



ICIMOD

**LETTER OF AGREEMENT**

**BETWEEN**

**INTERNATIONAL CENTRE FOR INTEGRATED MOUNTAIN DEVELOPMENT (ICIMOD)  
LALITPUR, NEPAL**

**AND**

**NORWEGIAN WATER RESOURCES AND ENERGY DIRECTORATE (NVE)  
FOR SNOW MONITORING IN THE HINDU KUSH HIMALAYAS**

**ON**

**SNOW ACCUMULATION AND MELT DYNAMICS IN A HIMALAYAN WATERSHED:  
OBSERVATIONS AND MODELLING**

**January 2019**

## Summary: Letter of Agreement

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**Agreement Number** :  
**ICIMOD Programme** : River Basins and Cryosphere Programme  
**Project Title** : Snow Accumulation and Melt Dynamics in a Himalayan Watershed: Observations and Modelling- 2  
**Country** : Nepal  
**Cost Center** : 3-939-242-0-P  
**Budget** : NoK 10,807,400  
**Project Period** : Four years  
Effective date: **1 January 2019** Completion date: **31 December 2022**

### Focal Persons:

#### ICIMOD

Name: Anna Sinisalo  
Designation: Programme Coordinator  
Email: [Anna.Sinisalo@icimod.org](mailto:Anna.Sinisalo@icimod.org)

#### NVE

Name: Westgaard, Kirsten  
Designation: Programme Coordinator  
Email: [kwe@nve.no](mailto:kwe@nve.no)

**Agreement** : The terms and conditions are presented in multiple sections, as outlined below. All of the contents of these sections and annexes constitute the entire agreement between the Parties.

SECTION 1 – Partnership Principle  
SECTION 2 – Scope of Work and Duration  
SECTION 3 – Implementation  
SECTION 4 – Financial Provisions  
SECTION 5 – Reporting Provisions  
SECTION 6 – Monitoring and Evaluation Provisions  
SECTION 7 – Copyright, Intellectual Property Right and Use of Logo  
SECTION 8 – Amendment and Termination  
SECTION 9 – Special Provisions  
SECTION 10 – Entry into Force

The following documents, hereinafter referred to as "Annex" are hereby agreed to be an integral part of this agreement:

ANNEX I: Terms of Reference (ToR)  
ANNEX II: Programme Implementation Schedule  
ANNEX III: Budget  
ANNEX IV: Progress Report Template  
ANNEX V: Financial Report Template

## **PREAMBLE**

**WHEREAS** The International Centre for Integrated Mountain Development (ICIMOD) is a regional intergovernmental learning and knowledge sharing centre serving the eight regional member countries of the Hindu Kush Himalayas – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – and based in Kathmandu, Nepal. Globalization and climate change have an increasing influence on the stability of fragile mountain ecosystems and the livelihoods of mountain people. ICIMOD aims to assist mountain people to understand these changes, adapt to them, and make the most of new opportunities, while addressing upstream-downstream issues.

The centre support regional transboundary programmes through partnership with regional partner institutions, facilitate the exchange of experience, and serve as a regional knowledge hub. We strengthen networking among regional and global centres of excellence. Overall, we are working to develop an economically and environmentally sound mountain ecosystem to improve the living standards of mountain populations and to sustain vital ecosystem services for the billions of people living downstream now, and for the future.

ICIMOD aims to deliver impacts through its six Regional Programmes, which are supported by the four thematic Areas of Livelihood, Ecosystem services, Water and Air and Geospatial Solutions and underpinned by Knowledge management and Communication.

Address : ICIMOD, P.O. Box 3226, Kathmandu, Nepal  
Telephone : +977-1-5003222  
E-mail : scu@icimod.org

**WHEREAS** Norwegian Water Resources and Energy Directorate (hereafter referred to as NVE) is a directorate under the Ministry of Petroleum and Energy and is responsible for the management of Norway's water and energy resources. We also work to reduce the risk of damages associated with landslides and flooding. NVE believes in open dialogue with the local communities, and we make sure that all interested parties receive the required information.

The directorate aims to ensure an integrated and environmentally sound management of the country's water systems, promote efficient energy markets and cost-effective energy systems, and contribute to efficient energy use. We also bear the overall responsibility for maintaining national power supplies.

NVE is involved in research and development (R&D) and international development assistance NVE is also the national centre for expertise in hydrology. In addition, with its expertise in systematic mapping and observation, NVE has become an important actor both in national and international climate research.

**WHEREAS** Norwegian Water Resources and Energy Directorate (hereafter referred to as NVE) and ICIMOD have agreed on amending Letter of Agreement (LoA) with reference to renewing the collaboration upon snow monitoring in the Hindu Kush Himalayas as the validity of the existing agreement is till December 31, 2017 as described in the article I of the Agreement signed between the two Parties on March 31, 2014 for the purpose to contribute to increasing the scientific

knowledge on snow melting and accumulation dynamics in the Hindu Kush Himalayan watersheds, and on role of snow melt for the water resources in the area.

Address : The Norwegian Water Resources and Energy Directorate,  
Postboks 5091, Majorstua 0301 Oslo, Norway  
Telephone : +47 22959864 Mob: +47 48144883  
E-mail : [mbj@nve.no](mailto:mbj@nve.no)

**WHEREAS** having recognized the mutual objective of understanding the seasonal snow cover dynamics and snow meltwater release in Nepal, increasing the knowledge on snow monitoring, data analysis and modelling techniques and their application in the Hindu Kush Himalayan mountain environment and sharing knowledge between NVE, ICIMOD, the Department of Hydrology and Meteorology (DHM), Government of Nepal, Kathmandu University and Tribhuvan University.

**THEREFORE**, NVE and ICIMOD (**hereafter referred to as Parties**) agree to enter into Letter of Agreement (LoA), to share their competencies and resources, and implement the activities as described in the following Sections.

#### **Project Objective:**

This Project intends to contribute to the Strategic Results under ICIMOD's Strategy and Results Framework 2017 and MTAP IV, and especially the MTAP IV Outcome of the Regional Programme of River Basins and Cryosphere (RB&C). NVE and ICIMOD have jointly created a plan for the second phase of SnowAMP for 2019-22. ICIMOD's RB&C programme works at the river basin level on cryosphere and water resources issues, which include a wide range of concerns such as monitoring and assessment, water-induced risk management, and climate change adaptation, and the outputs of SnowAMP will supplement the on-going work (Table 2.1).

#### **SECTION 1: Partnership Principle**

In order that the Parties have the best possible chance of success, ICIMOD promotes the partnership principles of **synergy, equity, transparency and mutual benefit**.

- 1.1 Synergy** means the Parties have a shared vision, bringing together diverse partners and is designed on the assumption that the sum is more than its parts.
- 1.2 Equity** means the Parties commitment to justice, fairness and even-handedness irrespective of the commitment of transaction volume where each Partner has equal right to be heard and contributes to the partnership from their areas of competence and strength.
- 1.3 Transparency** means the Parties are open and honest in its dealings with one another; will not intentionally withhold information, and will make decisions based on discussion and openness in its dealings with each other.
- 1.4 Mutual benefit** recognizes that it is important for Parties to be able to discuss and recognize each other's individual reasons for being involved in the partnership, and ensure that these are met. When mutual benefit exists, it is much more likely that, even in difficult situations, the Parties will continue to engage and work out solutions.

