Government of Nepal
Water and Energy Commission Secretariat
Centre of Hydrology and Water Resources Research
Babarmahal, Kathmandu

Application Form for Researcher

Please attach passport size photograph

Personal Details

Name: _____

Name (In Devanagari): _____

Place of Birth: _____ Date of Birth: _____

Nationality: _____ Gender: _____

Citizenship Number: _____ Date and Place of Issue: _____

Permanent Address:

_____

_____

Mobile: _____

Current Address

_____

_____

Mobile: _____ E-mail: _____

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Academic Qualifications

Level	Name and Address of Institution	Subject	Marks in Percentage/ GPA	Year
Bachelor's				
Master's				
Other				

Professional Experiences (if any)

Position	Name and Address of the Institution	Duration of work	
		From	To

Publication (if any)

Research Interest

I, the undersigned certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications and my experiences. I understand that any wilful misstatement described herein may lead to my disqualification for the position/purpose of this application. All the rights regarding the decision on the application or the selection of aforementioned position will be remained with CHWRR.

Signature: Date:

Name:

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Documents to be submitted:

1. Cover Letter addressed to the Executive Director of CHWRR
2. Application Form
3. Photocopy of Citizenship
4. Photocopy of Transcript and Character Certificate of Bachelor's degree
5. Photocopy of Transcript and Character Certificate of Master's degree
6. Photocopy of Transcript and Character Certificate of higher degree (if any)
7. Curriculum Vitae
8. Professor's recommendation letter from the University/Institute/College where he/she obtained Master's or higher degree
9. Research Proposal with intended outcomes and methodology/work plan for the research topic provided by CHWRR
10. Eligibility criteria – At least two years' experience of research work in water resources sector and completion of at least two research works. Evidences shall be submitted during application.
11. Research theme and topic for Researchers can be downloaded from website

Other Note:

- Facility services are provided to Researchers as per approved Guidelines regarding program of mobilizing Researchers in water resources sector. (Please download from website: www.chwrr.gov.np)
- The duration of the research programme shall be reviewed and, where necessary, revised for the subsequent fiscal year, taking into account the research performance and progress achieved up to the end of Fiscal Year 2083/84, as well as the availability of funds.

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Selection Criteria

अनुसूची-३

(दफा ८ को उपदफा (२) सँग सम्बन्धित)

अनुसन्धानकर्ताका प्रस्ताव/आशय पत्रहरूको मूल्याङ्कन तथा छनौट मापदण्ड

क्र.स.	मूल्याङ्कन वा छनौटका सूचक	अधिकतम अङ्कभार	अङ्कभार विभाजन
१	शैक्षिक योग्यता	२०	विद्यावारीधि - २०, स्नातकोत्तर - १५
२	सम्बन्धित क्षेत्रको अनुसन्धान कार्यानुभव	१०	५ वर्ष भन्दा बढी — १०, ३-५ वर्ष — ८, ३ वर्ष भन्दा कम - ५
३	सम्बन्धित क्षेत्रमा गरेको अनुसन्धान कार्य (राष्ट्रिय/अन्तर्राष्ट्रिय ख्यातीप्राप्त जर्नलमा प्रकाशित) सङ्ख्या	२०	५ वटा भन्दा बढी — २०, ३ - ५ वटा — १५, ३ वटा भन्दा कम - १०
४	पेश भएको अनुसन्धान प्रस्ताव	४०	समितिले निर्धारण गर्ने
५	प्रस्तुतीकरण	१०	समितिले निर्धारण गर्ने
	जम्मा	१००	

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TERMS OF REFERENCE (TOR)

For

Researchers

Government of Nepal

Water and Energy Commission Secretariat

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Babarmahal. Kathmandu

जलस्रोत तथा ऊर्जा (जलबिज्ञान) विषयमा प्रोजेक्ट/थेसिस इन्टर्नशीप तथा सोधकर्ता परिचालन तथा सोध प्रकाशन कार्यक्रम

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1. Background and context

The Centre of Hydrology and Water Resources Research (CHWRR) is a premier research institution dedicated to addressing critical challenges at the intersection of water resources management, hydrology, cryosphere, energy systems, and environmental sustainability. The Centre seeks to recruit qualified research associate across four specialized thematic areas to strengthen its research capacity and contribute to applied research-based implementation, evidence-based policy formulation, technological innovation, and sustainable development in the field of water resources

The Centre operates in a rapidly evolving landscape where climate change, water-induced disasters, water resources, hydrological and sediment modelling, cryosphere, energy transitions, and agricultural water management present complex, interconnected challenges requiring interdisciplinary research excellence.

