



FINAL REPORT

Evaluation of ICI Projects in Afghanistan, Bhutan, India, and Nepal

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1 Acronyms and Abbreviations

AGS	Afghanistan Geological Survey
AMEA	Consolidating Academic Mining Education in Afghanistan
ARTF	Afghanistan Reconstruction Trust Fund
ASA	Department of the Americas and Asia
BGS	British Geological Survey
BRCH	Building Resilience to Climate Related Hazards
CCOs	Cross-cutting objectives
CIF	Climate Investment Funds
CLIMOB	Climate Modelling and Observations
CPCB	India's Central Pollution Control Board
DHM	Nepal's Department of Hydrology and Meteorology
DHMS	Bhutan's Department of Hydro-meteorological Services
DLCP	Commercial Law Development Program
DMS	Database Management System
ECHAM-HAMMOZ	Comprehensive 3-dimensional Chemistry Climate Model
EMS	Evaluation Management Framework
EN	European Nation
ENFUSER	Environmental information Fusion Service (by FMI)
FABC	Finnish Afghan Business Council Ry
FMI	Finnish Meteorological Institute
FNEP	Finnish-Nepalese project for improved capability of the Government of Nepal to respond to the increased risks related to the weather-related natural disasters caused by climate change
GEF	the Global Environment Facility
GIZ	German International Cooperation
GTK	Geological Survey of Finland
HKH HYCOS	Hindu Kush Himalayan - Hydrological Cycle Observation System project

HRBA	Human-Rights Based Approach
ICI	Institutional Cooperation Instrument
ICIMOD	International Centre for Integrated Mountain Development
IITM	Indian Institute of Tropical Meteorology
IMD	India Meteorological Department
JICA	Japan International Cooperation Agency
KPU	Kabul Polytechnic University
MFA	Ministry for Foreign Affairs of Finland
MIDAS	Mining Investment and Development for Afghan Sustainability
MoEF	Minister of Environment and Forests
MoEFCC	Ministry of Environment, Forests and Climate Change
MoMP	Ministry of Mines and Petroleum
MoU	Memorandum of Understanding
NAPA	National Adaptation Plan of Action
NAPCC	National Action Plan on Climate Change
NCHM	Bhutan's National Centre for Hydrology and Meteorology
NWP	Numerical Weather Prediction Model
PD	Project Document
PPCR	Pilot Program for Climate Resilience
SAFAR	System of Air Quality and Weather Forecasting And Research
SHSB	Strengthening hydro-meteorological services for Bhutan
SILAM	System for Integrated Modelling of Atmospheric composition
SOP	Standard Operating Procedure
SPCB	State Pollution Control Board
TERI	The Energy and Resources Institute
ToR	Terms of References
UNDP	United Nations Development Programme

UNEP	the United Nations Environment Programme
USAID	United States Agency for International Development
USD	United States Dollar
USGS	United States Geological Survey
VTT	Technical Research Centre of Finland
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization
WMO	the World Meteorological Institute
WMO	World Meteorological Organization

2 Abstract

This report summarises the evaluation of five projects in South Asia implemented since 2011 and describes detailed findings for each project in separate appendices. The five projects were part of the Institutional Cooperation Instrument (ICI) that was introduced in 2008 by the Ministry for Foreign Affairs of Finland (MFA) as a supplementary development cooperation instrument. ICI projects are based on institutional twinning between Finnish expert agencies and their counterparts in developing countries.

The MFA commissioned this evaluation to obtain evidence-based information to demonstrate the results of these projects and to learn and inform decisions about ongoing and similar future projects.

The evaluation found that all five projects had reached their immediate objectives and contributed to significantly increased staff competencies and strengthened systems in partner country agencies. For three agencies, there was evidence that the agencies also delivered better services such as improved weather forecasts because of the projects, with plausible population-wide impacts.

The evaluation formulated 100 project-level findings, 26 summary findings, drew 14 conclusions, derived 9 lessons learnt, and issued 8 general and 5 project-specific recommendations for the MFA, the ICI agencies, and other stakeholders. Among others, it was recommended to continue using ICI projects because of their proven effectiveness. The instrument should, however, be focused on situations where it is relevant and can make a difference – as described in this report.

3 Executive Summary

Introduction. This evaluation was commissioned by the Department of the Americas and Asia (ASA) of the Ministry for Foreign Affairs of Finland (MFA). This main evaluation report summarizes the evaluation of five projects implemented since 2011 in South Asia. The specific findings for each individual project are summarized in Project Appendices 2-6. The five projects are:

1. **Geological Survey of Finland's Support to Afghanistan Geological Survey - GTK/AGS Afghanistan:** a Euro 4.2 million project in Afghanistan that began in 2013 and is still ongoing, led by the Geological Survey of Finland (GTK), focusing on strengthening the capacity of the Afghanistan Geological Survey (AGS) for utilizing modern geophysical techniques, and show-casing institutional cooperation between government agencies, academic institutions, and the private sector.
2. **Capacity Building for Emission Measurements in India - VTT/CPCB India:** a Euro 0.5 million project in India implemented between 2011 and 2014, led by the Technical Research Centre of Finland (VTT) that supported India's Central Pollution Control Board (CPCB) to strengthen national capacity for emission measurement.
3. **Climate Modelling and Observations in India - FMI/IMD "CLIMOB" India:** the second project led by the Finnish Meteorological Institute (FMI) with a budget of Euro 0.5 million project, implemented between 2014 and 2016 to increase the capacity for measuring air quality for climate modelling of the India Meteorological Department (IMD).
4. **Strengthening hydro-meteorological services for Bhutan - FMI/NHMS "SHSB" Bhutan:** the third FMI-led ICI project, with a budget of Euro 0.46 million, implemented 2013 to 2016 to improve the capacity of Bhutan's National Centre for Hydrology and Meteorology (NCHM) to manage and produce high-quality weather information and services.
5. **Finnish-Nepalese project for improved capability of the Government of Nepal to respond to the increased risks related to the weather-related natural disasters caused by climate change - FMI/DHM "FNEP" Nepal:** a series of three ICI projects from 2010 to 2022 in Nepal, each with a budget of ca. Euro 0.5 million, of which only the second and the ongoing third phase are covered by this evaluation. FNEP is led by FMI and aims at strengthening the capacity of the Department of Hydrology and Meteorology (DHM) in Nepal to deliver weather, climate and early warning services.

The common feature of these projects is that they are part of a particular instrument of Finland's development policy and cooperation – the Institutional Cooperation Instrument (ICI). ICI projects pair partner country expert agencies with their Finnish counterparts and use a peer-to-peer adult learning approach to strengthen competencies, systems, and organizational capacities in the partner agencies. The instrument was established in 2008 as a supplementary instrument in the MFA's development cooperation toolbox. Its niche are situations where specialist-to-specialist capacity development can lead to distinct, well-defined results.

The rationale for the evaluation is that only a small fraction of all 116 ICI projects since the instrument was introduced in 2008 have been evaluated, and none of the projects and phases covered in this evaluation has been reviewed to date.

The MFA hence pursues two principal purposes with this evaluation:

- To provide evidence about what the projects have achieved in order to satisfy accountability requirements of the MFA and other stakeholders; and
- To generate insights and lessons learned to support learning and inform decisions of the MFA and other stakeholders about ongoing and future projects of this kind.

The evaluation answers nine evaluation questions that cover the following criteria: relevance, coherence and harmonization, participation, partnership and ownership, effectiveness, the implementation capacity of the Finnish agency, impact, sustainability, and the Human-Rights Based Approach (HRBA) and the four cross-cutting objectives of Finland's development policy and cooperation.

Approach. The evaluation was conducted from April to June 2021 by a team of eight; four senior evaluators worked directly in the four countries in which the five projects had been implemented. Information was obtained through 98 interviews, extensive document review, an online survey with 65 responses and, for the two FMI-led projects in Bhutan and India and the GTK-led project in Afghanistan, through self-evaluation. Collection, analysis and triangulation of evidence were guided by a simple Theory of Change. Challenges to the evaluation were the short implementation phase of just over two months, difficulties with identifying informants and validating their memories for the earlier projects and project phases, and the Covid-19 pandemic.

Findings were structured along the eight criteria addressed by this evaluation:

- **Relevance.** The evaluation found that all five projects responded to significant capacity development needs of the partner country agencies and had convincing rationales linking them to development objectives of the partner countries and Finland's development policy and cooperation. The projects also responded to the external context of the projects, such as the high level of air pollution in India and vulnerability to natural disasters in Bhutan and Nepal.
- **Coherence and harmonization.** The two projects in India were stand-alone in the sense of their partner country agencies not being targeted by other development cooperation projects at the time. The three other projects sought and successfully realized synergies with some other initiatives, but the evaluation team also identified lost opportunities that could have been realized with better coordination. No duplication of efforts was found in any of the five projects.
- **Participation, partnership and ownership:** The evaluated projects were designed, managed, and governed with strong participation and ownership from the partner country agencies, and the project teams from both sides established strong, effective, and lasting partnerships that served as a basis for effective and efficient project implementation.
- **Effectiveness.** All projects reached their direct ICI targets and contributed to significantly strengthened competencies and job performance of, however, a relatively small group of targeted specialists in the partner country agency. The projects also contributed to new and improved systems. During implementation, all projects had to adapt their planned activities somewhat, and the project in Afghanistan had to react to significant external challenges. The project in Nepal complemented and adapted to a larger project by another donor at the same agency. The three closed projects in India and Bhutan struggled somewhat with the short project duration of only up to three years.
- **Implementation capacity of the Finnish agency.** Staff from the Finnish agencies were recognized for their technical and scientific expertise. In addition, they also demonstrated didactic skills and motivation. After some start-up issues and delays, project implementation capacity was very good across all projects.
- **Impact.** Three projects showed plausible contributions to increased agency performance and indirectly (based on the increased agency performance) also to development impacts. In Afghanistan, there was less evidence of improved agency performance, and the overall situation in the country makes impacts beyond the project partners unlikely. The VTT/CPCB project in India also did not show clear signs of impact.
- **Sustainability.** In most partner country agencies, the core group of trained professionals was still operational but usually smaller in size and at risk of further attrition. The sustainability of new or improved systems vary and is in some cases limited, and continued support is required to keep them operational. Sustained agency performance seemed more likely for longer projects and when reflecting a continued priority in the partner country.
- **Cross-cutting objectives (CCOs) and the Human Rights Based Approach (HRBA).** Overall, the understanding of Finland's cross-cutting objectives (CCOs) has remained basic, and the Human Rights-Based Approach (HRBA) was not mainstreamed in project design and implementation. Gender equality was mostly addressed by trying to assure the participation of women in the project, and no project showed a plausible link to the cross-cutting objective of non-discrimination. Regarding the two climate-focused CCOs, the three FMI-implemented projects in Bhutan, India and Nepal had a plausible link to climate resilience, and the CLIMOB project in India plausibly related to low-emission development.

Conclusions. Based on the general and project-specific findings, 14 conclusions were drawn. Regarding the evaluation purpose of accountability, these were:

1. All five projects addressed significant and relevant capacity needs, were implemented diligently and were successful in the primary ICI objectives of developing staff competencies and strengthening systems in partner country agencies.
2. The aid effectiveness principles of coherence and harmonization were only partly fulfilled, whereas participation and ownership were strongly realized in all projects.
3. ICI project reporting was detailed regarding activities but because it lacked reliable baselines and evidence-based monitoring of results.
4. Implementation in the two ongoing projects in Afghanistan and Nepal is progressing but was – and will continue to be – negatively impacted by the Covid-19 pandemic.
5. Three projects clearly contributed to improved agency performance in terms of weather forecasts, flood warnings and climate change modelling with significant potential for impact.
6. In Afghanistan, because of factors beyond the control of the project, agency performance has not yet significantly improved, and the intended impacts associated with attracting fresh mining sector investments are not likely to materialize in the near future.
7. In the VTT/CPCB project in India, there was little evidence of strengthened agency performance in terms of new or improved services of the agency to the country.
8. The HRBA and Finland's CCOs were not mainstreamed in project preparation and design, and no significant contributions to gender equality or non-discrimination are expected by any project. Three projects are likely to indirectly contribute to climate resilience, and one to low-emission development.

Conclusions addressing the evaluation purpose of informing learning and decision-making were:

9. Some ICI projects struggled initially because of lacking inter-cultural awareness and know-how and of insufficient understanding of the situation at the partner country agency and its operating context.
10. Finnish ICI agencies were overall well equipped to carry out the projects. They were able to establish strong and trust-based relationships that allowed effective project implementation through the way ICI projects were governed, managed and implemented by Finnish agency staff once they were up and running.
11. All projects had to adapt their planned activities – and some of their objectives – because needs and circumstances at the partner country agencies changed during implementation.
12. Three projects showed surprisingly clear and plausible contributions to significant development impacts because they helped to strengthen the basic services of partner country agencies for which there was sustained demand and support.
13. The primary factor driving sustainability is the continued existence of a rather small group of trained specialists and the degree of support they have within the partner country agencies.
14. There are good examples of learning from past ICI experience, but current arrangements do not fully exploit the potential for learning.

Lessons learnt. The evaluation identified eight lessons learnt. Regarding accountability, these were:

1. If applied according to established good practices, the ICI instrument represents a useful addition to the MFA's development cooperation instruments
2. Even if designed and implemented well, chances for success of ICI projects are lower in fragile contexts.

Lessons learned for the purpose of informing learning and decision-making were:

3. Initial cultural awareness training can enable more effective projects.
4. Strong partnerships are necessary for success and depend on several good practices identified in this evaluation and the skill and motivation of Finnish and national agency staff.

5. ICI projects must be designed, managed and implemented with enough flexibility to be able to adapt to evolving needs of the partner country agency.
6. ICI projects contribute more clearly to development impacts if they support basic services of partner country agencies that result in immediate population benefits. One example is longer-term weather forecasts that reduce the population's vulnerability to weather risks.
7. ICI projects are more likely to contribute to impact if they cater to the strong and sustained priorities of the partner country agency.
8. ICI projects are more likely to be effective and sustainable if they extend over more than one phase.

Recommendations. Based on the evidence and analysis conducted, eight general recommendations for future ICI projects were developed.

1. The MFA should continue financing ICI projects as one specialist instrument of Finland's development policy and cooperation for purposes (and under conditions) where they have proven to be relevant and effective.
2. The MFA should support and require more thorough preparation of future ICI projects – including useful baselines – in ICI guidance and templates with respect to a detailed understanding of the situation at the partner country agency and its operating context.
3. The MFA should support ICI agencies with intercultural awareness training and blended learning approaches.
4. The MFA should put more emphasis on the generation, documentation, sharing and use of ICI experiences and know-how.
5. Planning and reporting of ICI projects should focus less on activities and more on results, including how they can best be attained, which includes more proactive risk and adaptive management.
6. For results-based monitoring, project reporting and evaluations, ICI projects should systematically keep track of participant data.
7. The MFA should explore creative ways to ensure longer-term "maintenance" support to partner country agencies after successful projects.
8. The MFA should require and support more rigorous initial analysis on potential and ways to integrate the HRBA and Finland's four CCOs into ICI project design.

Five additional project-specific recommendations were issued for the two ongoing projects:

Afghanistan:

9. In its remaining time until 2022, the GTK-led project in Afghanistan should focus on conserving and solidifying what has been achieved and explain how and why the original project plan has been adapted.
10. A proposal for a third project phase of the Afghanistan project after 2022 should critically examine what worked and what did not work in the second project phase and reflect the findings of the project evaluation.

Nepal:

11. In its remaining time until 2022, FNEP 3 should assure that all project results remain coherent with the outcomes of the now closed Building Resilience to Climate Related Hazards (BRCH) project, under the leadership of the partner country agency DHM.
12. In the remaining implementation time, the project should develop and implement an exit strategy focused on the sustainability of achievements.
13. For Afghanistan and Nepal, independent of project extensions, the MFA should consider a minimal level of "maintenance" support after 2022.

4 Table of Key Findings, Conclusions, and Recommendations

FINDINGS	CONCLUSIONS	RECOMMENDATIONS
Overall development performance		
<p>1. All projects responded to significant capacity development needs of the partner country agency</p> <p>2. All projects have strong development-related rationales that are based on the mandates of the partner country agencies</p> <p>3. All projects can be linked to goals in both national development plans and Finland's country strategies</p> <p>7. No duplication of efforts was found in any of the five projects</p> <p>9. Overall, projects were designed, managed, and governed with strong participation and ownership from the partner country agencies</p> <p>10. The project teams from both sides established strong, effective, and lasting partnerships</p> <p>11. All projects contributed to significantly strengthened competencies and job performance of a relatively small group of targeted individuals</p> <p>12. Projects also contributed to new and improved systems</p>	<p>1. All five projects addressed significant and relevant capacity needs, were implemented diligently, and were successful in the primary ICI objectives of developing staff competencies and strengthening systems in partner country agencies</p> <p>(This conclusion is based on several other findings as well: Finding 5 on sustainability, 8 on coherence and harmonization, 13-15 on effectiveness, and 16-17 on implementation capacity)</p>	<p>1. The MFA should continue financing ICI projects as one specialist instrument of Finland's development policy and cooperation for purposes (and under conditions) where they have proven to be relevant and effective</p> <p>(Conclusion 11 also contributes to this recommendation)</p>
<p>18. The three FMI-led projects in Bhutan, India and Nepal show plausible contributions to increased agency performance and to wider impacts</p>	<p>5. Three projects clearly contributed to improved agency performance in terms of weather forecasts, flood warnings and climate change modelling with significant potential for impact</p>	
<p>9. Overall, projects were designed, managed, and governed with strong</p>	<p>10. Finnish ICI agencies were overall well equipped to carry out the projects. They were able to establish strong and trust-based relationships</p>	

FINDINGS	CONCLUSIONS	RECOMMENDATIONS
<p>participation and ownership from the partner country agencies</p> <p>10. The project teams from both sides established strong, effective, and lasting partnerships</p> <p>16. Staff from the Finnish agencies were recognized for their expertise but also demonstrated didactic skill and motivation</p>	<p>that allowed effective project implementation through the way ICI projects were governed, managed and implemented by Finnish agency staff once they were up and running.</p> <p>(This conclusion is also based on Findings 16 and 17 on implementation capacity)</p>	
Project preparation		
<p>4. Projects have been implemented without an exact “baseline” for individual competencies and equipment</p> <p>5. Agency-level plans for organizational development in Afghanistan were more confusing than helpful for project planning and implementation.</p> <p>13. The three projects that have already ended were largely implemented as planned and adapted some activities to reach their objectives, but they struggled with the short ICI timelines</p> <p>17. Despite some start-up issues, the implementation capacity of the Finnish agencies was overall very good, though it was limited by the design of the instrument.</p>	<p>9. Some ICI projects struggled initially because of lacking intercultural awareness and know-how and of insufficient understanding of the situation at the partner country agency and its operating context</p> <p>(This conclusion is also based on Finding 21 on sustainability)</p>	<p>2. The MFA should support and require more thorough preparation of future ICI projects – including useful baselines – in ICI guidance and templates with respect to a detailed understanding of the situation at the partner country agency and its operating context</p> <p>(This recommendation is also based on Conclusions 3)</p>
<p>14. The Afghanistan project faced significant external challenges, requiring considerable flexibility and tenacity, but nevertheless achieved its phase 1 objectives</p> <p>15. The Nepal project reached its objectives primarily by contributing effectively to a larger project at the same agency.</p>	<p>4. Implementation in the two ongoing projects in Afghanistan and Nepal is progressing but was – and will continue to be – negatively impacted by the Covid-19 pandemic</p>	<p>3. The MFA should support ICI agencies with intercultural awareness training and blended learning approaches</p>

FINDINGS	CONCLUSIONS	RECOMMENDATIONS
<p>4. Projects have been implemented without an exact “baseline” for individual competencies and equipment</p> <p>6. In Afghanistan and Nepal, subsequent project phases were also relevant in light of earlier project phases</p>	<p>14. There are good examples of learning from past ICI experience, but current arrangements do not fully exploit the potential for learning</p>	<p>4. The MFA should put more emphasis on the generation, documentation, sharing and use of ICI experiences and know-how</p>
Planning and reporting		
<p>4. Projects have been implemented without an exact “baseline” for individual competencies and equipment</p>	<p>3. ICI project reporting was detailed regarding activities but rather poor regarding results because it lacked reliable baselines and evidence-based monitoring of results</p> <p>(This conclusion is also based on Findings 11-15 on effectiveness)</p>	<p>5. Planning and reporting of ICI projects should focus less on activities and more on results, including how they can best be attained, which includes more proactive risk and adaptive management</p>
<p>13. The three projects that have already ended were largely implemented as planned and adapted some activities to reach their objectives, but they struggled with the short ICI timelines</p> <p>14. The Afghanistan project faced significant external challenges, requiring considerable flexibility and tenacity, but nevertheless achieved its phase 1 objectives</p> <p>15. The Nepal project reached its objectives primarily by contributing effectively to a larger project at the same agency</p>	<p>11. All projects had to adapt their planned activities – and some of their objectives – because needs and circumstances at the partner country agencies changed during implementation</p> <p>(This conclusion is also based on Finding 5 on relevance)</p>	<p>6. For results-based monitoring, project reporting and evaluations, ICI projects should systematically keep track of participant data</p> <p>(Recommendation 6 is also based on Conclusion 14)</p>
Sustainability		
<p>19. The core groups trained remain operational in all agencies but usually smaller in size and at risk of further attrition</p> <p>20. Sustainability of new systems varies and requires/benefits from</p>	<p>13. The primary factor driving sustainability is the continued existence of a rather small group of trained specialists and the degree of support they have within the partner country agencies</p>	<p>7. The MFA should explore creative ways to ensure longer-term “maintenance” support to partner country agencies after successful projects</p> <p>13. For Afghanistan and Nepal, independent of project extensions, the MFA should consider a minimal</p>

FINDINGS	CONCLUSIONS	RECOMMENDATIONS
<p>limited but continued support in Afghanistan and Bhutan</p> <p>21. Sustained higher performance is likely in the three FMI-led projects and depends on stable agency priorities, supportive external factors, and a sufficiently long project duration</p>		<p>level of "maintenance" support after 2022</p>
HRBA and cross-cutting objectives (CCOs)		
<p>22. Projects did not mainstream the HRBA, and knowledge of the CCOs on gender equality and non-discrimination remains basic</p> <p>23. The CCO of gender equality was mostly addressed by trying to assure the participation of women in project activities</p> <p>24. No project showed a plausible link to the cross-cutting objective of non-discrimination</p> <p>25. Only the three FMI-implemented projects in Bhutan, India and Nepal had a plausible link to the CCO of climate resilience</p> <p>26. Only the CLIMOB project in India had a plausible link to low-emission development</p>	<p>8. The HRBA and Finland's CCOs were not mainstreamed in project preparation and design, and no significant contributions to gender equality or non-discrimination are expected by any project. Three projects are likely to indirectly contribute to climate resilience, and one to low-emission development</p>	<p>8. The MFA should require and support more rigorous initial analysis on potential and ways to integrate the HRBA and Finland's four CCOs into ICI project design</p>
Additional project-specific findings, conclusions and recommendations for Afghanistan and Nepal (see also Project Appendices 2 and 6, respectively)		
<p>8. Two projects were stand-alone; the other three projects sought and realized synergies with other efforts but also suffered lost opportunities</p> <p>14. The Afghanistan project faced significant external challenges, requiring considerable flexibility and tenacity, but nevertheless achieved its phase 1 objectives</p>	<p>2. The aid effectiveness principles of coherence and harmonization were only partly fulfilled, whereas participation and ownership were strongly realized in all projects</p> <p>4. Implementation in the two ongoing projects in Afghanistan and Nepal is progressing but is negatively impacted by the Covid-19 pandemic</p>	<p>9. In its remaining time until 2022, the GTK-led project in Afghanistan should focus on conserving and solidifying what has been achieved and explain how and why the original project plan has been adapted</p> <p>10. A proposal for a third project phase of the Afghanistan project after 2022 should critically examine what worked and what did not work in the</p>

FINDINGS	CONCLUSIONS	RECOMMENDATIONS
<p>15. The Nepal project reached its objectives primarily by contributing effectively to a larger project at the same agency.</p> <p>18. The three FMI-led projects in Bhutan, India and Nepal show plausible contributions to increased agency performance and to wider impacts</p>	<p>6. In Afghanistan, because of factors beyond the control of the project, agency performance has not yet significantly improved, and the intended impacts associated with attracting fresh mining sector investments are not likely to materialize in the near future</p> <p>12. Three projects showed surprisingly clear and plausible contributions to significant development impacts because they helped to strengthen basic services of partner country agencies for which there was sustained demand and support</p> <p>(These conclusions are also based on Findings 7, 9 and 10)</p>	<p>second project phase and reflect the findings of the project evaluation</p> <p>11. In its remaining time until 2022, FNEP 3 should assure that all project results remain coherent with the outcomes of the now closed BRCH project under the leadership of the partner country agency DHM</p> <p>12. FNEP 3 should develop and implement an exit strategy focused on the sustainability of achievements</p> <p>(In addition, these recommendations are also based on Conclusions 2, 4 and 5)</p> <p>(Recommendation 13 is covered above, after Recommendation 7)</p>

5 Introduction

5.1 Rationale, purpose, scope, and objectives

The Department of the Americas and Asia (ASA) of the Ministry for Foreign Affairs of Finland (MFA) has commissioned this evaluation of five development cooperation projects conducted over the last decade in Afghanistan, Bhutan, India and Nepal.

The common feature of these projects is that they are part of a particular instrument of Finland's development policy and cooperation: the Institutional Cooperation Instrument (ICI).

ICI projects pair partner country expert agencies with their Finnish counterparts and uses a peer-to-peer adult learning approach to strengthen competencies, systems, and organizational capacities in the partner agency. Ultimately, ICI projects aim at contributing to the goals of Finland's development policy and cooperation by enabling these partner country agencies to better fulfil their respective mandates.

The rationale for the evaluation is that the five projects have not yet been evaluated, apart from an earlier phase of the Nepal project not covered by this evaluation. Although 166 ICI projects have been initiated to date, only a limited number of evaluations were conducted to verify the instrument's functioning and understand what results it has contributed to.

The objective of the evaluation is to produce and provide objective and impartial information about these five ICI projects. This information serves different purposes:

- **Accountability.** The MFA and its departments, units and embassies directly involved with the ICI instrument and the evaluated ICI projects¹, as well as the project partners involved, can use the evaluation and its findings to demonstrate and communicate progress and results in Finland and the four partner countries.
- **Learning and informed decision-making.** The MFA can also use the evaluation findings, conclusions, lessons and recommendations to inform future decisions on ICI projects and for developing the instrument. ICI agencies in Finland and partner countries can use the evaluation as an opportunity to reflect and learn and improve their future planning and management of ICI projects. Beyond those directly involved with ICI, a wider circle of interested people and organisations can use the evaluation to inform their own approaches to capacity development based on institutional cooperation.

The scope of the evaluation is set by the five projects described in Section 6.2 and by the evaluation questions that are described below. In terms of time, the evaluation covers the period 2011 to 2020 and encompasses all project phases apart from the first phase of the project in Nepal that has already been evaluated. Three projects are over and covered in their entirety (two in India and one in Bhutan). The projects in Afghanistan and Nepal are ongoing and are covered from when they started until the end of 2020.

Importantly, this evaluation is *not* an evaluation of the ICI as an instrument. Such an evaluation was conducted in 2014 as part of the evaluation of complementarity in Finland's development policy and cooperation (Bäck and Bartholomew, 2014, Bäck et al., 2014).

The difference between evaluations of projects and instruments is important to keep in mind throughout this report because an evaluation of the instrument can look beyond the purpose and the guidelines for the ICI and ask questions about the relevance, effectiveness, and value for money of that instrument compared to other instruments and forms of development assistance. In contrast, the present evaluation does not investigate or question the ICI as an instrument but evaluates the five selected projects in the context of the purpose and the guidance for this particular instrument.

¹ Mainly the Unit for South Asia in the Department for the Americas and Asia (directly responsible for the five ICI projects), the Unit for General Development Policy in the Department for Development Policy (in charge of the ICI instrument), and the embassies in New Delhi, Kathmandu and Kabul.

5.2 Approach and methodology

The evaluation was conducted by a team of seven evaluators with a total capacity of about 162 days and total cost of about Euro 200.000. Three evaluators formed the core team: the team leader, another senior evaluator, and an emerging evaluator. Four senior evaluators supported the project evaluations in Afghanistan, Bhutan, Nepal and India. Short bios of the evaluation team members can be found at the end of the report on page 63.

The evaluation was conducted from April to June 2021, based on the Terms of Reference (0) and an evaluation inception report. The evaluation was contracted under the Evaluation Management Framework (EMS) of the MFA. Contracting, quality assurance and logistical support was provided by EMS consortium partner NIRAS, and the evaluation was informed and guided by an MFA reference group.

The evaluation answers nine evaluation questions (0 Terms of Reference):

1. How relevant were the projects in view of the capacity development needs of the partner country agencies?
2. What plans, strategies and frameworks – both Finnish and from the partner country – have influenced project selection and design?
3. To what degree were the projects linked, coordinated, compatible and synergetic with other interventions in the partner countries? (both Finnish and other development cooperation)
4. To what degree did the partner country agencies have responsibility and ownership of the projects?
5. Did the projects succeed in strengthening the institutional capacities of partner country agencies? (both as intended and in unintended ways)
6. Were the Finnish ICI agencies sufficiently equipped – especially in terms of human capacity – and supported (by the MFA and the ICI consultants) to implement the ICI projects efficiently?
7. How likely is it that the projects have affected (or will affect) the work of the partner country agencies?
8. To what degree did the projects mainstream the Human Rights-Based Approach (HRBA) and the cross-cutting objectives of Finland
9. Have the capacity increases in partner country agencies – both in terms of human and technical capacity – been sustainable?

Information was collected through interviews, a desk review, an online survey and, for the projects in Afghanistan, Bhutan and India, through self-evaluation. The findings presented in this report are based on the triangulation of evidence obtained from these four types of data and on subsequent analysis by the evaluation team.

Interviews. Ninety-eight people were interviewed for this evaluation (0). Five interviews were conducted as group discussions to allow interaction between interviewees, and several people directly involved with ICI projects were interviewed more than once as the evaluation proceeded. Because of the Covid-19 pandemic, most interviews were conducted online. Overall, the evaluation team considered the interviews to yield solid and reliable information despite the lack of direct personal face-to-face interaction (only the Afghanistan-based evaluator was able to visit partner country agency premises and interviews there). Language issues were overcome by conducting interviews in the local language by the four country-based evaluators or by translating questions and answers as needed, whenever required, for ensuring precise understanding and feedback. Interviews focused on the key stakeholders directly involved with implementing and overseeing the five projects, i.e., former and current staff at the participating Finnish and partner country agencies, project partners, participants in capacity development activities, staff at the MFA in Helsinki and at the Finnish Embassies, and the ICI consultants. Selected additional interviews with stakeholders not directly involved with the projects were also conducted, for example, other donors involved in projects in the same country and sector, country and sector experts, MFA staff involved with ICI at the instrument (rather than the project) level, and senior management and leadership in the Finnish and the partner country agencies.

Desk review covered a large number of ICI project- and instrument-level documents, MFA guidelines and policies, and plans and strategies related to capacity strengthening and organizational development

of the ICI agencies in Finland and the partner countries. The evaluation team also reviewed national development plans, country strategies and reports and websites of project partners. Key documents are referenced directly in the report; all documents consulted are listed in the References section at the end of the report.

An online survey was conducted with former participants in the various capacity development activities of the five projects. The team collected contact details of 225 former participants to which personalized survey invitations were sent. A total of 19 email addresses were outdated and bounced. Several more non-responsive email accounts can be suspected to be dormant for some time because free email account providers (rather than institutional email servers) were used. From 206 delivered invitations, a total of 66 responses were received, reflecting an overall response rate of 32 per cent (Table 5.1).

Table 5.1 Online survey statistics and response rates

	SENT	DELIVERED	BOUNCED	ANSWERED	RESPONSE RATE (IN PER CENT OF DELIVERED EMAILS)
AFGHANISTAN	60	56	4	22	39%
BHUTAN	54	54	0	19	35%
INDIA (BOTH PROJECTS)	43	39	4	4	10%
NEPAL	68	57	11	21	37%
TOTAL	225	206	19	66	32%

Source: Online survey analysis.

The survey produced statistically relevant feedback for Afghanistan, Bhutan and Nepal. Especially in view of the fact that several training activities date back several years, the evaluation team considers the response rates for these projects to be overall satisfactory. For India, too few responses were received, likely because the survey coincided with the worst weeks of the Covid-19 pandemic in New Delhi.

Therefore, the survey feedback is used as an additional source of evidence in the project-level findings for Afghanistan, Bhutan and Nepal, but not for the two projects in India. Survey feedback, including the 4 responses received from India, is also used as evidence across all five projects in the summary findings in Section 6 of this report, but the non-representativeness of the survey results for the India projects is noted when interpreting the data. The complete feedback is summarized in 0.

Self-evaluation. ICI agencies were offered the option of additional self-evaluation along with a detailed project-level template (0). These self-evaluations were conducted by the two FMI-led projects in Bhutan and India and focused on harvesting additional and more structured feedback from project participants that complemented and added to the information received in earlier interviews, also allowing project managers to self-reflect a bit more than possible in an interview situation. The evaluation team stressed that these exercises should not take more than a few hours of staff time in total and that they were entirely voluntary, i.e. not part of the "expected" cooperation during the evaluation process. One ICI agency - FMI - leading three of the five projects in the sample went through such a process and provided the team with detailed feedback. Also, project managers from other Finnish and partner country agencies showed interest but could not fit this exercise into their work calendars. The Afghan counterpart, however, volunteered to self-assess staff competencies to validate earlier assessments, following a different template, as discussed below.

Additional tools and methodological guidance used in this evaluation are described in 0.

5.3 Challenges and limitations

The evaluation had to manage several challenges and undertook related mitigation measures to limit the impact on the evaluation. These are as follows:

Timing. The timeline for the evaluation was ambitious, with only two months between approval of the Terms of Reference on April 16, 2021, and submission of the draft final report on June 16, 2021. This was managed by speeding up the planning and inception phases to the extent possible by delegating evaluation tasks among a comparatively large and senior evaluation team and by tight management, coaching and detailed pre-structuring of the project- and country-level work.

Covid-19 and limitations to travel and in-person interviews. The Covid-19 pandemic required the evaluation to be conducted without travel, and most interviews were held using online meeting software such as Microsoft Teams, Skype, Zoom or WhatsApp. Access to people in India was especially restricted as the pandemic had peaked in New Delhi at the time. While a sufficient number of online interviews could be secured, only very few statistically non-representative answers to the online survey were received for both projects in India. Online interviews in Nepal could be conducted despite outbreaks at the partner country agency. Interactions in Afghanistan and Bhutan were less affected, and the Kabul-based evaluation team member could meet several stakeholders in person. To make the best use of online interviews, the evaluation team used a dialogue-based approach that left space for introductions and for the interviewee to guide and structure the conversation to reflect their interests and what they perceived to be the most information for the evaluation team.