#### **SECTION 2: Scope of Work and Duration**

## **2.1 Scope of Work**

The present Agreement sets forth the general terms and conditions of the partnership between the Parties in all aspects of achieving the project objectives, as set out in the ToR (Annex I). The Parties agree to join efforts and to maintain close working relationships, in order to achieve the objectives.

## **2.2 Duration**

**2.2.1** This LoA shall take effect, upon the signature of both Parties as of the effective date indicated in section 9.

**2.2.2** Should it become evident to both Parties during the implementation of the activities that an extension beyond the expiration date set out on the agreement is required, then the partner shall, without delay, inform ICIMOD in writing and shall stipulate the reasons for the delay, with a view to entering into consultations to agree on a new termination date.

## **SECTION 3: Implementation**

### **3.1 Coordination**

ICIMOD and NVE designates the following as respective focal persons who will be responsible for the coordination of activities under this agreement. The ICIMOD focal person will also be responsible for receiving and approving outputs/deliverables and reports.

#### **ICIMOD**

Name: Anna Sinisalo  
Designation: Programme Coordinator  
Email: [Anna.Sinisalo@icimod.org](mailto:Anna.Sinisalo@icimod.org)

#### **NVE**

Name: Westgaard, Kirsten  
Designation: Programme Coordinator  
Email: [kwe@nve.no](mailto:kwe@nve.no)

### **3.2 Activities, Roles and Responsibilities**

The activities shall be carried out according to the attached ToR (Annex I) and Programme Implementation Schedule (Annex II) which outlines the scope of work, deliverables, roles, and responsibilities.

## **SECTION 4: Financial Provisions**

### **4.1 Budget and Disbursements**

**4.1.1** The total amount payable to the Partner under this Agreement is NoK 10,807,000 (In words ten Million and eight hundred and seven thousand NoK only). The details of the budget are provided in the Annex III.

**4.1.2** The Partner shall ensure that ICIMOD contribution shall be kept separate from funds of other sponsors within the Partner's financial system. Disbursements to NVE will be made in arrears based on costs accrued during last period. NVE shall submit invoices quarterly to ICIMOD for approval and payment. NVE shall immediately confirm receipt of payment to ICIMOD in writing. The NVE bank account where funds will be transferred by ICIMOD, must be under the name of the organisation as registered under the Tax Identification Number. Bank account cannot be owned or registered under an individual's name.

**4.1.3** The total amount payable to the Partner under this Agreement (Agreement Obligated Ceiling) is NoK 10,807,000. The payment shall be made on the basis of actual quarterly expenditure made as per the schedule below:

<b>S. No</b>	<b>Title of Report</b>	<b>Due Date</b>
1	First Technical and Financial Report	10 April 2019
2	Second Technical and Financial Report	10 July 2019
3	Third Technical and Financial Report	10 October 2019
4	Fourth Technical and Financial Report	10 January 2020
5	Fifth Technical and Financial Report	10 April 2020
6	Sixth Technical and Financial Report	10 July 2020
7	Seventh Technical and Financial Report	10 October 2020
8	Eighth Technical and Financial Report	10 January 2021
9	Ninth Technical and Financial Report	10 April 2021
10	Tenth Technical and Financial Report	10 July 2021
11	Eleven Technical and Financial Report	10 October 2021
12	Twelve Technical and Financial Report	10 January 2022
13	Thirteen Technical and Financial Report	10 April 2022
14	Fourteen Technical and Financial Report	10 July 2022
15	Fifteen Technical and Financial Report	10 October 2022
16	Final Technical and Financial Report	10 January 2023

**4.1.4** To request a disbursement, the Partner shall submit:

- a. The first disbursement will be based on the 1<sup>st</sup> quarterly invoice submitted by NVE with and bank details provided to ICIMOD.
- b. For each subsequent quarterly invoice, a narrative report and financial report certified by the authorized signatory of the partner together with the request letter are to be submitted by Partner.
- c. Certified copy of all the actual supporting documents for the expenditure claimed by the partner for that particular period. The actual supporting documents should be retained by the partners till the end of the required period (refer. Clause 4.4.1) for necessary audit by ICIMOD or the donor. Photocopies of the actual supporting documents have to be certified by the Head of finance of the partner organization for submission to ICIMOD. Without the certified financial statement in the agreed format and the certified copies of all the supporting documents for the expenditure claimed, there will no financial disbursements. The liquidation of final disbursement should be made by submission of the required financial report and the supporting documents within 1 month after the completion of the contract.
- d. The partner should provide a detailed technical progress report annually in December of each year within the contract period.

**4.1.5** Payment shall be made within 30 days after receipt of verified and approved quarterly invoice and supporting technical progress report by ICIMOD for which payment is requested. ICIMOD reserves the right to withhold payment subject to deliverables verification.

**4.1.6** Any deviation from the approved budget requires ICIMOD's prior written approval. However if total variance on budget line item and/or component activity is within 10%, it would be accepted with proper justification without prior written approval. Variances above 10% that are not supported by a prior written approval from ICIMOD would be disallowed and would be recovered from the partner.

**4.1.7** In the event of termination, the NVE shall be entitled to full remuneration for services performed and expenses incurred prior to the date of termination.

**4.1.8** Unless otherwise agreed upon by the Parties in writing, ICIMOD shall not be liable for any additional costs other than agreed in this LoA incurred by the Partner. ICIMOD shall not be responsible for any losses incurred by the Partner due to delays, standard and additional bank charges arising from incomplete or inaccurate banking details submitted. The sole responsibility in this instance shall be that of the Partner.

## **4.2 Taxes**

The Partner shall be responsible for compliance with local tax laws including withholding tax, income and other indirect taxes for the project activities funded through this LoA. Any taxes or other government liabilities arising out of any payments made from this LoA will be the responsibility of the Partner. ICIMOD is in no case liable for any such taxes or liabilities.

## **4.3 Financial Management**

The partner shall maintain at all times during the agreement term a financial management system that complies with the Norwegian State regulations and guidelines and shall ensure that all funds are prudently managed and used solely for project purposes in a manner consistent with the terms of this LoA. The Partner shall use its reasonable efforts to ensure that the funds are not used for the purposes other than stated in this LoA.

## **4.4 Maintenance of Records**

**4.4.1** The Partner shall maintain accounting books, records, documents and other evidence relating to the Agreement, adequate to show, without limitation, all costs incurred and revenues earned by the Partner for the project and the overall progress toward completion of the project. It shall maintain project books and records in accordance with the generally accepted accounting standards as prescribed by the Host Country. Project books and records must be kept in the possession of the Partner for at least up to 31 December 2028.

**4.4.2.** The Partner shall keep a separate list of all non-expendable items (fixed assets) purchased out of this project. A disposal plan for such items/assets should be presented for ICIMOD approval at the end of the project/assignment.

## **4.5 Audits Requirements**

**4.5.1** The annual accounts of these activities under the LoA may be subject to financial audit by ICIMOD, after due agreement of Partner, anytime during the period of the agreement or within such period up to which the financial records of the project are required to be maintained by the partner. If deemed necessary, ICIMOD in consultation with Partner might also assign an external auditor to do the final audit. Similarly, there may also be requests from the project sponsors/ donors for a specific audit. In such cases, the audit schedule will be provided to the Partner in advance and Partner shall comply with this provision and the cost of the audit will be borne by ICIMOD.