It is hence the center with government fund seeks four numbers of qualified researchers in their relevant field as described below.

2. Objectives of the recruitment

The primary objectives of hiring the research associates are:

- To enhance research capacity in four critical thematic domains aligned with national and regional development priorities;
- To generate high-quality, evidence-based research outputs so that it can be directly apply in water resources policy formulation, practice, and innovation;
- To foster interdisciplinary collaboration across water, energy, climate, and agricultural;
- To build institutional knowledge base and strengthen the Center's position as a regional research hub;
- To support bilateral and multilateral negotiation processes through technical expertise and policy analysis;
- To advance laboratory-based experimental research in hydraulic engineering and water infrastructure.

3. Thematic areas and scope of work

Theme 1: Water-induced disaster risk management and climate change

Research Focus Areas:

- Impact of Climate change on water resources availability and variability
- Hydrological modeling under changing climate scenarios
- Impact of Climate change on cryosphere and Himalayan ecosystems.
- Climate-resilient water infrastructure planning and design
- Adaptation and mitigation strategies for water-energy systems
- Glacier hydrology and cryosphere changes
- Climate risk assessment and risk mapping
- Integration of climate projections into water resource planning

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- Flood forecasting, early warning systems, and risk management
- Landslide and debris flow dynamics related to hydrological triggers
- Landslide hazard mapping
- Drought monitoring, prediction, Drought forecasting and impact assessment
- Flash flood modeling and watershed-scale hazard assessment
- Glacier lake outburst flood (GLOF) risk assessment and mitigation
- Integrated disaster risk reduction (DRR) and water management
- Post-disaster recovery and resilience building in water systems

Key Deliverables:

- Climate impact assessment reports and scenario analyses
- Peer-reviewed publications on climate-water interactions
- Technical guidance documents for climate-adaptive management
- Contribution to national climate change adaptation plans
- Policy briefs on climate-resilient water governance
- Hazard and risk assessment maps and databases
- Early warning system design and evaluation reports
- Disaster risk management guidelines and protocols
- Case studies and lessons learned documentation
- Training materials and capacity-building resources

Required Expertise:

- Climate science, hydrology, atmospheric science, Water Resources, Geology, Disaster management background
- Proficiency in climate modeling tools (e.g., GCM/RCM downscaling, hydrological models)
- Experience with IPCC assessment methodologies and climate scenarios
- Strong quantitative and spatial analysis skills (GIS, remote sensing)
- Strong programming skills (Python, R etc)
- Experience with hydraulic and hydrological modeling (HEC-RAS, MIKE, SWMM, etc.)
- Knowledge of remote sensing, GIS or satellite image processing for disaster assessment
- Understanding of DRR frameworks (Sendai Framework, national DRR strategies)

Theme 2: Energy, transboundary water cooperation and bilateral negotiation

Research Focus Areas:

- Water-energy nexus analysis and integrated resource planning
- Hydropower development, optimization, and environmental sustainability
- Transboundary water and energy governance and diplomacy
- Bilateral and multilateral negotiation support for water/energy treaties

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- Energy analysis, renewable energy integration, and grid planning
- Benefit-sharing mechanisms for transboundary water and energy projects
- Power trade, regional energy markets, and cross-border infrastructure
- Climate change impacts on transboundary water and energy systems
- Environmental flow requirements and ecological sustainability in hydropower
- Water allocation and sharing mechanisms in transboundary river basins
- Conflict resolution and mediation in transboundary water disputes
- Socio-economic impact assessment of large-scale water and energy projects
- Gender and social inclusion in transboundary water and energy governance
- Climate-resilient energy infrastructure and adaptive management
- Groundwater governance and transboundary aquifer management
- Sediment monitoring and its management
- Water quality monitoring and pollution control in shared water bodies
- Disaster risk reduction in transboundary water and energy infrastructure
- Public-private partnerships and financing models for water-energy projects
- Community engagement and indigenous rights in transboundary resource management
- Digital tools and decision support systems for transboundary water management
- Socio-economic damage assessment of water induced disasters and its future projection.