Identification of informants and quality of recall. Because some of the project activities covered took place up to a decade ago, it was challenging to identify and reach those involved with the projects at the time and, even if reached, their recollection of events long ago was at times vague. This introduced several potential biases: a **selection bias** because the evaluation team could more easily contact people still involved with the project today and a **recall bias** because interviewees and survey respondents likely had more accurate memories of recent events than of what happened many years ago. Neither form of bias can be fully determined or eliminated, but the evaluation team took measures to control them:

- Regarding **selection bias**, the team made an effort to also speak to people involved in the earlier stages of the project and, if that was not possible, to avoid a *pars-pro-toto* error by recording the times people were involved and acknowledging this in the analysis, i.e. not to generalize their feedback to project periods when they had been absent. For example, in Afghanistan, the team was unable to contact four trainees who had defected during visits to Finland, and the evaluation hence cannot say anything about their experiences with the project.
- Regarding **recall bias**, the evaluation team helped people remember by offering basic facts about reported project activities at the time, asked for supporting documented evidence from the time, and triangulated feedback received from different people about the same events.

5.4 This report

This evaluation report is a summary report across all five ICI projects covered in this evaluation. It answers the evaluation questions for the sample of ICI projects and highlights commonalities and differences between them, and provides conclusions, recommendations and lessons learned across those five projects. Additional detail on project-specific findings can be found in the respective annexes for each project (Appendices 2-6). For the two ongoing projects, the report also provides project-specific recommendations to inform MFA decision-making.

The report is structured as follows. After this introduction,

- Section 5 sets the context by introducing the ICI instrument and the five evaluated projects.
- Chapter 6 summarizes key findings across the five projects along with the eight evaluation criteria. For additional project-specific findings, the reader is referred to Appendices 2-6.

- Chapter 7 provides conclusions and lessons learnt that serve the two principal purposes of this evaluation: accountability and learning/decision-making.
- Chapter 8 then summarizes general and project-specific recommendations.

This report has 10 appendices, which include the list of people consulted (Appendix 1), project-level findings (Appendices 2-6), Terms of Reference (Appendix 7), templates and tools used as part of the methodology (Appendix 8), a description of the ICI actors, roles, and responsibilities (Appendix 9), and the survey results (Appendix 10).

6 Context

6.1 Origin and nature of the instrument

The Institutional Cooperation Instrument (ICI) was established in 2008 by an administrative order (MFA 2008) on the basis of a 1989 law on the Participation of Government Agencies and Institutions in Development Cooperation (Government of Finland 1989). In 2010, the administrative order was replaced by its current version (MFA 2010).

The 2010 administrative order introduced the ICI as a means of cooperation between Finnish government agencies and their counterparts in the developing/partner countries for the purpose of capacity development, especially in areas in which the Finnish agency possessed specialised knowledge and a high level of expertise (see Section 5.2 for examples). Because ICI projects were (and are) restricted to government agencies in Finland, they were considered "in-house" undertakings that the MFA could procure without competitive tendering and bidding processes.

The ICI represents a supplementary instrument in the MFA's development cooperation toolbox. Its niche area of operation is the limited number of situations where institutional twinning based on colleague-to-colleague level cooperation can lead to distinct, well-defined results.

The 2010 administrative order restricted ICI project budgets to 500.000 Euros but allowed for significantly higher budgets in cases where those projects promoted key priorities of the MFA's country or regional cooperation strategies. In 2021, as part of an updated ICI manual, the budget limit was increased to one million Euros.

On the project level, five actors are typically involved in ICI projects. The respective **MFA Regional Department** assesses, approves, finances and monitors ICI projects. Project development and implementation responsibility ultimately rest with the **Finnish agency**. The **partner country agency** is expected to closely collaborate in project preparation and implementation and is considered the ultimate owner of the project with a crucial role in ensuring its relevance. The **ICI Consultant** - formally called the Facilitation Consultant - is a consulting company contracted by the Department for Development Policy. It supports the Finnish agency during project preparation and implementation. **Finnish Embassies** support the preparation of ICI projects.

As an instrument, i.e. beyond individual projects, the ICI is managed by the MFA's **Department for Development Policy** by means of management documents and instructions, with support from the **ICI Consultant**.

Project-level actors and their respective roles and responsibilities are summarized in Table 6.1 and are described in more detail in Appendix 9 (which also covers actors, tasks and responsibilities at the instrument level).

Table 6.1 Overview of project-level ICI actors and their roles and responsibilities

	Project Proposal preparation and assessment	Project Document (PD) preparation and assessment	Financing decision by the Minister (on the basis of the recommendation of the Quality Assurance Board and the submission by the regional department of the MFA)	Contracting and signing of agreements	Implementation, reporting and monitoring
Partner country agency	Initiate mutual contact Jointly prepare the project proposal	Participate in Project Document preparation Prepare Memorandum of Understanding (MoUs)		Sign MoU	Supports project implementation Jointly prepare required planning documents and reports
Finnish agency		Prepare and submit the Project Document and MoU		Sign the Assignment Contract Sign MoU	Assume implementation responsibility Jointly prepare required planning documents and reports and submit to ICI Consultant Ensure functioning of the project's decision-making arrangements Invoice the MFA
MFA Regional Departments	Assess and decide on project proposals	Assesses and decide on Project Documents (Optional: provide funding for project document preparation)		Prepare and sign the Assignment Contract	Reviews progress and financial reports Pay invoices
MFA Embassies	Support initial matchmaking Comment on proposals	Comment on Project Documents			Monitoring of results ²
ICI Consultant		Support PD preparation and quality assurance			Support the Finnish agency Quality assurance of plans and reports

Source: (MFA 2012)

Between 2008 and 2020, a total of 116 ICI projects had been initiated, most until 2014, with fluctuations but an overall decreasing trend after that (FCG 2020/2). The cumulative annual budget of these projects

² As part of the MFA's overall results-based reporting on country strategies (not directly mentioned in the ICI manual on which the remainder of the table is based).

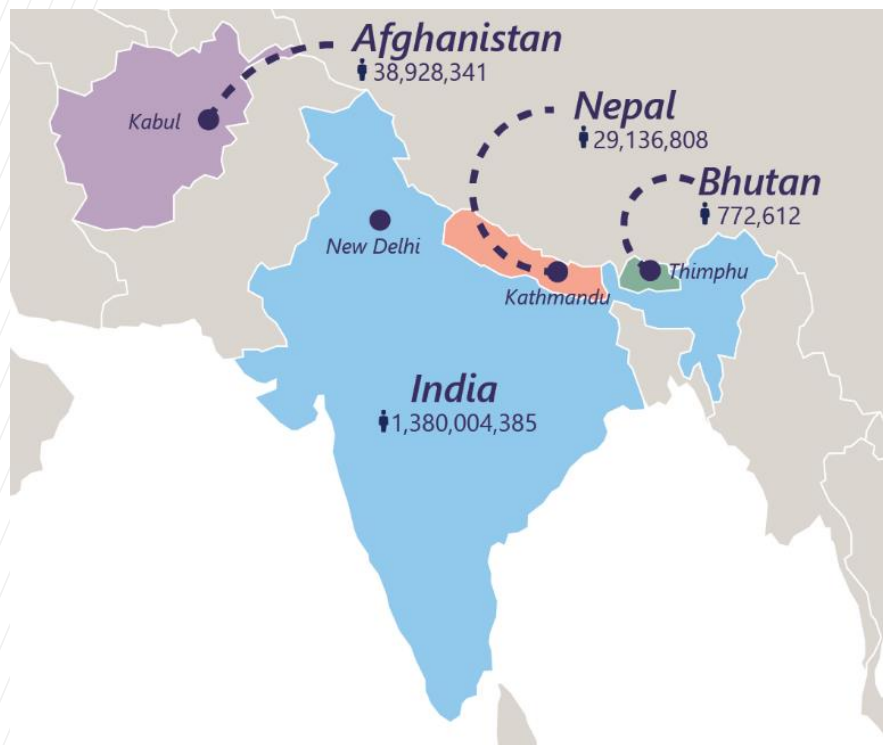
from 2012 to 2020 is Euro 60 million (about Euro 0.52 million on average per project); a large sum but small in relative terms compared to other channels of Finland's development policy and cooperation.

Among the 17 Finnish agencies that have been - and are - part of ICI projects, the three agencies in charge of the five evaluated projects are among the most experienced ones in terms of the number of ICI projects they have led, as explained below.

6.2 Overview of the five evaluated projects

The evaluation covers five projects in four countries; Afghanistan, Bhutan, India, and Nepal (Figure 6.1).

Figure 6.1 Countries included in the evaluation



Source: Population figures from Wikipedia.

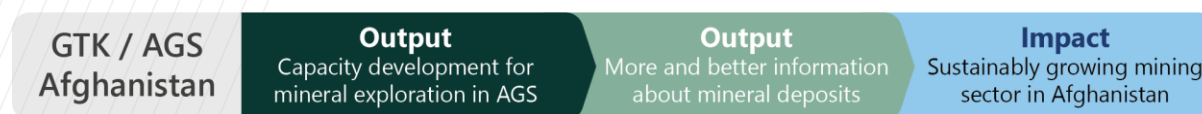
These projects are briefly introduced below and are described in detail in Appendices 2-6. Figure 6.2 summarizes activities, outcomes and impacts associated with each project.

Figure 6.2 A basic Theory of Change of ICI projects

Project	Output	Output	Impact
GTK / AGS Afghanistan	Capacity development for mineral exploration in AGS	More and better information about mineral deposits	Sustainably growing mining sector in Afghanistan
VTT / CPCB India	Strengthen technical capacities of CPCB/SPCB	Improved pollution control services	Improved water and air quality in India
FMI / IMD India	Strengthen modelling and measurement capacities of IMD	Improved weather forecasts and climate modelling	Reduced vulnerability to weather and climate risks
FMI / NHCD Bhutan	Strengthen modelling and forecasting capacities of NCHM	Improved weather forecasts and models	Reduced vulnerability to weather and climate risks
FMI / DHM Nepal	Strengthen modelling and forecasting capacities of DHM	Improved weather forecasts and models	Reduced vulnerability to weather and climate risks

Source: Developed by the evaluation team.

Geological Survey of Finland's Support to Afghanistan Geological Survey



GTK/AGS Afghanistan began in 2013 and will continue, now in its second phase, until the end of 2022. The full names of the first and second phases are:

1. Cooperation in the sector of mining and exploration geophysics between the Geological Survey of Finland and the Afghanistan Geological Survey; and
2. Capacity building for mineral exploration and institutional cooperation in Afghanistan.

The project is led by the Geological Survey of Finland (GTK), Finland's premier governmental geoscience research agency. GTK is an experienced ICI lead agency. Among all ICI agencies, GTK ranks first in terms of cumulative project budget (Euro 13.1 million or 22 per cent), and second in terms of the number of all projects (23 projects or 20 per cent all ICI projects) (CG 2020/2). On the Afghan side, the project partners with the Afghanistan Geological Survey (AGS) that is part of the Ministry of Mines and Petroleum (MoMP). In its second phase (2019-22), additional partners are the Kabul Polytechnic University (KPU), the Afghanite Geo & Mining Engineering Services Company (Afghanite), and the Finnish Afghan Business Council Ry (FABC).

The project focuses on strengthening AGS' capacity for utilizing modern geophysical techniques and on showcasing institutional cooperation between government agencies, academic institutions, and the private sector.

The GTK/AGS project has the largest budget of all projects covered – Euro 4.2 million for both phases – and is also structured differently than the other four projects with regard to the ICI: apart from a Euro 0.5 million ICI component in its first phase, the project is based on general institutional cooperation contracts between GTK and the MFA.

Capacity Building for Emission Measurements in India



In contrast, **VTT/CPCB India** was a "regular" ICI project with a budget close to the ICI threshold of Euro 0.5 million with the full title "Capacity building for emission measurement in India". It was implemented from 2011 to 2014 by the Technical Research Centre of Finland Ltd (VTT) and India's Central Pollution Control Board (CPCB). VTT is one of Europe's leading research institutions and is owned by the Finnish state. Because of changes in its corporate status, VTT has not been eligible for ICI projects since 2015. Nevertheless, VTT ranks fifth among ICI agencies, both in terms of the number of projects (7) and total project budget (Euro 3.6 million) (FCG 2020/2). CPCB is a statutory and advisory body to the Government of India under the Ministry of Environment and Forests.

The project focused on supporting and strengthening national capacity for emission measurement.

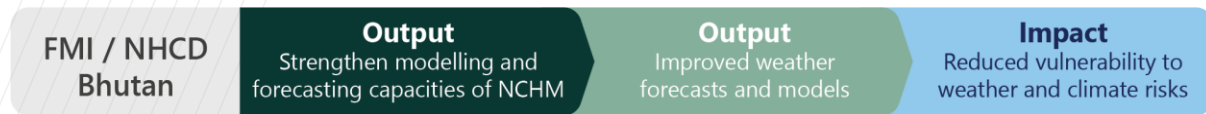
Climate Modelling and Observations (CLIMOB) in India



FMI/IMD ("CLIMOB") India. The FMI-led Climate Modelling and Observations (CLIMOB) project took place in India from 2014 to 2016 with a budget of Euro 0.5 million. The full project title was "Climate Modelling and Observations, India", hence the acronym "CLIMOB". The Indian partner agency was the India Meteorological Department (IMD), a department of the Ministry of Earth Sciences. IMD was - and is - India's principal government agency in the areas of meteorology, seismology, weather, and climate for more than 100 years.

The project focused on increasing IMD's capacity for measuring air quality for climate modelling.

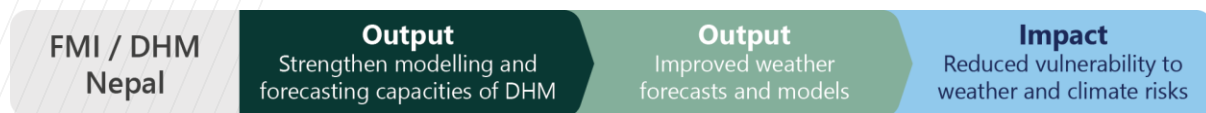
Meteorology Sector Cooperation in Bhutan



FMI/NCHM ("SHSB") Bhutan is the third FMI-led ICI project in this evaluation with the full title "Strengthening hydro-meteorological services for Bhutan". It was implemented between 2013 and 2016 in Bhutan with a budget of Euro 462,000. The Bhutanese project partner was the National Centre for Hydrology and Meteorology (NCHM) that emerged in 2016 from the earlier Department of Hydro-meteorological Services (DHMS). The NCHM is an autonomous scientific and technical organization of the Royal Government of Bhutan responsible for weather-, climate-, and water-related research and information services.

The "Strengthening hydro-meteorological services for Bhutan (SHSB)" project aimed at improving the capacity of NCHM (initially DHMS) to manage and produce high quality weather information and services to the Bhutanese society.

Finnish-Nepalese Project for Improved capability of the Government of Nepal to respond to the increased risks related to the weather-related natural disasters caused by climate change (phase II and III)



FMI/DHM Nepal – also referred to as "FNEP" – is a series of three ICI projects, each with a budget of close to Euro 0.5 million. The full project name is "Finnish-Nepalese project for improved capability of the Government of Nepal to respond to the increased risks related to the weather-related natural disasters caused by climate change (FNEP)". FNEP 1 (2010-2012) has already been evaluated and was therefore not included in the present evaluation. FNEP 2 was implemented from 2013-16; FNEP 3 started in 2018 and will end in 2021 or 2022, depending on a possible extension. FNEP is one of three projects in the evaluation sample led by the Finnish Meteorological Institute (FMI), a world-class research and service agency under the Ministry of Transport and Communications. Of all ICI agencies, FMI has led most ICI projects to date (29) and is the agency with the second-highest cumulative ICI budget (Euro 12.5 million). The project partner in Nepal is the Department of Hydrology and Meteorology (DHM), a governmental organization that is part of the Ministry of Energy, Water Resources, and Irrigation.

FNEP aims at strengthening the capacity of DHM to deliver weather, climate and early warning services.

7 Findings

This section summarizes the findings of five detailed country-level evaluations conducted by the evaluation team. It focuses on the most important findings for each project and highlights common themes and differences emerging between the projects. It does not attempt to present all of the detailed project-level findings and the evidence that support them; for this, the reader is referred to Appendices 2-6. Because of the relatively large size of the GTK/AGS project in Afghanistan project (covering 63 per cent of the budget for evaluated projects), that project is more frequently referred to.

The section is structured along with the evaluation criteria and the evaluation questions. The evaluation questions are provided in a box at the beginning of each section, followed by the related findings.

7.1 Relevance

EQ1. How relevant were the projects in view of the capacity development needs of the partner country agencies?

EQ2. What plans, strategies and frameworks – both Finnish and from the partner country – have influenced project selection and design?

Finding 1 All projects responded to significant capacity development needs of the partner country agency

The five evaluated projects were found to address clear and significant capacity development needs of the partner country agencies that are described in detail in the project evaluation findings (Appendices 2-6). In summary:

- In Afghanistan, prior to the project, employees in the Afghan Geological Survey (AGS) were unable to use their geophysical equipment for minerals exploration³, the principal task of that unit, which has a central role within the agency as a source of information about mineral deposits in the country.
- In India, the Central Pollution Control Board (CPCB) had identified odour monitoring as one emerging area of concern, and the project then made this a priority because neither instruments nor competencies for odour measurement existed at all at the time.
- The three FMI-led projects in Bhutan, Nepal and India focused on improving competencies and strengthening systems to improve the agencies' weather (and flood) forecasts, climate modelling, and, in India, odour measurement. The related service delivery of the targeted partner country agencies required improvement of staff competencies and systems, for example, in order to move beyond a 24-hour horizon for weather forecasts in Bhutan.

The overwhelming majority of survey respondents (96 per cent, N=55 and 52, respectively) indicated that the project had addressed both the most important capacity development needs of their unit and agency and their own professional capacity development needs. The feedback was similarly positive from participants receiving technical training and from higher-level executives. This was also confirmed in interviews with stakeholders of all five projects.⁴

Capacity development needs were identified between the Finnish and partner country agencies during the project preparation phases; no partner country agency was found to possess a detailed capacity development plan prior to the ICI projects, but one such plan was developed during the first phase of the

³ Although staff had received some training from the US Geological Survey that had also procured several new instruments for the unit, nobody in the unit felt able to make use of that equipment which was also related to several experienced staff having retired and new recruits without work experience having joined the unit.

⁴ It should be noted – here and in further findings – that the survey is not representative for the two India-based projects (see Appendix 10).

FNEP project in Nepal, and a more comprehensive plan was developed together with partners during the second phase.

Finding 2 All projects have strong development-related rationales that are based on the mandates of the partner country agencies

Not surprisingly, the five partner country agencies all aim to make important contributions to the development of their countries and to the welfare of their people. By strengthening these institutions, the ICI projects, therefore, contribute to these development objectives as well.

- In Afghanistan, the project supported the Ministry of Mines and Petroleum (MoMP) and the Afghan Geological Survey (AGS) in their mandate to research and publish information about the country's mineral deposits. This was considered the basis for attracting more investment into the mining sector, resulting in a strengthened economy and increased government revenue and, ultimately, benefits for the Afghan population.
- In India, by strengthening the technical capacity of the central- and state-level pollution control boards, the VTT-led project would help these statutory and advisory bodies to better fulfil their mandates to improve the quality of air, and to prevent, control or abate air pollution.
- The FMI-led projects in Bhutan, India and Nepal assisted the countries' meteorological agencies in their respective mandates related to weather forecasting and the modelling of climate-related risks and air quality. More accurate and longer-term weather forecasts and understanding of climate-related risks would then, in turn, contribute to the positive economic development of the country, reduce poverty, and manage disaster risk in times of climate change. This would have a positive impact in many sectors, such as agriculture, health, tourism, clean energy development, transport, and communication.

Naturally, the results chains linking the capacity development activities of the evaluated projects to these far-reaching development outcomes depend on many factors and conditions beyond the control of the projects, within and beyond the partner country agencies. For example, as described later, the Afghanistan project was successful in enabling staff to use geophysical equipment, but adverse conditions both within the agency and the country negatively affected higher-level results. In contrast, the three FMI-led projects contributed, among others, to longer-term forecasting services with likely positive population-wide impacts.

Finding 3 All projects can be linked to goals in both national development plans and Finland's country strategies.

All projects relate to and are relevant within the broad goals and strategies described in the partner country's development plans at the national and/or sector level.

For example, the first Afghanistan National Development Plan (2008 to 2013) declared that "The intention is to encourage legitimate private investment in the sector so as to substantially increase government revenues, improve employment opportunities and foster ancillary development centred on mining activity" (the Islamic Republic of Afghanistan, 2008), a rationale reiterated in subsequent strategies and plans. Clearly, the GTK/AGS project can be linked with this intention because it aims to enable the respective government agency to produce better information about mineral deposits in Afghanistan, which, in turn, is hoped to attract additional mining sector investment.

In other countries, the situation was similar, and the projects were found to be well-aligned with national contexts, development priorities, plans and laws. The evaluation found this to be unsurprising. Unless a country maintains obsolete institutions, all government agencies exist to support the country and the government. Therefore, the projects, simply by virtue of supporting a government agency – automatically support the respective national priorities in the responsibility of that agency as well.

The projects were also found to be in line with the country-level strategies of Finland's development policy and cooperation in these countries. The evaluation team could, however, not establish the degree to which

those strategies have shaped and influenced project selection and design. Most concrete descriptions with the potential to provide such guidance were after-the-fact, i.e., they referred to already ongoing project activities.

For example, in Nepal, FNEP 2 and 3 is mentioned in the country strategy as an ongoing initiative but is somewhat forced under the Water, Sanitation and Hygiene (WASH) priority, while it was found by the evaluation team to be more relevant for climate resilience (which was however not a priority in the Nepal country strategy at the time). In Afghanistan, the GTK/AGS project is mentioned in two documents guiding cooperation between Afghanistan and Finland – a 2013 partnership agreement and a 2018 parliamentary white paper (there is no country strategy for Afghanistan) – but clearly refers to it as already ongoing activities. Apart from these concrete mentions, the project simply falls under the overall priority of economic development and – within that priority – under that of (sustainable) development of the country's natural resources.

Finding 4 Projects have been implemented without an exact “baseline” for individual competencies and equipment

While all five evaluated projects addressed relevant capacity development needs of the partner country agencies, all started without a precise understanding of the levels of staff competencies as well as the availability and state of pre-existing instruments and systems. This required them to adjust the content and types of capacity development activities after the project had already started. Moreover, the absence of well-defined indicators describing the situation at the partner country agency prior to the project made precise target setting and progress monitoring on the level of results impossible.

The by far largest project, the GTK/AGS collaboration in Afghanistan, struggled with this despite conducting two fact-finding missions to the agency during an inception phase. This included estimating baseline competency levels of key agency staff along 24 criteria prior to developing the project document. Still, the project started with a too high expectation of existing competencies and only learned briefly before the project began that some relevant geophysical equipment had already been procured by another donor a few years earlier, something that had not become clear during the two fact-finding missions. In both cases, this forced the project to adjust its approach: to an individual coaching approach to cover fundamental skill gaps and to base theoretical, field and laboratory training on different equipment.

The first phase of the FNEP project, after an inception phase, assisted the Nepalese partner country agency DHM in providing inputs for the development of a 5-year departmental road map which was considered useful in an end-of-phase review (Mikkola K. et al., 2012), which was done in synergy with the first phase of Pilot Program for Climate Resilience (PPCR). A comprehensive roadmap for the development of DHM was done by the second phase of that project (PPCR 2), partly based on this plan. The review of FNEP 1 applauds the fact that a capacity needs assessment had been conducted prior to planning the capacity development activities but does not provide any detail about the quality of that assessment.

For the other projects, there was no documented baseline beyond general description of the types of required capacities. A clear weakness of these projects is to plan for “improvement” without a clear baseline, which is reflected in the results frameworks that are focused on project activities. These three projects were also started without a prior inception phase.

Finding 5 Agency-level plans for organizational development in Afghanistan were more confusing than helpful for project planning and implementation.

While all projects had been designed with reference to agency plans, the GTK/AGS Afghanistan project was the only project where this approach had not been useful.

In the country evaluation, the project was found to have diligently reviewed implicit and explicit plans for restructuring and organizationally developing the Ministry of Mines and the Afghanistan Geological Survey. However, since the early 2000s, the ministry had seen a flux of strategies and plans for reform, most of which was never fully implemented and, in the words of Afghan project participants, tended to remain “on

paper". A review of a large United States Agency for International Development (USAID) project implemented in parallel at the same ministry confirmed this: "The leadership and policies of the MoMP were not stable, and its 20 acting directors were unable to make or implement long-term plans, including the hiring of needed staff" (USAID 2017).

Regarding that project, the evaluation found that relying on existing agency plans for organizational development at any point in time was a risk rather than representing useful guidance. For example, the project design depended on a fast-growing core unit of geophysicists from about 10 to more than 20 within the agency. This recruitment had been anticipated by the agency, but then no recruitments were made, forcing the project to find ways to spread excess training capacity as usefully as possible to other departments as well.

Finding 6 In Afghanistan and Nepal, subsequent project phases were also relevant in light of earlier project phases.

Two projects in the evaluated sample have had more than one phase. The GTK/AGS project in Afghanistan started with a five-year phase in 2013 and continue with a second phase from 2018 until 2022. The second phase logically builds on the first; it continues to support the core AGS geophysics unit that was in the focus of the first phase. In addition, it continues to raise awareness among a broader stakeholder group about how trilateral cooperation can function between the government, academia, and the private sector, incorporating the Kabul Polytechnic University (KPU) and Afghanite, a mining company.

In Nepal, the second project phase (2013-16) built on and incorporated the results and findings of the first phase (2010-12). Both FNEP 2 and FNEP 3 (2018-21/22) continue to support the Department of Hydrology and Meteorology (DHM). DHM is the national agency in charge of the USD 31 million project "Building Resilience to Climate-related Hazards (BRCH)", which is the Nepal implementation phase of Pilot Program for Climate Resilience (PPCR) co-financed and implemented by the World Bank. The Finland-financed project fits into the overall plan for PPCR, covering different capacities required for improved weather, climate, and early warning services to the Nepalese population.

In both projects, there was a trend from developing to using capacities of key agency staff when the projects progressed, which is considered logical and useful in terms of consolidating knowledge and developing skills and experience.

7.2 Coherence and harmonization

EQ3. To what degree were the projects linked, coordinated, compatible and synergetic with other interventions in the partner countries? (both Finnish and other development cooperation)

Finding 7 No duplication of efforts was found in any of the five projects

In the five project evaluations conducted at the country level, the evaluation team did not detect any duplication of efforts or harmful overlaps with other interventions targeting the same agency or sector.

In Nepal, in addition to other project activities, FNEP closely integrated with, adapted to, and complemented the larger (USD 31 million) PPCR-BRCH project implemented by the World Bank between 2013 and 2020. For example, a planned sectoral stakeholder workshop was cancelled because it was already included in the other project. Coordination and complementarity between the projects were further supported by the fact that the Finnish agency – FMI – was both in charge of the ICI project and providing advisory for planning the BRCH project. While there was no duplication of efforts, the dependence of FNEP on the larger project caused problems because BRCH was designed to finalize in July 2018.

FMI's collaboration with the NCMS in Bhutan took place among several other significantly larger projects. Despite not having a common forum for coordination, the project evaluation did not detect any duplication of efforts but several synergies between the ICI project and these other initiatives.

In Afghanistan, the Finnish agency (GTK) was instructed by the MFA – specifically by the embassy in Kabul – to find a complementary niche among mining sector projects and to avoid “stepping on the feet of other donors” and contributed to several mining sector donor coordination meetings. This appears to have worked. For example, GTK had also identified a need to support the management of geological data at the agency (AGS) during design-phase fact-finding missions but abandoned the idea because of ongoing support by the British Geological Survey (BGS) at the time.

In India, both projects were stand-alone in the sense of not depending on other projects and represented the only donor support the national agencies received at the time.

Finding 8 Two projects were stand-alone; the other three projects sought and realized synergies with other efforts but also suffered lost opportunities

Three of the five projects were implemented in the context of other ongoing initiatives. The partner country agencies of the VTT and IMF projects in India – CPCB and IMD – were not targeted by other donors while they were implemented.

In Afghanistan, most international assistance is channelled through large multilateral programs and trust funds, the most prominent of which is the 34 donor Afghanistan Reconstruction Trust Fund (ARTF) that currently finances up to 30 per cent of Afghanistan's civilian budget (ARTF website). Among others, it supports structural reforms in Afghanistan that also affect the Ministry of Mines and Petroleum (MoMP) and the Afghanistan Geological Survey (AGS). Relevant bilateral agencies targeting the same agencies are:

- Past and present support by the British and US Geological Surveys (BGS and USGS) financed from different sources in the UK and the US;
- The USAID Mining Investment and Development for Afghan Sustainability (MIDAS) program implemented from 2012 to 2017 at the MoMP; and
- The Consolidating Academic Mining Education in Afghanistan (AMEA) project supported by the German International Cooperation (GIZ) and implemented from 2014 to 2020 with the Kabul Polytechnic University (KPU).
- Training and advisory activities to the MoMP and AGS by the Commercial Law Development Program (DLCP) on behalf of the US Department of Commerce.

GTK staff involved in the project were aware of most other ongoing initiatives, the only exception being the capacity development work implemented by the DLCP. The same was, however, not true the other way around and the GTK/AGS project has remained little known with at least some of the initiatives by other donors in the sector. For example, people interviewed involved with the US- and UK-related efforts were not or only vaguely aware of the project, and the final performance evaluation of MIDAS – a program implemented largely in parallel at the MoMP – did not mention the GTK/AGS project (USAID 2017).

Apart from the fact that these interventions were much larger than the GTK project, information exchange may also have been affected by the fact that they were funded partly or entirely from non-traditional donor sources, such as the US defence and commercial budgets. While those efforts were self-critical about being unaware of other ongoing work, the evaluation team found that the GTK/AGS project could have benefited from better initial information exchange with the USGS effort to help determine a more precise baseline in terms of competencies and equipment and might benefit in the future from closer coordination with DLCP capacity development at AGS. In hindsight, the GTK project could have helped the significantly larger USD 45 million MIDAS program towards more relevant design and more effective implementation. As it stands, MIDAS design was found to be *flawed from inception* and the training to be *typically poor in quality and inadequate for intended purposes* (USAID 2017).

That said, the GTK project did realize significant synergies by closely coordinating with the GIZ AMEA project. This cooperation contributed to the inclusion of KPU as a phase 2 project partner, and students participating in the AMEA project attended two GTK-led trainings in Iran.

In Bhutan, there were also several other relevant initiatives:

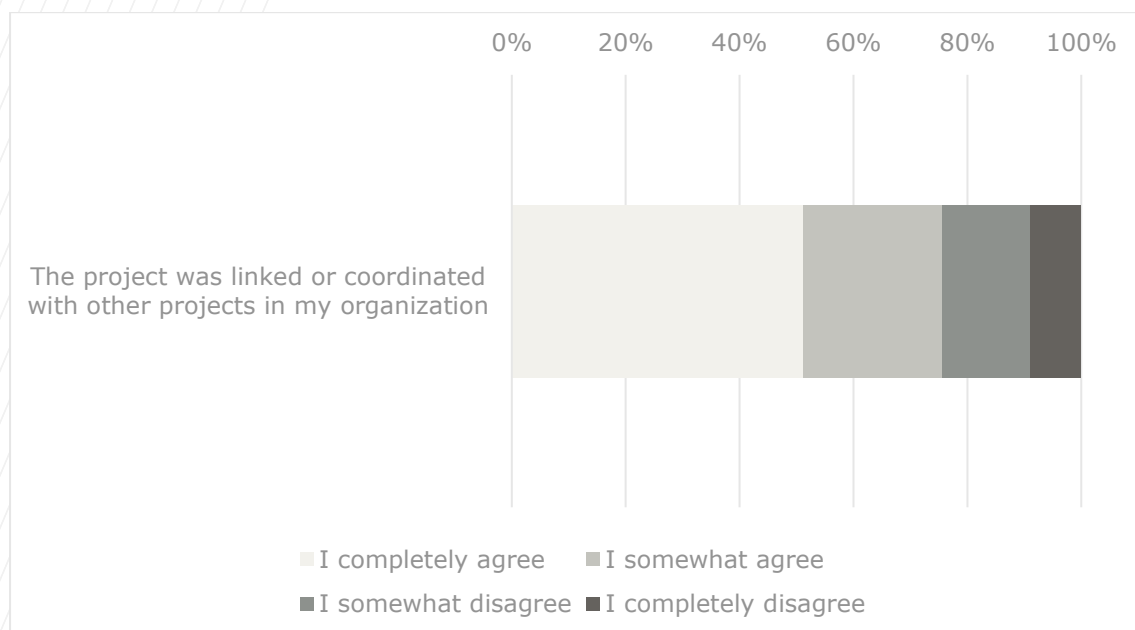
- The United Nations Development Programme (UNDP) -coordinated the National Adaptation Plan of Action (NAPA II) 2014-2018 financed by the Global Environment Facility (GEF) with USD 11.9 million, implemented largely in parallel with the ICI project;
- A project by the Japan International Cooperation Agency (JICA) installed an early warning system in a river basin;
- A Cryosphere project financed from Norway (2014-2020) strengthened NCHM;
- A World Bank study developed a hydro-met roadmap (2015).

The evaluation of the FMI/NCHM project in Bhutan found that despite not having a common forum, these projects achieved synergies. For example, interviewees and the FMI self-evaluation mention that NCHM used funds from NAPA II to complete financing of the FMI Smart-Met system. FMI supported NCHM in the installation of the system after the ICI project implementation. The project's capacity development also filled capacity gaps emerging from technical upgrades supported by other projects. A lost opportunity in Bhutan was the planned installation of a common Hydro-Met Database Management System (DMS) that was found to fit quite well with the NAPA II network expansion plan. This system could, however, not be installed because of the insufficient budget of the latter project. Another missed opportunity was that the planned HydroMet policy could not be completed due to the upgrading of the National Centre for Hydrology and Meteorology.