**4.5.2** The Partner needs to keep all records for the entire agreement period. NVE is subject to the general audit arrangements of the Norwegian Auditor General. A schedule depicting total fund accountability pertaining to funding made by ICIMOD must also be attached separately as part of the consolidated financial statement and the Such audit report needs to be submitted to ICIMOD on annual basis.

**4.5.3** ICIMOD may carry out a due-diligence of the financial and other administrative management systems of the partner during the project period if deemed necessary. For this a schedule would be mutually agreed upon. Based on such due-diligence process inputs on additional measures as required in the overall programme management, financial management and other internal control systems for the organization will be identified and communicated for implementation and capacity building needs, if any, and it will be addressed through mutual agreement. The cost of a due-diligence will be borne by ICIMOD.

#### **4.6 Compliance with Funding Partner**

Each of the Parties shall carry out the tasks assigned to them in the LoA with due diligence and efficiency. The Parties shall ensure that the Project is implemented in accordance with the Grant Agreement and that instructions from the parties to the Grant Agreement are adhered to.

The Agreement incorporates all [Donor or funding partner] Standard Terms and Condition and Guidelines made applicable to ICIMOD as per the funding/g Agreement in effect on the Effective Date; provided, however, that this Letter of Agreement shall be deemed to have been amended, and the collaborator shall be automatically bound, by any changes to such Standard Terms and Conditions and Guidelines issued after the Effective Date, if and to the extent that such changes are binding on ICIMOD pursuant to the Program Funding/ Agreement or otherwise. Donor's standard provisions and guidelines are available upon request from ICIMOD.

In the event of an apparent conflict or inconsistency between LoA and Guidelines of donors made applicable to ICIMOD and any specific agreement term or condition, the latter shall govern.

### **SECTION 5: Reporting Requirements**

- 5.1** The Partner shall submit quarterly progress report along with the quarterly financial report to receive each installment as specified in Section 4.1.4 Please refer to Annex IV and V for the progress report and financial reporting template respectively.
- 5.2** The Partner shall submit a project completion report together with the final quarterly invoice.

### **SECTION 6: Monitoring and Evaluation (M&E)**

- 6.1** To maximise impact and sustainability as well as to ensure an appropriate level of monitoring, ICIMOD will require the Partner to apply result oriented monitoring and evaluation system based on the defined indicators, baselines and targets for efficiency, effectiveness and impact. These indicators are agreed as part of the M&E plan jointly developed by the Partner and ICIMOD. ICIMOD will conduct review and evaluation at any given point of time of the agreed plan. The date of the review and evaluation will be communicated in advance to the Partner.
- 6.2** ICIMOD, in its sole discretion, conduct or commission evaluations of the programme, or of specified programme activities, implementing structures or other Programme issues. ICIMOD shall specify the ToR for any evaluation and an appropriate schedule for conducting it. Exercise by ICIMOD of this right does not mitigate the obligation of the Partner to monitor and evaluate the programme.



## **SECTION 7: Copyright, Intellectual Property Right and Use of Logo**

- 7.1** ICIMOD is fully committed to open access publishing and open source deliverables and to making these deliverables fully accessible as an international public goods at no cost.
- 7.2** Copyright may be held jointly with the Partner, in which case both institutions retain full rights over the material and may use it in any form without reference to the other, but the Partner must adhere to open access and open source principles and may not sell or donate the copyright to a third party. ICIMOD and the Partner will follow the Creative Commons BY-NC (Non-Commercial) license and will clearly indicate this in all its publications. This license entails that the user is free to copy, distribute and transmit the work for non-commercial purposes and requires that the user attributes the work in the manner specified by ICIMOD.
- 7.3** ICIMOD shall not be bound to publish or use deliverables delivered under this LoA. If ICIMOD decides not to publish or use these materials, the Partner may publish or use these materials in adherence with open access and open source principles.
- 7.4** The Partner shall take full responsibility to ensure that the work produced by them, or anyone whom the Partner may employ to carry out the work, respects intellectual property rights and does not use work protected by copyright law without permission prior to submitting the final report to ICIMOD.
- 7.4** The Partner and ICIMOD will have equal and free access to the data/information generated under this LoA. All publications under this Agreement need prior review and approval of ICIMOD.
- 7.5** Neither Party shall use the name, logo/emblem or trademarks of the other Party without the prior expressly written approval of the other Party in each case.

## **SECTION 8: Special Provisions**

### **8.1 Governing Law and language**

**8.1.1** The LoA will be governed by and construed in accordance with the laws of Government of Nepal.

**8.1.2** It is ICIMOD's policy that English is the official language for all agreement documents.

### **8.2 Sub-awards**

In the case of all sub-awards, including subcontracts, and sub-grants, the Partner will seek prior written approval of the sub-award from ICIMOD which will include an explanation of the competition process that was followed. ICIMOD must approve the sub-award in advance of the execution of any agreement by the Partner.

### **8.3 Procurement**

**8.3.1** The Partner shall keep ICIMOD continuously informed about the policies and practices that it shall use to contract for goods and services under this Agreement. Contracts shall be awarded on a transparent and, subject only to established exemptions included in written procurement policies and practices provided to the ICIMOD on competitive basis.

**8.3.2** For all procurement above US\$ 10,000.00, Partner shall take prior approval from the ICIMOD before initiating procurement process.

**8.3.3** The Partner shall keep a separate list of all non-expendable items (fixed assets) purchased under this LoA.

**8.3.4** The partner shall ensure that all goods and services and activities financed with project funds are used solely for project purposes

#### **8.4 Insurance and Security**

The Partner undertakes full responsibility for all health, safety and security arrangements of its individuals, property or work (including relating to subcontractors of the partner) under this Agreement.

#### **8.5 Conflict of Interest**

All partner staff involved with ICIMOD under this LoA must be free of real or apparent conflict of interest. If the Partner becomes aware of any real or potential conflict of interest, the partner shall immediately notify ICIMOD in writing.

#### **8.6 Arbitration**

The Parties shall try to settle amicably through direct negotiations, any dispute, controversy or claim arising out of or relating to the present agreement, including breach and termination of the agreement. Any dispute arising out of the terms of this agreement shall be submitted to the Royal Norwegian Embassy (RNE) for consolation. The Parties agree that any decision rendered by the RNE shall be accepted as final adjudication of the dispute.

### **SECTION 9: Amendment and termination**

**9.1** This Agreement may only be amended in writing signed by duly authorized representatives of the Parties.

**9.2** The LoA shall remain in force until all obligations arising from it have been fulfilled. Whether the obligations under this LoA shall be considered fulfilled, will be determined through consultations between the Parties.

Each Party may terminate the LoA:

- a) Upon three months written notice to the other Party with a copy to each of the parties of the Grant Agreement, or
- b) With immediate effect in the event that the Grant Agreement is terminated with immediate effect.

In the event of a termination pursuant to this article, the Parties shall exert their best efforts to bring the cooperation to an end in a rapid, orderly and financially sound manner. The Parties shall deliver to each other any plans or documents completed under this LoA and shall cooperate to fulfil all outstanding reporting obligations under this LoA.

**9.3** Either Party may terminate this agreement upon 30 days prior written notice to the other it considers termination justified on the grounds that no further purpose would be served by continuing with the activities. Such notice of termination will only be given by either Party after full discussion with the other Party of the reasons for the proposal to give such notice

**9.4** If the Partner or its staff is found to be misappropriating, or mishandling, or spending the disbursed funds against the provisions of the Agreement or ToR, ICIMOD may instantaneously terminate this Agreement and the Partner shall be liable to return such amount and remaining unspent amount within 30 days of demand by ICIMOD.