Key Deliverables:

- Water-energy nexus assessments, transboundary governance evaluations, climate risk and vulnerability analyses, and socio-economic and environmental impact studies
- Bilateral and multilateral negotiation support documents, draft treaty provisions, memoranda of understanding, and agreement frameworks
- Regional cooperation strategies, water allocation and sharing plans, renewable energy integration and grid planning reports, and climate-resilient infrastructure designs
- Cost-benefit and feasibility studies for water-energy infrastructure, financing and investment strategies, and public-private partnership models
- Stakeholder analysis, community consultation frameworks, indigenous rights assessments, and gender and social inclusion action plans
- Hydropower optimization studies, environmental flow guidelines, water quality monitoring protocols, and GIS-based digital decision support platforms
- Training modules for negotiators and practitioners, policy briefs and communication materials, and peer-reviewed publications on transboundary cooperation
- Disaster preparedness and emergency response strategies, conflict sensitivity analyses, groundwater management plans, and adaptive management protocols

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Required Expertise:

- Background in energy, international relations, water law, or water economics
- Understanding of transboundary water governance and international water law
- Experience in analysis, negotiation processes, or diplomatic contexts
- Knowledge of energy markets, power systems, and renewable energy technologies
- Strong analytical, writing, and communication skills for audiences

Theme 3: Hydraulic modeling and laboratory-based research

Research Focus Areas:

- Physical hydraulic modeling of weirs, dams, spillways, and river structures
- Sediment transport, river morphology studies and river management interventions
- Hydraulic structure design optimization and performance testing
- Flow measurement and instrumentation development
- Instrument calibration
- Computational fluid dynamics (CFD) validation using physical model data
- Urban drainage and flood control structure testing
- Turbine and pump testing for hydropower and irrigation applications
- Scour and erosion analysis around bridge piers and abutments
- Two-phase flow modeling and air entrainment in hydraulic structures
- Wave dynamics and coastal structure interaction studies
- Hydraulic jump and energy dissipation analysis
- Real-time monitoring and smart sensor integration in physical models
- Scale effects and similitude analysis for model-prototype correlation
- Climate-resilient hydraulic infrastructure design and testing
- Debris flow and sediment flushing mechanism studies
- Cavitation and flow-induced vibration analysis in hydraulic machinery
- Multi-purpose reservoir operation and controlled release optimization
- Eco-hydraulics and fish passage design evaluation

Key Deliverables:

- Physical model design, construction, and testing reports; calibration and validation datasets for numerical models; scale effect and similitude analysis documentation
- Hydraulic performance evaluation and optimization recommendations for dams, spillways, and river structures; scour and erosion risk assessments; energy dissipation and hydraulic jump analysis reports
- Technical specifications and design guidelines for hydraulic structures; structural hydraulic design standards compliance reports; climate-resilient infrastructure design manuals

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- Computational fluid dynamics validation reports using physical model data; two-phase flow and air entrainment analysis; cavitation and flow-induced vibration assessments
- Flow measurement and instrumentation development reports; laboratory quality assurance and standard operating procedures; smart sensor integration and real-time monitoring protocols
- Urban drainage and flood control structure testing reports; debris flow and sediment flushing mechanism studies; controlled release and reservoir operation optimization plans
- Turbine and pump testing reports for hydropower and irrigation applications; hydraulic machinery efficiency and performance evaluations; wave dynamics and coastal structure interaction studies
- Eco-hydraulics and fish passage design evaluation reports; environmental flow compatibility assessments; peer-reviewed publications on experimental hydraulics and river morphology

Required Expertise:

- Water Resource engineering, Hydraulic engineering, Engineering geology, or civil engineering background
- Hands-on experience with physical hydraulic modeling and laboratory techniques
- Proficiency in CFD software (OpenFOAM, ANSYS Fluent, Flow-3D, etc.)
- Knowledge of instrumentation, data acquisition, and measurement techniques
- Understanding of structural hydraulic design standards and codes
- Experience with sediment transport modeling and river morphology analysis
- Familiarity with scale modeling principles and prototype correlation methods
- Skills in eco-hydraulics, environmental flow assessment, and fish passage design
- Competence in urban drainage systems, flood control, and storm-water management
- Understanding of hydropower machinery, turbine efficiency testing, and pump hydraulics
- Ability to develop laboratory protocols, quality assurance systems, and SOPs
- Strong data analysis, visualization, and technical writing capabilities

Theme 4: Irrigation, water management and agriculture

Research Focus Areas:

- Modern irrigation system design, efficiency, and performance assessment
- Water accounting and productivity in agricultural systems
- Climate-smart agriculture and water management practices
- Participatory irrigation management and institutional reforms
- Crop-Water modelling