In Nepal, as described earlier, FNEP 2 and especially FNEP 3 were closely integrated with the PPCR-BRCH project financed with USD 16 million from the Climate Investment Funds (CIF) and a USD 15 million loan from the World Bank between 2013 and 2020. The country evaluation found that not only had duplication been avoided but described the relationship as synergetic and even symbiotic. The FMI project adapted to and served the capacity needs that emerged in the course of the larger BRCH project. Nevertheless, lost opportunities were also identified in Nepal related to the potential that improved linkages across sectors could have ensured a wider impact than hydro-met services and their connection to disaster response.

For the three projects in Afghanistan, Bhutan and Nepal, survey feedback reflected this mix of synergies with some lost opportunities (Figure 7.1).

Figure 7.1 Survey feedback (N=45 for the first statement, N=37 for the second)



Source: a survey carried out by the evaluation team

7.3 Participation, partnership, and ownership

EQ4. To what degree did the partner country agencies have responsibility and ownership of the projects?

Finding 9 Overall, projects were designed, managed, and governed with strong participation and ownership from the partner country agencies

Finnish ICI agencies have overall legal and financial responsibility for the projects towards the MFA. Hence, the degree to which partner country agencies participated in design and decision-making and felt responsible and accountable for project results was of interest to the evaluation team, also because strong participation and ownership are assumed to be one of the most important ingredients for successful ICI projects (MFA 2012 and Appendix 2).

One indicator for early participation and ownership is how the first ideas for these projects came about. The evaluation team derived the genesis of the five projects from desk review and interviews conducted with people involved at the time (Table 7.1).

The two projects in Bhutan and Nepal originated from a coincidental acquaintance and mutual interest between agency staff from both sides and then were brought forward with the partner country agencies in the lead. The CLIMOB project in India was largely developed between FMI and IMD, first during WMO conferences and then during MFA-supported missions. In contrast, initial outreach in the case of the VTT/CPCB project in India and the GTK/AGS project in Afghanistan came from the MFA, looking for ways to support those countries. The FMI and VTT projects in India also benefited from earlier work and networks these agencies already had in the country. Across all five projects, partner country agency staff interviewed by the evaluation team indicated that the Finnish agencies had been very responsive to designing the projects according to their priorities and needs.

Table 7.1 Project genesis of the five evaluated projects.

Project	Genesis
GTK/AGS Afghanistan	Around 2010, MFA looked for opportunities to support the country. The mining sector was considered a potentially promising avenue. GTK was contacted by the MFA and tasked with conducting a fact-finding mission to the country. Based on the findings of that mission and the strong interest shown by AGS, the project was gradually developed over the next three years in partnership between GTK and AGS.
VTT/CPCB India	VTT has had connections with India since 2008. The Government had agreed with the World Bank that India had to demonstrate more concrete results in emission reductions. VTT visited CPCB during a mission to India and discovered weak institutional capacity. The project was conceptualized as part of a broader partnership between Finland and India. The Minister of Environment and Forests (MoEF) and other senior Indian officials undertook early visits to Finland that were important to cement the bilateral relationship and identify broad capacity building areas. Subsequently, the MoEF identified CPCB as the main project beneficiary, and the project was designed in partnership between the CPCB and VTT. <i>MOEF is now the Ministry of Environment, Forests and Climate Change (MoEFCC).</i>
FMI/IMD (CLIMOB) India	FMI collaborated with the Energy and Resources Institute (TERI) since 2003, and they started two major research projects in India in 2013. To maximize the benefit of the bilateral climate research collaboration between Finland and India, discussions and negotiations were made to join efforts between IMD and FMI. Most of the project ideas emerged on the sidelines of the WMO meetings. The IMD was also requested by the Ministry of Environment and Forests (MoEF) to start air quality forecast modelling. The project document draws from discussions between the directors, managers and key staff of the two agencies during FMI missions to India in 2013.
FMI/NHMS Bhutan	In 2012 during the Bhutan Climate Summit, one member from NCHM was asked to make a presentation of the weather and climate service to the international audience. During the meeting, NCHM met with the WMO Director General, who was the former Director-General of FMI. It was then suggested that NCHM should write a project proposal to the government of Finland through the MFA. FMI was technical advisor in the former Hindu Kush Himalayan - Hydrological Cycle Observation System project (HKH HYCOS) coordinated by International Centre for Integrated Mountain Development (ICIMOD) funded by Finnish MFA, and FMI facilitated the connection between MFA and the Bhutanese officials, helping the two parties meet and discuss the proposed project.

**FMI/DHM
(FNEP) Nepal**

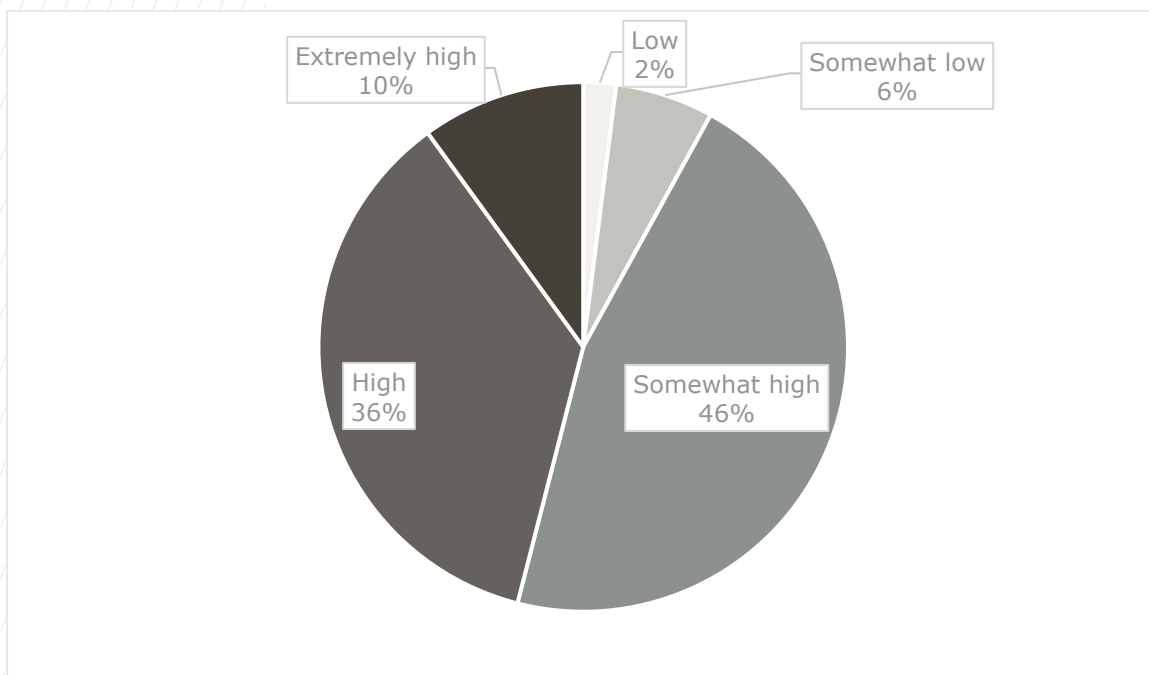
FNEP 1 started as a result of a conversation at an international conference where FMI and DHM representatives happened to meet. They identified a need and a matching offer as a combination of FMI expertise and a fitting MFA ICI instrument. As FNEP 1 developed several required assessments, FNEP 2 and FNEP 3 were designed mainly based on the FNEP 1 results and recommendations, reflecting the needs and priorities of DHM and Nepal.

Source: evaluation team's analysis.

During implementation, participation of – and institutional ownership by – partner country agency staff directly involved in the projects continued to be high. This was supported by interviews and by the online survey (Figure 7.2).

In the Afghanistan project evaluation, this was investigated in detail and found to be related to the projects exemplary approach to governance and management that included full transparency, including the project budget, and allowed the partner country agency equal weight in all project-related decisions. Several interviewees from other donor agencies considered this exceptional compared to how their own projects were governed and managed. A nuance was, however, that ownership in this project was only strong up to a certain level. Higher-level executives in the ministry were making decisions without consulting the project and. As a consequence of that, one of three planned outcomes for the second project phase had to be changed because the original idea, developed together with agency staff directly involved in the project, had been to determine mineral exploration targets for the next couple of years in a collaborative manner. Instead, these decisions were taken top-down without participation from the project.

Figure 7.2 Survey feedback on the level of institutional ownership of the project results (N=50)



Source: a survey carried out by the evaluation team.

Another indication for high levels of ownership was that survey respondents strongly felt that the projects had been well integrated into their organizations' work plans. Of 54 respondents, 70 per cent completely agreed with that statement, and 27 per cent agreed somewhat.

In the FMI/IMD India project, the first feedback received from both sides did not add up. Based on additional interviews, desk review and triangulation of evidence, the following picture emerged. Overall slow decision-making processes and the departure of one key IMD staff had led to a slow design and inception phase. FMI staff interpreted this to represent a lack of interest from the agency, partly because

FMI and MFA staff were not used to IMD's formal and slow institutional procedures at the time. These issues were resolved through inter-agency dialogue, and the project made up for initial delays and still achieved nearly all the project targets. The perception of low interest from the partner country agency had, however, already influenced the MFA's decision to not extend the project, making this into a 2-year project only.

Finally, in the VTT/CPCB India project, the strong priority assigned by the CPCB to developing odour measurement capacity seemed to taper off after the project was over, and an odour measurement prototype that was developed during the project was never replicated.

Finding 10 The project teams from both sides established strong, effective, and lasting partnerships

Across all projects, interviewed staff on both the partner country and the Finnish side described strong partnerships that had developed between the Finnish and the partner country agencies. These partnerships were based on strong personal relations that had formed between key staff on both sides over the course of the projects, as illustrated in Box 1.

Box 1 Quotes from interviews in India

"CPCB and VTT shared a good relationship. We appreciated the high quality of knowledge sharing and technical information exchange. Many of the VTT team mingled with the Indian colleagues and maintained a cordial relationship. This brought the feeling of a team – the nature of the group changed, there was a feeling of openness which encouraged good team working."

(CPCB Executive, India)

"A very pleasant warm relationship that continued even after the project ended."

(IMD Executive, India)

"Problems were addressed, models were installed, and people were able to run the models."

(Another IMD Executive, India)

"In the last project period all changed, and the project was implemented smoothly and highly efficient."

(FMI Project Manager, Finland)

In the case of the FMI/NCHM project in Bhutan, this partnership continues with ongoing cooperation, nearly five years after the project ended. Interviewees on both sides also highlighted the mutual respect that had developed. In Nepal, FMI and DHM staff were found to have established mutual trust, respect and harmonious working relations resulting in a partnership that is responsive and reliable. In the CLIMOB project in India, all staff interviewed at IMD, and FMI agreed that the relationship between FMI and IMD personnel was excellent, and that trust, respect, and effective working relations had been established. In the evaluation of the VTT/CPCB project in India, all interviewees spoke very highly of the relationship with – and expertise of – the Finnish VTT team. Interviewees from both countries highlighted the trust that had been established.

People interviewed in Afghanistan strongly felt that the project had contributed to improving bilateral relationships between the countries at various levels. AGS staff generally looked at GTK with respect and appreciation and felt that there was a good basis and prospects for future cooperation between the two agencies. All interviewees, particularly those within the AGS and MoMP, expressed huge appreciation of the support provided by the GTK experts, particularly as they had responded to their training needs and stood by them stable and consistently during the past years. Interviewees also agreed that GTK had gained "good trust" of the geophysics unit and that the project had established a "triangle of good relationships and trust" between the partners representing academia, the private sector, and the Afghan government.

The evaluation team identified the following factors that had contributed to establishing strong partnerships:

- A participative and transparent approach to managing and governing the projects as equal partners. In Afghanistan, where project governance was evaluated in detail, there was for example clear evidence of how the project's exemplary governance and management and the close involvement of senior- and technical-level MoMP and AGS staff had contributed to building strong, trusting, and lasting professional relationships which, over time, increasingly facilitated project planning and implementation. The evaluation of the CLIMOB project in India also found that the project steering committee had adopted a collaborative partnership model that worked well in practice.
- Across projects, the high relevance of the projects and the degree to which they remained relevant by being sensitive and adapting to the changing needs of the partner country agencies were considered important.
- Study tours to Finland were considered effective tools for raising awareness and involving staff, especially from more senior levels of the partner country agencies. To some degree, they were considered investments into good relations and ways to move beyond formal acquaintance to openness and trust.
- In Afghanistan, the long and steady collaboration over a period of eight years between some key people continuously involved was considered to have contributed to strong partnerships. In other countries the earlier presence of Finnish agencies in the country or their interest to remain in contact after the project was over, also contributed.

7.4 Effectiveness

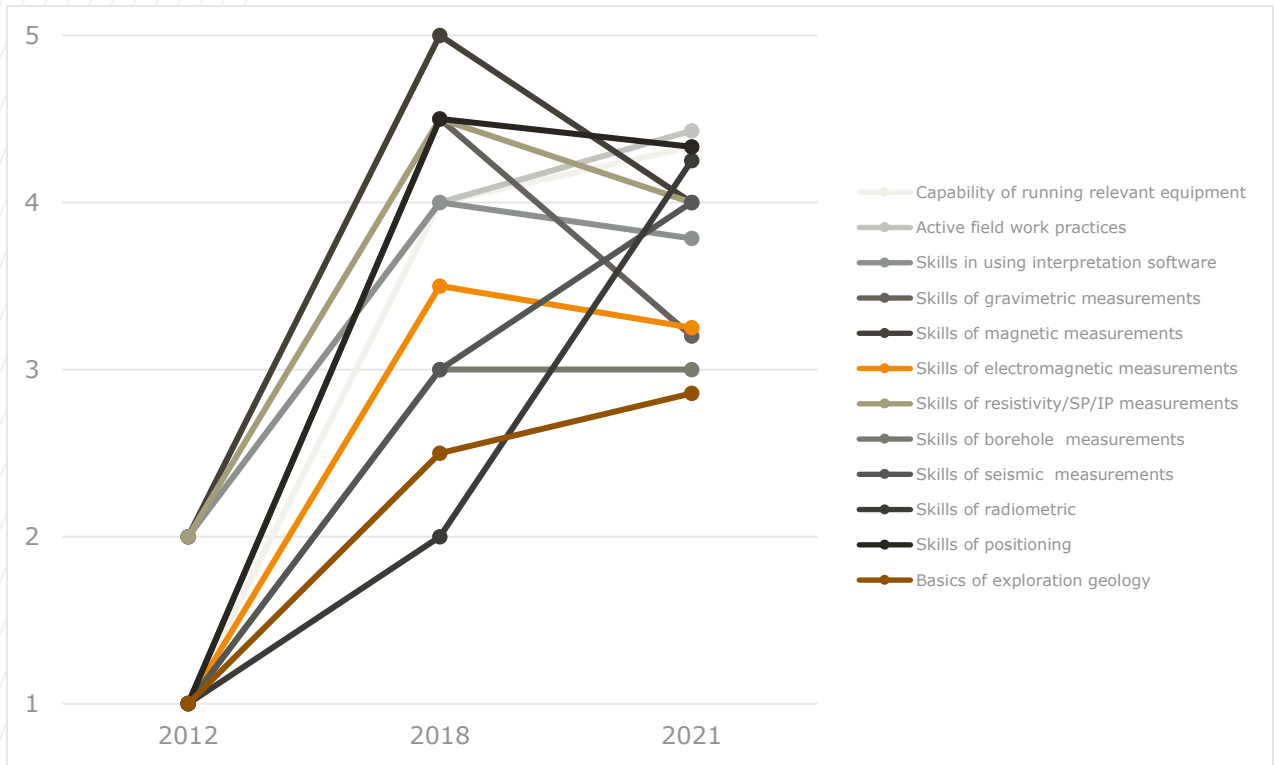
EQ5. Did the projects succeed in strengthening the institutional capacities of partner country agencies? (both as intended and in unintended ways)

Finding 11 All projects contributed to significantly strengthened competencies and job performance of a relatively small group of targeted individuals

Across all five project evaluations, evidence was found that the projects had contributed to significantly increased knowledge, skills, abilities, and job performance of targeted individuals.

In Afghanistan, the key job competencies of the targeted group of geophysicists were estimated by GTK trainers in 2012 and 2018 – before and after the first phase of the project. The 2012 baseline was then validated, and competency levels were estimated again in 2021 based on a self-assessment by the remaining staff working in that unit. The results of that analysis show significant improvements along with a range of core skills for those individuals (Figure 7.3). That analysis shows that initial staff competency levels had indeed been very low before the project started and that they had improved both in the assessment done by the GTK experts in 2018 and in a self-assessment by AGS staff in 2021.

Figure 7.3 Development of individual competencies of the AGS geophysics team between 2012 and 2021. The rating scale ranges from 1= none/primitive to 5=maximum/up-to-date.



Source: (GTK 2018a) for 2012 and 2018, self-evaluation by the AGS geophysics unit staff for 2021, team analysis.

Similar observations were made in the four other projects (however, without a quantitative baseline). In Nepal, the project activities were found to have contributed significantly to increased competencies of individual officers; new knowledge was found to be incorporated into daily work routines in the VTT project. In India, the CLIMOB project was found to have made an important contribution to improved staff knowledge, and the Bhutan project was found to have made a positive contribution to increased skills and knowledge of targeted individuals.

Survey feedback confirmed these findings. It pointed to a very good quality across the suite of capacity development activities employed by the projects (Table 7.2). Study tours to Finland received the highest score, but there was high satisfaction with all and little difference between the types of capacity development. This survey feedback reflected similarly positive feedback obtained very consistently in interviews with all five agencies.

Table 7.2 Rating of overall quality of capacity development during the ICI projects (per cent of respondents participating in each activity)

Type of capacity development	Rating			
	Low quality (major issues)	Average (significant issues)	Good (only minor issues)	Excellent (perfect or almost perfect)
Study tours	0	3.3	30.0	66.7
Field work	2.9	5.7	37.1	54.3
Courses	2.6	10.3	38.5	48.7
Seminars/workshops	2.6	7.7	46.2	43.6
Personalized technical training	4.4	13.0	43.5	39.1
Board/steering committee	3.5	10.3	34.5	51.7
Hardware	0	12.1	36.4	51.5
Software	3.0	12.1	30.3	54.6
Average	2.4	9.3	37.1	51.3

Source: a survey carried out by the evaluation team.

Building on good training quality, surveyed project participants further indicated the applicability of what they had learned:

- 87 per cent of the survey respondents were satisfied with the applicability of the training in their respective jobs (N=55);
- 84 per cent (N=56) were satisfied with how their new learning had affected their job performance; and
- 82 per cent were satisfied with how agency leadership accepted and supported them during the process.

Significant training effects were most evident in the core groups of agency staff targeted by most of the technical training activities. These core groups were, however, comparatively small. While, for example, the Afghanistan and Bhutan projects each reached more than 100 people with their training activities, the core group of agency staff onto which most training focuses were only about 10 people in Afghanistan and about 25 people in Bhutan. Most survey respondents in executive positions estimated that 10 or fewer people had been trained in their agency, whereas participants in technical trainings most frequently estimated that the number had been between 11 and 20, the latter possibly reflecting trainings held beyond the core group.

Finding 12 Projects also contributed to new and improved systems

According to ICI guidelines, peer-to-peer capacity development is the priority of ICI projects, and the procurement of new equipment and systems – while permitted – should not be the budgetary focus of the

projects. The five evaluated projects reflected these relative priorities and made only targeted hard- and software procurements. Mostly, the projects, however, focused on strengthening competencies and skills related to operating existing systems and supporting system upgrades with capacity development.

In Bhutan, data management and quality control systems were strengthened but finalized after the project. Due to FMI support, NCHM was able to improve its hydro-meteorological data management and increase the weather forecasting from 24 to 72 hours. The preparation for the introduction of the FMI Smart-Met System, which was not specified in the results framework, was initiated during the project period and was finalized later with other donor funding.

In the FMI-led CLIMOB project, new aerosol instrumentation was procured and installed at an IMD measurement station to upgrade the measurements. The instruments were procured by FMI and sent to IMD through WMO to minimize delays. No procurement of hardware or software was originally planned in the VTT-CPCB project in India, but MFA accepted that budget funds left over, in the end, were used to produce an olfactometer in Finland and transport it to India. The Nepal project did not finance equipment, but FMI experts gave advice on specifications necessary for procurement processes. For instance, in the current phase (FNEP3), FMI has supported DHM's progress in radar acquisition, including site evaluation and selection, technical specifications and procurement documents.

Because most of the budget for the Afghanistan project was provided outside of the ICI instrument, that project was not bound by ICI restrictions and could allocate some of its Euro 3.7 million non-ICI budget components to the procurement of hard- and software. Originally, the project had also planned to procure certain geophysical equipment for the target group at AGS, the idea being to buy the same instruments that could also be used for training in Finland. However, the discovery of a suite of already existing instruments halted this idea, and the project found other ways to support project partners with useful instruments, such as a gravimeter, equipment for the AGS petrophysics lab and, in phase 2, several mineral exploration tools to be used for academic education.

Finding 13 The three projects that have already ended were largely implemented as planned and adapted some activities to reach their objectives, but they struggled with the short ICI timelines

The three projects implemented by FMI and VTT in India and Bhutan represent one-phase ICI projects that had closed several years before this evaluation was conducted. All three show very high compliance with output-level targets and achieved an average of about 90 per cent of the outputs during the implementation period (Table 7.3). However, the standard implementation period of only three years (and only two years for the CLIMOB project) was found to represent a significant challenge for these projects. Interviews indicate that initial inter-institutional formalities, planning and start-up delays frequently reduce the actual implementation time even further. On the other hand, the strong partnerships that were established led to finalizing most of the outputs on time.

Table 7.3 Objectives and outputs of the projects covered by the evaluation

Project topic	Objective	Country	Institute	Main National partners	Period	Outputs
Capacity Building for Emission Measurements	Reduce air pollution and lift emission measurements to an international level	India	VTT	Central Pollution Control Board (CPCB), State Pollution Control Board (SPCB)	11/2011-8/2014	17 on time, 1 after project

Project topic	Objective	Country	Institute	Main National partners	Period	Outputs
Climate Modelling and Observations (CLIMOB)	Increase the capacity of IMD in measuring the quality of air and in climate modelling	India	FMI	India Meteorological Dept (IMD)	12/2014-12/2016	10 on time, 1 after project
Meteorology Sector Cooperation	Reduce weather and climate-related losses of life and property, to enhance potential for investments in the renewable energy sector and reduce vulnerability to climate change through improved weather and climate services	Bhutan	FMI	Dept of Hydro-Met Services (DHMS), converted to National Centre for Hydrology and Meteorology (NCHM) in 2015	5/2013-2-2016	8 on time, 1 after project, 1 not completed

Source: project reports.

In the VTT-CPCB project in India, a Handbook for emission measurements in India was finalized after the project and was a revision of the Indian emission regulation's part 3. In the other India project (FMI-IMD), the IMD services related to air quality forecasting were also completed after the project implementation, in collaboration with the Indian Institute of Tropical Meteorology (IITM). In the Bhutan FMI-NHMS project, the development of a data management and quality control system was completed after the project closing by a Nepalese firm contracted by FMI, and the Hydro-met Services Policy that should be developed with support from the project is still not finished. It is expected to be approved until December 2021.

The VTT-CPCB project in India made two changes to adapt to changing requirements, which was appreciated by the national agency:

- **Instrumentation:** Due to the lack of Indian suppliers for odour measurement instruments, VTT used an innovative approach to get around this issue. VTT assembled one olfactometer in Finland, customized it to suit CPCB needs and sent it to India. Although this was not the most optimal solution, this was expected to be an important step in building CPCB capacity in the new area of odour.
- **Standards:** The Board decided to use unspent funds (towards the end of the project) in procuring European Nation (EN) standards.⁵ CPCB received soft copies of publications (EN documents) with a disclaimer that the document should only be used by CPCB. These documents are costly and would otherwise have been difficult for an agency such as CPCB to procure through its routine work and budgets. CPCB greatly appreciated these methodologies and standards as they were relevant to future planning and certification, as well as for the online monitoring system.

The FMI CLIMOB project achieved expected project capacity development results despite having to cancel a study trip to Finland by using these funds to cover more trips to India and thereby strengthening training.

The FMI-NCHM project in Bhutan had very positive results but two delayed outputs. One of them hinges on policy approval, which is outside the control of project management, and should probably not have been included as a project result in the design. As soon as FMI discovered the delay of this process, the project should have been reformulated to only be responsible for the draft of the respective policy before it was handed over to the politicians. The other delay was caused by a Nepalese firm contracted by FMI,

⁵ The European Union (EU) has developed an extensive body of legislation which establishes standards and objectives for a number of pollutants in air.

and this could likely have been avoided by adapting quickly or by handing over procurement management to the agency partner. The evaluators consider the main problem to be that FMI was directly in charge of procurement and follow-up of the firm without sufficient knowledge of local procurement rules and practice.

Across all three projects, the implementation period of only three years was found to represent a significant challenge for these projects. Interviews indicate that initial planning and start-up delays frequently reduce the actual implementation time even further. On the other hand, the partnerships that were established in all cases led to finalizing of some outputs even after the formal implementation time was over.

Finding 14 The Afghanistan project faced significant external challenges, requiring considerable flexibility and tenacity, but nevertheless achieved its phase 1 objectives

Activities and outputs of the Afghanistan GTK-AGS project have been documented in semi-annual progress reports and project board minutes meetings in both phases, as well as in mission reports from all the 28 missions of the first phase. In the second phase, reporting was less detailed, and no mission and mid-term reports were produced. This phase had no ICI component and was therefore not subject to the reporting requirements and quality assurance by the ICI Consultants. Activities of both project phases are summarized in Appendix 2.

During both project phases, there was also ongoing (undocumented) communication and support between GTK and project partners by email and phone. From the Afghan side, GTK was considered accessible and motivated to provide support also in-between missions but feedback from GTK staff indicates that such support could have been requested more.

In its first phase, the project used its entire budget and closed timely. Overall, GTK staff invested close to 2600 working days (roughly seven full-time working years) into the first phase of the project, representing Euro 2 million of the total Euro 3 million costs for that phase. In the ongoing second phase, expenditures lagged somewhat behind plans when the project evaluation was conducted – mostly due to the Covid-19 pandemic – and the project has been granted a no-cost extension until the end of 2022.

During both project phases, there was also ongoing (undocumented) communication and support between GTK and project partners by email and phone. From the Afghan side, GTK was considered accessible and motivated to provide support also in-between missions but feedback from GTK staff indicates that such support could have been requested more.

Implementation challenges. The project evaluation found that GTK and AGS staff implemented the planned activities diligently and showed a great deal of tenacity in overcoming many logistical problems, such as setting up trainings in Iran without being able to transfer funds and to overcome or adapt the meeting location because of visa issues for Afghan participants.

The project implementation was also impacted by several external issues beyond the control of the project:

- The deteriorating security situation negatively impacted field work-related training and the fieldwork itself, both in terms of the length and the locations of field missions. The political situation continued to make it difficult to obtain visas for Afghans to travel abroad, and trainings in Tajikistan had to be cancelled already in phase 1. The growing tensions between the U.S. and Iran also made trainings in Iran logistically challenging. It was, for example, impossible to electronically transfer funds from Finland into that country.
- Also related to the security situation in Afghanistan but also to the overall working conditions and career outlook, the project saw four defections of AGS staff during workshops and trainings in Finland 2010-2015. The loss of expertise through these defections was, however, limited because most staff in question had only participated in a single training, but it did leave the AGS geophysics team in AGS reduced in number and without the only woman (and one of two people) that had received laboratory training up to that point.

- Reform, strategy, and organizational development plans for the MoMP in general and AGS, in particular, were usually not implemented as planned and changed over time, with negative consequences for the project. For example, the project's first phase was designed to target a larger number of AGS staff, based on informal and formal plans and projections of the MoMP. The constant insecurity around whether or not plans would also be implemented led to some degree of frustration and fear of job loss in the targeted AGS team. For example, at the time this report was written, there had been statements by the president and the minister about reducing the number of MoMP employees by half, creating significant concerns and insecurity also for AGS leadership and the AGS employees targeted by the project. During the project period, AGS also experienced a generational shift in which a large number of Soviet-trained older professionals retired and were – to some extent – replaced by young people without proper academic education.
- The Covid-19 pandemic began impacting the project from early 2020 and led to delays and cancellations of activities compared to what had been planned.

Based on interviews with project stakeholders, triangulated with the review of project documents and reports, the evaluation team found that the project board had reacted quickly and effectively to these challenges.

- The project team showed tenacity, patience and practical problem-solving skills by relocating trainings and overcoming logistical challenges when organizing trainings outside of Finland and Afghanistan.
- The problem of defections was repeatedly addressed in the project board, which moved swiftly to end trainings in Finland after the 2015 defections after earlier AGS internal measures did not seem to suffice.
- The project also moved to include additional units into training activities ("building stones" and "petrophysics") after it became clear that AGS geophysics staff numbers would remain far below the planned build-up.
- Regarding Covid-19, the project compensated for the lack of direct interaction by trying out several innovative blended learning approaches, such as videoconference-assisted lab work and one-on-one on-the-job coaching.

Results. Despite these challenges, the project achieved all four outcome-level results it had set itself for the first five-year phase:

- AGS staff skills strengthened in using geophysical measurement equipment;
- AGS staff skills in geophysical data management and interpretation improved;
- AGS organizational capacity strengthened in teamwork; and
- Operational manual for geophysical fieldwork prepared and in use in AGS.

For phase 2, no results reporting was available when the evaluation was conducted. This was related to the fact that this phase was not managed as an ICI project and hence did not follow the rules and regulations for ICI reporting – and also did not benefit from the support of the ICI Consultant.

In this phase, the project also lags behind schedule because of the Covid-19 pandemic. Moreover, project management decided to adopt the approach to reaching two of the three planned outcomes for that phase:

- Regarding the planned collaborative process for setting AGS exploration targets together with AGS and MoMP leadership, the reality was that those decisions were taken at higher levels of the MoMP without allowing significant interaction or consultation with the project. The evaluation team finds that the project management took the right decision when accepting these institutional realities and refocusing on trainings, workshops and the demonstration of trilateral institutional collaboration.
- The second-phase project also aimed at raising awareness on human rights issues in the mining sector with a wide range of Afghan stakeholders. This component was originally planned along with a classical dissemination-of-information-based approach, in close consultation with the

parties directly involved in the project. Early into the second phase, project management realized that this Finland-inspired approach might not be the best for the Afghan context in which key groups – such as rural Afghans actually or potentially affected by mining operations – could not be effectively reached by social or print media. Project management then refocused on including rights-based and environmental issues into training curricula targeted at KPU students and AGS/Afghanite employees. At the time this evaluation was conducted, the project was still looking for effective ways to reach other stakeholders. The evaluation team supports this change in project approach and notes that, possibly, a more thorough preparation and consultation period might have brought this design flaw to light at an earlier stage.

The evaluation found that even though the project designs included a risk assessment, this was not used in a systematic fashion, for example, by regularly updating the risk matrix during project implementation, and most problems were treated ad-hoc when they occurred.

Finding 15 The Nepal project reached its objectives primarily by contributing effectively to a larger project at the same agency.

The FNEP 1 project (not evaluated) was implemented at the same time as the planning phase for the Pilot Program for Climate Resilience (PPCR), financed by the Climate Investment Funds (CIF) and implemented by the World Bank. This phase prepared a capacity building plan for DHM, which was used as one of the inputs in the design of the PPCR implementation phase called “Building Resilience to Climate-Related Hazards” (BRCH). This USD 31 million project had DHM as the main national agency, and logically, all small projects (as FNEP 2 and 3) should be implemented in coherence with the large project to assure the best possible institutional impact. The impact from Finland financed FNEP project phases went, however, beyond the project outputs and synergies with BRCH because FMI senior advisors to DHM were in a key position to influence the overall institutional development process, including parts of the World Bank implemented components.

Despite several challenges that limited timely implementation, all FNEP 2 activity indicators (except for the earlier mentioned Sectoral Stakeholder Workshop) were successfully completed. Implementation was delayed in the early phase of FNEP 2 due to the Constituent Assembly elections in November 2013, which brought implementation to a standstill. The implementation of activities was also adversely impacted by the large earthquake in 2015, which greatly affected the country.

According to the DHM staff interviewed, both FNEP 2 and 3 faced implementation challenges posed by multi-tasking of a limited technical human resource base. Besides regular work, the staff was involved in multiple trainings and workshops of different projects. High turnover of staff and a limited number of human resources also posed challenges to capacity building.

"Practically the same group of people is repeatedly targeted by various projects. These days it has become difficult to recall and pinpoint project-specific workshops/trainings" – DHM official

Despite the mentioned challenges, the project experienced no significant changes in the planned activities. The only change registered was not carrying out a planned stakeholder’s workshop, which is considered as justified adaptive project management to avoid duplication with a similar workshop of the BRCH project. However, another option could have been to carry out the workshops together.

Over time, the collaboration and participation of partner country agencies in project implementation were strengthened. The collaborative engagement has now become more proactive and constructive, resulting in a strong partnership that is responsive and reliable. This was validated by the views of DHM officials during evaluation interviews. They also commented that the joint implementation had some challenges, but these were always resolved through dialogue, resulting in a mutually agreed compromise.

"FMI has been proactive and responsive to our needs. This is manifested in the frequency of their missions to Nepal, which provided us with useful hands-on capacity development inputs" – DHM Official.

The capacity development activities focused on practical application mostly by a "learning-by-doing" process. It was participatory and mainly focused on improving the operation of newly installed systems and equipment. The capacity development package comprised a combination of institutional and individual components:

- Institutional: Standard Operating Procedures (SOP) for the Meteorological Weather Forecasting Division, review and further development of Hydro-Met Policy, DHM Communication Plan, development of new automatic weather forecast products.
- Individual development: Numerical Weather Prediction Model (NWP) training, various trainings on weather forecast and climate products.

The project activities reflected and appropriately adapted to DHM's requirements. The resource persons from FMI were expert practitioners in their fields and had a good understanding of the subject matters with strong theoretical and practical experience. The training requirements of DHM were mutually discussed and agreed upon. The Finnish experts applied practical and participatory education methods that, according to the DHM officials interviewed, were easy to comprehend.

Given that the relationship between FMI and DHM dated all the way back to 2010, Finnish experts on missions to Nepal were sensitive to and generally understood the local context. The knowledge and interactions between FMI specialists and DHM officials, as well as with other key stakeholders, contributed towards contextualization and adaptation to local circumstances.

All FNEP 2 result indicators were successfully completed, except for the mentioned Sectoral Stakeholder Workshop. For FNEP 3 project phase is ongoing, but the rate of implementation has been affected since 2020 by the Covid-19 pandemic. Despite this factor, some indicators have been completed, and other targets are in the process of being reached (Table 7.4).

Table 7.4 Summary of outputs achieved during the Nepal FNEP project, phases 2 and 3.