## SECTION 10: Entry into Force

This LoA between NVE and ICIMOD shall enter into force upon signature by the Parties and will remain in effect from 01 January 2019 until 31 December 2022

Each Party will hold a copy of the signed LoA in the English language and having equal validity.

**IN WITNESS WHEREOF**, the duly authorized representatives of the Parties affix their signatures below:

For the International Centre for Integrated  
Mountain Development

For Norwegian Water Resources and  
Energy Directorate (NVE)



Dr. David Molden  
Director General



Name: ANNE BRITT LEIFSETH  
Designation: DIRECTOR GENERAL NVE

Date and Seal:

Date and Seal: 11/2-19 . 00/0

## **ANNEXES**

### **Annex I Terms of Reference (Proposal)**

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#### **1. Background: The ongoing NVE-ICIMOD cooperation under SnowAMP**

Snow is an important element of the water cycle, especially in mountain regions such as Norway and Nepal. In Nepal, meltwater from snow reservoirs, together with meltwater from glaciers, provides an important contribution to rivers especially during the dry seasons when rainfall is absent. This meltwater from the Himalayas is vital for renewable hydropower energy production, domestic use, agriculture and industry downstream of the mountains.

Started as a part of ICIMOD's Mid Term Action Plan (MTAP) III, the first phase of the ongoing NVE-ICIMOD cooperation project "SnowAMP" (2014-2018) has been focusing on understanding the seasonal snow cover dynamics and snow meltwater release in pilot watershed in the Langtang valley, Nepal. SnowAMP has also contributed to increasing and sharing the knowledge between NVE, ICIMOD and the Nepalese partner institutes the Department of Hydrology and Meteorology (DHM), Government of Nepal, Kathmandu University and Tribhuvan University, on snow monitoring, data analysis and modelling techniques and their application in the Hindu Kush Himalayan mountain environment.

The main outputs of the first phase of SnowAMP are

- near real-time meteorological and snow information from four automatic monitoring stations in different altitudes;
- Production chain for regularly updated maps of snow conditions for the Langtang case study watershed. The maps are produced by combining 1) real-time (hourly updated) meteorological and snow information with a 2) detailed numerical snow model, as well as with 3) MODIS satellite images of the snow-covered area.

The unique data from the automatic monitoring stations has been used to understand snow accumulation and melt processes in the high altitude mountain environment, and snow maps include essential information of the water equivalent of the snow cover, and they can provide crucial information for hydropower and flood forecasting, for example.

## 2. Plan for the second phase of SnowAMP (2019-2022)

Contributing to the Strategic Results under ICIMOD's Strategy and Results Framework 2017 and MTAP IV, and especially the MTAP IV Outcome of the Regional Programme of River Basins and Cryosphere (RB&C), NVE and ICIMOD have jointly created a plan for the second phase of SnowAMP for 2019-22. ICIMOD's RB&C programme works at the river basin level on cryosphere and water resources issues, which include a wide range of concerns such as monitoring and assessment, water-induced risk management, and climate change adaptation, and the outputs of SnowAMP will supplement the on-going work (Table 2.1).

A detailed results framework for the second phase of SnowAMP will be shared with the Royal Norwegian Embassy by the annual review meeting tentatively planned for May 2019.

The plan of the second phase of SnowAMP is divided in two parts:

### 1) PART A (under existing Grant Agreement for 2019-2022)

The Part A of Snow AMP for 2019-22 continues the well-established co-operation between ICIMOD and NVE on glacio-hydrological monitoring and modelling. The plan covers the activities to be carried out by NVE and funded by ICIMOD, as requested in the Grant Agreement between Norwegian Ministry of Foreign Affairs (MFA) and ICIMOD in 2018.

### 2) PART B (Addendum activities on hydropower development for 2019-2022)

The activities and deliverables of the Part B of SnowAMP will extend the work in Part A, and widen the scope of activities related to supporting the hydropower and energy sector development in Nepal. The Part B plan includes additional activities to be jointly carried out by NVE and ICIMOD, and proposed to be funded by an Addendum to the Grant Agreement between MFA and ICIMOD to develop the hydropower framework in Nepal (Budget proposal provided in section 5).

Table 2.1. Main Outputs and Deliverables of SnowAMP Parts A and B for 2019-22 contributing to ICIMOD's RB&C Programme Outcome.

<b>RB&amp;C Programme Outcome:</b> RMC policies, strategies, and development programmes highly critical to water resources management and disaster risk reduction in HKH region influenced through robust evidence from scientific research, gender responsive practices and capacity building in the areas of river basins and cryosphere.		
<b>SnowAMP Project Contribution to RP Outcome:</b> SnowAMP will contribute to provide robust evidence in terms of snow monitoring, glacio-hydrological modeling and hydropower framework development		
<b>Project Part</b>	<b>Main Outputs:</b>	<b>Major Deliverables:</b>
<b>Part A</b>	Near real-time snow monitoring system operational and publicly available covering the Langtang pilot area in Nepal.	<ul style="list-style-type: none"> <li>• Successful field participation and maintenance of station network, field report</li> <li>• A website displaying the near real-time monitoring/modelling products.</li> </ul>
<b>Part A</b>	Hydrological flow forecasting system for the Langtang valley.	<ul style="list-style-type: none"> <li>• The assessment of the implications of model results for potential hydropower development in the Langtang area published as NVE/ICIMOD/DHM report</li> <li>• Contribution to improving the global ECWMF weather forecast model using the real-time monitoring data from the current project.</li> </ul>
<b>Part A</b>	Enhanced human and institutional capacity at the relevant Nepalese institutions (e.g. DHM) that are/will be responsible for hydrological monitoring for a longer-term and national institutions' on maintenance of hydrological	<ul style="list-style-type: none"> <li>• Approved MSc-thesis from Tribhuvan University.</li> <li>• Training workshop in Norway/Report from the training workshop</li> </ul>

	monitoring stations and modelling activities for hydropower development.	<ul style="list-style-type: none"> <li>Submitted/published peer-reviewed article from the project findings.</li> <li>Presentation of the project findings in a scientific conference.</li> </ul>
Part B	Operational near real-time snow monitoring and modelling system at a new site in a relevant river basin for hydropower planning, community water resources management, and flood warning service applications.	<ul style="list-style-type: none"> <li>Data and knowledge need assessment for hydropower development published as NVE/ICIMOD/DHM report</li> <li>Operational monitoring stations installed, field report</li> <li>New high resolution dataset on snow and glacier mapping in the Trishuli basin.</li> <li>User-friendly glacio-hydrological model operational and available for hydropower developers.</li> <li>The assessment of the implications of model results for potential hydropower development in the Trishuli basin published as NVE/ICIMOD/DHM report</li> <li>Report on the sediment dynamics and monitoring in Nepal with recommendations for the way forward</li> </ul>
Part B	Enhanced human and institutional capacity in EIA process and requirements for relevant Nepalese institutions responsible for hydropower development.	<ul style="list-style-type: none"> <li>Training Evaluation Report from each thematic workshop</li> </ul>
Part B	Concept Note for long term support on developing hydropower framework in Nepal.	<ul style="list-style-type: none"> <li>Concept Note with activity plan for the upcoming two years (2021-22).</li> </ul>

### 3. Detailed activity plan for SnowAMP Phase 2 Part A and Part B

The SnowAMP activities, tasks and deliverables for 2019-22 contributing to the SnowAMP outputs and RB&C Programme Outcome are presented below under SnowAMP Part A and Part B and labelled according to which part they belong with either with A or B.