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- Agricultural water demand forecasting and allocation optimization
- Salinity management, drainage, and soil-water interactions
- Integration of renewable energy (solar pumping) in irrigation systems
- Watershed management and rainwater harvesting for agriculture
- Drip, sprinkler, and pressurized irrigation technology optimization
- On-farm water management and crop-water requirement estimation
- Groundwater recharge and conjunctive use in irrigated agriculture
- Water quality assessment for irrigation suitability and crop health
- irrigation governance and Water user organization
- Gender responsive irrigation system
- Digital agriculture and precision irrigation using remote sensing and IoT
- Post-harvest water management and value chain water footprint analysis
- Climate adaptation and drought-resistant crop variety water use studies
- River basin-scale agricultural water planning and transboundary irrigation coordination
- Economic instruments and water pricing for sustainable irrigation
- System design, operational modalities for multi-purpose water resources projects.
- Water footprint and water pricing
- Public-Private partnership in irrigation infrastructure operation and management

Key Deliverables:

- Irrigation system performance evaluations, modernization and rehabilitation plans, and design specifications for pressurized and gravity irrigation systems
- Water accounting and productivity assessments, crop-water requirement studies, and on-farm water management optimization recommendations
- Guidelines for climate-smart irrigation water management, drought adaptation strategies, and climate-resilient irrigation practice manuals
- Policy recommendations for sustainable irrigation governance, institutional reform proposals, water pricing and economic instrument designs, and participatory management frameworks
- Training modules and extension materials for farmer and practitioner capacity building, farmer organization strengthening guides, and gender-responsive irrigation governance toolkits
- Socio-economic impact assessments of irrigation interventions, livelihood and food security analysis reports, and value chain water footprint studies
- Salinity management and drainage design reports, groundwater recharge and conjunctive use plans, water quality assessment for irrigation suitability, and watershed management and rainwater harvesting designs

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- Precision irrigation system designs using remote sensing and IoT, solar pumping integration plans, digital agriculture platforms, and renewable energy-based irrigation feasibility studies

Required Expertise:

- Irrigation system performance evaluations, modernization and rehabilitation plans, and design specifications for pressurized and gravity irrigation systems
- Water accounting and productivity assessments, crop-water requirement studies, and on-farm water management optimization recommendations
- Guidelines for climate-smart agricultural water management, drought adaptation strategies, and climate-resilient irrigation practice manuals
- Policy recommendations for sustainable irrigation governance, institutional reform proposals, water pricing and economic instrument designs, and participatory management frameworks
- Training modules and extension materials for farmer and practitioner capacity building, farmer organization strengthening guides, and gender-responsive irrigation governance toolkits
- Socio-economic impact assessments of irrigation interventions, livelihood and food security analysis reports, and value chain water footprint studies
- Precision irrigation system designs using remote sensing and IoT, solar pumping integration plans, digital agriculture platforms, and renewable energy-based irrigation feasibility studies

4. Eligibility and qualifications

Minimum Qualifications (All Themes):

Criterion	Requirement
Education	Master's degree in relevant field
Experience	Minimum 2 years of relevant research or professional experience
Publications	Demonstrated record of research outputs (Minimum 2 research publications)
Language	Nepali and English
Computer Skills	Proficiency in relevant technical software, data analysis tools, Programming, Big data analysis

Desirable Qualifications:

- Prior experience with research institutions, government agencies, or international organizations
- Fieldwork experience in challenging environments
- Experience with grant writing and project management
- Network of professional contacts in relevant thematic areas
- Teaching, training, or capacity-building experience

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- International exposure and cross-cultural collaboration experience

5. Roles and responsibilities

Core Responsibilities:

1. Research Execution: Design and implement research projects within assigned thematic area; collect, analyze, and interpret data using appropriate methodologies; ensure research quality, rigor, and ethical compliance.
2. Knowledge Production: Prepare research reports, policy briefs, working papers, and journal articles; present findings at conferences, workshops, and stakeholder meetings; contribute to the Center's publication and knowledge management systems.
3. Policy Engagement: Engage with government agencies, development partners, and civil society; provide technical inputs to policy processes, planning documents, and negotiations; translate research findings into actionable policy recommendations.
4. Collaboration and Networking: Collaborate with interdisciplinary teams within the Center; build and maintain partnerships with national and international research institutions; represent the Center in relevant forums and professional networks.
5. Capacity Building: Mentor junior researchers and research assistants; contribute to training programs, workshops, and academic partnerships; support institutional learning and knowledge sharing.
6. Project Management: Contribute to project proposal development and resource mobilization; manage assigned project components within timelines and budgets; ensure compliance with donor requirements and institutional policies.