Topic	Goals	Period	Outputs
Capability to respond to increased risks of weather-related natural disasters caused by climate change	Phase 2: Strengthen the capacity of the DHM to make forecasts and provide weather services	2013-16 (2017)	19 on time, 1 cancelled
	Phase 3: Improved capability of the Nepal Government to respond to the increased risks of natural disasters related to weather and climate	2018-22	So far: 1 completed, 5 ongoing, 3 no progress

Source: project reports.

In the FMI FNEP projects, 24 missions from FMI and 4 study tours were completed during phase 2, and 7 missions were completed during FNEP 3 before the Covid-19 situation stopped mission travel.

7.5 Implementation capacity of the Finnish agencies (efficiency)

EQ6. Were the Finnish ICI agencies sufficiently equipped – especially in terms of human capacity – to implement the ICI development cooperation activities efficiently?

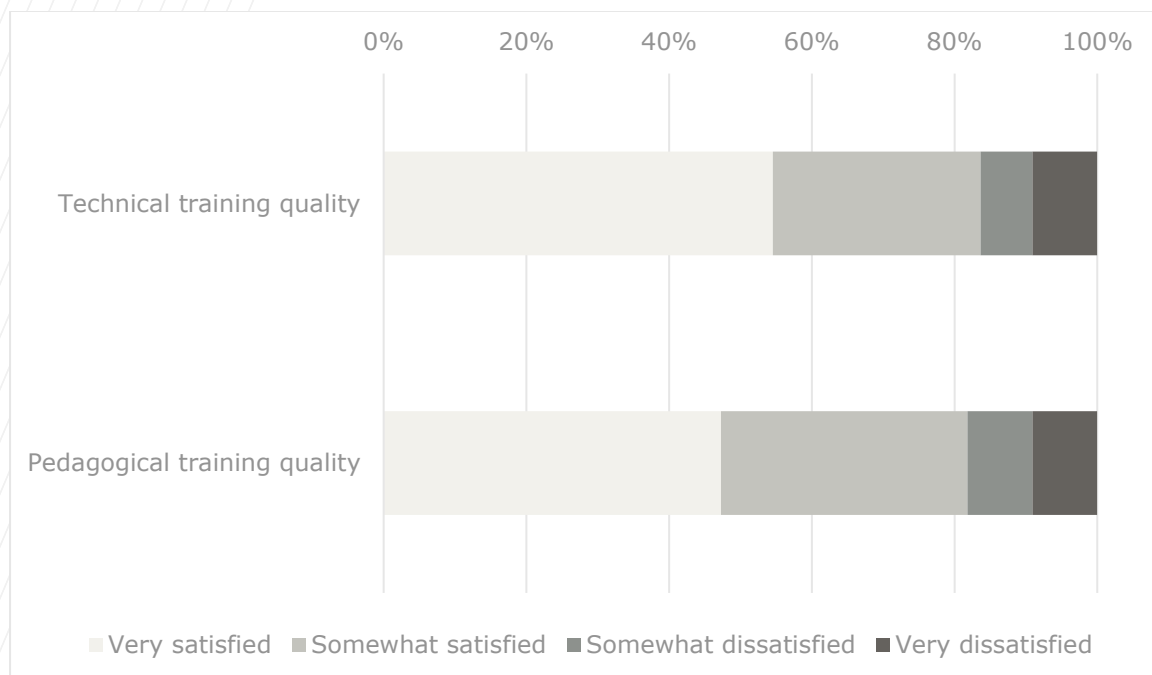
Finding 16 Staff from the Finnish agencies were recognized for their expertise but also demonstrated didactic skill and motivation

Staff from the Finnish agencies FMI, GTK and VTT participating in the project were widely recognized for their technical and scientific experience and expertise. This was not entirely unexpected because these agencies are globally known leaders in their respective fields. Interviewees, however, also gave project

staff and trainers from these agencies high marks for the manner in which they implemented the projects and conducted the capacity development activities.

Survey respondents saw little difference between the technical and the didactic quality of the training that was provided (Figure 7.4), and only 3 of 45 respondents (7 per cent) considered “insufficient teaching skills of Finnish experts” a hindering factor in their project. These apparently good capacity development skills were confirmed in project-level interviews with partner country agency staff and other participants in the five projects’ capacity development activities. In these interviews, the fact that agency staff – often without prior teaching experience – were considered effective in capacity development was often linked to the peer-to-peer approach used in ICI projects or, as one interviewee phrased it, “it needs a geophysicist to speak to another geophysicist”.

Figure 7.4 Survey feedback on training quality (N=55)



Source: survey carried out by the evaluation team.

Across the board, project staff from the three Finnish agencies were considered to have done their job very well. Virtually all survey respondents rated the efficiency with which they had carried out their work as either extremely efficient (63 per cent) and somewhat efficient (35 per cent, N=54).

In interviews with project stakeholders and representatives from other donor agencies active in Afghanistan, GTK was often characterized as a world-class expert organization that had achieved what other, larger but shorter, donor-funded interventions had failed to achieve. Several interviewees referred to a significantly larger (USD 45 million) intervention between 2012 and 2017 that mostly failed in terms of its capacity development efforts at the same ministry because of training that was *regarded as irrelevant, of poor quality, too short-term, repetitive, and led by minimally to completely unqualified trainers by virtually all interviewed training recipients and their supervisors* (USAID 2017, p. 7). In contrast, GTK’s contributions were considered to have been successful also because of the motivation, sensitivity, patience, and flexibility of key GTK staff involved that led to strong and effective partnerships.

Finding 17 Despite some start-up issues, the implementation capacity of the Finnish agencies was overall very good, though it was limited by the design of the instrument.

As institutions, the three Finnish agencies had passed the ICI eligibility tests, but because VTT changed its corporate status in 2015, it was no longer eligible for new ICI projects. All three agencies fulfilled their contractual, financial, and reporting-related requirements. The project evaluations found that the agencies had overall excellent implementation capacity for these types of projects, including a sufficient number of available staff with the necessary technical expertise, but suffered some delays during start-up.

The lack of a detailed baseline and understanding of the situation at the partner country agencies described earlier caused slower project start-ups projects because the agencies had to establish formal relationships, find out how to work together in practice, and plan the concrete content and dates for the project activities. This was less notorious for later stages in the multi-phase projects in Afghanistan and Nepal, where new phases could continue an established relationship and way of working, even though also these projects did experience some delays at the beginning of each phase.

The factors that caused most delays in the beginning were compliance with formalities and misunderstandings. For instance, in India, a Memorandum of Understanding (MoU) would not be enough, and a more formal agreement was required by the partner agency. Different work cultures in Finland and the partner countries caused misunderstandings and delays in the beginning, where the Finnish staff were used to quite informal e-mail communication while their Indian peers were expecting and requiring signed letters, and executives often did not even read the e-mails. This gradually improved during implementation when more trust had been established. In Afghanistan, implementation efficiency improved after initial misunderstandings of what instruments the partner country agency actually possessed and at what levels staff competencies really were.

Regarding knowledge, experience, and skills beyond technical or scientific, there were two overall observations:

- First, despite efforts, projects with new partners suffered delays and misunderstandings related to too little understanding of the partner country agency. Apart from the lack of knowledge of the exact status quo at the partner country agencies, this also concerned a too superficial understanding of the work culture and decision-making processes at those agencies. For example, the two FMI-led projects in Bhutan and India were found to have incurred delays during the design and the inception periods because FMI did not know those partners well enough and therefore was not sufficiently prepared for institutional challenges. In India, this was, for example, a matter of how to institutionally interact and how long some procedures and decisions would usually take. In Afghanistan, GTK started from the assumption that the ministry's plans for increasing staff at the partner agency would be implemented and then had to adjust its target group when this did not happen, while, in hindsight, this could have been anticipated as a risk with mitigation measures from the start.
- Second, some Finnish agency project staff remembered their steep inter-cultural learning curves when the project started, and very similar feedback was received from interviewees in the respective partner country agencies. Issues were related to communications and work culture, for example, the degree to which hierarchies prevented open discussions, superiors could or could not admit knowledge gaps, or friendly responses represented agreements. Reciprocally, partner country agency staff without prior experiences with Finland or the Finns had to understand and decode typical Finnish behaviour and communication. GTK staff involved in the Afghanistan project considered the two days of intercultural training organized by the MFA for them as a pivotal moment in the project because it made them aware of the importance of several "do's" and "don'ts" in Afghanistan – for example, the importance of showing respect and avoiding embarrassment – and guided them towards more effective interactions and, ultimately, strong and trust-based professional relationships.

Naturally, these issues were more prominent for new project staff and for new projects involving new partners in new countries. FNEP 2 and 3 in Nepal, for example, could rely on the previous project phase and all Finnish agencies has some staff that had participated in earlier international assignments, including ICI projects but also other forms of cooperation.

Beyond these considerations, implementation capacity at the institutional level was mainly limited by the rules and regulations of the ICI instrument itself and by external factors. The following factors were most frequently mentioned in interviews and the online survey:

- Lack of more financial support for the project;
- Lack of more direct financial support to the partner country agency and its staff;
- Focus of capacity development activities mainly on a few days and weeks during visits and study tours;
- Too short duration (due to budget limitations) of the technical training sessions; and
- Absence of Finnish key project staff between those interactions (i.e., no resident project staff).

All five ICI projects dutifully implemented the mandatory ICI reporting requirements, which were found to be well supported by the ICI Consultant. The evaluation team noted that ICI reports were mostly activity-based and that little reliable information was available about actual results beyond what activities had been implemented. The only partial exception was the repeated assessment of individual competencies in the GTK/AGS Afghanistan project. In all other instances, reports argued the achievement of intended results based on the implementation of project activities without offering evidence for how these had led to further changes in the targeted agencies.

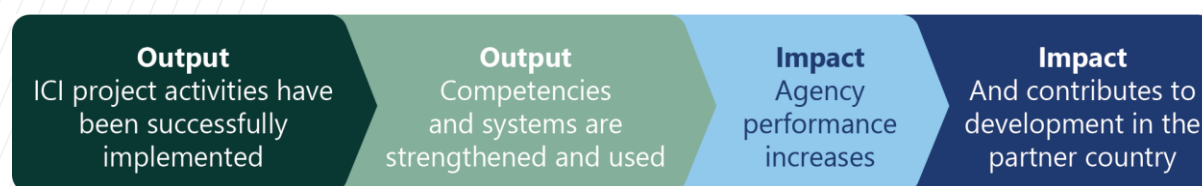
In the evaluation team's assessment, the ICI agencies would require additional guidance and support by the MFA and the ICI Consultant if early results on the level of strengthened capacities and changed job performance should be monitored systematically.

7.6 Impact

EQ7. How likely is it that the projects have affected (or will affect) the work of the partner country agencies? (both in intended and unintended ways, and directly or indirectly related to the developed capacities)

Finding 18 The three FMI-led projects in Bhutan, India and Nepal show plausible contributions to increased agency performance and to wider impacts

Impact was analysed on two levels, both described in the right-most box of Figure 7.5. First, the project evaluations determined whether the project had **contributed to the increased performance of the partner country agency**. This assessment was based on the prior analysis of effectiveness, i.e., the degree to which the project had contributed to strengthened competencies and systems in the partner country agency and the degree to which these were applied and used (the middle box). Second, the team asked project stakeholders for their views, consulted project documents and national strategies, and applied logical reasoning and common sense to assess **the likelihood that increased agency performance had contributed to intended or unintended development impacts** – or could plausibly do so in the future.

Figure 7.5 Simple results chain for ICI projects

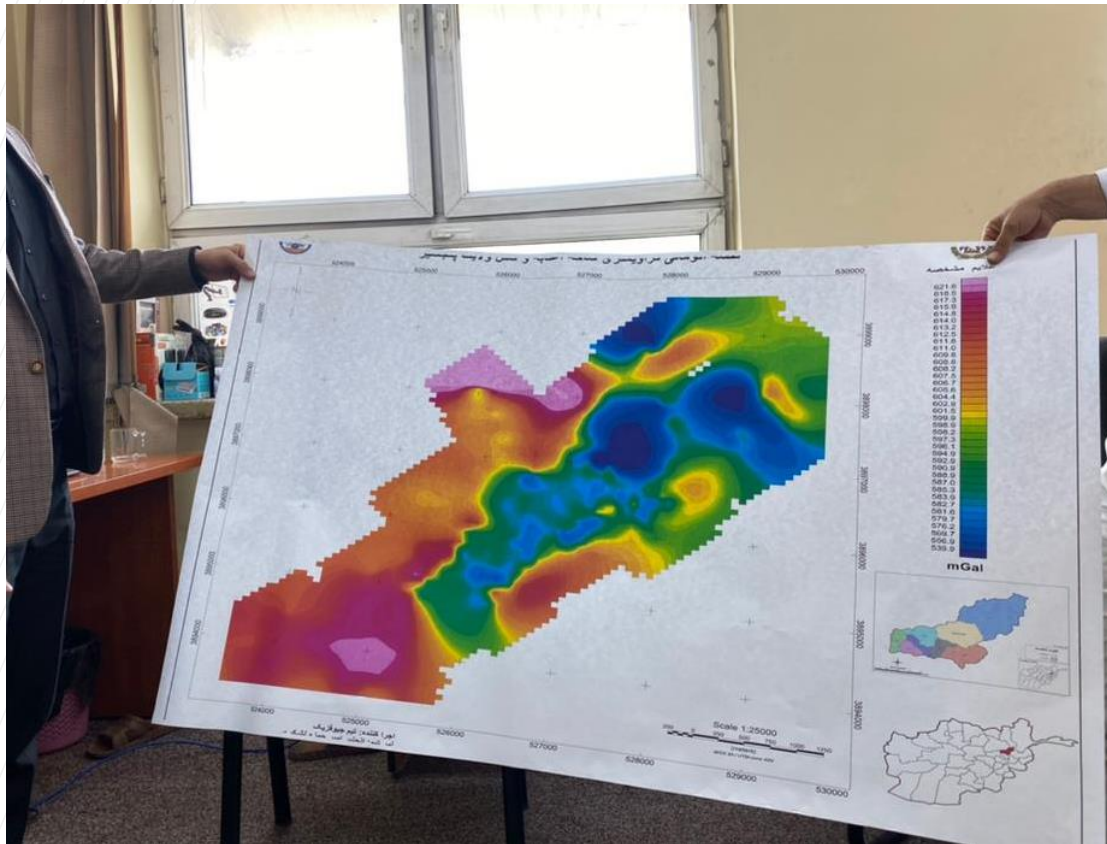
Source: (Evaluation inception report and Appendix 8)

Contributions to increased agency performance and further impacts could be evidenced in three of the five projects. For example:

- In Bhutan, the project was found to have been instrumental in upgrading the weather forecasting capacity of NCHM, increasing the lead time from 24 to 72 hours and improving forecast accuracy. Because weather forecasts are a fundamental societal service, many sectors in the country and, ultimately, the entire Bhutanese population are likely to benefit from better forecasts that allow improved planning and risk management.
- The findings were similar in Nepal, where FNEP was found to have contributed, in coordination with a much larger project supporting the same national agency, to a range of improved hydrological and meteorological services provided by DHM for the country, including weather forecasts, flood warnings, and climate modelling services. Impact of the FNEP project was found to go beyond the project results due to the influence of FMI specialists on DHM management and even on components of the large PPCR-BRCH project.
- In the FMI-led CLIMOB project in India, new project-related systems enabled IMD to undertake real-time monitoring and forecast information on air quality. This effectively upgraded the agency's ability from ex-post monitoring to ex-ante forecasting. The project also enlarged the suite of available forecasting models used and piloted and published the monitoring of aerosols, another first-time capacity for the agency. In the words of an IMD executive: *"In this project, IMD with the help of FMI could develop capacity for air quality forecasting for the first time. Another very good activity was the aerosol monitoring – this was the first time that capacity was developed in IMD, and we are now using it across cities"*.

In Afghanistan, there was less evidence of improved agency performance. Most available evidence focused on training and their outcomes, e.g., increased competencies and systems and, since 2019, awareness and experiences with trilateral institutional collaboration between the agency, a university, and a private sector company. Some examples of additional information about mineral deposits in the country (with the potential to attract new investors into the sector) were identified (Figure 7.6), but the situation in the country and the agency itself was such that there were strong limitations for the agency to increase its output, and for the mining sector to attract additional investment. In the online survey, this was reflected by the feedback that only 37 per cent (N=19) could apply the skills they had learned in the project in their daily work. According to one impact-level indicator tracked by Finland's embassy in Kabul, the estimated annual income of the government of Afghanistan from the mining sector has remained at a very low level, far below earlier expectations in the countries' development plans.

Figure 7.6 An example of AGS exploration work. The photo shows a gravimetric map of a mining site from Seyadara of Bamyan that was developed by the AGS geophysics team in 2019.



Source: Photo taken by the Afghan evaluation team member during a visit to AGS in Kabul.

Similarly, for the VTT/CPCB project in India, the evaluation team could not evidence any impact that could be clearly linked with the project. The possible impact would be more indirectly through a contribution to increased CPCB performance based on the staff members application of their improved skills. One possible explanation is that the project focused on “soft” tools such as improved manuals, as well as several study tours to Finland with many different representatives of national and state pollution control boards, which would raise awareness but not necessarily impact specific abilities and skills. The project also developed and built a prototype for odour measurement that has only been piloted and not replicated.

In addition, the three FMI-led projects and the GTK project in Afghanistan also reported that the projects had contributed to increased reputation and recognition of their respective agencies, both in a national and international context.

7.7 Sustainability

EQ9. Have the capacity increases in partner country agencies – both in terms of human and technical capacity – been sustainable?

Finding 19 The core groups trained remain operational in all agencies but, usually, smaller in size and at risk of further attrition.

In Afghanistan, seven geophysicists of those trained by the project still worked at AGS when the evaluation was conducted. The core target group for technical training had never been very large as then 10 in size.

Of the core group, two retired, and three defected during trainings in Finland, while two new staff were recruited. Hence, the sustainability of the project's capacity development efforts now hinges on only a small number of people. Regarding the future of that core group, two considerations were frequently shared with the evaluation team during interviews:

- There were worries about further erosion of staff. Reasons mentioned in interviews included the external risks discussed earlier in this report but also several other factors such as the recent departure of a widely respected Director-General of AGS and perceptions of low wages, low positions in the hierarchy, and non-transparent and nepotistic human resources management.
- There were also a number of stabilizing factors. The generational change at AGS appears to be largely over. Because of the project, trained AGS staff enjoy a high level of recognition, and the core team of geophysicists is considered somewhat of a "success story" in the agency. Recently, AGS was promoted to a Deputy Ministry and, while its exact future role remains uncertain, it is likely to play some important role. Lastly, because of the high degree of specialization of these professionals, alternative employment options for the trained specialists are scarce.

In the VTT-CPCB project in India, most people trained are still working in the same departments at the central or state levels. Some key personnel have, however, retired since the project ended seven years ago, including the Chairman, the Member Secretary, and the Project Coordinator. Diffusion of knowledge, however, happens between staff working in the same team. One staff member noted that he had learned on the job and through learning-by-doing in this project. As such, he expressed to have progressed in his career. One problem is that staff is required to multi-task across different technical streams and work areas and may not be focused on the aspects that were covered by the training. Hence, although staff may still be in the CPCB, they may now be working on other areas/fields within the same organization. It is not clear to what extent the skills and knowledge acquired under the project were transferred to new staff.

In the FMI-IMD project, four scientists and three researchers from IMD were trained, plus two engineers that benefitted from specific training on instrumentation. All those trained are still in the IMD system and even in the same team. One senior interviewee commented that the staff retention is high because there is not much scope for IMD staff to move to the private sector or to other agencies. Another interviewee noted that, before implementation, IMD research fellows and scientists worked on their desktop computers. The combination of new knowledge and the installation of software on a supercomputer enabled IMD staff to work closely together, with bigger datasets, use the model for weather forecasting and its integration with chemistry transport models. IMD staff also gained exposure to international knowledge and have deepened their research activities, including through several publications.

In the FMI-NCHM project in Bhutan, there were 25 direct beneficiaries that attended training in Finland, and they were also followed up with personalized advice and training in Bhutan. Of these, 8 had left NCHM as of May 2021, but they are either on studies or working in other sectors in Bhutan in the same field, which is still part of the project's impact. There are also about 200 beneficiaries who attended project trainings, workshops and seminars organized by NCHM.

In the FMI-DHM project in Nepal, 43 technical staff participated in the trainings and workshops during FNEP2. Of the survey respondents, 70% still work at DHM, providing the capacity to operate the installed weather forecasting systems. Some participated in more than one training, and there are a few persons in the "core group" of beneficiaries that participated frequently. There are, however, a very limited number of people who know how to run some of the systems that had been installed during the modernization of DHM in the context of the BRCH project. According to DHM staff interviewed, the hydrological and meteorology divisions are understaffed and with a heavy workload, which inhibits DHM's service delivery capacity.

The interviews show that there is a generational shift currently ongoing at DHM. This will lead to a decrease in DHM capacity in the short term in several areas. This also means that a lot of training is needed in different areas to be able to fully run and develop DHM. Retirement and transfers to other government

organizations are the primary reasons for losing staff. About 20 per cent of DHM's core technical human resources have retired or have been transferred to other government agencies. The DHM interviews show that new staff replacement/handover is an ongoing process in the DHM, done according to institutional rules/regulations and practices.

Finding 20 Sustainability of new systems varies and requires/benefits from limited but continued support in Afghanistan and Bhutan

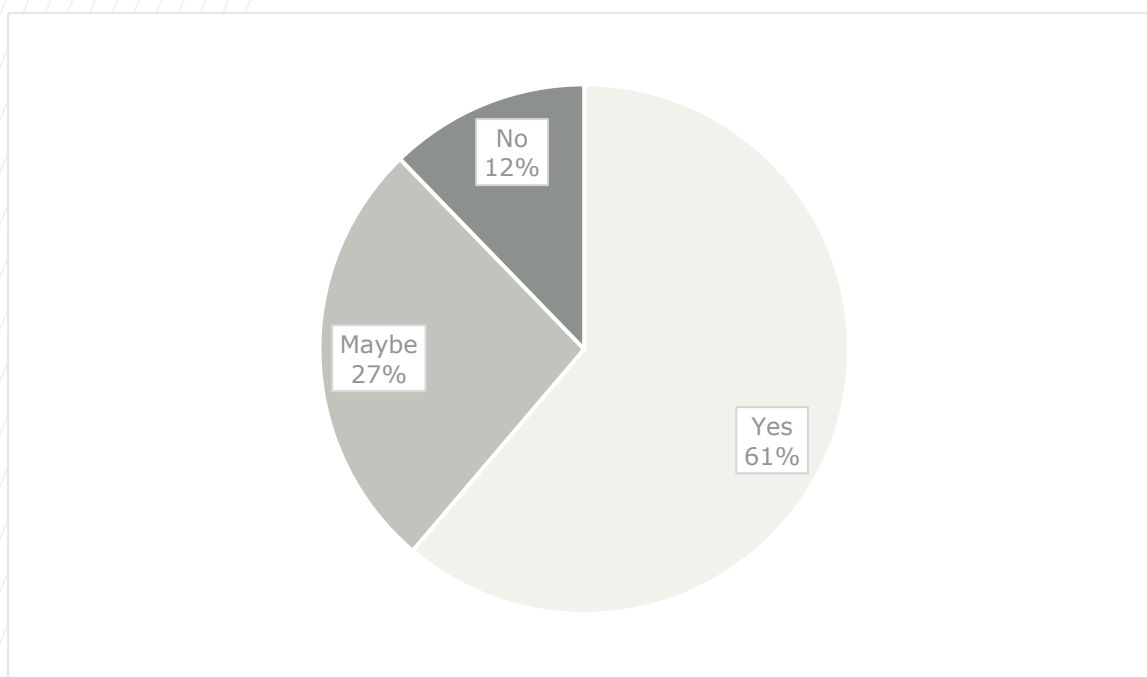
In all projects, new or improved systems and equipment were still operational when the evaluation was conducted and trained staff felt capable of using it effectively, but feedback indicates that some level of "maintenance support" may be needed.

- In Afghanistan, some hard- and software was found to require financing for maintenance and licenses. For example, the geolocation software procured by GTK during the project has a license fee of USD 4,000/year. AGS staff indicated that financial sustainability is unrealistic in view of existing agency budgets. Looking forward, they indicated a need for modern cameras and positioning equipment, spare parts, and accessories for the drilling section, as well as for PCs and printers.
- The FMI-IMD CLIMOB project in India provided three types of instruments for aerosol monitoring, which remain operational and trained the IMD engineers in their use. The people interviewed comment that skills are being transferred to new staff members. The virtual Moodle system is still in operation and acts as a knowledge resource for the IMD. One member of the team explained that they had received training and diffusion of knowledge within the team. Staff interviewed also noted that they gained new skills on data and analysis, on how to use a system, and how to run the model on different platforms, for instance, skills for air quality forecasting models.
- In the FMI-NCHM project in Bhutan, almost all the competencies and skills that were strengthened are currently operational and used. The only drawback mentioned was the difference in technology models and versions in Finland and Bhutan; thus, not all skills learnt or exposure provided could be used. It is highly likely that the improved systems will continue in the future. 65% of those that responded to the survey consider that NCHM has sufficient capacity to continue the processes and practices introduced. The collaboration between FMI and NCHM is also continued, and there is frequent person-to-person communication and support happening even without a project.
- In FNEP 2 and 3 in Nepal, a large majority of the core staff trained are still intact, providing DHM with the capacity to operate the installed weather forecasting systems, but the hydrological and meteorology divisions are understaffed, which inhibits DHM's service delivery capacity. New staff replacement and handover is an ongoing process, done according to institutional regulations and practices. The improved capacity of the technical core team sustains the operation of the weather forecasting systems, which have been significantly enhanced and fully operational, while the Numerical Weather Prediction is also operational. Migration to more advanced systems and system integration was achieved as part of the BRCH project, which augurs well for operational sustainability.
- In contrast, in the VTT-CPCB project in India, the project training focused on the source and fugitive emissions that are at the core of CPCB work, as well as introducing the new topic of "odour". CPCB gave priority to the latter during project implementation but has not followed up significantly, and an olfactometer that was produced by VTT during the project was never replicated.

Finding 21 Sustained higher performance is likely in the three FMI-led projects and depends on stable agency priorities, supportive external factors, and sufficiently long project duration.

Survey respondents provided a rather positive view on sustained performance increase (Figure 7.7).

Figure 7.7 Survey feedback on the question: Is there sufficient capacity in the organization to continue the processes and practices introduced by the project? (N=49)



Source: survey carried out by the evaluation team.

Feedback from interviews was more differentiated, and the degree of expected institutional sustainability and the factors enabling or inhibiting it differed from project to project:

- In Afghanistan, the security threat, the retention of trained staff, and the uncertainty of the future role of AGS hindered both increasing and sustaining agency performance. The project was, however, found to have left a visible mark and introduced a new way of working within AGS. Interviewees generally agreed that things were unlikely to ever go back to how they were before the project. The trained AGS core staff interviewed felt capable of conducting future work without intense support from GTK, but all people interviewed in Afghanistan agreed that some level of ongoing support would be required to keep the high level of competencies that had been achieved, for example, by some form of continued accessibility and availability of GTK experts for on-demand advice, and occasional training on specific speciality issues.
- In the VTT-CPCB project, while the institutional capacity building was considered sustainable in several other areas, sustainability in the project's top priority of odour measurement is likely low because it apparently ceased to be a priority for the agency after the project had closed. CPCB has air Labs in many Indian cities, but interviewed staff noted that work on odour remained at a nascent stage, and India was yet to develop a policy and regulation for this complex field.
- In the FMI-IMD project, senior IMD officials reiterated the importance of sustainability and mentioned that they used their own funding and resources from the Ministry of Earth Sciences to sustain what was introduced by the project. Additionally, FMI had continued to provide support to IMD, including installing new version updates to the software and providing virtual support to any glitches. During the installation of the aerosol equipment, two IMD engineers received training on operation and maintenance.
- In the FMI-NCHM project in Bhutan, interviewees considered that the main factors enabling sustainability were the ability of the Government to fund the operation and maintenance of the systems, employ more people, and achieve new projects to provide support for continued institutional development.
- In the FMI-DHM project in Nepal, 77% of those that responded to the survey consider that there are insufficient human resources and too frequent rotation of staff to implement the learned

practices. Many of those that were trained have, however, later been promoted to DHM management positions and can therefore utilize their improved knowledge as part of institutional decision-making. They are in frequent contact with their peers in FMI and presented in 2018 a proposal to MFA for a new ICI project that would build on the first phase.

As one common denominator, for the three ICI projects with only a single three-year phase (two years for the FMI CLIMOB project), the evaluation team received consistent interview feedback that the changes introduced would have been more sustainable if solidified during a second project phase. The evaluation findings from the two multi-phase projects in Afghanistan and Nepal supported this because the capacity development activities had become more effective over the course of years, as trust and working relations were slowly established and strengthened.

7.8 HRBA and cross-cutting objectives

EQ8. To what degree did the projects mainstream the Human Rights-Based Approach (HRBA) and the cross-cutting objectives of Finland's development policy and cooperation?

The review of HRBA and cross-cutting objectives (CCOs) was based on the respective MFA guidelines of 2015 (HRBA) and 2020 (CCOs) and the MFA definitions issued in 2019. At the same time, it was recognized that the older projects and project phases were not required to consider these objectives in this form during their design, although they were important for Finland's development cooperation long before the 2019 definitions were published.

Finding 22 Projects did not mainstream the HRBA, and knowledge of gender equality and non-discrimination remains basic

The evaluation team found that only the GTK/AGS Afghanistan project explicitly integrated the Human Rights-Based Approach into the project design and the project activities and that no project systematically mainstreamed it, for example, based on socio-cultural analysis.

The project documents for the SHSB Bhutan and FMI Nepal project mention that it would only have an *indirect* effect on human rights. The ability to provide better weather forecasting to the nation helped to reduce climate-related natural disasters that are affecting vulnerable people, indigenous peoples, persons with disabilities, women, and children, as well as communities in remote areas. Regarding the likely effects of improved services to these groups, the evaluation team notes that – generally and without having been evaluated in particular in this evaluation – early warning systems and disaster management systems can run the risk of being designed with “a male perspective”, focusing on an average (male) person, and creating a system which excludes women and other vulnerable groups in terms of their needs and realities, unless these perspectives are deliberately brought into the scope (World Bank 2020; UNDP 2021; Brown et al. 2019). The benefits of improved weather forecasting for the agricultural sector are also contributing to the universal human right to food. This finding is also valid for the other two FMI projects, in India and Nepal, while the VTT project in India has an indirect link to the human right to health due to the air pollution's effect on public health.

The second phase of the Afghanistan project was an exception since it aimed to raise awareness on human rights issues in the mining sector through the dissemination of information. Early into the second phase, project management realized that this Finland-inspired approach might not be so well suited for the Afghan context in which key groups – such as rural Afghans or potentially affected by mining operations – could not be effectively reached by social or print media. Project management then refocused on including rights-based issues into training curricula targeted at students and employees. At the time this evaluation was conducted, the project was still looking for effective ways to reach other stakeholders in more direct ways.

The evaluation team did not find evidence of any socio-cultural analysis that could have informed the project design on HRBA, gender equality, and non-discrimination.

Across the people interviewed for this evaluation, only few had a deeper understanding of the HRBA beyond the widely used improvement of gender equality by increasing the participation of women during project implementation. The ones that did show deeper understanding were mainly external partners, such as the users of hydro-met information for disaster risk management and civil society actors.

Finding 23 The cross-cutting objective of gender equality was mostly addressed by trying to assure the participation of women in project activities

In the ICI projects evaluated, the CCO of gender equality was mostly treated as an issue of “try to increase participation of women”, but without concrete measures of how to reach the objective.

In Bhutan, NCHM staff interviewed expressed that it is a challenge to increase women’s participation in a technical agency in a small country with few qualified candidates because they have to recruit those that are most fit for the job. 28.5% of their employees are female, and there are no women at the executive level, but the weather forecasting section is fully operated by 4 women. For the project activities, only 10% of participants in the training were women, while 30% of stakeholders in other meetings were women. NCHM found that early warning was important for rural women due to their safety and livelihoods, published in the project report “Socio-Economic benefit of Hydro-met Services”.

According to the Final Report of the India CLIMOB project, 4 out of 12 (33%) of the people that were trained were women; however, from interviews, it appears that only two women participated. One of these has been promoted from research assistant to research associate. Senior IMD staff that were interviewed noted the main constraint was the lack of more female scientists and researchers in IMD. The evaluation team interviewed a female research associate who spoke positively about the quality of training and how it helped her to develop skills for her career progression within IMD.

In the India VTT-CFCB project, consideration was the inclusion of female participants in the training events. The project aimed for at least 30% female staff trained, which *CPCB understood as a clause imposed by the donor*. This target was not met; however, the project coordinator on behalf of CPCB was a woman, and one of the two participants in the one-month expert visit in Finland was also female.

In the Nepal FNEP projects, gender equality and non-discrimination influenced the project design but was not the main target. FMI reports that the project placed increasing emphasis on gender balance in the participant lists of the trainings and study tours. In the current project phase, 8 of 17 participants in the sounding training were women, but there is no progress on other gender-disaggregated targets.

As with its approach to the HRBA, the Afghanistan project phase was an exception, where gender equality was addressed not only as headcount. The project encouraged awareness-raising among female staff and students, partly by demonstrating Finnish equality values. Trainees and students interviewed considered themselves aware of – and sensitive to – the cross-cutting objectives of gender equality and non-discrimination.

Throughout both phases, the project adopted the common Afghan approach of restricting female professionals from fieldwork. This was considered adequate by most interviewees, including by professionals working in academic education in the country. That said, female participation was not impossible and, for example, the German GIZ had conducted an all-female field workshop in Iran for KPU students. Apart from single-day excursions which were considered useful and possible, longer-term fieldwork was, however, mostly considered to pose more risks than benefits for female participants. The two (male) evaluators for that project – one of which is an Afghan national – concurred with this view. The lack of fieldwork opportunities for women was somewhat compensated by targeting especially female employees with laboratory work.

Finding 24 No project showed a plausible link to the cross-cutting objective of non-discrimination

The evaluation team could not identify a plausible causal connection or contribution to the CCO of non-discrimination, including related to persons with disabilities, in project documentation, apart from possible high-level linkages between improved weather and flood forecasts and improved climate modelling that would benefit the vulnerable groups due to their higher exposure to disasters, as mentioned in the FMI-led projects. However, the evaluation team notes that, such as for gender equality, this could often be a misinterpretation, as the vulnerable groups tend to be more excluded from early warning systems because their situation influences their ability to receive, interpret and react to early warnings (Brown et al. 2019 & CREWS 2017). Interviews and desk review of project documents revealed neither dedicated activities to avoid discrimination nor any instances of reported discrimination.