#### Activity A1: Monitoring and field campaigns in the Langtang catchment

Continue maintenance and service of the four existing SnowAMP monitoring stations in the Langtang valley sharing increasingly responsibilities with DHM / governmental partner with mandate for cryosphere monitoring.

**Aim:** To ensure continuity and sustainability of the monitoring activities started in Phase 1, and strengthen capacities of local institutes.

- **Task A1.1:** Yearly participation of 1-2 persons from NVE on the autumn or spring field campaigns with focus on SnowAMP station maintenance (4/6) and glacier monitoring (2/6), including preparations and reporting. Totally 6 person-participations.
- **Deliverable A#1:** Successful field participation and maintenance of station network, field report

#### Activity A2: Glacio-hydrological modelling (water, snow, glacier ice) in the Langtang catchment

Modelling of the full hydrological cycle from rain- and snowfall as well from glacier melt to river discharge, allowing also simulations in a projected future climate up until 2100.

**Aim:** Develop a suitable glacio-hydrological model for short and long term flow forecasts to benefit the hydropower developers

- **Task A2.1:** Review and selection of the most suitable model(s) to be used in Activity A2.
- **Task A2.2:** Setup and optimization of the full glacio-hydrological model to Langtang catchment.
- **Task A2.3:** Evaluation of the simulation results against observations in Langtang catchment (snow and river discharge data).
- **Task A2.4:** Assessment of the implications of model results for potential hydropower development in the Langtang area.
- **Deliverable A#2:** The assessment of the implications of model results for potential hydropower development in the Langtang area published as NVE/ICIMOD/DHM report.

**Activity A3: Dissemination and training**

Knowledge exchange, training and capacity building of ICIMOD and local partner Institutes (DHM, KU, TU, relevant ministries)

**Aim:** To strengthen local capacity in cryo-hydrological monitoring and operation for hydropower development

- **Task A3.1:** Assigning subject/aims of MSc-thesis relevant to the current project and co-supervising a graduate (MSc-level) student from a Nepali university.
- **Task A3.2:** Arrange a two-week training workshop at NVE for the graduate (MSc-level) students from Nepali universities.
- **Deliverable A#3:** Approved MSc-thesis relevant to the project.
- **Deliverable A#4:** Report from the training workshop.

Make the near real-time monitoring/modelling products (snow and weather conditions) from the Langtang valley available to public (citizens, trekking tourists) via a dedicated website.

**Aim:** To provide information and data products directly to users

- **Task A3.3:** Design and code the website displaying the near real-time monitoring/modelling products.
- **Deliverable A#5:** A website displaying the near real-time monitoring/modelling products.

Make the real-time monitoring results available to weather forecasting purposes (e.g. assimilation of snow observations to the global ECWMF weather forecast model).

**Aim:** To improve weather forecast model for Nepal

- **Task A3.4:** Code automatic data flow/transmission and transfer to ECWMF data format.
- **Deliverable A#6:** Contribution to improving the global ECWMF weather forecast model using the real-time monitoring data from the current project.

Scientific publications and conference participation

**Aim:** To increase knowledge on cryosphere processes

- **Deliverable A#7:** Submitted/published peer-reviewed article from the project findings.
- **Deliverable A#8:** Presentation of the project findings in a scientific conference.

**Activity B4: Review of data and knowledge needs for hydropower development**

On the basis of experience and knowledge from Norway, and in co-operation with expert(s) in ICIMOD/Nepal, study and review what type of hydrological data and information would be the most needed/useful for supporting the hydropower development purposes in Nepal.

**Aim:** To improve understanding of the status of development of hydropower framework in Nepal

- **Task B4.1:** Reviewing relevant literature and reports and interviewing experts on hydropower planning.
- **Deliverable B#9:** The findings published as NVE/ICIMOD/DHM report.

**Activity B5: Establishment of glacio-hydrological monitoring stations at a new site (e.g. Trishuli river basin)**

The Trishuli river basin hosts many planned/ongoing hydropower development activities. Based on the SnowAMP station concept, establish two new real-time, nearly maintenance-free satellite-transmission based stations to extend the existing monitoring network in Nepal to improve understanding of spatial variability of cryosphere contributions to river runoff. These stations should be located at two different elevations (e.g. around 4000 and 5000 m a.s.l.). The sensors needed at minimum would be: air temperature, precipitation (tipping bucket at the lower station, snow water equivalent (gamma sensor) at the higher station) and snow depth.

**Aim:** Improve understanding of spatial variability of cryosphere contribution to river runoff in a hydropower relevant river basin, e.g. Trishuli basin.

- **Task B5.1:** Selection of the most suitable site to extend the network (e.g. another tributary of Trishuli river) where two-station-based automatic monitoring and glacio-hydrological modelling relevant for potential hydropower development will be done.
- **Task B5.2:** Design, assemble and test the two-station-based automatic monitoring instrumentation (at NVE/ICIMOD/DHM). Annual maintenance and partner training on site.
- **Task B5.3:** Design and execute an additional field campaign to install the two automatic monitoring stations in the new Pilot Area (including risk analysis).
- **Deliverable B#10:** Operational monitoring stations installed, field report

**Activity B6: Glacio-hydrological modelling at a new site (Trishuli river basin)**

Modelling of the full hydrological cycle from rain- and snowfall as well from glacier melt to river discharge, as in Part A project plan, but now at a whole new site (Trishuli river basin), allowing for enhanced relevance to hydropower development in the Trishuli river basin.

**Aim:** Develop a suitable glacio-hydrological model to benefit the hydropower developers



- **Task B6.1:** Setup and optimization of the full glaciohydrological model to Trishuli basin.
- **Task B6.2:** Evaluation of the simulation results against observations at Trishuli basin (snow and river discharge data).
- **Task B6.3:** Assessment of the implications of model results for potential hydropower development in Trishuli basin.
- **Deliverable B#11:** The assessment of the implications of model results for potential hydropower development in the Trishuli basin published as NVE/ICIMOD/DHM report.
- **Deliverable B#12:** User-friendly glacio-hydrological model operational and available for hydropower developers.

#### **Activity B7: Satellite remote sensing**

Explore and utilize the new satellite-based snow and glacier products from the European Space Agency's new Sentinel 1, 2 and 3 satellites to obtain new and better knowledge of the dynamics and status of the cryosphere in the Himalayas, relevant for the hydropower development.

**Aim:** To improve remote sensing based data and understanding of cryosphere processes in the Trishuli basin.

- **Task B7.1:** A remote sensing scientist visit (1 week) from NVE to ICIMOD for knowledge exchange on use and new possibilities of Sentinel satellite data.
- **Task B7.2:** Acquisition, analysis and utilization of Sentinel 1, 2 and 3 satellite images to obtain current status of the cryosphere in the Trishuli basin for glaciohydrological modelling (Activity B6) including transboundary subcatchments.
- **Deliverable B#13:** Dataset on snow and glacier mapping in the Trishuli basin.