6. Recruitment process

Stages:

Stage	Description	Timeline
1. Announcement and Receive Application	Public advertisement through Center website Submission of CV, cover letter, research statement, and writing sample	Week 2
2. Screening and Shortlisting	Initial review against eligibility criteria and thematic fit, Selection of candidates for interview based on merit	Week 3
3. Interview and Reference Check	Technical presentation, panel interview, and competency assessment, Verification of credentials, publications, and professional references	Week 5
4. Selection and Onboarding	Final selection and offer issuance by Center management	Week 5

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	Contract signing, orientation, and integration into research teams	

Evaluation Criteria:

S. N.	Evaluation/Selection Criteria	Maximum Marks	Marks Distribution
1	Academic Qualification	20	PhD - 20, Master's - 15
2	Research Experience in Related Field	10	More than 5 years - 10; 3-5 years - 8; –2-5 years - 5
3	Number of Research Works Published in Internationally Reputed Journals (Q1/Q2 Scopus, web of science) in Related Field	20	More than 5 - 20; 3-5 - 15; Less than 3 - 10
4	Submitted Research Proposal/Expression of Interest	40	To be determined by the Management Committee
5	Presentation	10	To be determined by the Management Committee
	Total	100	

7. Employment terms and conditions

Contract Types:

- Fixed-term research contracts (maximum 2 yr., renewable based on performance)
- The duration of the research programme shall be reviewed and, where necessary, revised for the subsequent fiscal year, taking into account the research performance and progress achieved up to the end of Fiscal Year 2083/84, as well as the availability of funds.
- Permanent positions for exceptional candidates with sustained track records
- Consultant/Adjunct arrangements for specialized, project-based engagements

Compensation:

- Basic salary of second-class gazette officer
- Fieldwork and travel allowances as per CHWRR policy
- Publication and conference participation support as per CHWRR policy

Reporting:

- Researchers will report to the Thematic Lead as assigned by CHWRR
- Matrix reporting to the Chief of CHWRR for cross-cutting activities
- Monthly performance reviews with objective-setting

8. Institutional support and resources

The Center will provide:

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- Access to research facilities, laboratories, and field equipment
- Internet, computing infrastructure, software, and data resources
- Administrative and logistical support for research activities
- Library and information services
- Opportunities for professional development, and training
- Collaborative environment with interdisciplinary research teams
- Researchers shall be entitled to two days of leave per month during the contract period, excluding public holidays.

9. Ethical considerations and compliance

All recruited researchers must adhere to:

- Research Ethics: Compliance with institutional ethics review board requirements
- Data Integrity: Ensuring data quality, transparency, and reproducibility
- Intellectual Property: Respecting IP rights and institutional policies on publications
- Conflict of Interest: Disclosure of potential conflicts and maintaining impartiality
- Environmental and Social Safeguards: Adherence to safety protocols in field and laboratory work
- Anti-Discrimination: Commitment to diversity, inclusion, and equal opportunity principles
- The Principal Researcher shall be the first author of all resulting publications, while the Project Coordinator shall serve as the corresponding author. All publications shall include appropriate acknowledgment of the CHWRR for its support and contribution to the research.

10. Monitoring and evaluation

The recruitment and performance of researchers will be monitored through:

- Monthly progress reports against research plans and deliverables
- Monthly performance appraisals linked to institutional objectives
- Periodic review of thematic area progress by management committee

11. Application requirements

Interested candidates must submit:

- Curriculum Vitae (maximum 5 pages) with complete publication list
- Cover Letter specifying the thematic area of interest and motivation (maximum 2 pages)
- Research Statement outlining proposed research agenda and methodology (maximum 3 pages)
- Writing Sample (published paper, report, or policy brief within last 3 years)
- Contact Information for two professional references (Except government officers of CHWRR)
- Copies of Academic Certificates and relevant professional credentials

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12. Work Station

- Babarmahal, Kathmandu, or Godawari, Lalitpur, depending on research requirements and institutional needs.

13. Contact and submission

- Application Deadline: Within 15 days of the notice's publication date
- Submission Method: Physical
- Contact Email: info@chwrr.gov.np
- Website: www.chwrr.gov.np

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