Of all people that responded to the evaluation survey in all countries, most (87 per cent, N=64) were men, and 13 per cent were women. In this male-dominated group, 84 per cent agreed that women had the same opportunities to participate in all project activities as the men, and 88 per cent felt that women had the same opportunities to influence the content of the project activities. Somewhat counter-intuitively, all those in the critical group were men.

Finding 25 Only the three FMI-implemented projects in Bhutan, India, and Nepal had a plausible link to the cross-cutting objective of climate resilience

The three FMI-implemented ICI projects in Nepal, Bhutan and India were found to support Finland's CCO on climate resilience.

- The Bhutan project contributed to improved climate resilience through the provision of accurate and reliable weather forecasting services. This was quantified in a study on the socio-economic benefits of hydro-met services.
- The FMI-IMD CLIMOB project in India was due to its main topic strongly related to both low emission development (see also next finding) and climate resilience. The national staff interviewed were sensitive to the significance of air quality and short-lived aerosols and pollutants and their impacts on climate change. Even though the project was finalized more than four years ago, the models have recently been fully operationalized, and it is therefore too early to tell how they will be used for emission control strategies.
- FNEP 1 in Nepal was aligned to multiple objectives of Nepal's Climate Change Policy of 2011, whereas FNEP 2 and 3 contributed to the areas of institutional strengthening, climate-related programs, enhancing climate adaptation and resilience, and quantifying climate change impacts. The project responded to the need for strengthening DHM in its task to help Nepal cope with climate change and the disaster risks related to it.

The fact that these three projects focusing on meteorology have a relation with climate resilience does not mean that climate change was the main reason for designing the projects. Rather, as ICI projects, they focused on very specific aspects of capacity development to strengthen the capacity of the targeted partner country organisations.

The VTT project in India climate resilience was not seen as directly relevant, and the Afghanistan project has the only relation to other environmental issues but not directly to climate resilience.

Finding 26 Only the CLIMOB project in India had a plausible link to low-emission development

The FMI-CLIMOB project in India was the ICI operation evaluated that was most relevant for climate change mitigation and low-emission development. At the time of the project formulation, climate change adaptation and mitigation were fast becoming a priority area in India, but there were limited policies on air quality monitoring and forecasting. The Government of India's National Action Plan on Climate Change

(NAPCC), launched in 2008, aimed at fulfilling India's developmental objectives while also focusing on reducing the emissions intensity of the economy.

As IMD did not have any air quality forecasting system, the project's capacity building component led to a transfer of tools and software source codes to customize and implement in India and to initiate the operationalization of the system. Scientists and researchers in IMD received hands-on training in the use of these forecasting systems and modelling. All interviewees were unanimous in noting their appreciation for the newly introduced System for Integrated Modelling of Atmospheric Composition (SILAM) and Environmental information Fusion Service (ENFUSER) models – which were seen as the main components of the air quality forecasting system. In terms of developing capacity for climate aerosol models, A Comprehensive 3-dimensional Chemistry Climate Model (ECHAM-HAMMOZ) was also installed at IMD and was seen as important in terms of modelling future climate scenarios and predict the long-term impact of aerosols on the climate.

IMD staff noted the value of SILAM as it covers the whole of India by generating air quality predictions for 72 hours and captures all the concentrations of major pollutions and secondary particulates generated by atmospheric chemistry and their distribution. It should be noted that this is the first time IMD is using such prediction frameworks, and unlike other general models, SILAM uniquely captures atmospheric chemistry.

The other four projects did not have objectives of climate change mitigation and did not show any direct links to low emission development. The VTT-CPCB project in India was indirectly related to the objective because the first step in this development is to understand and measure emissions. This has the potential to reduce GHG emissions while considering wider impacts. However, as the project developed with the most emphasis on odour, the evaluation team does not see a clear link to emission reductions. Some interviewees suggested that by virtue of strengthening their agency and because that agency covered climate change mitigation in their mandate, an indirect contribution could be argued. This was also suggested in Bhutan, where the partner country agency had adopted the government goal of climate change mitigation as well. The evaluation team agrees with the view that institutional strengthening of the main national climate agency would indirectly facilitate low emission development, even when this is not a direct outcome of the ICI projects.

For all projects, there is also a minor effect of emissions caused by project-related travel. As ICI projects include a fair amount of international air travel, their CO₂ footprint may be relatively large compared to their overall budget size.

8 Conclusions and lessons learnt

This section draws on the 26 summary findings presented in Section 7 and derives conclusions and lessons learned. In some cases, direct reference is also made to the more detailed project-specific findings in the project evaluation Appendices 2-6.

The conclusions and lessons learned address the two principal purposes of the evaluation:

- Section 7.1 focuses on **accountability**. It summarizes evidence about “what” the five projects have achieved. This information can be used by the MFA, ICI agencies, and other stakeholders to demonstrate and communicate project implementation and results.
- Section 7.2. focuses on **learning and decision-making**. It summarizes evidence about “how” and “why” the five projects achieved their objectives – or why not. This information can help the MFA, the ICI agencies, and other stakeholders to learn and to inform decisions about new and ongoing institutional cooperation projects.

8.1 Conclusions for accountability

Conclusion 1 All five projects addressed significant and relevant capacity needs, were implemented diligently and were successful in the primary ICI objectives of developing staff competencies and strengthening systems in partner country agencies.

The evaluation found clear evidence that all projects addressed significant capacity development needs of the partner country agencies. The projects contributed to strengthening partner country agencies whose mandates were relevant both in terms of national priorities and the priorities of Finland’s development policy and cooperation. The evaluation also confirmed that all projects contributed to significantly strengthened competencies and job performance of – however – a comparatively small group of targeted individuals.

This conclusion is based on Findings 1-3 and 5 (relevance), 7-8 (coherence and harmonization), 9-10 (participation, partnership and ownership), and 11-15 (effectiveness), and 16-17 (implementation capacity). It contributes to Recommendation 1.

Conclusion 2 The aid effectiveness principles of coherence and harmonization were only partly fulfilled, whereas participation and ownership were strongly realized in all projects

The three projects with contact to other projects did not show signs of duplication of effort and successfully realized synergies with some other initiatives but also showed some lost opportunities. Both projects in India were stand-alone in the sense that there were no parallel interventions by Finland or other donors targeting the same agency.

In all projects, the partner agency showed strong participation and ownership that could be traced back to a transparent and same-level approach to project governance and management between the agencies and to the ability and motivation of the Finnish agency staff.

This conclusion is based on Findings 7-8 (coherence and harmonisation) and 9-10 (participation, partnership, and ownership) and contributes to Recommendation 1.

Conclusion 3 ICI project reporting was detailed regarding activities, but because it lacked reliable baselines and evidence-based monitoring of results

Project reporting was mainly focused on describing activities and outputs and provided only limited evidence about results. If results were claimed, this was usually on the basis that activities had been implemented without providing direct evidence or by providing solid indirect arguments, e.g. by evaluating the presence of factors and conditions required for capacity development activities to contribute to

increased agency performance⁶. This stands in contrast to the results-based approach to project (and program) management that is mainstreamed at the MFA since becoming a priority for Finland's development policy and cooperation in 2012 (MFA, 2012a; Palenberg et al., 2015, 2019). The only exception was the Afghanistan project that estimated staff competencies before, during and after the first phase.

All projects lacked detailed, documented baselines for the key parameters they aimed to influence – staff competencies, the capacities of systems, and the level of services provided by the partner country agencies. Even in the case of the Afghanistan project, the documented competency levels failed to grasp more fundamental competency gaps that became evident only during the first workshops. Without a clear and precise understanding of the starting point in terms of intended outcomes, results-based reporting is impossible.

This conclusion is based on the evaluation team's experience with its desk review of project documents and reports, as reflected in Findings 4 (relevance), 11-15 (effectiveness) and 17 (implementation capacity). It contributes to Recommendations 2, 5 and 6.

Conclusion 4 Implementation in the two ongoing projects in Afghanistan and Nepal is progressing but was – and will continue to be – negatively impacted by the Covid-19 pandemic.

Two projects were still ongoing when this evaluation was drafted: the second phase of the GTK/AGS Afghanistan project and the FNEP 3 project in Nepal. Project implementation in Afghanistan started as planned but the project needed to adapt its approaches to support exploration target setting and to raise awareness about human rights issues. FNEP 3 started with some delays reflecting delays in the larger BRCH project it had integrated with and because of lingering consequences of the 2015 earthquake.

Because of the Covid-19 pandemic, both projects suffered delays from 2020 onwards and had to adapt their approach to capacity development to rely exclusively on distance learning methods that – while applied innovatively – are unlikely to reach the same effectiveness as in-person sessions.

This conclusion is based on Project Appendices 2 and 6 and Findings 14 and 15 (effectiveness). It contributes to Recommendations 9-12.

Conclusion 5 Three projects clearly contributed to improved agency performance in terms of weather forecasts, flood warnings and climate change modelling with significant potential for impact.

Beyond strengthened staff competencies and systems, the evaluation also found evidence of strengthened agency performance to which projects had contributed, but findings varied across projects (see also Conclusions 3 and 4). For three projects – the FMI-led projects in Bhutan and India and the ongoing FNEP projects in Nepal – contributions to increased agency performance were evident in improved services like longer-term weather forecasting, better flood warnings, and improved climate change modelling.

In addition, these three projects also helped to increase the profile of those partner country agencies nationally and internationally.

This conclusion is based on Finding 18 (impact) and contributes to Recommendation 1.

Conclusion 6 In Afghanistan, because of factors beyond the control of the project, agency performance has not yet significantly improved, and the intended impacts associated with attracting fresh mining sector investments are not likely to materialize in the near future.

In Afghanistan, the evaluation found only limited evidence of improved agency performance in terms of more and better information about mineral deposits in Afghanistan. This was related to overall low agency

⁶ These factors and conditions are, for example, summarised in the ICI Theory of Change (Appendix 8).

performance despite successfully strengthened competencies. Results of the second project phase that started in 2019 had remained at the level of raising awareness and piloting new forms of collaboration. Overall, agency performance had remained at a low level for other internal and external reasons, and the government-controlled portion of the Afghan mining sector had remained stagnant and far from the growth anticipated in national development plans.

This conclusion is based on Project Appendix 2 and Findings 14 (effectiveness) and 18 (impact). It contributes to Recommendations 9 and 10.

Conclusion 7 In the VTT/CPCB project in India, there was little evidence of strengthened agency performance in terms of new or improved services of the agency to the country.

Similar to Conclusion 6, for the VTT/CPCB project in India, the evaluation team could evidence improved competencies, and continued application of the skills learned during the project, but there were no indications that this had translated into improved performance in terms of services or products of the partner country agency, India's Central Pollution Control Board (CPCB). Possibly, this was related to the fact that the project had raised awareness and strengthened capacities among a wider group of people, leading to more diffuse and harder to track behaviour changes. One project priority led to the development of a prototype instrument for odour measurement, which was, however, only piloted and never replicated.

This conclusion is based on Project Appendix 3 and Finding 18 (impact).

Conclusion 8 The HRBA and Finland's cross-cutting objectives were not mainstreamed in project preparation, and design and no significant contributions to gender equality or non-discrimination are expected by any project. Three projects are likely to indirectly contribute to climate resilience, and one to low-emission development.

Across persons directly involved with the evaluated ICI projects, the understanding of the HRBA and the cross-cutting objectives of gender equality and non-discrimination were basic and limited to the avoidance of clear discrimination of participation in project activities or by trying to assure the participation of women during implementation. In that sense, the projects can be argued to fulfil minimal human-rights sensitivity criteria. In project design and implementation, these issues were, however, mostly addressed as formalities rather than being mainstreamed, and the evaluation team did not find evidence of socio-cultural analyses that could have informed the project design to this end. That said, the relatively small size of ICI projects and their techno-scientific focus may not leave much room for effectively addressing them, but more could be done to demonstrate that these priorities of Finland's development policy and cooperation have received the scrutiny they deserve. Apart from the second phase of the Afghanistan project, no other project addressed human rights issues in its objectives.

Regarding climate change, only the three FMI-implemented projects in Bhutan, India and Nepal had a plausible link – at the level of impact – to the cross-cutting objective of climate resilience through their work on improving weather and flood forecasting and climate modelling that contribute to climate resilience actions. The cross-cutting objective of low emission development was only addressed by the CLIMOB project in India through its work on air quality monitoring and forecasting.

This conclusion is based on Findings 22-26 (HRBA and cross-cutting objectives) and contributes to Recommendation 8.

8.2 Lessons for accountability

Lesson learnt 1 If applied according to established good practices, the ICI instrument represents a useful addition to the MFA's development cooperation instruments

The evaluation of the five projects evidenced that there is a relevant and useful role for ICI projects. The specialist-to-specialist, peer-to-peer approach to capacity development enables the MFA to access and support the specialist teams in partner country government agencies. The comparative advantage of institutional cooperation was showcased in Afghanistan, where capacity development by the Geological

Surveys of Finland and the US had been of good quality, whereas more generic approaches without the involvement of specialists had failed (see Project Appendix 2).

Moreover, since ICI projects aim to strengthen partner country government agencies that deliver fundamental services such as weather forecasting to those countries, they have the potential to indirectly *contribute to large-scale and even population-wide impacts*.

This said, it must be noted that ICI projects are specialized surgical tools with a correspondingly narrow application window. They can contribute to strengthening capacities of highly specialized staff units and systems in the partner country agencies but are unable to effectively address the many other factors that may stand in the way for impact, as demonstrated most clearly by the project in Afghanistan.

Based on the analysis of relevance, effectiveness, linkages with other projects and lost opportunities, it is expected that ICI projects in all countries would contribute more to impact and sustainability if they are integrated into national project frameworks and/or embedded into larger programmes by other donors, where all main issues not covered by the ICI project are covered by those frameworks and partners, such as for example in the Nepal FNEP projects.

This lesson is based on Conclusions 1 and 5 and contributes to Recommendation 1.

Lesson learnt 2 Even if designed and implemented well, chances for success of ICI projects are lower in fragile contexts.

The evaluation team found the reasons for limited effects of the GTK/AGS Afghanistan project on agency performance to be symptomatic for fragile contexts, for example, in terms of the security situation, ineffective agencies, unclear and shifting political priorities, non-transparent and nepotic decision-making, travel restrictions and logistical challenges, as well as unsatisfactory working conditions.

ICI projects can help to put increased speciality capacity in place but remain at the mercy of conditions in the targeted agency and beyond regarding their contribution to increased agency performance.

This said, the same list of adverse conditions is likely to affect other forms of development cooperation as well. In Afghanistan, capacity development efforts undertaken by the Geological Surveys of Finland and the US have been far more effective than a large USAID effort targeted at the same ministry that did not involve institutional cooperation. While this cannot be generalized, it showcases that even in a fragile context, the peer-to-peer learning approach can be more effective than more traditional capacity development.

This lesson is based on Project Appendix 2 and Findings 11-12, 14 (effectiveness), and 18 (impact), and 19-21 (sustainability). It contributes to Recommendations 1 and 9.

8.3 Conclusions for learning and informed decision-making

Conclusion 9 Some ICI projects struggled initially because of lacking inter-cultural awareness and know-how and of insufficient understanding of the situation at the partner country agency and its operating context.

Unless involved in earlier project phases or other work in the respective countries, Finnish agency staff involved in planning and implementing ICI projects do not necessarily have prior experience in working with nationals and the agency of the partner country for a particular project. Moreover, even when preparatory missions are conducted, these are short and cannot provide a deep understanding of the situation at the partner country agencies and of the context they are operating in. Apart from making the establishment of factual baselines difficult (see Conclusion 8), these conditions can result in ineffective communication, misunderstandings, and unrealistic expectations, all of which contributed to delays and reduced effectiveness during the start-up phases.

This conclusion is based on Findings 4-5 (relevance), 13 (effectiveness), 17 (implementation capacity), and 21 (sustainability). It contributes to Recommendations 2, 3 and 5.

Conclusion 10 Finnish ICI agencies were overall well equipped to carry out the projects. They were able to establish strong and trust-based relationships that allowed effective project implementation through the way ICI projects were governed, managed and implemented by Finnish agency staff once they were up and running.

The evaluation team found clear evidence that the agencies were overall well equipped to carry out the projects while recognizing the start-up issues discussed in the previous conclusion. Project teams on both sides had been able to establish strong, effective, and lasting partnerships on the professional and institutional levels across all projects. These were considered by virtually everybody interviewed to represent the basis for the effective implementation of these projects. For CLIMOB and FMI/SHSB Bhutan, these partnerships even continued for years after the ICI project had ended. In the second phase of the Afghanistan project, this was described as a "triangle of good relationships and trust" between the partners representing academia, the private sector, and the Afghan government.

The evaluation also found that frequent changes of project managers in the Finnish and the partner country agency could negatively impact such relationships, and the MFA should therefore incentivize ICI agencies to aim for continuity in project leadership within and across project phases.

This conclusion is based on Findings 9-10 (participation, partnership, and ownership) and 16-17 (implementation capacity). It contributes to Recommendation 1.

Conclusion 11 All projects had to adapt their planned activities – and some of their objectives – because needs and circumstances at the partner country agencies changed during implementation

All projects adapted their implementation somewhat in view of changing needs and circumstances in and beyond the partner country agency. For example, both the projects in Bhutan and Nepal served capacity development needs emerging from technical system upgrades done in coordination or synergies with larger projects. Not surprisingly, these changes were more pronounced in the longer, multi-phase projects in Afghanistan and Nepal that also reflected learning from earlier implementation experiences. Two projects also realized they could not attain specific objectives they had set themselves: the GTK/AGS Afghanistan project adapted to the ministry's de facto decision of not deciding mineral exploration targets in a consultative manner, and the FMI-NCHM project in Bhutan still see continued delays in the planned adoption of a Hydro-Met Services Policy.

In all cases, the evaluation found that changes to the original project designs were made in response to changing circumstances or insights gained during implementation and likely contributed to improving project results. In isolated cases, for example, the focus on odour measurement in the VTT-led project in India, changes did not improve results (although reflecting interests of the partner country agency).

The evaluation team concludes that ICI project activities can only be planned in advance to a certain extent. While general objectives can continue to be pursued over the course of several years, the best ways to support the partner country agency in reaching them can change in unpredictable ways, requiring changes to planned activities and – at times – also to specific project objectives that are beyond what the projects can influence.

This conclusion is based on Finding 5 (relevance) and 13-15 (effectiveness). It and contributes to Recommendation 5.

Conclusion 12 Three projects showed surprisingly clear and plausible contributions to significant development impacts because they helped to strengthen basic services of partner country agencies for which there was sustained demand and support

The evaluation team found convincing evidence of contributions to population-wide impacts in three of the five ICI projects. This was somewhat surprising because, usually, the causal chains linking project activities to impacts are too long and complex to allow such strong and straightforward contribution statements. Correspondingly, the team found contributions to impact to be unlikely in Afghanistan and was not able to identify indications for impact in the VTT/CPCB project in India.

The convincing contributions to impacts by the three FMI-led projects in Bhutan, Nepal and India were based on three arguments:

1. Clear evidence for contributions to improved performance of those three partner country agencies;
2. The fact that the performance improvements were related to fundamental hydro-meteorological and climate modelling related services directly linked to population-wide impacts in terms of weather and flood warnings and improved disaster preparedness; and
3. The continued priority demand and support for these services by agency and political leadership.

This conclusion is based on Finding 18 (impact) and contributes to Recommendation 1.

Conclusion 13 The primary factor driving sustainability is the continued existence of a rather small group of trained specialists and the degree of support they have within the partner country agencies.

Because of their technical nature, the ICI projects focused most of their attention on a comparatively small number of specialists in the partner country agencies. In these agencies, some individuals trained are still in place, but several others trained have left their agencies. Of those that remain in post, some experience an unreasonable workload and are at risk of further attrition. If one of those groups still in post left, it would remove most of the technical competency established over the course of the projects. Those groups require and would appreciate some degree of continued advice and coaching from their Finnish ICI partners after the project.

Improved systems and instruments had largely remained operational but depended in some cases on support for maintenance and licensing.

This conclusion is based on Findings 19-21 (sustainability) and contributes to Recommendations 7 and 13.

Conclusion 14 There are good examples of learning from past ICI experience, but current arrangements do not fully exploit the potential for learning.

Both the Afghanistan and Nepal project applied learning from previous project phases and produced useful insights. For example, the Afghanistan project produced a comprehensive annex of useful lessons learned in its phase 1 completion report.

The evaluation team, however, found that there is considerably more potential for learning from ICI experience than is currently realized.

- The evaluation team found that the projects did not have a complete record and contact information of all people that had participated in trainings, study tours and other capacity development activities. The online survey was finally sent to 225 contacts, but the true number of people directly affected by the projects is likely much larger. Moreover, the evaluation team did not see any indication that the participants had been asked to provide such information, agree to it being stored and used for monitoring and evaluation purposes, and be encouraged to keep their contact information up to date. A more rigorous approach to managing participant information seems useful for a range of purposes, for example for determining the effects the project had on these individuals and to collect their views on what can be learned and improved.
- The evaluation team also found that several key individuals in the Finnish and partner country agencies and in the MFA held valuable knowledge and had useful experience-based advice at hand for how to avoid past delays and mistakes in new ICI projects. Currently, there does not seem to be a process in place to collect and synthesize this knowledge. For example, in the context of the Afghanistan project, two key people – one of each agency – have recently left their jobs, taking with them much of the institutional memory of that project. Moreover, as noted in an evaluation of the instrument conducted in 2014, the ICI consultants also held significant portfolio-level insight beyond what is reported in their semi-annual progress reports to the MFA.

Naturally, the present evaluation should also be counted as a knowledge generation and learning effort and hopes to contribute accordingly.

This conclusion is based on experiences of the evaluation team with participant contact data (see Section 5.3) and with its desk review of project reports, as reflected in Findings 4 and 6 (relevance) and 11-15 (effectiveness) and contributes to Recommendations 4 and 6.

8.4 Lessons for learning and informed decision-making

Lesson learnt 3 Initial cultural awareness training can enable more effective projects.

In the Afghanistan project, a two-day cultural awareness training was found to have been critical for enabling mutual understanding and effective project implementation. The training was considered effective because it was conducted by a Finnish national who had lived for a long time in Afghanistan and could hence point out the most important differences between the countries, their people, and the work cultures in governmental agencies. In the same project evaluation, Afghan participants described their own steep inter-cultural learning curve.

Hence, a lesson learned is that quality inter-cultural awareness training on both sides of an ICI project can add help to avoid a range of issues and help to increase start-up speed and implementation effectiveness.

This lesson is based on Conclusion 9 and contributes to Recommendations 1 and 3.

Lesson learnt 4 Strong partnerships are necessary for success and depend on several good practices identified in this evaluation, the skill and motivation of Finnish and national agency staff, and continuity in the project management staff.

The importance of strong and trust-based partnerships represents an existing and well-documented good practice for ICI projects. This lesson was strongly confirmed by this evaluation.

As a basis, the typical ICI peer-to-peer approach to capacity development was found to facilitate access. Despite language and cultural barriers, staff on both sides already spoke the same “expert language” and shared a common techno-scientific way of thinking. On top of that, a number of factors supporting strong partnerships were identified:

- A participative, collaborative and transparent approach to managing and governing the projects as equal partners. For example, as an unwritten rule, staff from both agencies used the same accommodation and spend the evenings together during study tours and field trainings;
- Establishing a shared perception of project objectives and their relevance through intense interaction and consultation;
- A sensitive and pragmatic approach to adapting the project objectives and approach, if required to ensure its continued relevance;
- Study tours involving higher-level management of the partner country agency to raise their awareness and to increase their level of ownership and support; and
- A long and steady collaboration over many years and – in some cases – beyond the project duration as sign of interest and shared responsibility.

Based on this lesson, more efficient project implementation and more sustainable project outcomes can be expected if MFA gives priority to mature alliances – over more than a single project period – where both partner agencies clearly have contributed to the project design.

Frequent changes in project management personnel on the Finnish or the partner country agency side can negatively impact partnerships, and the MFA should plan for and incentivize continuity of key project staff to the extent feasible.

This lesson is based on Conclusion 10 and contributes to Recommendation 1.

Lesson learnt 5 ICI projects must be designed, managed and implemented with enough flexibility to be able to adapt to evolving needs of the partner country agency.

In all projects, but especially in the projects with durations of more than three years, the flexibility of all project partners – including the MFA – in adapting the initial project design to changing needs and circumstances was found to represent an important condition for success because of two reasons:

- Capacity development is usually understood – including in ICI guidance – as an *endogenous* process that happens within the partner country agency. The role of the Finnish ICI agency is to support this process. In other words, rather than to teach partner agency staff something, ICI projects aim to support those people in learning something. This implies that – rather than supplying certain teaching content determined at the beginning of the project – ICI projects need to remain sensitive and flexible in order to best support partner country staff in their learning journey.
- Moreover, ICI projects are often implemented in the context of larger projects, agency reform processes, or changing external conditions. All of these factors influence the contribution the projects can make to increased agency performance and subsequent impacts. Because ICI projects are rather small and focused, they cannot influence these factors but rather need to adapt to them.

This flexibility is required related to project activities but also – to a limited extent and possibly more common in fragile countries – to specific project objectives beyond their control.

It is expected that the effectiveness and efficiency of ICI projects would improve through the encouragement of adaptive project management. This would, however, require improving project monitoring and reporting and preferably carry out a brief mid-term review.

This lesson is based on Conclusion 11 and contributes to Recommendation 1.

Lesson learnt 6 ICI projects contribute more clearly to development impacts if they support basic services of partner country agencies that result in immediate population benefits. One example is longer-term weather forecasts that reduce the population's vulnerability to weather risks.

The three agencies of the FMI-led projects were the National Centre for Hydrology and Meteorology (NCHM) in Bhutan, the Department of Hydrology and Meteorology (DHM) in Nepal, and the India Meteorological Department (IMD), with similar mandates that included weather and flood forecasting services and climate change modelling. These projects shared comparatively simple and rather intuitive impact pathways, for example, improved weather forecasting helping farmers maximize yield or longer-term flood warnings reducing loss of life.

While not covered in this evaluation, there are likely many services provided by government agencies in partner countries that provide basic services with similarly immediate and direct linkages to the whole or parts of those countries populations. Examples could be services provided directly to citizens in the sectors of transport, security, health, and labour. It is therefore expected that the impact and sustainability of ICI projects would be strengthened by giving higher priority to projects that give a regional or national population-wide impact.

This lesson is based on Conclusions 1 and 12, and contributes to Recommendation 1.

Lesson learnt 7 ICI projects are more likely to contribute to impact if they cater to strong and sustained priorities of the partner country agency.

Confirming a similar lesson in existing ICI guidance about the importance of leadership support, the evaluation team found that projects are likely to be more successful in translating strengthened competencies and systems into improved service provision by the partner country agencies if they correspond to issues for which it is strong and continued demand and support by the agency and political leadership. It is therefore expected that project impact and sustainability would strengthen with the degree of alignment with national policies and strategies.

This lesson is based on Finding 18 (impact) and contributes to Recommendation 1.

Lesson learnt 8 ICI projects are more likely to be effective and sustainable if they extend over more than one phase.

The evaluation found evidence that projects with longer implementation horizons are more likely to be effective and sustainable because of the gradual establishment of effective working relations and the consolidation of competencies and partnerships in subsequent phases.

This stands somewhat in contrast to the limitations on project length imposed by the ICU guidelines – three years in the 2012 guidance and four years in the new guidance issued in 2021. One idea associated with limited project duration is that the ICI partners should find ways to continue their cooperation after the project without further MFA funding, for example, because of mutual commercial interests.

While the evaluation found examples of such continued cooperation, it also evidenced that impact and sustainability of the ICI projects would be strengthened with at least a second phase, involving new issues discovered during the first phase, as well as replication and scaling-up of successful project outcomes. It is also expected that the quality of the project design in most cases would improve from the first to the second phase, based on more accurate baseline information.

This lesson is based on Findings 13 (effectiveness) and 21 (sustainability) and contributes to Recommendation 1.

9 Recommendations

The recommendations presented in this section are derived from the conclusions and lessons learned in Section 8. Recommendations are presented in two sub-sections:

- General recommendations are those that apply rather generally to new ICI projects; whereas
- Project-specific recommendations are reserved for the two ongoing projects in Afghanistan and Nepal.

Project-specific recommendations are directed to the Unit for South Asia in the Department for the Americas and Asia and the leadership of that department, who were and are in charge of the projects that have been evaluated. They should also inform GTK and FMI and their partners in Afghanistan and Nepal regarding their ongoing projects and potential additional phases.

General recommendations have a wider audience. They are primarily addressed to the Unit for General Development Policy in the Department for Development Policy which is in charge of the ICI instrument and to the leadership of that department, who can decide about incorporating them into the existing instrument guidance. Although the ICI manual has been updated not long ago, it is designed as an online document that makes specific additions and updates easy.

General recommendations also serve to inform the MFA's Regional Departments who are in charge of implementing ICI projects, the respective ICI agencies, and other interested international actors operating similar institutional cooperation instruments in their development policy and cooperation.

9.1 General recommendations

Recommendation 1 The MFA should continue financing ICI projects as one specialist instrument of Finland's development policy and cooperation for purposes (and under conditions) where they have proven to be relevant and effective.

In view of the successful contribution of some ICI projects outcomes and impacts, the MFA should keep the ICI in its toolbox of development cooperation instruments.

Continued care should be taken to apply ICI projects to where they are most relevant, i.e., when focusing on specialist peer-to-peer and agency-to-agency capacity development and according to existing ICI good practices. This includes considering that ICI projects that can already profit from mature and effective relationships are likely to be more effective and sustainable than those where such relationships still have to be built.

Moreover, the MFA should consider new ICI projects in the light of the eight lessons learned from this evaluation:

1. The proven potential of ICI projects to contribute to development impacts;
2. Their lower likelihood for contributing to impact in fragile contexts;
3. The importance of cultural awareness and partner country work experience of designated Finnish ICI staff;
4. The importance of following good practices (as described Lesson Learnt 4) for building strong partnerships;
5. The importance of flexibility in planning and implementation;
6. The lesson that impact contributions are more visible if ICI projects support population-relevant services of partner country agencies;
7. The insight that strong and sustained priorities in partner country agencies make ICI projects more likely to succeed; and
8. The related insight is that longer ICI projects are likely to be more effective and sustainable than shorter ones.

The evaluation team recommends that the MFA – supported by the ICI Consultant – should carefully review future ICI project proposals along with lessons 2-8 before making a funding decision. The team, however, decided against a more concrete recommendation that would prioritize future ICI projects along with these lessons – for example, on non-fragile contexts (lesson 2) or on cases where results can more easily be argued (lesson 6) – because such decisions need to consider other factors as well – such as Finland’s priorities and the suitability of the ICI relative to other instruments – that were not investigated by this evaluation.

This recommendation is based on Conclusions 1, 2, 5, 10 and 11, and reflects Lesson Learnt 1. It includes the following actions:

Recommendation 2 The MFA should support and require more thorough preparation of future ICI projects – including useful baselines – in ICI guidance and templates with respect to a detailed understanding of the situation at the partner country agency and its operating context

For the often rather small core groups of specialists in the focus of ICI projects, the MFA should require a list of staff, an inventory of existing instruments and systems currently in use, described in layman’s terms, and an assessment of current and required competency levels to make effective use of existing or new instruments and systems. It will be important that the assessment of competencies includes basic elements such as language and computer skills, in addition to technical competencies. One way to obtain such information would be by moderated confidential self-assessments (the results could be presented in anonymized form).

Moreover, the MFA should require a deeper understanding and analysis of potential issues within and outside of the project’s influence beyond what is currently found in risk matrices of project documents. The focus should be on soft issues such as power relations, decision-making processes and working culture within the agency and on external factors such as political, financial, or reputational pressures the agency finds itself in. To obtain such information, key partner agency staff but also selected persons external to the agency should be closely involved, supported by Finnish embassy staff. Templates derived from the frameworks used by the evaluation team, such as the ICI Theory of Change or detailed project analysis questions (see Appendix 8) could be useful for leading discussions and guiding self-assessments. The ICI Consultant would probably be best placed to produce such additional guidance and templates and to guide the ICI agency in the TOC analysis and project design, including results framework and risk matrix, which are areas that should be strengthened.

Because achieving such a deeper understanding of context and related risks requires a good deal of trust between key persons at the Finnish and the partner country agency, sufficient time and occasion, including multiple in-person visits, for establishing trust-based working relations should be allowed and supported by the Finnish embassy staff if an embassy exists in the country. One useful way to provide an opportunity for such interactions and assessments prior to the project start is a dedicated inception phase. An inception phase does, however, not automatically guarantee this type of deeper initial understanding – as exemplified by the projects in Afghanistan and Nepal – and the required analyses and interactions can also be part of a project start-up phase, especially for shorter ICI projects.

The new MFA ICI guidelines of 2021 already cover some of these issues, but it may be necessary to task the ICI Consultant with paying additional attention to the quality and depth of these preliminary analyses to ensure that they fully serve their above-described purposes.

This recommendation is based on Conclusions 3 and 9 and includes the following actions:

Recommendation 3 The MFA should support ICI agencies with intercultural awareness training and blended learning approaches.

The MFA should ensure that designated project managers and other key project staff of both agencies have the necessary soft skills and intercultural awareness, and understanding to communicate respectfully and effectively with each other. One way to achieve this is by organizing inter-cultural training – either

separately for each side or together – that speaks to the differences and possible pitfalls in each other's (working) cultures in an informed but informal manner. Ideally, these trainings are conducted by professionals with a technical background that have lived and worked in both countries. In view of limited staff resources at the MFA, these trainings should be organized and implemented with the support of the ICI Consultant and/or contracted out.

In the ongoing COVID-19 pandemic, the MFA should also support ICI projects with training on distance and blended learning approaches and tools by experienced capacity development professionals.

This recommendation is based on Conclusion 4 and 9, and reflects Lesson Learnt 3.

Recommendation 4 The MFA should put more emphasis on the generation, documentation, sharing and use of ICI experiences and know-how.

The MFA should explore additional ways to make accessible what has been learned to date from the implementation of ICI projects. In view of limited human resource capacity at the MFA, the ICI Consultant could be tasked with developing and implementing solutions to this end.

- One option could be to form a pool of former ICI project managers that can act as advisors and peer reviewers for new ICI projects, both to the MFA and to ICI agencies.
- Another option could be to task the ICI consultants to conduct structured exit interviews at the end of ICI projects and with all key staff (in both agencies but also in the MFA) leaving the projects during implementation, to compile yearly or bi-yearly knowledge briefs to summarize new insights, and to use these to elaborate, expand and detail the current set of ICI good practices and lessons learnt.
- To operationalize adoption and compliance with ICI good practices, the ICI Consultant could develop a template, and the MFA could require it to be filled in as part of project planning and reporting.
- Finally, as several other donors operate similar institutional cooperation instruments, a workshop on experiences and lessons learned could be organized, for example, between the Nordic countries.