#### **Activity B8: Support and capacity building for development of framework for hydropower**

The International Finance Cooperation (IFC) and ICIMOD has been supporting the Ministry of Population and Environment (MoPE; now Ministry of Environment and Forestry) in the development of environment impact assessment (EIA) guidelines for the hydropower sector, which was approved in July 2018. These are critical to bring Nepal's E&S standards in line with international standards. IFC and ICIMOD plan to provide support on implementation the newly approved E&S standards including environmental impact assessments (EIA) for hydropower projects, and the development of cumulative impact assessments (CIA) and environmental flows (Eflow).

NVE and ICIMOD propose a two-step approach in support for the implementation of the new EIA guidelines for hydropower in partnership with IFC. The first step should be to provide tailored training on relevant EIA-aspects to involved Nepalese stakeholders to raise the general capacity. The second step should be to prepare a plan for long term support on these issues based on findings and experiences on the initial training.

**Aim:** Enhanced human and institutional capacity in EIA process and requirements for relevant Nepalese institutions responsible for hydropower development, and for involved institutions, familiarize to get an understanding of status and key challenges.

- **Task B8.1:** Provide 2 EIA thematic workshops annually in Nepal

- **Task B8.2:** ICH course in Norway -Environmental Management in the hydropower sector
- **Task B8.3:** Prepare a plan for long-term support on these issues based on findings and experiences on the initial training. The 2-year component should include stakeholder and partnership meetings and workshops.
- **Deliverable B#14:** Training Evaluation Report from each thematic workshop
- **Deliverable B#15:** Concept Note with activity plan for the upcoming two years (2021-22).

#### Activity B9: Sediment dynamics for hydropower development

**Aim:** Understanding the status of sediment monitoring and the knowledge gaps of sediment dynamics for hydropower development.

- **Task B9.1:** Review of current knowledge of sediment dynamics in Nepal.
- **Task B9.2:** Inventory of on-going sediment monitoring stations and activities in Nepal.
- **Deliverable B#14:** Report on the sediment dynamics and monitoring in Nepal with recommendations for the way forward.

## 4. Timeline of the SnowAMP Phase 2 in 2019-22

**Table 4. 1. Tentative timeline of each activity with the specific tasks (tasks code provided on the left) presented in section 3 for Part A and Part B, and the total duration of each task in months (second column from the left).**

(second column from the left).

M	2019												2020												2021												2022																									
	1	2	3	4	5	6	7	8	9	1	1	1	1	2	3	4	5	6	7	8	9	1	1	1	1	1	2	3	4	5	6	7	8	9	1	1	1	1	2	3	4	5	6	7	8	9	1	1	1	1	2	3	4	5	6	7	8	9	1	1	1	2
Activity A1: Monitoring and field campaigns in the Langtang catchment																																																														
A1.1	48																																																													
Activity A2: Glacio-hydrological modelling (water, snow, glacier ice) in the Langtang catchment																																																														
A2.1	6																																																													
A2.2	12																																																													
A2.3	12																																																													
A2.4	12																																																													
Activity A3: Dissemination and training																																																														
A3.1	24																																																													
A3.2	2																																																													
A3.3	6																																																													
A3.4	3																																																													
Activity B4: Review of data and knowledge needs for hydropower development																																																														
B4.1	12																																																													
Activity B5: Establishment of glacio-hydrological monitoring stations at a new site																																																														
B5.1	3																																																													
B5.2	13																																																													
B5.3	2																																																													
Activity B6: Glacio-hydrological modelling at a new site																																																														
B6.1	12																																																													
B6.2	12																																																													
B6.3	9																																																													
Activity B7: Satellite remote sensing																																																														
B7.1	2																																																													
B7.2	12																																																													
Activity B8: Support and capacity building for development of framework for hydropower																																																														
B8.1	18																																																													
B8.2	2																																																													
B8.3	24																																																													
Activity B9: Sediment dynamics for hydropower development																																																														
B9.1	6																																																													
B9.2	6																																																													

## 5. Budget plan for Part A and Part B

The budget plan for Part A will the NVE-activities in 2019-22 funded by ICIMOD according the Grant Agreement between MFA and ICIMOD in 2018. The total amount for NVR is about 4.0 million NOK (Table 5.1).

Table 5.1. Tentative budget plan for Part A as a part of the Grant Agreement presented in million NOK.

<i>All in million NOK</i>	2019	2020	2021	2022	Total in 4 yrs
NVE	1.246	1.172	0.806	0.806	4.030

The Part B plan includes additional activities proposed to be funded by an Addendum to the Grant Agreement between MFA and ICIMOD, and the annual budgets for NVE and ICIMOD in total of 9.9 million NOK are presented in Table 5.2.

For successful completion of the project, a budget for ICIMOD is also proposed in Table 5.2 as a part of the addendum. The ICIMOD budget is to bring more quality and additionality in terms of involving and hosting young Nepali professionals with the glacio-hydrological modelling work for long-term impacts; to provide additional expertise on EIA guidelines: designing and executing workshops with NVE/IFC, especially on the need assessment and freshwater ecosystems assessment and monitoring; major contribution to a review of current knowledge of sediment dynamics in Nepal and inventory of on-going sediment monitoring stations and activities in Nepal; local coordination of the workshops / trainings organized for capacity strengthening in Nepal; production of additional knowledge products and training materials; field work at the new monitoring site once a year for ICIMOD together with Nepalese partner organizations such as DHM to enhance sustainability of the SnowAMP monitoring network; overall coordination with the local partners; and major contributions to the plan for 2021-2022 to be presented as a concept note.

Table 5.2. Tentative budget plan for Part B proposed for an Addendum presented in million NOK.

<i>All in million NOK</i>	2019	2020	2021	2022	Total in 4 yrs
NVE	2.6	2.8	0.8	0.6	6.8
ICIMOD	1.1	1.0	0.5	0.5	3.1
Total per yr	3.7	3.8	1.3	1.1	9.9

### About the budget allocation for NVE Project Coordination/Administration In 2019-22

- **Part A:**  
NVE has reduced the hours and travel for the NVE Project Coordination/Administration to 7% of the total for NVE in Part A. The hours deducted from Adm, have been added on for the respective technical working areas up so the total frame for the NVE part A remains the same 4,03 MNOK.
- **Part B:**  
NVE will do most of the coordination and administration for part B activities on behalf of both ICIMOD and NVE. Especially coordination towards IFC and DHM sedimentation study will be undertaken by NVE in addition to coordination towards

the Embassy for the same activities. It is foreseen that dialogue with IFC and Nepalese EIA stakeholders to define a training program and activities will require quite much administrative work. ICIMOD will use its defined administrative resources for the main program (Part A) to follow up on the reporting requirements for Part B. The total administrative costs for part B are less than 7%.

