities and Social Science Invention (IJHSSI)* ISSN (Online): 2319 – 7722, ISSN (Print): 2319 – 7714 www.ijhssi.org ||Volume 7 Issue 07 Ver. II||July. 2018 || PP.01-09.
3. Chhetri R.; Basnet S.K.; Dhakal R.; Maharjan B. The Performance of Local Governments of to Fight against the COVID-19: The Case of Makwanpur and Chitwan Districts of Bagmati Province of Nepal. *Green Rep.*, 2021, 2(4), 13-20.
4. Devkota, K., Maharjan, B., Mandal, D. N., Giri, R., & Goode, M. (2021). Save The King: Human-King Cobra, *Ophiophagus hannah* (Cantor 1836), conflicts and the need for conservation strategies in Nepal. *Reptiles & Amphibians*, 28(2), 197-204.
5. Joshi, U., Shrestha, P. M., Maharjan, S., Maharjan, B., Chapagain, N. P., Karki, I. B., & Poudyal, K. N.
  - a. (2021). Estimation of Solar Energy Using Different Empirical Models at Mid Hill, Nepal. *Journal of Nepal Physical Society*, 7(2), 42-48.

### Skills and Abilities

1. Key software like ArcGIS Desktop, Q-GIS (Open source), Erdas Imagine (Remote Sensing), Tableau (Data Analysis), MaxEnt (Habitat Suitability Modelling) and so on.

2. Creating and using Maps, compiling Geographic Data, Analysing Mapped Information, sharing and discovering geographic information, using maps and geographic information in a range of applications, and managing in a database.
3. Capable of Remote Sensing application with raster graphics editor abilities designed for geospatial applications.
4. Excellent coordination skills of image processing software serving a broad range of tasks.
5. For the visualization and analysis of surfaces. It includes visualization of landscapes, geomorphological analysis, GIS file conversion, map output, archaeological mapping and analysis, surface modelling and many others.
6. Knowledge of different programming languages such as Hypertext Mark-up Language (HTML), Cascading Style Sheets (CSS), JavaScript and Python.
7. Capacity to work in Emergency Operations under stressful conditions and handle pressure
8. Reporting skills: preparation related to GIS and RS.
9. Mobile Based Application Development.

#### Udemy Online Courses Completed

1. **"Tableau Enthusiast"** The "Visual Analytics using Tableau" training organized by United Nations
  - a. World Food Programme Regional Bureau for Asia and the Pacific (06 September 2019)
2. 1 hour of **"Fundamental of GIS and Web GIS"** online course on March 25, 2019.
3. 14.5 hours of **"Introduction to Web Programming for GIS Applications"** online course on June 10, 2019.
4. 1 hour of start **"3D GIS Web Development in JavaScript"** online course on March 15, 2019
5. 13.5 hours of **"Display and Analyse GIS data on the Web Leaflet"** online course on June 13, 2019.
6. 2 hours of Leaflet JS - **"Create Apps using Leaflet JS"** online course on March 29, 2019.
7. 1 hour of **"Microsoft Excel Workbooks & Worksheet: Simple Tips & Trick"** online course on April 15, 2020.
8. 5.5 hours of **"Leaflet for Beginners"** online course on June 23, 2019.

**Expert's Contact Information:** Email: [ichbinbishnu@gmail.com](mailto:ichbinbishnu@gmail.com), [bishnum.npkm.sep2013@gmail.com](mailto:bishnum.npkm.sep2013@gmail.com)  
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### References

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Kathmandu, Nepal

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**Sridhar Thapa Dr.**

United Nations World Food Programme (UNWFP)

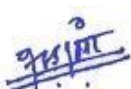
Program Policy Officer

Country Office, Kathmandu

+977-9841940948, [sridhar.thapa@wfp.org](mailto:sridhar.thapa@wfp.org)

### Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. Understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.



Date: 15<sup>th</sup> March, 2024

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Name of Expert: Mr. Bishnu Maharjan

Position: GIS and RS Expert