On the level of ICI as an instrument, the MFA (through the ICI Consultant or another one-time consultancy) could carry out a meta-analysis of earlier MFA evaluations that have covered ICI projects and of experiences and lessons from other donors. The 2014 ICI evaluation (Bäck et al., 2014) provided some of the groundwork for this that can be updated. The same study could also review the degree to which the recommendations of that evaluation have benefited ICI projects since then.

This recommendation is based on Conclusion 14 and includes the following actions:

Recommendation 5 Planning and reporting of ICI projects should focus less on activities and more on results, including how they can best be attained, which includes more proactive risk and adaptive management.

The MFA should ensure that ICI projects move to meaningful results-based planning and reporting. The considerable current progress monitoring and reporting burden for ICI project managers could be reduced if reliable results-level indicators could be established and tracked, for example, by regular evaluation of staff competencies compared to baselines, by tracking instrument health and use frequency of equipment, and by monitoring the quality and quantity of targeted agency services over time.

The MFA could support this by tasking the ICI Consultant to support ongoing and future ICI projects to these ends. One concrete suggestion would be to task the ICI consultants with conducting a standardized annual survey across all ICI projects (from project start until several years after they end) that tracks the number of key staff trained, their technical competency levels, the degree to which they can apply these competencies in their daily work and asks for feedback on issues and improvement suggestions. The

synthesis findings from such regular outcome monitoring could become a section in the currently largely activity-based progress reports by the ICI Consultant to the MFA.

Risk management should be improved by regularly following up on initial analyses of risks done as part of the project documents, focusing on the main risks based on probability and impact in case of occurrence. Project reporting should openly and transparently communicate and justify changes made to planned project activities and immediate objectives not only with respect to what was planned – which would lead to a “justification culture” but more so based on what is needed to achieve overall project objectives in view of other initiatives, changing circumstances in and beyond the partner country agencies, and increased mutual learning and understanding between the agencies.

The new MFA ICI guidelines of 2021 already address these issues, but it may be necessary to task the ICI Consultant with paying additional attention to how results-based management and risk analysis are designed and applied in practice, so they can fully serve their above-described purposes.

This recommendation is based on Conclusions 3 and 11 and reflects Lesson Learnt 5.

Recommendation 6 For results-based monitoring, project reporting and evaluations, ICI projects should systematically keep track of participant data

As a basis for monitoring of staff competencies through online surveys or interviews, the MFA should require ICI projects to maintain a complete and up to date participant contact list. When conducting capacity development activities, participants should be asked to provide their consent for sharing their personal data and to their willingness to respond to online survey or interview requests in the future.

This recommendation is based on Conclusions 3 and 14.

Recommendation 7 The MFA should explore creative ways to ensure longer-term “maintenance” support to partner country agencies after successful projects

After successful ICI projects, the MFA should find ways to support Finnish ICI agencies in providing a limited level of “maintenance” capacity development for their partner country counterparts for several years in the form of on-demand online coaching, occasional in-person hands-on support, or demand-driven training on selected emerging issues.

If partner country agencies are unable to ensure continued maintenance of systems and instruments and to pay for software licenses, the MFA should consider continuing paying for service and license fees for some years after projects have ended.

Ideas for such support could consist in contracting Finnish agency staff that has played a key role in ICI projects as consultants to provide a certain total number of hours or days per year maintaining relations and supporting partner country agency staff as required. Because the MFA currently cannot fund such support outside of project arrangements, the introduction of a new class of ICI projects designed specifically for safeguarding strengthened capacities after successful ICI projects for a limited period of time until partner country agencies are able to do so themselves.

Another option could be to enable this type of support through interventions of other donors, e.g., by limited co-financing, to ensure continued support by the Finnish agency and to cover maintenance costs of critical hard- and software. On a larger scale, the MFA could consider creating an expert pool of ICI experts that can provide on-demand support when needed.

In case legally and technically feasible options for maintenance support are not realizable, the MFA – with support of the ICI Consultant – should encourage current and former Finnish ICI agencies to maintain and

nurture ICI-related partnerships out of self-interest, in view of future ICI projects and other forms of institutional cooperation.

This recommendation is based on Conclusion 13.

Recommendation 8 The MFA should require and support more rigorous initial analysis on potential and ways to integrate the HRBA and Finland's four cross-cutting objectives into ICI project design

The MFA should support ICI projects in moving beyond addressing the HRBA, gender equality and non-discrimination, mostly as formalities that have to be addressed in the project documents. This could be done based on the MFA CCO guidelines of 2020 and by making available suitable experts to consult intensely with the project teams during project preparation about ways and options to include the HRBA and the cross-cutting objectives of gender equality and non-discrimination meaningfully into project design.

At the same time, the same or another expert should support the project in mapping out the impact pathways that would link the project to all four cross-cutting objectives as a result of strengthened partner country agency performance.

The goal of this support should not be to "force" all ICI projects to address all four cross-cutting objectives in design, during implementation, and through their results but, rather, to clearly understand all options on the table and then to take an informed and transparently argued decision on which options to select.

This recommendation is based on Conclusion 8.

9.2 Project-specific recommendations for Afghanistan and Nepal

Recommendation 9 In its remaining time until 2022, the GTK-led project in Afghanistan should focus on conserving and solidifying what has been achieved and explain how and why the original project plan has been adapted

Because of the high level of uncertainty introduced by the withdrawal of US military presence from the country, the project should, in its remaining time, focus on ensuring that past achievements are conserved. The most tangible and important achievement being the small group of successfully trained geophysicists at AGS. This group is under acute risk of disbanding in view of unclear job prospects and the overall deteriorating security situation. The MFA should ensure that these experts have continued access to peer support and support GTK in advocating for improving their employment conditions and career prospects at AGS and in the MoMP.

Both project phases have also resulted in a strong and trust-based partnership between a range of individuals at GTK, AGS, the MoMP and the phase two project partners – the Kabul Polytechnic University and the private sector firm Afghanite. While less tangible, these partnerships represent an important asset for any future collaboration and are critical for sustaining the increased awareness and beginning behaviour change regarding the collaboration between government, academia, and the private sector in the Afghan mining sector.

Both issues can be addressed by a limited level of "maintenance support" (see Recommendation 7) or by a third project phase (see Recommendation 10).

In light of the difficulties with implementing the phase 2 workplan as originally planned, the project team should also be asked to more comprehensively document the reasons – and insights gained – that led to changing two of the three intended outcomes for phase 2 and describe how available project resources can best be used in view of the current situation in the country.

This recommendation is based on Project Appendix 2 and Conclusions 4 and 6. It reflects Lesson Learnt 2.

Recommendation 10A proposal for a third project phase of the Afghanistan project after 2022 should critically examine what worked and what did not work in the second project phase and reflect the findings of the project evaluation.

If the current project partners and the MFA envisage a third phase for the project after 2022, that phase should be planned based on a similarly well-reflected analysis of lessons learned as that project had produced after its first phase. The present evaluation could not find solid evidence for tangible project results in the second phase – mostly because project activities in that phase have only been recently implemented and hence evidence on results was not yet available. One important expected outcome would be increased awareness and tangible behaviour change related to how the MoMP and AGS collaborate with academia and the private sector. The evaluation team recommends basing the decision on another project phase on whether or not there are promising signs that these intended changes can indeed be realized. If no third project phase is decided, the MFA should anyhow consider offering a limited level of “maintenance support” to AGS to ensure that the small group of successfully trained geophysicists at AGS does not disband over the next couple of years because of the unpredictable political and systemic future of the country.

A third phase proposal should also incorporate the detailed findings of Project Appendix 2, and the overall recommendations made above.

This recommendation is based on Project Appendix 2 and Conclusions 4 and 6. It reflects Lesson Learnt 2.

Recommendation 11 In its remaining time until 2022, FNEP 3 should assure that all project results remain coherent with the outcomes of the now closed BRCH project under the leadership of the partner country agency DHM

Finalize all activities and outputs planned for FNEP 3, and adjust the results framework if needed to avoid duplication with the areas covered by the BRCH project.

Support an updated institutional development plan for NHMS, developed together with NHMS and BRCH, based on the current situation.

This recommendation is based on Project Appendix 6 and Conclusions 2, 4, 5 and 12.

Recommendation 12 A The FNEP project should develop and implement an exit strategy focused on the sustainability of a achievements

In line with the content of the project document, an exit strategy should be developed and implemented to consolidate the results, which means:

- Review areas of capacity building that has been supported during FNEP 1-3, and strengthen training in areas where weaknesses are detected;
- Carry out training in all areas based on the Training-of-trainers methodology; and
- Carry out an assessment of which institutional units and persons will continue the tasks that were supported by the project and support needed from the government or other funding sources.

This recommendation is based on Project Appendix 6 and Conclusion 2, 4, 5 and 12.

Recommendation 13 For Afghanistan and Nepal, independent of project extensions, the MFA should consider a minimal level of “maintenance” support after 2022

Reflecting the general Recommendation 7 and independent of whether or not the projects are extended, the MFA should find ways to provide a reduced level of “maintenance support” to the core groups of trained

staff at the agencies in Afghanistan and Nepal (AGS and DHM) to conserve their competencies, help them with issues that require deep expertise, and to maintain the partnerships that have been established over the last decade.

This recommendation is based on Project Appendices 2 and 6 and Conclusion 13.

9.3 Additional remark on the Bhutan project

The evaluation team was not tasked to issue recommendations for the three already closed projects in India and Bhutan, but it had come to the attention of the team that the partner country agency in Bhutan (NCHM) had presented an extension proposal to the MFA in 2018 that was apparently still being considered by the MFA when this evaluation report was drafted in 2021. An updated proposal was recently presented.

In view of the initial investments made during the first project phase and the general finding of increasing effectiveness, efficiency and sustainability during longer projects, the evaluation team suggests that the MFA consider approving the "Strengthening hydro-meteorological services for Bhutan-II" (SHSB-II) in the near future.

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Evaluation Team

Markus Palenberg, Team Leader

Markus Palenberg manages the Institute for Development Strategy, an independent research institute in Munich, Germany (www.devstrat.org). Markus works as researcher, evaluator and consultant. His research focuses on evaluation methodology such as tools for efficiency analysis, the concept of results chains, Results-Based Management (RBM), and causal attribution and contribution. As evaluator, he conducts theory-based evaluations of institutions and their work in the development arena. Markus also consults programmes and networks on impact strategies, internal governance arrangements and M&E systems. Prior to this evaluation, Markus led several other evaluations for the Ministry of Foreign Affairs of Finland: on policy-level RBM in 2015, on results-informed learning and decision-making in 2019, and on multilateral influencing in 2020. Markus holds a doctorate in theoretical physics and worked as researcher in academia and as consultant and manager in the private sector before entering the development field in 2005.

Dr Trond Norheim, Senior Evaluator

Dr. Trond Norheim (PhD Forest Ecology) is a Partner of Scanteam, Norway, specialized on Environment, Climate Change, and Governance of natural resources, based on 38 years' experience in more than 70 countries on all continents. His main competence is project design, implementation, monitoring and evaluation, having evaluated and reviewed approx. 80 projects. He worked 12 years as Senior Specialist in the Inter-American Development Bank, 9 years as Swedforest International Regional Director for Latin America, and 3 years as Danida Senior Advisor on forestry and climate change. Dr Norheim has carried out many assignments for the UN, EU, development banks and multiple bilateral agencies. Most of his assignments the last four years have been in Asia & the Pacific, including three terminal evaluations for the UNEP Evaluation Office, as well as a global evaluation for the GEF Independent Evaluation Office.

Maria Kontro, Emerging Evaluator

Maria has 12 years of experience working as an advisor, project manager and a consultant mainly for international organizations, including UN offices, European Commission and the World Bank. Her key focus area is to create connections between disaster risk reduction, climate action and early warning systems, as she considers them to form a strong basis that enables sustainable development. In this field Maria has coordinated inter-agency groups and subregional portfolios, enabled multi-actor dialogues and supported global Task Forces for L2/L3 emergencies.

Maria has several publications, particularly connected to gender equality and inclusion in disaster risk reduction. Her experience as a researcher and her on-site work in four different continents has enabled her to find context-specific solutions for complex phenomena. Maria is a Finnish national. She holds a MSc in Development Geography and Global Political Economy, as well as over 30 specialization courses on her areas of work.

Mr. Chhimi Dorji, Country Evaluator, Bhutan

Chhimi holds an MSc in Environmental Systems – Energy, Environment and Society, from, California State University, Humboldt in the USA. He also holds a Bachelor of Technology in Civil Engineering from Motilal Nehru National Institute of Technology (MNNIT) in India, and completed a postgraduate course in Energy Planning and Sustainable Development at the University of Oslo, Norway in 2008.

Chhimi's recent work includes working for the Asian Development Bank; UNDP Bhutan; Austrian Development Agency; The world Bank; UNCDF- WRI; IFAD; UNEP; WWF Bhutan and, Government of Bhutan as Hydrologist, Hydro-Met Engineer, Water Resources and Environmental Expert on Urban Environment, Renewable Energy, EIA, Project Evaluations, Waste and Hydropower Development.

He has also worked for 10 years as a hydrology/water resources engineer for the National Centre for Hydrology and Meteorology of Bhutan and the erstwhile Department of Energy (now also Department of Hydropower and Power Systems) of Bhutan.

Debbie Menezes, Country Evaluator, India

Debbie has 25 years of experience in international development spanning across multiple sectors. These include climate change, urban resilience, regional connectivity, transboundary water, human development, governance, and gender and social inclusion. She has substantial experience in the areas of strategic planning, leadership and development of complex high value programs, monitoring and evaluation, knowledge management and organizational change management. Her geographical experience extends to programmes in the UK, Europe, South and South-East Asia, Africa, and China.

Debbie holds an MSc in Development Finance (with distinction) from the School of Oriental and African Studies (SOAS) and works as independent consultant with several multilateral and bilateral agencies, civil society partners, and private sector foundations. She also serves as the Chair of the Adaptation Fund-Technical Evaluation Reference Group (AF-TERG). Previously she served in senior management roles as a staff member in the UK's Department for International Development (now Foreign, Commonwealth & Development Office).

Najib Murshed, Country Evaluator, Afghanistan

Holding a master's degree in public administration from Warwick Business School UK, and a Bachelor degree in civil engineering, Najib Murshed is a results-oriented professional with over 20 years of work experience in government, non-government and private sector organizations, benefiting from practical experience in public sector reform, security sector reform, strategy development, change management, community development, capacity development and data management.

With over 10 years of work experience in consultancy, Mr Murshed has engaged in multiple evaluation projects of development programs of major international donors, including Evaluation of Selected Finland's Country Strategies for Development Cooperation, Evaluation of Norwegian Development Cooperation with Afghanistan, Study of National Solidarity Program, Study of Education Quality Improvement Program funded by the World Bank, Study of Selected Aspects of NGOs in Afghanistan and many more. Mr Murshed is currently working as a freelance management consultant.

Mohan Mardan Thapa, Country Evaluator, Nepal

Mohan Mardan Thapa, who holds a masters degree in business administration, is an experienced development practitioner with over thirty-seven years of work experience in both the corporate and social sectors. He had worked for the Nepal Industrial Development Corporation (NIDC) – a government-owned development financial institution - for nineteen years with the final designation as the Chief of the South Asian Development Fund Secretariat. Mohan has been the team leader in over 57 projects and worked as associate/team member in about 51 projects. Mohan has in-depth knowledge on the human rights-based approach (HRBA) for human development, gender, economic empowerment, and inclusive governance & democracy having evaluated many programs/projects that have strong focus on human rights (including economic, social and cultural rights of marginalized/excluded groups), inclusive democratic governance and women empowerment. For the past seventeen years, Mohan has been extensively working with Nepalese civil society organizations (CSOs), government organizations, international NGOs and bilateral and multilateral development agencies. During these assignments, mainly related to project/program evaluation, strategy formulation, organizational development and project/program development, he has travelled all over Nepal (including the most remote regions) and in South Asia and has interacted with a wide range of stakeholders at the central and local level. These stakeholders, among others, include the political leadership including youth and women leaders, media representatives, private sector entrepreneurs, women's groups, consumer groups, users' groups, environment groups, representatives of people's organizations, civil society leaders, agriculture groups/cooperatives and civil servants. He is well versed and has in-depth knowledge of the current socio-political and the development context of Nepal and South Asia.

Petra Mikkolainen, Service Coordinator, Project Manager

Petra Mikkolainen is a senior expert in international cooperation, specialising in large-scale complex development policy and programme evaluations. She has worked for seven years in long-term field positions in both implementation and programme management positions dealing with multiple sectors. Her areas of expertise include mainstreaming cross-cutting objectives, such as gender equality, non-

discrimination, and environmental and social sustainability. Currently, she acts as the NIRAS consortium Focal Point and Deputy Service Coordinator of the MFA of Finland Evaluation Management Services Framework Contract. She also manages individual evaluation assignments.

Luciana Capuano Mascarenhas, Survey Consultant

Luciana Capuano Mascarenhas is an emerging evaluator with over 7 years of international professional experience in sustainable development. At NIRAS, she is responsible for proposal coordination, project management and quality assurance of Monitoring, Evaluation and Learning assignments for the EU, MFA Finland, GIZ and other development cooperation agencies. Her technical skills encompass analysing data and managing databases using different software, as well as consulting and engaging stakeholders in urban, rural and remote settings. Her previous work experiences in project management, consultancy and research has included the topics of environmental impact assessment and safeguards, water and sanitation, agriculture, solid waste, energy, climate change and human rights. She has worked in projects in Latin America, Africa and Europe, being fluent in English, Portuguese and Spanish. She holds a Master's degree in Environmental Studies and Sustainability Sciences and a BSc. in Environmental Engineering.

Kaarina Suominen, Digital Solutions Specialist

Kaarina Suominen is a digital solutions specialist working in the intersection of technology and development cooperation. Her academic background is both in social sciences as well software and she has been working in the international development context on development projects and policy both for the public and private sector. She also has hand-on experience with programming and software development for multiple clients within an international technology consulting company and a command of a range of software and tools used for data collection and analysis.

Appendix 1 People consulted

Name	Position/Function	Department
<i>Ministry of Foreign Affairs of Finland</i>		
Alanen, Sara	Programme Officer	Department for the Americas and Asia, Unit for South Asia
Gahnström, Sebastian	Desk officer 2015-2016	Department for the Americas and Asia, Unit for South Asia
Hares, Minna	Senior Advisor, Development Policy	Department for the Americas and Asia, Deputy Director General
Heimola, Niko	Desk Officer, Afghanistan, Pakistan, Development Cooperation	Department for the Americas and Asia, Unit for South Asia
Joshi, Dr. Chudamani	Special Advisor	Embassy of Finland, Kathmandu
Kaipola, Annika	Senior Advisor, Development Policy	Department for Development Policy, Unit for General Development Policy
Kuivila, Helena	Desk Officer (retired)	Department for the Americas and Asia, Unit for South Asia
Laukka, Jari	Senior Specialist and Counsellor, Development Cooperation (Water and Sanitation)	Embassy of Finland, Kathmandu
Leppänen, Kari	Embassy FNEP focal point 2012-2013	Embassy of Finland, Kathmandu
Mäkelä, Merja	Senior Specialist	Embassy of Finland, Kabul
Peltonen, Lari	Head of Office	Murmansk office of the Consulate General of Finland (formerly: Embassy of Finland, Kabul)
Seppälä, Pekka	Senior Adviser, Development Policy	Department for Development Policy, Unit for General Development Policy
Shoor, Kashmir	Project Management Officer	Embassy of Finland, Kabul
Suittio, Nina	Attaché (Admin.), Assistant Desk Officer	Department for the Americas and Asia, Unit for South Asia
Tasanen, Ari	Desk Officer, India	Department for the Americas and Asia, Unit for South Asia
<i>Finnish Meteorological Institute (FMI)</i>		
Böök, Herman	Project Manager FNEP 2 (former)	
Eerikäinen, Matti	Head of Group	
Hyvärinen, Antti	Head of Group (India)	
Pietarila, Harri	Director of Expert Services	
Pusa, Riikka	Project Manager FNEP 2-3 (former)	
Selinheimo, Stella	Project Manager FNEP 3	
<i>Geological Survey of Finland (GTK)</i>		
Brooshan, Elmira	Deputy Project Manager	
Forss, Heikki	Head of Unit	Geophysical Solutions
Karell, Fredrik	Project Coordination and Management	
Vanhala, Heikki	Senior Advisor	
<i>Other actors</i>		
Alaeddini, Mina	Head of Training Department and Training Facilities, Organizer	Geological Survey of Iran
Brittan, Richard	Managing Director	ALCIS Holdings Ltd, UK
Byrne, Bryan	Deputy Director Afghanistan	United States Agency for International Development (USAID)
Jokinen, Toni	Disaster Risk Management Officer	Red Cross Finland
K. C., Deepak	Senior Programme Officer, Climate Change Adaptation & DRR/ CDRMP	United Nations Development Programme - Nepal Country Office
Laine, Marja	Project Director, Development Consulting	Finnish Consulting Group (ICI Consultant to the MFA)
Mack, Thomas	Hydrogeologist/ Geophysicist/ Program Manager for USGS Afghanistan Project	United States Geological Survey (USGS)

Name	Position/Function	Department
Mallet, Anna	Expert consultant	Commercial Law Development Program (CLDP), Office of General Counsel, United States Department of Commerce
Meighouni, Seyed	Manager of Exploration Projects	Geological Survey of Iran
Pellikka, Tuula	Principal Scientist	VTT Technical Research Centre of Finland
Peltonen, Jorma	Director, Development Consulting; Natural Resources	Finnish Consulting Group (ICI Consultant to the MFA)
Shamsi, Ehsanullah	Operations Analyst, Afghanistan	World Bank
Sharma, Rajendra	Assistant Director / Under Secretary (technical)	World Bank supported BRCH project. Nepal Centre for Disaster Management (NCDM)
Steger, Kai-Uwe	Team Leader, Project Manager Afghanistan; Academic Mining Education in Afghanistan (AMEA)	GIZ
Steiner, Jocelyn	Attorney Advisor, International	Commercial Law Development Program (CLDP), Office of General Counsel, United States Department of Commerce
Tarvainen, Anne	Programme Director, International Cooperation	World Wide Fund for Nature (WWF) Finland
Tsering, Karma	Former Director General	National Center for Hydrology and Meteorology of Bhutan. Currently: International Center for Mountain Development (ICIMOD), Nepal
Zahir, Fahim	Former National Coordinator	United States Geological Survey (USGS)
GTK/AGS Afghanistan⁷ (in-country project partners)		
	Chair and Founder	Finnish-Afghan Business Council (FABC)
	Geophysicist	Afghanistan Geological Survey (AGS)
	Geophysicist	Afghanistan Geological Survey (AGS)
	Chancellor	Kabul Polytechnic University (KPU)
	CEO	Afghanite Geo & Mining
	Geophysicist	Afghanistan Geological Survey (AGS)
	Geophysicist	Afghanistan Geological Survey (AGS)
	Former Project Manager	Afghanistan Geological Survey (AGS)
	Head of Petrophysics Team	Afghanistan Geological Survey (AGS)
	Vice President	Afghanite Geo & Mining
	Freelance Researcher	Formerly: Integrity Watch Afghanistan (IWA)
	Geophysicist	Afghanistan Geological Survey (AGS)
	Dean of faculty	Kabul Polytechnic University (KPU)
	Donor coordinator	Ministry of Mines and Petroleum of Afghanistan
	Former Project Manager	Ministry of Mines and Petroleum of Afghanistan
	Former Deputy Minister MoMP, Director General AGS	Ministry of Mines and Petroleum of Afghanistan and Afghanistan Geological Survey (AGS)
	Former Director General	Afghanistan Geological Survey (AGS)
	Minerals Director	Afghanistan Geological Survey (AGS)
	Project Manager	Afghanistan Geological Survey (AGS)
	Advisor, HR	Ministry of Mines and Petroleum of Afghanistan
	Former Director Minerals Survey	Afghanistan Geological Survey (AGS)
	Capacity Development Officer, former HR Director	Ministry of Mines and Petroleum of Afghanistan
FMI/NHMS Bhutan (in-country project partners)		

⁷ Names of Afghani interviewees not disclosed in the online version of the report

Name	Position/Function	Department
Dorji, Singay	Chief	Weather and Climate Services Division, National Center for Hydrology and Meteorology of Bhutan
Dupchu, Karma	Director	National Center for Hydrology and Meteorology of Bhutan
Rai, Kush	Engineer	Hydro-Met Operation and Infrastructure Division, National Center for Hydrology and Meteorology of Bhutan
Sharma, Prem	Officiating Chief	Hydro-Met Operation and Infrastructure Division, National Center for Hydrology and Meteorology of Bhutan
Subba, Monju	Engineer	Weather and Climate Services Division, National Center for Hydrology and Meteorology of Bhutan
Tamang, Tayba Buddha	Chief	Hydrology and Water Resources Division, National Center for Hydrology and Meteorology of Bhutan
Tenzin, Sangay	Executive Engineer	Hydro-Met Operation and Infrastructure Division, National Center for Hydrology and Meteorology of Bhutan
FMI/IMD (CLIMOB) India (project partners)		
Attri, Dr. S. D.	Deputy Director General	India Meteorological Department, Ministry of Earth Sciences
Bist, Dr. Sanjay	IMD Senior Researcher	India Meteorological Department, Ministry of Earth Sciences
Ramesh, Dr. K. J.	Director General of Meteorology,	India Meteorological Department, Ministry of Earth Sciences
Soni, Dr. Vijay Kumar	Head, Environment Monitoring and Research Center (EMRC), Polar Meteorological Research Division (PMRD)	Indian Meteorological Department, Ministry of Earth Sciences
VTT/CPCB India (project partners)		
Deep, Sharan	Scientist 'C'	Central Pollution Control Board (CPCB)
Kamyotra, J. S.	Member Secretary (retired)	Central Pollution Control Board (CPCB)
Mirashe, Pundlik Kisan	Assistant Secretary (Technical)	Maharashtra State Pollution Control Board (SPCB)
Pathak, Abhijit	Senior Scientist	Central Pollution Control Board (CPCB), India
FMI/DHM (FNEP) Nepal (project partners)		
Aryal, Mean Kumar	Meteorologist	Department of Hydrology & Meteorology of Nepal (DHM)
Haapala, Juho	Field Specialist	Rural Village Water Resources Management Project (RVWRMP; MFA-funded project)
Kandel, Shanti	Sn. Divisional Meteorologist	Department of Hydrology & Meteorology of Nepal (DHM)
Karmacharya, Dr. Jagadish	Deputy Director General	Department of Hydrology & Meteorology of Nepal (DHM)
Maharjan, Sunny	Meteorologist	Department of Hydrology & Meteorology of Nepal (DHM)
Manadhar, Pratibha	Sn. Divisional Meteorologist	Department of Hydrology & Meteorology of Nepal (DHM)
Neupane, Bipul	Director, Disaster Management Department	Red Cross Nepal
Paudel, Barun Prasad	Meteorologist	Department of Hydrology & Meteorology of Nepal (DHM)
Pokhrel, Anil	Executive Director	Nepal Disaster Risk Reduction Management Authority (NDRRMA)
Regmi, Suman Kumar	Sn. Divisional Meteorologist	Department of Hydrology & Meteorology of Nepal (DHM)
Rimal, Rameshwor	Agrometeorologist	Nepal Agriculture Research Council
Sharma, Rishi Ram	Joint Secretary -Retired	Ministry of Energy, Water Resources & Irrigation of Nepal; Former DHM DG
Shrestha, Lasa-Kusa Samir	Meteorologist	Department of Hydrology & Meteorology of Nepal (DHM)

Name	Position/Function	Department
Shrestha, Dr. Archana	Project Manager for FNEP3 and Deputy Director General	Department of Hydrology & Meteorology of Nepal (DHM)
Subedi, Sujan	Sn. Divisional Meteorologist	Department of Hydrology & Meteorology of Nepal (DHM)
Upadhyaya, Subarna	Chief, Air Traffic Mangement Department	Civil Aviation Authority of Nepal

Appendix 2 Project-level findings GTK/AGS Afghanistan

1 Project Summary

Name of project	<p>GTK/AGS Afghanistan</p> <ul style="list-style-type: none"> Phase 1 title: Cooperation in the sector of mining and exploration geophysics between the Geological Survey of Finland and the Afghanistan Geological Survey Phase 2 title: Capacity building for mineral exploration and institutional cooperation in Afghanistan
Timing	2013 - 2022
Budget	4.2 million Euro
Finnish agency	<p>Geological Survey of Finland (GTK). Today, GTK describes itself as an internationally oriented geoscience research agency with more than 400 professional staff, operating under the Ministry of Economic Affairs and Employment, and with the following duties:</p> <ul style="list-style-type: none"> Providing expert information and insight for the mineral policy of Finland and the EU; Surveying geological natural resources and maintaining the maps and data services related to them; Producing geological information to support decision making; and Conducting applied research for our private customers, such as the mining, energy and construction industries (GTK website). <p>In 2012, when the first phase of the GTK/AGS Afghanistan project was prepared, GTK characterized itself as a research centre for assessment, research and sustainable use of Earth geological resources with the mission to produce and disseminate geological information for industry and society that promotes systematic and sustainable use of crustal resources and the national geological endowment.</p> <p>At that time, GTK employed 40 geophysicists and covered practically all applied geophysics activities from field measurements to managing and distributing national geophysical databases (GTK 2012a).</p>
Partner country agency	<p>Afghanistan Geological Survey (AGS). With the MoMP, AGS is an Afghan government agency responsible for developing and maintaining reports and databases on the country's natural resources. Its archives contain reports, aerial photographs and maps of Afghanistan's geology and its mineral resources. Until 2019, AGS was a department in the Ministry of Mines and Petroleum and has then been restructured and promoted to a Deputy Ministry within the MoMP.</p> <p>In 2019, overall AGS staff was reported as close to 400, with about 150 working in the Minerals Survey Directorate, prior to the restructuring (MoMP 2019). That directorate <i>is responsible to conduct geological studies and exploration of solid mineral resources in the country, which includes geological surveying and mapping, the exploitation and exploration of areas with mineral perspective to attract investment for the use of mineral resources in the country</i> (MoMP website).</p> <p>Within AGS, the project targeted selected staff in several units with a focus on a small geophysicist team in charge of geological survey instruments.</p>
Other project partners	<p>The MoU for the second project phase also included:</p> <ul style="list-style-type: none"> Ministry of Mines and Petroleum (MoMP) Kabul Polytechnic University (KPU) Afghanite Geo & Mining Engineering Services Company (Afghanite) Finnish Afghan Business Council Ry (FABC) <p>FABC is a non-profit organization registered in Finland. Established in 2014, its current membership comprises 24 Afghan and Finnish companies and institutions. The organization</p> <ul style="list-style-type: none"> Promotes trade and investment between Afghanistan and Finland;

	<ul style="list-style-type: none"> • Facilitates networking events, meetings, seminar and visits; • Connects to peers, partners and potential clients; • Provides a forum for information and experience exchange • Represents its members and their interests; • Engages in development projects; and • Collaborates with governmental organizations (FABC 2018, 2020). <p>The chairman of FABC's board is also a board member in the second phase of the GTK/AGS Afghanistan project.</p> <p>KPU is Afghanistan's premier technical university and the second-largest university in the country. It was founded in 1963 as the Soviet-style "Kabul Polytechnic Institute" and was reopened and renamed in 2002 as KPU. The KPU has three faculties and 20 departments. The current KPU chancellor – a project board member – described it as "the mother university in technical and engineering sciences of Afghanistan" (KPU website).</p> <p>Afghanite – named after a blue mineral discovered in 1968 in Afghanistan – is an Afghan technical consulting and engineering company based in Kabul. With relevance to the project, it offers a wide range of services, including mineral exploration, extraction and processing, geophysical studies, environmental assessments and training (Afghanite website). Afghanite is ISO certified for laboratory work, (environmental) management, and occupational health and safety.</p>	
Project objective and purpose	<p>Phase 1:</p> <p>The overall objective of the project's first phase from 2013-2017 was to strengthen AGS' capacity for utilizing modern geophysical techniques⁸ (for investigation of raw material deposits). This was hoped to ultimately lead to more investments, jobs and revenues in the mineral sector in Afghanistan.</p> <p>Intended direct beneficiaries of the project were AGS staff, with a focus on staff from AGS's solid minerals department. The capacity of these people should be strengthened to enable AGS staff to use geophysical tools in their work. The phase 1 Project Document described the desired competencies as follows:</p> <p>After the project the AGS geophysics staff can use modern geophysical equipments for gravity, electromagnetic and electrical, magnetic, seismic and radiometric measurements; can choose the right combination of equipments (methods) for different kind of mineralization types; can interpret the measured data; can produce thematic models and reports.</p> <p>Increased AGS capacity was also intended to contribute to promoting and increasing the clientele for AGS services and to allow AGS to better support the Ministry's policy work in the sector.</p> <p>Expected training results were:</p>	<p>Phase 2:</p> <p>The second phase of the GTK/AGS project aims at further increasing the capacity of AGS and building the most competent team for mineral exploration in Afghanistan to act on the demands of the Ministry to develop the raw material and mineral sector in Afghanistan. It also aims at strengthening Afghan partner organizations' roles as experts and their capacity to influence decision makers and at establishing new ways of cooperation with the private and academic sectors to secure future talent and agility. The second phase will help creating and implementing new guidelines for exploration targets and contributing to sustainable and socially accepted field work and exploration of mineral potential.</p> <p>The project aims to achieve this through three principal outcomes:</p> <ol style="list-style-type: none"> 1. Exploration target setup: <ul style="list-style-type: none"> • Exploration targets set by AGS and reviewed by partner experts and approved by MoMP. • Implementation of field work jointly with KPU and Afghanite as part of AGS annual field work. 2. Institutional cooperation: <ul style="list-style-type: none"> • Facilitate cooperation between governmental organization (AGS), private company (Afghanite) and university (KPU) 3. Stakeholder awareness: <ul style="list-style-type: none"> • Stakeholder, NGO and civil society awareness. Dissemination and information about exploration, mining, civil and human rights.