## 6. Risk Assessment for SnowAMP in 2019-22

**Table 6.1. Identified risks, their potential consequences and mitigation measures for Part A and Part B.**

		Identified Risk and Consequences		Analysis and Assessment		Mitigation Measure and Responsibility				
Cat.	CA	Description of Risk (factors, event)	Description of Consequences	Probab.	Conseq.	Impact	Action	Impact post action	Responsible	Status
Global	All	Lack of donor financing from the Norwegian Ministry of Foreign Affairs	Reduced or closure of Program	Unlikely	Severe	High	Close dialogue with NMFA and Embassy and focus on result management	Reduced likelihood = Serious	NVE and ICIMOD	Ongoing
National	All	National election in Nepal in 2022	Political instability during election which may impact implementation of programme activities and cause delays	Unlikely	Moderate	Medium	Reduced activity level in the programme prior to elections	Medium	NVE and ICIMOD	Ongoing
Sector	All	Donor Coordination	Lack of sufficient donor coordination may lead to low efficiency, overlaps, lack of necessary measurements	Ukely	Moderate	Serious	Mapping of potential donors in the same field and tight coordination. ICIMOD with an office in Kathmandu will play a central role in donor coordination.	Reduced probability = Medium	NVE and ICIMOD	Ongoing
Program	CA1	Priorities in the RMCs change due to political change or changes in leaderships in partner institutions	Change of priorities of the local partners may lead to inefficiency and delays in implementation.	Ukely	Moderate	Serious	Be aware of changing situations. Engage with mid-level officials. Documenting partnership and having MoUs and/or LoIs. Having focal person at the concerned partner institutions.	Reduced consequences = Serious	NVE and ICIMOD	Ongoing
	CA2	RMCs readiness in transboundary cooperation remains low	Lack of transboundary cooperation may lead to lack of relevant information from the upstream areas.	Ukely	Moderate	Medium	Continuous engagement and advocacy through participation in various fora; organizing platforms; working with country focal points; work through the state/province level and nudge the central government; seek win-win situations; engagement with cross border communities, local governments and civil society institutions; engagement with organisations working on transboundary water issues	Medium	NVE and ICIMOD	Ongoing
	CA3	Extreme physical environment and weather conditions in the field	Environmental and weather related challenges may cause delays in carrying out field work and hamper data collection and lead to data gaps.	Ukely	Moderate	Serious	Alternative plans and flexible field plans; Health check-up of field team members; Insurance and rescue plan; Regular safety trainings for the relevant staff; members and partners.	Medium	NVE and ICIMOD	Ongoing/awaiting
	CA4	Lack of coordination between multiple partners	Lack of sufficient partner coordination may lead to low efficiency, overlaps, lack of necessary measurements	Ukely	Moderate	High	Planning with involvement of all the partners from the very beginning and periodic meetings.	Reduced consequences = Serious	NVE and ICIMOD	Ongoing



CA5	Field equipment installed may be damaged or destroyed due to vandalism, theft, or natural hazards such as earthquakes, landslides and avalanches.	Damaged field instruments lead to data gaps or even complete loss of a field monitoring site.	Likely	Moderate	Serious	Working closely with the concerned agencies to have O&M, and sustainability plans in place and implemented; Careful planning of the equipment locations to minimize the external risk; Regular field visits to check and maintain the equipment.	Reduced probability = Medium	NVE and ICIMOD	Ongoing
CA6	Partner institutions facing difficulty in taking over the responsibility of operating the monitoring systems	Sustainability of the long-term monitoring activities may become endangered	Likely	Moderate	Serious	Involving the partners in the preparatory and planning process as well as in future planning and budgeting process; Providing targeted capacity building; Phased handover process.	Reduced probability = Low	NVE and ICIMOD	Ongoing
CA7	Partners do not have practices for adequate information and data sharing.	Lack of adequate information and data sharing may lead to low efficiency, overlaps, and data/information gaps.	Likely	Moderate	High	Conscious efforts to encourage and support data and information sharing (e.g. via Cryosphere Knowledge Hub and Regional Database System with regular follow-up; monitoring process and data sharing policies built into partnership agreements and capacity building).	Reduced probability = Medium	NVE and ICIMOD	Ongoing

Likelihood	Almost certain	Serious	Serious	High	High	High
	Likely	Medium	Serious	Serious	High	High
	Moderate	Low	Medium	Serious	High	High
	Unlikely	Low	Low	Medium	Serious	High
	Very Unlikely	Low	Low	Medium	Medium	Serious
		Insignificant	Minor	Moderate	Major	Severe
Consequence						

## 7. Cross – Cutting Issues

### 7.1 Human Rights

In the Norwegian development cooperation, human rights are considered fundamental for sustainable development. This is central to achieving development results in accordance with political ambitions and international obligations. The minimum requirement is the integration of human rights in the risk management process of all grants to reduce unintended negative effects from interventions. This Technical Assistance Program key focus in hydrological data collection and analysis, which is not considered to influence or trigger any negative impact on Human Rights aspects.

The support to Nepalese institutions for implementation of newly approved EIA guidelines for Hydropower Sector is likely to have a positive impacts on Human Rights issues. Development of hydropower projects do often impact many lives, not only regarding access to electricity and these benefits, but also in terms of resettlement of whole villages, with the need for livelihood restoration. Active efforts to integrate basic human rights into the project planning, implementation and operation is crucial. Through the planned capacity building on EIA guidelines, the program strives to ensure compliance with national framework and align with International Standards such as the IFC Performance

Standards. IFC decided not to create a separate standard on human rights during the revision in 2012, but instead chose to strengthen the environmental and social requirements in the standards within their existing structure. The IFC Performance Standards address the majority of rights recognised under the International Bill of Human Rights, with a focus on those most relevant at a project level. Examples of these include: the right to life, the right to freedom of assembly, rights that specifically impact women and minorities, right to non-discrimination. ICIMOD is working involving many stakeholders on hydropower benefit sharing framework which will help to strengthen process of benefits reaching to the most deserving people including disadvantage group.

The strengthening of the government institutional capacity through this program is an important step towards a more sustainable development of the Nepal energy sector in general, and hydropower development in particular.

## **7.2 Good Governance**

The new program will build on the routines and practices for financial management of the current program. An external auditor will audit all funds, and report will be submitted to the Embassy to ensure we are meeting the requirements of the Embassy on good governance and anticorruption.

NVEs funds management is vetted by the Embassy, which is in line with the Norwegian General Auditor's rules and policy. NVEs accounting department complies that costs associated with the program according to Norwegian practice. The program budget and accounts will be open for inspection at any time by the Embassy as well for the Norwegian General Auditor.

The Program sets out to mitigate the risks of corruption and leakage of funds, by following up receipts and procurement closely in accordance to Nepal and/or Norwegian procurement legislation. To ensure that implementation of Program activities is transparent, open processes will be mandated through competitive tendering processes if external assistance is needed or through use of NVE framework agreement, which has already undergone a tendering process.

ICIMOD's financial management system is governed by its Finance Policy and Procedures Manual, which has been approved by its Board of Governors (BoG). There is a Finance Committee of the Board of Governors at ICIMOD who oversee the overall financial management and performance of the Centre, which includes the appointment of auditors.

From 2011, ICIMOD's finance department has adopted several initiatives to strengthen the system and enhance coordination between finance and the programme units. MTAP-IV plans and processes in finance include, among others, monthly management reports for up-to-date and timely financial information, tracking expenditures to the activity level, information on expenditure commitments at the programme/project level, and automation of all administrative processes.

ICIMOD is implementing an Enterprise Resource Planning (ERP) known as "STAR" system that integrates management information systems across the organization. This automation has not only increased the efficiency of processes, but also greatly reduced manual work, thereby contributing to reduced administrative

costs. The ERP system will be further strengthened in the next MTAP period by enhancing the business intelligence features, developing an online payment system, preparing annual plans and budgets templates in the system, and integrating functions like publication and maintenance requests, which are currently processed manually.

### **7.3 Gender**

Energy institutions throughout the world tend to be male-dominated, particularly in the professional posts, which is the same trend we see in Nepal. The upcoming Program will continue striving towards having both women and men participation in project activities, and further that both sexes will benefit from the Program activities. Gender neutrality will be assured in selection processes. Promotion of equal participation in capacity building, employment and career opportunities in the sector institutions are prioritised

NVE has developed a gender policy which will be taken into consideration throughout the Program. ICIMOD's vision and mission reflects the strong position that it takes on gender. The ICIMOD Gender Equity Policy, 2013 states as its goal, "to ensure gender equality and transformative change in sustainable and equitable mountain development in the HKH." Apart from integrating gender into its programmes and initiatives, ICIMOD seeks to integrate gender at all levels of the institution. Therefore, institutionally increasing gender responsiveness is crucial for the work during MTAP-IV. To streamline this, a strategic Gender Action Plan at the institutional as well as programme levels have been developed and will be followed also in this program.

### **7.4 Climate and Environment**

Environmental sustainability is a fundamental tenet of ICIMOD's mandate, and is reflected both in terms of the Centre's focal activities as well as in its compliance with relevant international and regional environmental agreements and obligations. ICIMOD intends to minimize its own environmental impact by improving the environmental sustainability of its operations during the MTAP-IV period. As an organization actively involved in the sustainable development of mountain ecosystems, ICIMOD is aware of the environmental impacts of its own operations. Through a commitment to continuous environmental improvement, ICIMOD aims to ensure that its operations are undertaken in such a manner as to have minimum impact on the environment.

Renewable hydropower and environment/climate are closely linked together and environment and climate change will be an aspect in several of the cooperation areas. Improvement of the hydrometric network will be important for environmental/climate analyses and studies. Field work in this program is carried out with the "leave no trace" principle and no waste is left behind or burnt in the camp sites. The carbon footprint will be reduced by maximizing the use of video conferences and other online tools for meetings between remote partners.





### Template: Programme Implementation Schedule



**Annex III: LFA for the Snow Accumulation and Melt Dynamics in a Himalayan Watershed: Observations and Modelling- 2**

<b>Results</b>	<b>Indicators</b>	<b>Means of verification</b>	<b>Risks and Assumptions</b>
<b>Outcome:</b> Policies and programmes related to water resource management and DRR are influenced through robust scientific knowledge generated on snow monitoring, glacio-hydrological modelling, hydropower framework development and individual's as well as institutional capacity strengthening	<ul style="list-style-type: none"> <li>Number of policies and strategies using ICIMOD <u>outputs related to snow monitoring, glacio hydrological modeling and hydropower framework development.</u></li> <li><u>Number of individuals and organizations effectively operating hydrological monitoring and modelling activities.</u></li> </ul>	<p>Outcome monitoring report, progress report</p> <p>Tracer study, progress report</p>	The relevant departments and organizations show interest and willingness to improve their policies and strategies
<b>Output 1:</b> Near real-time snow monitoring system operational and publicly available	<ul style="list-style-type: none"> <li>Snow monitoring system established covering the Langtang pilot area in Nepal</li> </ul>	Activity completion report, monitoring report, progress report	
<b>Output 2:</b> Strengthened human and institutional capacity in hydrological monitoring and modelling activities for hydropower development, EIA processes and requirements	<ul style="list-style-type: none"> <li>Number of individuals and institutions trained in hydrological monitoring and modelling activities for hydropower development, EIA processes and requirements</li> </ul>	Training report, monitoring and progress report	Institutions nominate relevant staff for training and support the process during and after the training
<b>Output 3:</b> Knowledge generated, published and shared with relevant stakeholders.	<ul style="list-style-type: none"> <li>Number of publications in the peer reviewed articles.</li> <li>Number and type of dissemination events conducted.</li> </ul>	Publications data, Events completion reports	Relevant experts dedicate enough time for the publications and events preparations

## **Annex IV: Budget**

Please refer attached Annex.

## **Annex V**

### **Template: Progress Report**

The project progress shall be reported in accordance with the operational plan, if any included in the ToR (Annex 1) and the reporting requirements/deliverables as stated in Article I. Project progress reports, as well as all supporting documents should be submitted in hard copies and also in electronic copies. The Partner shall submit progress report on [xx-monthly] basis to the coordinator named in Section 3.1 of the LoA.

#### **Activity Title:**

#### **Reporting Period:**

1. Summary
2. Introduction and background of the project/activity
3. Project/activity implementation process and approach
4. Main activities undertaken during the reporting period (refer to LoA)
5. Any revisions (e. g., different approach used to implement activities, delays, etc.), including justification for changes and corrective actions to minimize or avoid further changes or delays
6. Completed activities in accordance with LoA
7. Status on deliverables
8. Future plans and steps
9. Challenges and recommendations
10. Annexes: Field activity reports

## **Annex VI:**

### **Template: Financial Reporting Template**

Expenditures of the committed funds from ICIMOD shall be reported in accordance with the budget details with reference to supporting details and as stated in the LoA in the prescribed in Excel format by ICIMOD both in soft and hard copy. Please note that all fund utilisation reports should be stamped and signed by the partners.



ICIMOD

For LoA based agreement

Name of Project

(A) Snow Accumulation and Melt Dynamics in a Himalayan Watershed: Observations and Modeling-2

Name of Partner

(B) Framework for Hydropower Development

Country

Norwegian Water Resources and Energy Directorate (NVE)

Cost Center

3-938-242-0-P

Budget Period

1/1/2019 12/31/2022

Contract Currency

NOK

Partner ID

Cost Category wise Budget Total

Project	Total Budget
Staff Cost	7940400
Consultants	375000
Travel	1560000
Equipment	700000
Workshop/Meetings	120000
IT/Communication	112000
Supplies	0
Partners Overhead	0
Total Budget	10867400
Check	Correct

Fund disbursement Schedule

Tranche	Amount	Planned date*
First tranche Invoice		10-Apr-19
(2-4)		10-Jan-20
(5-8)		10-Jan-21
(9-12)		10-Jan-22
(13-15)		10/10/2022
Last tranche (16)		10-Jan-23
Total	0	

(\* Latest date)

% allocation in Partners Overhead 0%

Project Activity Plan

Project Activity	Cost Category	Capital/ Non-capital	Unit (A)	no. of units (B)	Unit rate (C)	Amount (B*C)	Notes, if any
SnowMAP II (Activity A1- A3)	Staff Cost	Non-Capital	Hours	2469	1200	2962800	NVE staff fee
SnowMAP II (Activity A1- A3)	Consultants	Non-Capital	Fee	0	125000	0	Per week Consultancy incl travel and per diem for coding (A3.4)
SnowMAP II (Activity A1- A3)	Travel	Non-Capital	Travel	18	30000	540000	Travel for NVE staff (and training)
SnowMAP II (Activity A1- A3)	Equipment	Non-Capital	Inst.	1	150000	150000	Total for hydrometric equipment
SnowMAP II (Activity A1- A3)	Workshop/Meetings	Non-Capital	Event	0	30000	0	
SnowMAP II (Activity A1- A3)	IT/Communication	Non-Capital	Quarterly	16	7000	112000	Quarterly data transfer IEC telecom
Framework for HP development (Activity B4 and B8)	Staff Cost	Non-Capital	Hours	1033	1200	1239600	

Amount in NOK