⁸ The process of planning and performing geophysical investigations, including interpretation, modelling and distribution of geophysical data, in mineral exploration and mineral potential evaluation.(GTK 2012a)

	<ol style="list-style-type: none"> 1. Strengthened skills of AGS staff in using geophysical measurement equipment; 2. AGS staff skills in data management and interpretation improved; 3. Organizational capacity of AGS strengthened in team field work; and 4. Operational manual for geophysical field work produced and in use by AGS staff. 	<ul style="list-style-type: none"> • Info about exploration and mining for the civil society.
Principal project activities	Main project activities are implemented during "missions" that last a few days to several weeks and include workshops, study tours, field training, and regular project board meetings. The project also procured some equipment and instruments.	
Impact logic	<p>In phase 1 the project focused on strengthening the capacities of the geophysics team in AGS. The project's impact logic was this would contribute to more and better information about mineral deposits in Afghanistan which would attract investments into more detailed exploration and evaluation of potential mining sites and, eventually, lead to increased extraction which, in turn, would benefit the Afghan job market and the country's economy and increase government revenue from the mining sector. This could then translate into benefits for the Afghan population and the environment.</p> <p>Naturally, this impact logic depends on many implicit assumptions ("if's"). Some of them are discussed in the findings below.</p>	
Project genesis	The MFA looked for opportunities to support the country and the mining sector was considered a potentially promising avenue. GTK was contacted by the MFA and tasked with conducting a fact-finding mission to the country in 2010. Based on the findings of that mission and strong interest shown by AGS, the project was gradually developed over the next three years.	
Other relevant projects (Finnish or other international)	<p>Much of the overall donor-assisted interventions and structural reforms in Afghanistan were channelled through a reconstruction trust fund managed by the World Bank and through other multilateral agencies and initiatives.</p> <p>Regarding particular interventions, before the GTK/AGS project, BGS and USGS, on behalf of the UK and the US, supported the MoMP and AGS and contributed to the status quo observed by GTK during the fact-finding mission in 2010 and when the project began in 2013. For example, USGS had procured a range of exploration instruments for AGS that was later used for training in the GTK/AGS project. The projects, however, never "touched" because the USGS work phased out when the GTK/AGS project started, and the previous BGS-led work had focused on other issues, for example archives and database management.</p> <p>USAID conducted a USD 45 million program that also targeted the MoMP and AGS and included capacity development as a key component. While the "Mining Investment and Development for Afghan Sustainability" (MIDAS) project was implemented 2012-2017 and hence overlapped time-wise with the GTK/AGS project, there was only very little interaction and no reported synergies. Based on the final MIDAS performance evaluation, this seems to have been mostly due to the MIDAS program that was found to have been implemented largely in isolation and disconnected from actual capacity development needs of the ministry and AGS (USAID 2017).</p> <p>From 2014 to 2020, GIZ implemented the "Consolidating Academic Mining Education in Afghanistan" (AMEA) project that supported academic education at the KPU with which close collaboration developed, as described in below.</p> <p>While very active in Afghanistan in several sectors, Finland's development policy and cooperation did not implement any interventions with direct linkages or synergies with the GTK/AGS project during the evaluation period.</p>	

Source (if not cited in the text): Project documents and reports, and <https://www2.bgs.ac.uk/AfghanMinerals/About.htm>, visited in June 2021, interviews, team analysis.

2 Findings

It must be noted that, in the present evaluation, the GTK/Afghanistan project is somewhat of an outlier because most of its funding was (and is) provided outside of the ICI instrument, through a direct contract between GTK and the MFA that is based on the 1989 law regulating the participation of government agencies in development cooperation (Government of Finland 1989). The project had a Euro 0.5 million ICI component for its first three years (2013-2015) but phase 1 (2013-2018) received an additional Euro 2.5 million non-ICI funding in phase 1, and further non-ICI funding of Euro 1.2 million in the ongoing second phase. ICI-specific guidelines and procedures, therefore, apply – in a strict sense – only to the ICI component in phase 1.

2.1 Relevance vis-à-vis needs

Finding 1 The first phase of the GTK/AGS project responded to the clear and urgent priority needs of AGS.

Efforts to rebuild and strengthen AGS after two decades of the military conflict began in the 2000s. Among others, the British and US Geological Surveys – BGS and USGS, respectively – supported AGS with capacity development, geological mapping, evaluation of mineral and hydrogeological resources, and the creation of geological and mineral databases and geographical information systems.

Around 2010, when the first contacts between GTK and AGS were established, USGS purchased key geophysics equipment and instruments for AGS through the US Department of Defense, both for surface and borehole analyses and including computers and software. In addition, people interviewed at AGS remembered that the Afghan government itself had also procured some equipment between 2010 and 2013. This equipment replaced and complemented older Soviet-era instruments. Interviewees involved at the time agreed that when the GTK/AGS project started, there was hence no lack of geophysical equipment.

What lacked was the skill and experience of AGS staff to make use of these instruments. This was despite of some good quality training provided by the USGS at the time. Several AGS staff members remembered being taken to the US and to Turkey for training and estimated the total training length to about 40 days. Nevertheless, both AGS staff and people involved in the USGS efforts at the time agreed that that training had not been sufficient to enable AGS staff to use the instruments effectively. This reflected profound capacity gaps caused by the onset of generational change at the MoMP at the time: rather well-trained employees from the Soviet-era increasingly retired and were being replaced by young professionals without sufficient education and experience.

The lack of technical competencies was profound. In interviews, AGS staff participating in the first project phase described that they had initially been unable to use the existing equipment properly and to conduct mineral exploration projects. A pre-project baseline established by GTK trainers at the time (and confirmed in general terms by the current AGS project manager) ranked the seven basic skills for using different geophysical measurement methods either as "1" or "2" on a scale from 1 to 5, 1 standing for "none/primitive" and 5 for "maximum/up-to-date".

Box 1. A survey respondent on AGS's capacity development needs prior to the GTK/AGS project.

"Several decades of war destroyed most or infrastructure in Afghanistan. AGS, which was a very equipped and active organization, lost almost everything. After reconstruction by USGS in 2005, the USGS and BGS equipped most of the departments, including the Geophysics department. Since the Geophysics field has many methods and software, AGS leadership looked for a donor to work for the capacity building of this department."

Virtually all of 22 Afghan project stakeholders who responded to an online survey conducted for this evaluation found that the ICI project had addressed their own professional capacity development needs and also those of their unit or agency (Appendix 10 Survey Results).

Finding 2 The GTK/AGS project's second phase showcases useful trilateral cooperation for which needs from the Afghan side are, however, less clearly articulated.

Throughout the first project phase, one silent goal had been to raise awareness and showcase the manner in which Finland's Geological Survey interfaced and collaborated with the academic and the private sectors. In contrast, the situation in Afghanistan had been one of a rather strict separation of these three sectors.

Apart from continuing capacity development activities from the first phase, the second project phase rendered this objective explicit by showcasing such trilateral cooperation with new project partners: KPU, representing the academic sector, and Afghanite and the Finnish-Afghan Business Council. Interviewees from all sides highlighted the usefulness and relevance of demonstrating such cooperation. Compared to the very explicit and well-documented capacity gaps that gave rise to the first project phase, the concept of trilateral sector collaboration was rather something that had been introduced to the Afghan partners and then raised their interest.

Finding 3 Despite efforts, the initial determination of a "baseline" in terms of individual competencies and existing geophysical equipment as a basis for planning the project was not easy.

Prior to the project, several efforts were made to clearly establish AGS' capacity development needs:

- In 2010, the MFA commissioned GTK to conduct a fact-finding mission to Afghanistan to *assess the possibilities of bilateral cooperation in the minerals sector between Finland and Afghanistan*, specifically with a view to institutional cooperation between Finnish and Afghan agencies involved in the sector (GTK 2011).
- In 2011, GTK visited Kabul once more to better understand the state of mineral exploration geophysics at AGS, a tentative five-year capacity development plan was drawn up and shared with the Minister of Mines at the time.
- In 2012, nine AGS staff members visited Finland, and the training concept was tested in practice.

These initial interactions were necessary and important for establishing initial relations and for mutually understanding the situation in Afghanistan, the ministry, and AGS in Afghanistan, and what institutional cooperation with GTK could offer. At the same time, they demonstrated how difficult it was to obtain an accurate understanding of existing staff competencies and of equipment AGS had access to.

- Based on interviews with people involved at the time, GTK staff only understood during the direct face-to-face interactions in 2012 in Finland that staff competencies were actually much lower than already anticipated. For example, GTK project staff had silently assumed that AGS staff would possess basic computer, maps and math/physics skills but then realized that coaching was needed for basic issues such as opening and saving computer files, reading maps, and using coordinate systems.
- Regarding instruments and equipment, GTK only became fully aware of the number and type of geophysical instruments and equipment at AGS when the project started in 2013 and AGS presented a comprehensive overview of available hard- and software. Interviewees noted that the GTK project had been discussed and planned during an era of dynamic assistance provided by several, leading to significant changes in AGS's equipment stock.

The project adapted quickly once information on these two parameters was available. The training approach was individualized to include much one-on-one interaction (this also allowed practical coaching of basic skills) and the project changed tactics from procuring the equipment staff would be trained on to enabling staff to use the existing instruments.

The project would, however, have benefited from accurate information about these issues earlier on, especially because some of the instruments AGS possessed were considered too advanced or otherwise not useful for learning the basics of geophysical exploration but had to be used anyhow because purchases on top of existing instruments could not be justified.

One possible explanation for difficulties in establishing an accurate baseline regarding competencies and equipment is related to cultural differences. Afghan and Finnish interviewees described these in detail, including their growing mutual understanding.

Finding 4 The project was designed along the ministry's plans for developing AGS, but, in hindsight, those plans did not provide useful guidance.

The project diligently reviewed implicit and explicit plans for restructuring and organizationally develop the MoMP (then: Ministry of Mines) in general – and AGS in specific. However, since the early 2000s, the MoMP has seen a flux of strategies and plans for reform. Some of these were obtained and reviewed by the evaluation team; others were referred to in interviews and reports.

As an overall observation, it appears that most of these plans were never fully implemented, and they were hence of only limited value for helping to inform project design towards highest relevance. The ministerial strategic plan of 2013, as other plans, were found to have all remained essentially “on paper”, with little or no effect on the organization's capacity or its capacity development processes and efforts, mainly because of rapid political changes in the Ministry's leadership. In other words, the MoMP has lacked a stable strategic plan throughout the entire project period.

An earlier evaluation report published in 2017 noted similar issues:

The leadership and policies of the MoMP were not stable, and its 20 acting directors were unable to make or implement long-term plans, including hiring of needed staff. Both MoMP and MIDAS staff frequently cited MoMP's time-consuming bureaucratic procedures, centralized authorization process, information bottlenecks, ineffective M&E office, and paper-bound HR department with excessive vacancies as sources of organizational inefficiency and inaction (USAID 2017, p. 20).

Importantly, the project had been designed with the capacity to train about 24 geophysicists but the envisaged hiring of 10-15 additional AGS geophysicists to bring the targeted unit to that number never materialized. Instead, the number of professionals targeted in that unit had hovered around 10 and had fallen to seven in 2021. This mismatch not only reduced the reach the project could have with targeting geophysics but also forced it to adapt and expand the scope in terms of the disciplines targeted in AGS. Contrary to plans for increasing staff, several other plans – from 2010 to today – existed for significantly reducing MoMP and AGS employee numbers. For example, a recent MoMP structural review proposed an overall cut in MoMP personnel by almost 50 per cent, citing current staff numbers of over 2400. In a similar vein, earlier plans to increase salaries to retain qualified staff have also not materialized.

Changing ministerial and AGS leadership and plans also brought differing perspectives – and increased insecurity – to the intended role and envisaged organizational development priorities of AGS and the geophysics team within. At the time this evaluation was conducted, there is, for example, considerable insecurity regarding which way AGS will go. The 2019 Mining Sector Roadmap (MoMP 2019), for example, only hints at capacity development through identification of skills necessary for utilization of minerals as a key overall objective, under the overall oversight of the High Council on Human Capital, chaired by the President. But at the same time, the roadmap states that AGS will either be spun off as an independent technical agency whose sole purpose will be to develop and maintain natural resources data or that it will be merged with the Afghanistan Land Authority (ARAZI). The roadmap also leaves open to what degree AGS will be tasked to conduct mineral exploration in-house or whether these will largely be outsourced to the private sector. This reflects the uncertainty of people interviewed for this evaluation about which course AGS should take, with options ranging from a purely administrative unit managing private sector

exploration contracts to a deputy ministry in charge of most geophysical exploration work across the country.

The evaluation, therefore, finds that, in hindsight, relying on existing plans for organizational development of AGS at any point in time can be considered a risk rather than useful guidance. Because of the expectation of a growing geophysics team within AGS, consultation and project planning had focused on that team only and had not included other departments, the MoMP's Director for Planning, the Directorate of Aid Coordination, or the Department for staff capacity development. It was only later in the project when the scope was expanded, for example, by helping to establish and train the petrophysics team. As a lesson for future projects in similarly fragile contexts, the risk of relying too much on unreliable plans and projections can probably be mitigated best by designing and adapting the project in "foolproof" ways that allow it to function also under the assumption that some or all plans remain "on paper".

2.2 Relevance vis-à-vis development goals

Finding 5 There are strong development-related rationales for both project phases.

While differing in terms of their estimates of the combined value of Afghan mineral resources (ranging from one to several trillion USD), studies and reports reviewed by the evaluation team agree that the development of Afghanistan's extractives sector is one of the best options for economic growth for the country which, in turn, is considered vital for stabilizing the country and improving the livelihoods of its population (see, for example, USAID 2017 and MoMP 2019).

The MoMP, AGS, and especially the geophysics team within AGS play a vital role in this. Interviewees widely considered sufficiently reliable and comprehensive information about mineral deposits one of the necessary factors for attracting domestic and foreign investment into further detailed exploration and extraction. In 2010, when GTK conducted a fact-finding mission to Afghanistan, it remarked that while the geological potential was undeniably high, the current state of mapping only allowed estimates which, by themselves, would not be sufficient to attract investment into more in-depth exploration (GTK 2011). The report stated that reliable evaluation and reporting on existing deposits was needed to attract exploration and, ultimately, extraction companies. Enabling AGS to produce such information represents the principal objective of the GTK/AGS first project phase and is therefore highly relevant.

In this context, the objectives of the second project phase are relevant as well. They aim to guide the MoMP and AGS towards meaningful exploration targets and towards closer cooperation with both the academic and private sectors.

Finding 6 The project easily fits into overall development plans for Afghanistan.

Finland's development policy and cooperation with Afghanistan are guided by a 2013 partnership agreement between the two countries and a subsequent white paper. There is no MFA country strategy for Afghanistan. Both guiding documents define development cooperation priorities in line with the GTK/AGS project:

- In the partnership agreement, the Finnish government pledges to help promote sustainable development and seek to support the capacity of the Afghan Government to sustainably develop Afghanistan's own natural resources for the benefit of the Afghan people. The Parties agree to strengthen cooperation and capacity building on exploitation, development, processing and marketing of natural resources. (Government of Finland, 2013)
- The 2018 white paper mentions the GTK/AGS project specifically: The future exploitation of Afghanistan's mineral resources is expected to play an important role in the country's economic and social development. The Geological Survey of Finland is engaged in training cooperation with a corresponding institute in Afghanistan, developing expertise in ore prospecting technologies (MFA 2018a). The project ultimately aims to contribute to the third theme (of three) of Finland's support in Afghanistan that is described in that paper to developing the economic base, especially in rural areas.

National strategies of the Afghan government have not been reviewed in detail by the evaluation team. A cursory review of the first Afghanistan National Development Plan covering the period from 2008 to 2013 showed that the development of the mining sector already featured strongly at that time.

The intention is to encourage legitimate private investment in the sector so as to substantially increase government revenues, improve employment opportunities and foster ancillary development centred on mining activity (Islamic Republic of Afghanistan, 2008).

To contribute to this goal, that plan set a target of making more geophysical information available by surveying an additional 5% surface area for the country's natural resources between 2008 and 2013.

While interviewees confirmed that the project matched overall development plans – both of Finnish development policy and cooperation and those by the Afghan government – it should also be noted that that goals and objectives in these plans usually remain at a rather high level and that it is, therefore, difficult for any development project to not fit within any of those broad objectives.

2.3 Coherence and harmonization

Finding 7 Within a number of different projects targeting the same partners, the GTK/AGS project carefully avoided duplication and sought synergies.

The large potential of the mining sector for Afghanistan's development led to several other – and usually significantly larger – projects being planned and implemented in support of the MoMP, AGS, and other project partners.

Based on interviews, people involved in project planning in the MFA in Helsinki, in Finland's embassy in Kabul, and at GTK took great care to avoid "stepping on the feet of other donors", as one interviewee put it. Initially, for example, the management of geological data was considered as an alternative area for the project but was then abandoned because other donors were already working on it. Instead, geophysical capacity development represented a niche not covered by other donors. This approach led to complementarity with earlier interventions by other donors. For example, the project integrated the instruments procured previously by the US into its capacity development efforts and continued instrument- and method-specific capacity development. USGS had begun but was unable to complete before phasing out in 2014.

The GTK/AGS project coordinated closely with GIZ and, through the embassy, has participated in several donor coordination meetings in the mining sector. Between the phase 1 and phase 2 project managers on the GTK side – both were involved throughout both project phases – one focused on coordinating with partners and initiatives by other donors.

People involved in the German development cooperation project "Consolidating Academic Mining Education in Afghanistan" (AMEA) that supported academic education at KPU between 2014 and 2020 reported close and effective coordination and collaboration, including the participation of GIZ-sponsored KPU students in two trainings organized by the GTK/AGS project in Iran.

Finding 8 While GTK was aware of other initiatives, some of them were not aware of the GTK/AGS project.

GTK staff involved in the project were aware of most other ongoing initiatives. The report of the MFA-commissioned fact-finding mission – conducted by GTK in 2010 – demonstrated this with a comprehensive description of past, ongoing, and planned interventions of the key donors active in the sector. This awareness continued throughout both project phases, as a desk review of project documents and reports and interviews with key GTK project staff confirmed. The only possibly relevant project not on the GTK radar screen were recent advisory and training activities to the MoMP and AGS by the Commercial Law Development Program (DLCP) on behalf of the US Department of Commerce.

The same was however not true the other way around and the GTK/AGS project has remained little known with at least some of the initiatives by other donors in the sector. For example, people involved with US- and UK-related efforts in the sector interviewed for this evaluation were not or only vaguely aware of the project. Most knew GTK and considered it a world-class agency but were either not aware at all of the project in Afghanistan or had only heard that GTK was “doing something” with AGS without knowing any details. This was also reflected in the final performance evaluation of a USD 45 million effort in the sector that also targeted the MoMP and AGS between 2012 and 2017 – Mining Investment and Development for Afghan Sustainability (MIDAS). That final performance evaluation describes capacity development efforts targeted at the MoMP and AGS by the UK, the US, and Germany but does not mention the GTK/AGS project (USAID 2017, p. 25).

In summary, while the GTK/AGS project was aware of other ongoing initiatives, some of those initiatives were not aware of it. Somewhat surprisingly, the evaluation team received this feedback in spite of GTK/MFA/Embassy participation in a 2020 donor coordination meeting also attended by representatives of USAID, USGS, DFID, the World Bank, the Embassy of Canada, and GIZ (GTK progress report 2020/1). Interviewees involved in US efforts were rather self-critical about this and expressed a need to better liaise and network from their side. This was also mirrored in the above-mentioned evaluation of MIDAS that diagnosed a lack of coordination between the USGS and USAID in the context of that project (USAID 2017).

One possible explanation is that US assistance to Afghanistan was routed to a significant portion through other US departments such as the Task Force for Business and Stability Operations (TFBSO) under the US Department of Defence and the Commercial Law Development Program (DLCP) under the US Department of Commerce. Another possible explanation is the lack of communication between the international staff of these agencies interviewed by the evaluation team and their local representatives.

Nevertheless, the evaluation team finds that, in hindsight, the project would have benefited from more active outreach and coordination, especially, with US efforts and especially during the first project phase. This could have accelerated the determination of the number and type of instruments USGS had installed prior to the project. Interviewed USGS staff also had a deep understanding of the existing competencies of AGS geophysics staff in 2012 – having conducted several trainings with the instruments that had been delivered in 2010 – and could have helped GTK determine exact training needs quicker and with more precision. Also, in hindsight, the project might even have helped the significantly larger MIDAS project towards more relevant design and more effective implementation. As it stands, the MIDAS program design was found to be *flawed from inception* and the training to be *typically poor in quality and inadequate for intended purposes* (USAID 2017). Going forward, the GTK/AGS project and ongoing efforts by USGS and DLCP could mutually benefit from more mutual information exchange and networking. As these initiatives are coordinated by only a few key individuals that were supportive to the present evaluation and expressed interest in improving mutual information exchange, this should be a simple matter of making contact and mutually exchanging informal updates every now and then.

2.4 Participation, ownership, partnership

Finding 9 The project had – and has – an exemplary approach to governance and management that served as a basis for developing strong partnerships

Interviews held in the MoMP and AGS coherently indicated that project planning and design had been done collaboratively with GTK and that the contribution of AGS had been decisive: training needs had been raised and prioritized by AGS staff and the overall project scope had been defined in full partnership.

When the project started in 2013, a project board was established and met twice a year throughout the entire project lifetime. Board meetings were mostly held in person and usually alternated between Finland and Kabul. Since late 2020, meetings were held virtually because of the Covid-19 pandemic.

The evaluation team reviewed the meeting minutes of 14 board meetings held between 2013 and 2020 and found attendance to be exemplary. The GTK and AGS project managers were present at all meetings during their respective tenures and – especially on the GTK side – also beyond (the phase 1 GTK project manager attended all 14 meetings (both phases), the phase 2 project manager attended all phase 2 meetings, plus all phase 1 meetings (8 of 10) since he was appointed deputy project manager. Senior AGS and GTK attendance was also high, with changes due to leadership changes in the respective organizations. This overall continuity of board members and observers provided institutional memory to build up over the years and allowed the board to function as an informed governance body. On the level of project management, the project similarly benefited from continuity and overlapping tenures of the two GTK and three AGS project managers involved. The institutional memory became obvious during interviews with GTK and AGS staff, several of which had their own experiences from all or most implementation years since 2013.

The desk review of board meeting minutes also revealed a great deal of transparency and collaborative decision-making on a level playing field between GTK and AGS board members.

Clearly, the board operated as the project's principal decision-making body covering all aspects of the project and operating with full financial and operational transparency. Decisions were taken, for example, on what types, forms and locations for trainings were considered most needed and effective, on procurement of equipment, on planning higher-level workshops, and on subsequent project phases. After conducting interviews with people involved in Afghanistan, the Afghan member of the evaluation team summarized this as follows:

Every activity in the project has been proposed by the AGS authorities, agreed, discussed, and amended as necessary through shared authority, through the steering board, not by one side. For example, the changes in training venue, shifting from Finland to Iran, the inclusion of more online training, provision of spare parts proposed, procurement of the gravimeter etc. have all been discussed and approved by the board. Hence, all board members were clear about project activities, project budget and amendments made at every stage of the project.

Interviewed AGS staff also felt that they had been consulted and involved throughout the project, and that they had had very significant influence on the design of each project phase. Staff of other donor agencies interviewed for this evaluation also highlighted what they thought was exemplary transparency which they considered unparalleled regarding, for example, transparency about and decision-making based on available project funding.

Based on available evidence and the evaluation team's own observations during interactions with staff from AGS, GTK, the MFA and other donors, it is also clear that the project was governed and managed in an effective and efficient way.

As mentioned earlier, the only possible caveat in terms of broader participation in the project's initial strong focus on the geophysics team within AGS, due to the expectation that that unit would grow and be able to absorb all of the project's capacity development efforts. However, this initial focus may also have been a factor of success. In interviews, AGS staff considered the project a "model of success" because of its transparency, objectivity, efficiency, and effectiveness, but also because of its clear and long-term focus on a small section of the MoMP.

Study tours to Finland were considered one central element in getting to know each other and for building mutual trust. Apart from board meetings held every year in Finland, study tours included workshops and visits to mines and mining stakeholders and to mining conferences. Interviewees at GTK and in the MFA in Finland widely considered these tours to be useful for raising awareness with MoMP and AGS decision-makers about how the mining sector in a developed country operated and what was required for effective geophysical exploration work. Survey respondents from Afghanistan (and Iran) agreed that the higher echelons in AGS and MoMP needed to be involved in the project in order for them to support project

implementation but were less vocal about the usefulness of study tours in particular and they were not ranked among the most important success factors for the project in the online survey.

Overall, there is clear evidence of how the project's exemplary governance and management and the close involvement of senior-level MoMP and AGS staff (in addition to the technical staff) have contributed to building strong, trusting, and lasting professional relationships which, over time, increasingly facilitated project planning and implementation.

People interviewed in Afghanistan strongly felt that the project had contributed to improving bilateral relationships between the country at various levels. AGS staff generally looked at GTK with respect and appreciation and felt that there was a good basis and prospects for future cooperation between the two agencies. All interviewees, particularly those within the AGS and MoMP, expressed huge appreciation of the support provided by the GTK experts, particularly as they had responded to their training needs and stood by them stable and consistently during the past years. Interviewees also agreed that GTK had gained "good trust" of the geophysics unit and that the project had established a "triangle of good relationships and trust" between the partners representing academia, the private sector, and the Afghan government.

Finding 10 AGS and the MoMP/AGS demonstrated strong ownership for the project ... up to a certain level.

AGS staff directly involved in the project showed strong ownership in terms of taking responsibility and feeling committed and accountable for project outcomes. This was evident from interviews with former and present staff of AGS, GTK and the MFA involved in the project. It is also reflected in continuous and steady attendance of trainings, workshops and board meetings, and the level of detail and interest in project-related decision-making. AGS staff and staff and students connected to the phase 2 project partners KPU and Afghanite consistently saw the project as an opportunity for learning and advancement and held very high regard for their Finnish colleagues from GTK.

In the view of the evaluation team, all partners involved – including representatives of Finland's embassy in Kabul and the MFA's regional department in Helsinki – showed keen interest and aimed to contribute to the project's success.

Ownership was less evident in the higher echelons of the MoMP, likely also due to more frequent changes in personnel at those levels. As a relatively small initiative, the GTK/AGS project was at the receiving end rather than being able to exert influence on planned reforms of the roles and mandates of the ministry and AGS, their organizational setups and their overall management of human resources. As outlined before, there was continuous inactivity and an almost complete lack of implementation of existing and agreed organizational development plans at the MoMP during the entire project period. While also driven by external factors, this can be interpreted as a lack of ownership of MoMP leadership with authority to take such decisions, because it clearly did not benefit the project.

2.5 Implementation effectiveness

Finding 11 The project was implemented diligently and with sufficient flexibility to adapt it to lessons learned and changing circumstances.

Project implementation is documented in detail in semi-annual progress reports throughout both project phases, including the minutes of all project board meetings that were held. All 28 missions conducted in the first phase are documented in mission reports. Activities and outputs of that project phase were comprehensively summarized in mid-term and final completion reports. In the second phase, reporting was less detailed, and no mission and mid-term reports were produced because the project had no ICI component during that phase anymore and was hence not subject to the reporting requirements and quality assurance by the ICI Consultants. In both project phases, as noted in an earlier evaluation of the ICI instrument (MFA 2014), project inputs from the partner country side, for example, in terms of staff time, facilities, and project-related investments, were not reported.

In its first phase, the project used its entire budget and closed timely. Overall, GTK staff invested close to 2600 working days (roughly seven full-time working years) into the first phase of the project, representing Euro 2 million of the total Euro 3 million costs for that phase. In the ongoing second phase, expenditures lag somewhat behind plans – mostly due to the Covid-19 pandemic –and the project has been granted a no-cost-extension until the end of 2022. Reported cumulative costs until the end of 2020 were Euro 0.59 million compared to planned expenditures of Euro 0.96 million up to that point.

Based on the review of semi-annual progress reports from 2013 to 2020, phase 1 missions were implemented largely according to plans, with changes in focus and location as described in the next finding below. Overall, 28 missions were implemented, including a kick-off meeting in Finland and a final seminar in Tehran, nine training missions of four to five weeks each, ten board meetings, a visit of the Afghan Minister of Mines to Finland, as well as several preparatory and planning visits. During phase 1, some geophysical instruments were procured for AGS, and GTK supported the setup of the petrophysics laboratory at AGS.

Phase 2 began in 2019 with a kickoff meeting and a workshop held in New Delhi, India, KPU field and laboratory training and planning meetings in Kabul. Later that year, a project delegation visited Swedish mines and attended the biannual Fennoscandian conference after a board meeting in Finland. In 2020, a donor coordination meeting, a board meeting and several workshops were held in Kabul before the in-person meetings became difficult because of the Covid-19 pandemic. Trainings, board meetings and planning interactions moved online from the second half of 2020 onwards and included petrophysics training and several brief geophysics workshops. Also, in the second phase, several project promotion videos were produced⁹, and geophysical equipment was procured for use in KPU academic education programs.

During both project phases, there has been ongoing (undocumented) communication and support between GTK and project partners by email and phone. From the Afghan side, GTK was considered accessible and motivated to provide support also in-between missions but feedback from GTK staff indicates that such support could have even been requested more.

Overall, feedback indicates that GTK and AGS staff implemented planned activities diligently and showed a great deal of tenacity in overcoming many logistical problems such as setting up trainings in Iran without being able to transfer funds or to overcome or adapt the meeting location because of visa issues for Afghan participants.

The Covid-19 pandemic and other external factors such as the fragile security situation in the country have led to delays and cancellations of activities compared to what had been planned, as discussed in the next finding below. In addition, project management has adapted its modus operandi regarding two of the three planned outcomes for the second project phase (see table in Section 1):

- Regarding the planned collaborative process for setting AGS exploration targets together with AGS and MoMP leadership, the reality was that those decisions were taken at higher levels of the MoMP without allowing significant interaction or consultation with the project. The evaluation team finds that the project management took the right decision when accepting these institutional realities and refocusing on trainings, workshops and the demonstration of trilateral institutional collaboration.
- The second-phase project also aimed at raising awareness on human rights issues in the mining sector with a wide range of Afghan stakeholders. This component was originally planned along with a classical dissemination-of-information-based approach. Early into the second phase, project management realized that this Finland-inspired tactic might not be the right approach for the Afghan context in which key groups – such as rural Afghans actually or potentially affected by

⁹ The videos are available at <https://www.youtube.com/watch?v=iTd-cToOEM&t=27s> (3 minutes long), <https://www.youtube.com/watch?v=36w6J1r5r2I&t=10s> (6 minutes), and <https://www.youtube.com/watch?v=YFqJzUIISs&t=252s> (20 minutes). Visited in May 2021.

mining operations – could not be effectively reached by social or print media. Project management then refocused on including rights-based and environmental issues into training curricula targeted at KPU students and AGS/Afghanite employees. At the time this evaluation was conducted, the project was still looking for effective ways to also reach other stakeholders in more direct ways.

Finding 12 The project faced significant external challenges that were actively addressed by the project board and by project management.

The main implementation-related issues were external and beyond the control of the project. They were related to the security situation in Afghanistan, trainees defecting during visits to Finland, the organizational development of AGS and the management of its staff, and the Covid-19 pandemic.

- The deteriorating security situation impacted field work-related training (and fieldwork itself) negatively, both in terms of the length and the locations of field missions. The political situation continued to make it difficult to obtain visas for Afghans to travel abroad and already prepared trainings in Tajikistan in phase 1 had to be cancelled. The growing tensions between the U.S. and Iran also made trainings in Iran logistically challenging. It was, for example, impossible to electronically transfer funds from Finland into the country.
- Also related to the security situation in Afghanistan but also to overall working conditions and career outlook, the project saw several defections of AGS staff during workshops and trainings in Finland. Overall, four people did not return to Finland with the Afghan study groups since 2010: one during a preparatory mission before the project started, another in 2013 and two more in 2015. The loss of expertise through these defections was, however, limited because most staff in question had only participated in a single training, but it did leave the AGS geophysics team in AGS reduced in number and without the only women (and one of two people) that had received laboratory training (three sessions) up to that point.
- As described before, reform, strategy, and organizational development plans for the MoMP and AGS were usually not implemented as planned and changed over time, with negative consequences for the project. For example, the project's first phase was designed to target a larger number of AGS staff, based on informal and formal plans and projections of the MoMP. The constant insecurity around whether plans would be implemented or not also led to some degree of frustration and fear of job loss in the targeted AGS team. For example, at the time this report was written, there had been statements by the president and the minister about reducing the number of MoMP employees by half, creating significant concerns and insecurity also for AGS leadership and the AGS employees targeted by the project.
- During the project period, AGS also experienced a generational shift in which many soviet-trained older professionals retired and were – to some extent – replaced by young people without proper academic education.
- Finally, the Covid-19 pandemic began impacting the project from early 2020 onwards. The last face-to-face board meeting was held in February 2020 in Kabul. After that, interactions moved online, and training planned later that year in Turkey had to be cancelled. Until then, the project had benefited much from the direct interactions between GTK experts and staff and students from the phase 2 project partners AGS, KPU and Afghanite and interviewees generally considered the lack of direct personal contact to have negatively impacted the quality of interactions and to have caused delays in the implementation of the project.

Based in interviews conducted with project stakeholders and the review of project documents and reports, the evaluation team finds that the project board and management have reacted quickly and effectively to these challenges.

- The project team has shown tenacity, patience and practical problem-solving skills with relocating trainings and with overcoming logistical challenges when organizing trainings outside of Finland and Afghanistan.
- The problem of defections was repeatedly addressed in the project board, which moved swiftly to end trainings in Finland after the 2015 defections after earlier AGS-internal measures did not seem to suffice.

- The project also moved to include additional units into training activities (building stones and petrophysics) after it became clear that AGS geophysics staff numbers would remain far below the planned build-up.
- Regarding Covid-19, the project compensated for the lack of direct interaction by trying out several innovative blended learning approaches, such as videoconference-assisted lab work and one-on-one on-the-job coaching.

2.6 Strengthened competencies and systems

Finding 13 Within the targeted core group at AGS, the project resulted in very significant competency gains.

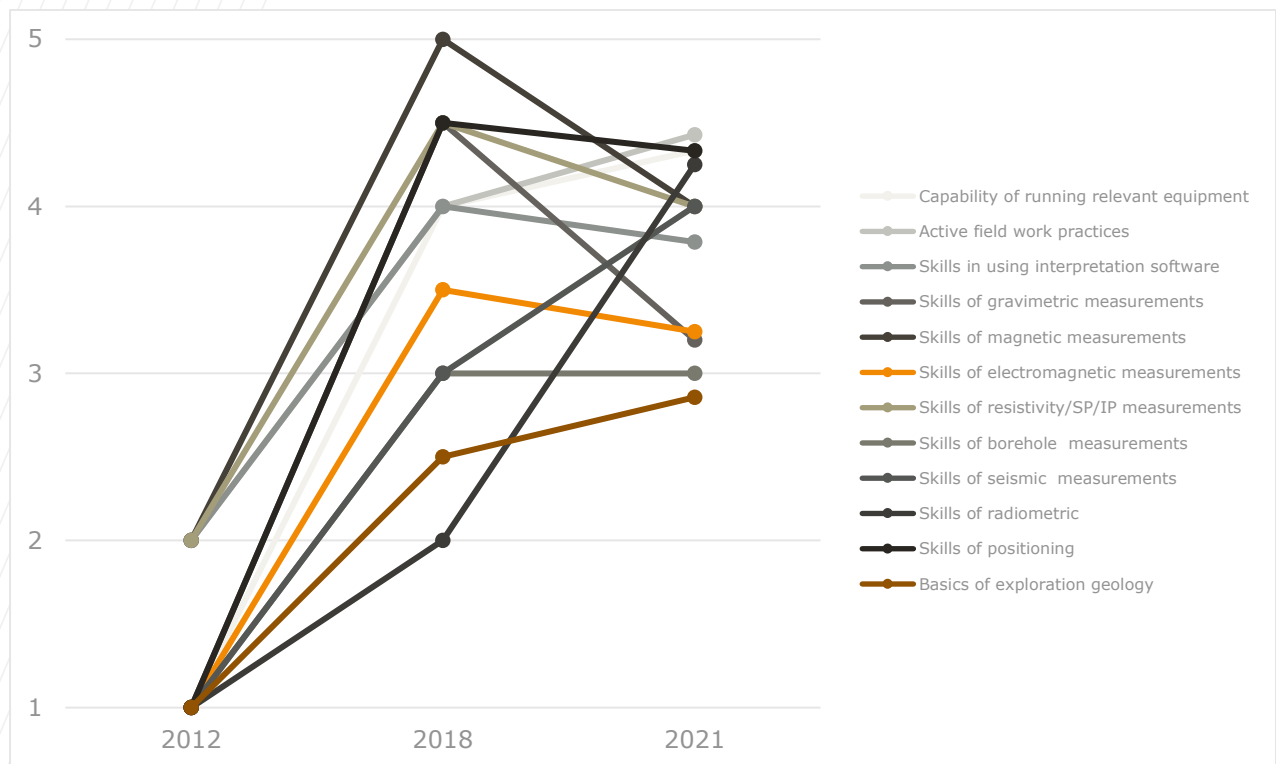
Interviews with the geophysics staff at AGS in the focus of the project convincingly indicated that professional competencies had been developed very significantly during the project. Most described themselves as – at the time – incapable of operating most of the instruments AGS possessed and viewed the unit as unable to perform meaningful geophysical exploration activities in the field. Several stated that the geophysics team was now enabled to perform mineral exploration projects and use geophysical instrument because of the project. Several also mentioned that they considered the MoMP and AGS to not have sufficient resources or capacity to conduct similar trainings by themselves.

Significant competency gains of that core group are also evident in Figure 3. It shows competency assessments before the project (2012 baseline), after the first project phase (2018), and during this evaluation (2021). The 2012 and 2018 figures represent estimates by GTK trainers and project managers, the 2021 figures are based on self-assessments of seven AGS geophysics staff, who was also in general agreement with how their competencies had been assessed in 2012. The scale used covers the numbers 1 to 5, with 1 standing for “none/primitive” and 5 for “maximum/up-to-date”.

When surveyed, the same core group also reported a high overall level of satisfaction with the quality of the different forms of capacity development activities they had participated in. The same positive feedback was received from all 22 respondents in Afghanistan, which covered students, technical staff and leaders of the MoMP, AGS, KPU, Afghanite, and also the Iran Geological Survey. Across all surveyed forms of capacity development (study tours to Finland, fieldwork, courses, seminars and workshops, personalized technical training and board meetings) this diverse group of participants coherently provided positive to very positive feedback regarding teaching quality as well as content quality. These positive survey results are remarkable, especially, in comparison to other projects. When another evaluation team had interviewed 28 MoMP leadership and staff about another large capacity development effort conducted by USAID between 2012 and 2017, not a single interviewed person found those capacity development efforts to be even of acceptable quality (USAID 2017, p. 20).

There was also interesting feedback on how training effectiveness varied by location. GTK staff considered training effectiveness to have been higher in Iran than in Finland. While they considered immediate learning effects to be similar, the longer-term retention of what had been learned and, most importantly, the “translation” of this learning into the real-world AGS work context in Kabul was not considered to have worked very well. In contrast, AGS staff indicated that they found the training effectiveness in Finland superior because of the availability of equipment modern equipment with greater similarity to that of the AGS in Kabul. Both groups agreed that training in Afghanistan would have been very effective if the security situation would not have oftentimes ruled it out.

Figure 3. Development of individual competencies of the AGS geophysics team between 2012 and 2021.



Source: (GTK 2018a) for 2012 and 2018, self-evaluation by the AGS geophysics unit staff for 2021, team analysis.

Those trained reported that they had been able to apply what they had learned during routine field missions, currently only undertaken in the two provinces (Bamyan and Panjshir) considered safe. In interviews, participants said that they had acquired the technical capacity to undertake the field missions successfully and to conduct technical studies of mineral deposits with good quality. They also indicated that they would not have been able to do so without the practical and theoretical training the project had provided.

If the Geophysics team is expanded, particularly through recruitment of the newly trained Polytechnic male and female graduates, the existing technical knowledge and technical skills will be further utilized and replicated in the country at a wider level, particularly when the security situation may also improve.

Regarding systems, it should be noted that the initial focus of the project was to enable AGS staff to effectively utilize the existing equipment at AGS. Later in the project, additional equipment was procured and used in training. GTK staff involved in the project considered the existing instruments to be of good quality but at times too complicated or advanced. They felt that simpler instruments would have served AGS staff better for their learning. In phase 2 of the project, Afghanite's instruments were also used during trainings, and additional equipment was procured for KPU to be used for academic education (Figure 4). The project also procured equipment and supported the establishment of a petrophysics lab at AGS. Across the board, interviewed project stakeholders considered instruments and equipment procured during the project relevant and of good quality.

Instruments used during training in Finland as very good, but several remarked that mismatches or non-availability of specific instruments during trainings in Iran had hampered training effectiveness somewhat. 15 surveyed project participants from Afghan project partners that had been trained on AGS instruments rated the quality of that specific training "excellent" and "good".

While considerably more generic, the MFA-internal results-based reporting for Finland's development cooperation in Afghanistan reported the project to be "on track" as long as that indicator was reported (MFA country reports Afghanistan 2015-2020).

In summary, there is strong and coherent evidence that this ICI project resulted in very significant development of professional capacities, especially in the AGS geophysics team but also beyond.

2.7 Implementation capacity of the Finnish Agency

Finding 14 GTK implemented the project effectively and efficiently.

According to ICI rules and regulations, the Finnish agency – in this case GTK – bears the ultimate financial and operational responsibility for the ICI project, which is also reflected in project contracts and project reporting arrangements. The same is true for the non-ICI project components of the GTK/AGS cooperation.

The feedback received in interviews and in an online survey with Afghan and other project partners very coherently gave GTK high marks for their contributions to the project. For example, asked how efficiently GTK had carried out its project-related tasks, 71 per cent answered extremely efficiently, and 29 per cent "somewhat efficiently" (N=21).

In interviews with project stakeholders and representatives from other donor agencies active in Afghanistan, GTK was often characterized as a world-class expert organization that had achieved what other, larger but shorter, donor-funded interventions had failed to achieve. Several interviewees referred to a significantly larger (USD 45 million) intervention between 2012 and 2017 that largely failed in terms of its capacity development efforts at the MoMP because of training that was *regarded as irrelevant, of poor quality, too short-term, repetitive, and led by minimally to completely unqualified trainers by virtually all interviewed training recipients and their supervisors* (USAID 2017, p. 7).

In contrast, GTK's contributions were considered to have been successful because of the high relevance of the project, the motivation, sensitivity, patience, and flexibility of key GTK staff involved (see next finding) that led to a strong and effective partnership between GTK, AGS and the phase 2 project partners, the strong focus of the first phase of the project, and the long and continuous project. The large majority of survey respondents considered the following factors to have had the strongest positive influence on the project: exchange of quality technical knowledge and know-how, the fact that the project met the main technical needs of their agencies, the combination of theoretical and practical training, the technical know-how of the Finnish experts, and the establishment of institutional networks and relationships.

Suggestions for improvement and factors that had diminished project effectiveness were also voiced by some interviewees and survey respondents. These factors, however, were mostly beyond the control of GTK: insufficient funding for required activities, too short trainings, and absence of GTK experts during some of the trainings because of the security situation.

In interviews, some trainees mentioned that some trainings had been done on different instruments, or that some equipment had not been available. The evaluation team considers these external factors as well because there is strong and positive feedback on the availability of the right type of instruments during trainings held in Finland and about GTK's efforts to ensure the presence of such equipment also in other training locations.

Finding 15 GTK project staff demonstrated motivation, skill, and a profound willingness to learn and engage

GTK staff was generally considered by their Afghan counterparts, project partners and representatives of other international donor agencies to be among the world's premier experts in the mining sector. The positive feedback received from these project stakeholders and partners, however, extended beyond technical and scientific expertise.

GTK staff involved in project governance and management were consistently seen as having acted in a transparent, reliable, non-hierarchical, and pragmatically solution-oriented way throughout the project. GTK trainers also received good marks on their didactic adult teaching skills and overall training quality which is notable for staff of a technical expert agency like GTK. GTK project managers also demonstrated a keen willingness to learn about their Afghan counterparts and about how to improve the effectiveness of the project's capacity development activities. This was documented after the first project phase by a comprehensive completion report that reflected several lessons learned (Box 2).

Box 2. Reflections on success factors from the first GTK/AGS project phase 2013-17.

"Working closely together – including staying in the same accommodation during visits, meetings, and trainings – on a concrete joint project towards a common goal helped to establish a spirit of trust, camaraderie and a mutual commitment to learning and teaching."

"Conducting training in small groups of 1-2 trainers and 1-2 trainees was most effective in view of language difficulties, trainee specializations for different measurement and analysis techniques, and for addressing fundamental capacity gaps in a culturally sensitive way."

"Enabling trainees by giving them increasingly important educational roles and active involvement beyond being recipients of information."

"A two-day cultural training seminar organized by the MFA for GTK project staff that was held by a Fin with decades-long experience from Afghanistan was considered crucial for GTK staff gain sufficient initial understanding of Afghan (work) culture to avoid pitfalls or embarrassment, and to build mutually respectful and effective relationships."

"The project board played a crucial role. This was possible because it had high-level participation from the Afghan side. Without high-level support from the Afghan side, the project would not have succeeded. Additional senior-level stakeholders from the MoMP and AGS were aware and interested in the project because they had been invited to study tours or otherwise involved in project activities. The visit of the Minister of Mines to Finland also helped."

Source: (GTK 2018a, Annex 3) and interviews with GTK project managers.

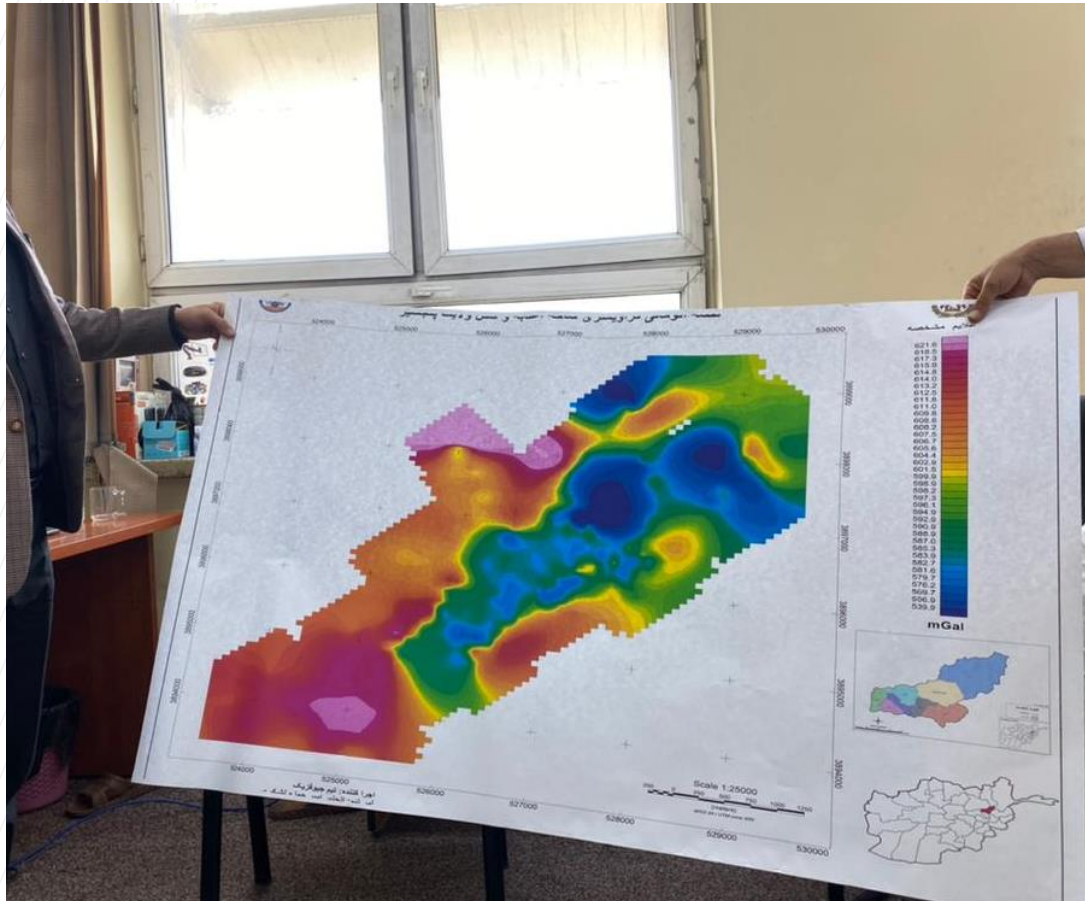
2.8 Potential impacts on the agency and beyond

Finding 16 Large-scale development impacts to which the GFK/AGS project contributed are theoretically possible and potentially significant, but unlikely to materialize now or in the near future.

As a project of Finland's development policy and cooperation, the GTK/AGS project has ultimately been motivated by its potential contribution to Finland's development goals, including the HRBA and Finland's four cross-cutting objectives.

The photo shows a gravimetric map of a mining site from Seyadara of Bamyan that was developed by the AGS geophysics team in 2019.

Figure 5. An example of AGS exploration work.



Source: Photo taken by the evaluation team during a visit to AGS in Kabul.

The overall rationale for the project was clear: a strengthened AGS would contribute to more and better information about Afghan mineral deposits (illustrated by Figure 5), which, in turn, would attract national, regional, and international sector players to invest in more detailed exploration and evaluation and, ultimately, attract investment by the extractive industries. An overall strengthened extractives sector in Afghanistan would then contribute to government income through licensing fees and taxes, to job creation and improved infrastructure, especially, in rural areas, and for subsequent benefits for many parts of the Afghan society. With the “right” laws and approaches used in the sector, negative environmental and social impacts through the mining operations could be minimized. The country’s National Development Strategy 2008 – 2013 described the effects of successfully attracting more investment in the mining sector were summarized in the country’s national development Strategy 2008 – 2013:

Employment and benefits from opportunities for skill improvement will be substantial. Most mining-related activity is expected to occur in isolated areas where unemployment is high. In addition, the large contribution that the mining sector will make to government revenues will increase the availability of social services, such as education and health services, which will contribute to increased security and stability (Islamic Republic of Afghanistan 2008).

Before the project started in 2013, both the Afghan government and the international donor community shared a rather optimistic outlook for the exploration and extractives sector in Afghanistan. While there is

a continued conviction that – compared to other strategies – developing this sector still represents one of the most promising pathways towards more security and better livelihoods for Afghanistan, the initial optimism has gone.

The feedback the evaluation team received from several interviewees about developments up to about 2016 is summarized well by a 2017 report on the subject (USAID 2017, p. 5):

The emergence of a stable, prosperous Afghanistan depends on the development of a strong Afghan economy that provides jobs for its workers and non-donor revenue to support government activities. Numerous analyses of Afghanistan's economic development options indicate that development of Afghanistan's extractives sector is the country's best, and perhaps only, option to achieve the degree of economic growth that supports the level of job creation needed to reduce economic inequality and, therefore, reduce support for insurgents.

[...] Unfortunately, the inability of Parliament to pass a workable mining law, and, to a much lesser degree, the decline in commodity prices, has effectively stalled the development of Afghanistan's extractives sector.

The same report also lamented factors that reduced the ability of the MoMP to operate efficiently and to implement long-term policies and strategies: frequent changes in MoMP leadership, a large number of acting directors, a high staff vacancy rate, weak information sharing among directorates, unstable leadership and policies, time-consuming bureaucratic procedures, and centralized authorization processes.

The evaluation team could confirm in interviews that the situation at the MoMP has not significantly changed over the last years. While a new mining law and accompanying mining regulations were adopted in 2018 and 2019 (Islamic Republic of Afghanistan 2019, 2019a), they have yet to be applied in practice as the latest licenses were still based on the previous laws (Islamic Republic of Afghanistan 2010, 2010a). In order to utilize existing capacity, other technical gaps in the mining exploration processes need to be closed. Particularly, as a regulating body, the ministry requires to be more capable in the management of mining projects to be able to plan, oversee and spend effectively and efficiently in exploration and encourage investment through transparent processes.

In interviews held with many people involved with the project in Afghanistan, a range of factors from input to outcomes were considered to stand in the way of tangible impacts associated with the project:

- Lack of budget for operations such as drilling and for maintenance of equipment;
- Inefficient organizational structure ("tashkil") and overall weak capacity of the MoMP;
- Shortage of young professionals;
- Lack of practical legal frameworks;
- Absence of foreign investors; and
- Overall weak infrastructure, changing political leadership, widespread corruption and nepotism, and the fragile security situation in the country.

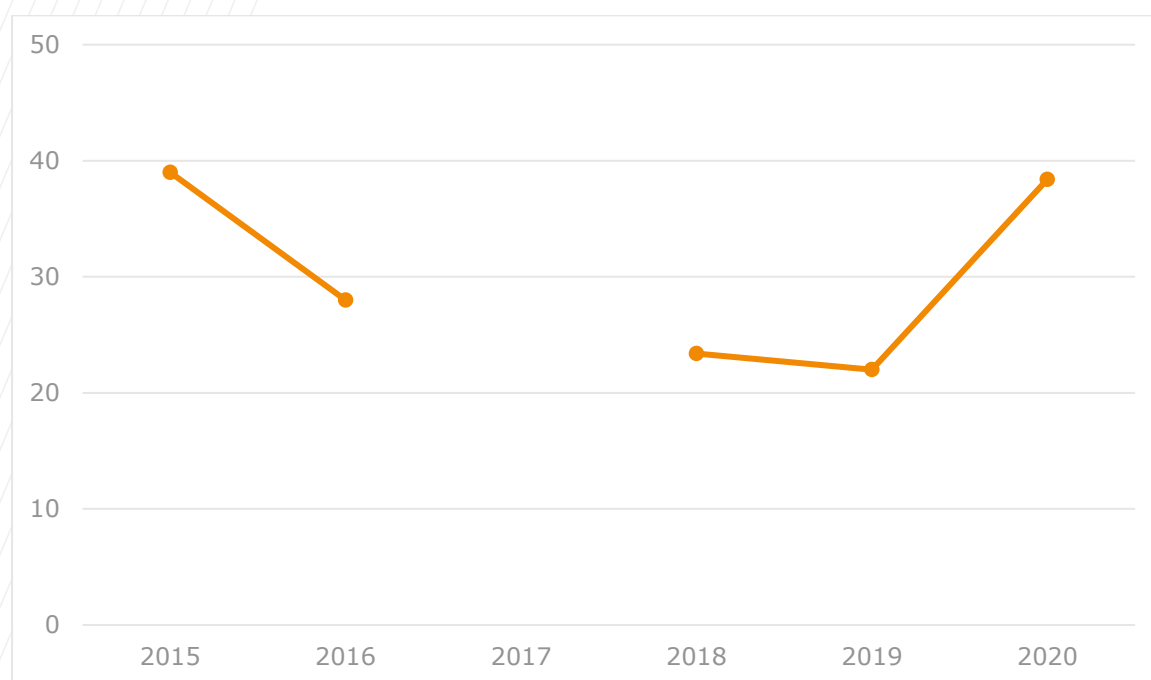
In addition, a schism has been forming between several large international donors and the Afghan government regarding the role of AGS in exploring the mineral resources of the country. While all parties agree that AGS needs to play a central role, the government prefers to largely conduct all exploration work inhouse by AGS, whereas Afghan donor community staff and the sector specialists interviewed for this evaluation considered that the only realistic option is to outsource most of the detailed exploration work to the private sector, in view of AGS capacities and how the sector is organized in other countries.

Overall, the evaluation team concluded that the extractives sector – at least the portion controlled by the Afghan government – has been stagnant and has not yet evolved along the optimistic trajectories envisaged in the early 2010s. This is also reflected in the annual government revenue that is reported annually by Finland's embassy in Kabul as part of its results-based reporting (Figure 6). In comparison,

the 2017-2021 Afghanistan National Peace and Development Framework (ADPDF) had still projected mining revenues between USD 260 and 400 million by 2020 (Islamic Republic of Afghanistan 2017).

Regarding future development in the sector, there is no clear indication that the situation at the MoMP and the country will improve. Rather, the uncertain outlook Afghanistan faces with the phasing out of the US from the country makes a quick and positive development in the sector increasingly unlikely. Unless the many inhibiting factors described above are at least partly addressed, the capacities developed by the project will remain mostly dormant in terms of their actual contribution to the development of the sector.

Figure 6. Reported Afghan Government's annual income from the extractive/mining sector 2015 – 2020 in USD million. The year 2017 was not reported.



Source: (MFA country reports Afghanistan 2015-2020)

2.9 Sustainability

Finding 17 The key target group in AGS is still intact but has shrunk in size and has an unclear future

In 2021, seven geophysicists of those trained by the project still work at AGS. The core target group for technical training had never been very large in size – the completion report of the project's first five years lists 22 people having received training on geophysical methods, and interviewees at AGS indicate that the core geophysics team was never larger than 10. Hence, some staff from other units in the AGS was trained as well once it became clear that projected additional recruitments in the geophysics team would not materialize. Of the core group, two retired, and three defected during trainings in Finland, and only two people were recruited. Hence, the sustainability of the project's capacity development efforts now hinges on only a small number of people. Regarding the future of that core group, two considerations were frequently shared with the evaluation team during interviews.

- On the one hand, there were worries about further erosion of staff. Reasons mentioned in the interview included the external risks discussed earlier in this report but also several other factors such as the recent departure of a widely respected Director-General of AGS as well as perceptions

of low wages, low positions in the hierarchy (“tashkil”) and of non-transparent and nepotistic human resources management.

- On the other hand, there also exist a number of stabilizing factors. The generational change at AGS is largely over, and the AGS staff targeted by the project are young professionals unlikely to retire in the near future. Because of the successful project, trained AGS staff enjoy a high level of recognition, and the core team of geophysicists is considered somewhat of a “success story” in the agency. Recently, AGS was promoted to a Deputy Ministry and, while its exact future role remains uncertain, it is likely to play some important role. Lastly, because of the high degree of specialization of these professionals, alternative employment options in Afghanistan are not abundant.

Considering these factors, the evaluation team is preoccupied that some AGS staff may be actively looking for job alternatives. This is especially true for AGS employees without a university master’s degree that constitutes the bulk of the targeted AGS workforce and remains outside of the ministry’s incentive schemes apart from a small project-related allowance during fieldwork.

Beyond the retention of trained staff, the uncertainty of the future role of AGS looms as a constant threat to sustainability because tasking even well-trained staff with unrealistic workload or with types of analysis they have not been trained for is unlikely to yield satisfactory results.

In contrast, sustainability on the level of working culture and institutional partnerships has a rather good outlook. The project has clearly left a mark and introduced a new way of working within in AGS but also regarding collaboration with KPU and Afghanite. Interviewees generally agreed that things were unlikely to ever go back to how things had before the project started and cited, as an example, that AGS staff formerly trained by the project had now begun to train KPU students, independent of the project.

Finding 18 Sustaining the achievements to date requires continued but limited “maintenance support”.

Trained AGS core staff felt capable and able to conduct future work without intense support from GTK, but all people interviewed in Afghanistan agreed that some level of ongoing support would be required. Regarding competencies, this included some form of continued accessibility and availability of GTK experts for on-demand advice in case of issues requiring more advanced expertise and occasional training on specific speciality issues. The evaluation team also considers some form of regular senior-level interaction between GTK, AGS and the other project partners necessary if good institutional and individual relationships are to be maintained.

Regarding instruments and systems, minor financial support for maintenance and software licenses is required. For example, the geolocation software procured by GTK during the project has a license fee of about USD 4,000 per year. AGS staff indicated that, in view of existing budgets, it would be unrealistic for the unit to ensure sustainability by simply buying the entire software package.

Looking forward, AGS staff indicated a need for modern cameras and positioning equipment, for some spare parts and accessories for existing instruments, for supporting and enabling the drilling section, and for several PCs and printers.

2.10 Cross-cutting objectives

Finding 19 Gender equality and the overall Human Rights-Based Approach (HRBA) of Finland’s development policy and cooperation have been observed to a reasonable degree during project planning and implementation

Following ICI guidance at the time, the project was planned with the HRBA and Finland’s cross-cutting objectives in mind. The project did not have dedicated objectives for these issues in its first phase, but the second phase included it as part of its outreach and awareness-raising outcomes. The understanding of the HRBA and Finland’s cross-cutting objectives by GTK and AGS project staff was basic and – during

project implementation – focused on increasing the number of female trainees and project staff. To the knowledge of the evaluation team, no socio-cultural analysis of the status of vulnerable groups defined gender, ethnicity, faith disability or other criteria was done to inform the project about the situation and related risks and opportunities at the MoMP, AGS and the other project partners. Only few people interviewed had a deeper understanding of the rights-based situation – beyond basic gender equality – in the MoMP, AGS, KPU and the mining labour market. That said, the evaluation team is doubtful that such deeper analysis and understanding would have made a significant difference in how the project – with its pronounced technical focus – was planned and implemented.

In practice, the project addressed gender equality through awareness-raising about female leadership and participation in the mining sector in Finland, through dedicated training elements covering social and environmental impacts and risks of mining activities, through including and targeting female staff and students, and through simply demonstrating Finnish equality values on-the-job, during project implementation. Interviewed trainees and students considered themselves aware of – and sensitive to – a range of cross-cutting objectives, including HRBA, gender equality, non-discrimination, low emission development and climate resilience. Participants also mentioned that it had been valuable to observe some of these concepts implemented in practice in Finland during visits.

Because of patriarchal traditions and the very male-dominated mining sector in Afghanistan, it can be considered a success that interview feedback coherently indicated that female trainers were accepted and respected and that female project partner staff were treated as equals to their male colleagues. Interviewed AGS and KPU staff reported that men and women worked side-by-side in offices, and female leadership of the petrophysics laboratory was considered a non-issue. Over the past 3 years, there have been 27 female graduates from the KPU Faculty of Geology and Mines, which may represent a useful talent pool for further recruitment of women into the AGS geophysics team, provided staff increase is possible at all.

The project adopted the common Afghan approach of restricting female professionals from fieldwork. This was considered adequate by most interviewees, including by professionals working in academic education in the country. Female participation was in no way impossible and, for example, the German GIZ had conducted an all-female field workshop in Iran for KPU students. Apart from single-day excursions, which were considered useful and possible, longer-term fieldwork was mostly considered to pose more risks than benefits for female participants. The evaluation team, which includes a (male) Afghan member, concurs with this view. The lack of fieldwork opportunities for women was somewhat compensated by targeting especially female employees with laboratory work. Two staff of the petrophysics team are women, a change mostly attributed to the GTK project. Among the ca. 50 people involved at KPU since 2019, there were 14 female and 20 male students, and two female (and 20 male) lecturers.

3 Conclusions

These project-specific conclusions are presented in the same order (but not the same numbering) as the general conclusions in the main report, and are explained in more detail there.

Conclusion 1. The GTK/AGS Afghanistan project addressed significant and relevant capacity needs of AGS, was implemented diligently, and was successful in developing AGS staff competencies.

Conclusion 2. The project showed strong ownership and carefully avoided duplication with efforts by other donors.

Conclusion 3. Phase 1 was implemented largely as planned, but phase 2 is negatively impacted by the Covid-19 pandemic and the deteriorating political and security situation in the country.

Conclusion 4. Because of factors beyond the control of the project, agency performance has not yet significantly improved, and the intended impacts associated with attracting fresh mining sector investments are not likely to materialize in the near future.

Conclusion 5. The HRBA and Finland's cross-cutting objectives were not mainstreamed in project preparation, and design and no significant contributions to gender equality or non-discrimination are expected in the project, apart from the possible benefits of some phase 2 stakeholder awareness-raising activities.

Conclusion 6. In spite of extended project preparation, phase 1 started without sufficient understanding of the level of staff competencies and the systems available at AGS.

Conclusion 7. Because of its exemplary approach to collaborative project governance and management, the project was able to establish strong and lasting partnerships and was able to adapt its approach to changing circumstances as needed.

Conclusion 8. Sustainability largely depends on a small group of successfully trained AGS geophysicists that is under acute threat of disbanding because of unpredictable job prospects and the deteriorating security situation in the country.

Conclusion 9. The final phase 1 report showed exemplary introspection and learning that has been applied in phase 2. Because phase 2 is ongoing and is/was not managed as an ICI project (and hence without support from the ICI consultant), such learning has not yet been documented.

4 Lessons learnt

These project-based lessons learnt are presented in the same order (but not the same numbering) as the general lessons learnt in the main report, and are explained in more detail there.

Lesson learnt 1: The project showed that ICI projects, if applied according to established good practices, represent a useful addition to the MFA's development cooperation instruments.

Lesson learnt 2: The project demonstrated the importance of intercultural awareness training and informed several success factors for building strong and trust-based partnerships.

Lesson learnt 3: The project showed that ICI projects must be designed, managed and implemented with enough flexibility to be able to adapt to evolving needs of the partner country agency. In addition, it showed that strong reliance on partner country agency strategies and plans might represent a risk when those plans are changed or simply not implemented.

5 Recommendations

These project-level recommendations are identical to Recommendations 9 and 10 in the main report and explained in more detail there.

Recommendation 1 (Recommendation 9 in the main report) In its remaining time until 2022, the GTK-led project in Afghanistan should focus on conserving and solidifying what has been achieved and explain how and why the original project plan has been adapted.

Recommendation 2 (Recommendation 10 in the main report) A proposal for a third project phase of the Afghanistan project after 2022 should critically examine what worked and what did not work in the second project phase and reflect the findings of the project evaluation.

Appendix 3 Project-level findings VTT India

1 Project Summary

Name of project	VTT/CPCB India Capacity building for emission measurement in India
Timing	11/2011 – 08/2014
Budget	499,164 Euro
Finnish agency	Technical Research Centre of Finland Ltd (VTT) https://www.vttresearch.com/en/about-us/what-vtt was established in 1942 and is one of Europe's leading research institutions, owned by the Finnish state. VTT's task is to advance the utilisation and commercialisation of research and technology in commerce and society. Through scientific and technological means, the institution turns large global challenges into sustainable growth for businesses and society. VTT brings together people, business, science and technology to solve the biggest challenges, which could create sustainable growth, jobs and wellbeing. Some figures: Total current revenue 244 Million EUR; 2,129 employees; 27% of Finnish innovations are completely or in part results of VTT's expertise; 45% of VTT's turnover comes from abroad. VTT presents itself as visionary research, development and innovation partner that drives sustainable growth and tackles the biggest global challenges of our time, turning them into opportunities for business growth. That includes groundbreaking research and science-based results, going beyond the obvious to help society and companies grow through technological innovation.
Partner agency country	Central Pollution Control Board (CPCB) https://cpcb.nic.in is a statutory and advisory body to the Government of India under the Ministry of Environment and Forests, constituted in 1974 with the purpose of pollution prevention and control in India. CPCB, along with the SPCBs, are responsible for creating air quality standards, monitoring and providing technical advice to Ministry. Objectives of the CPCB are: <ul style="list-style-type: none"> • To promote cleanliness of streams and wells in different areas of the states by prevention, control and abatement of water pollution • To improve the quality of air, and to prevent, control or abate air pollution in the country • To organise training programme for the personnel
Other project partners	State Pollution Control Boards (SPCB) have a similar role as CPCB but at the state level, to regulate activities that can harm the environment. India has 28 states.
Project objective and purpose	The overall objective of the project was to improve the levels of emission monitoring in India. The project purpose was to improve the competencies of emission measurements at CPCB and SPCB towards the international level.
Principal project activities	<ol style="list-style-type: none"> 1. Improve institutional capacities to support effective emission measurements: <ul style="list-style-type: none"> • National project kick-off workshop, Delhi • Support the preparation of a Handbook for emission measurements in India (Revision of Indian Emission Regulations - part 3) • Train the staff of CPCB • Workshop on quality assurance of emission measurements • Prepare quality assurance program for emission measurements • Prepare a priority list for investments for emission measurements • National workshop to promote the final results of the project 2. Improve capacities in odour measurement technologies: <ul style="list-style-type: none"> • Review the existing Guidelines on Odour Pollution produced by CPCB • Study tour to Finland, sharing Finnish experience on odour determination methodology and techniques • Expert visit to Finland, focus on odour determination methodology and techniques • Workshop for different odour determination methods

	<p>3. Improve capacities in the measurement of fugitive emissions, especially VOCs, from the organic chemical industry:</p> <ul style="list-style-type: none"> • Review the existing measurement protocols on fugitive and VOC- emissions in India • Workshop on VOC and fugitive emission measurements • Study visit to Finland (content defined by the needs identified during previous workshops) <p>4. Improve capacities in emission measurements:</p> <ul style="list-style-type: none"> • Review the existing monitoring protocols, methods and legislation related to emission measurements in India • Workshop on emission measurements • Study visit to Finland (contents defined by the needs identified during previous workshop) • Expert visit to Finland, focus on emission measurement methodology.
Impact logic	The project document, reports and annexes do not mention how the project intends to contribute to development impacts, or anything about the causally links to contribute to such impacts. The project is a series of activities that would contribute to strengthening the technical capacity of CPCB and SPCB, to raise the quality of their services to the government, states and general population.
Project genesis	VTT had connections with India since approx. 2008. The Government had agreed with the World Bank that India had to show more concrete results in emission reductions. VTT discovered the weak institutional capacity during a mission to India for another customer. The project was conceptualised as part of a broader partnership between Finland and India. The Minister of Environment and Forests (MoEF) and other senior Indian officials undertook early visits to Finland that were important to cement the bilateral relationship and identify broad capacity building areas. Subsequently, MoEF identified CPCB as the main project beneficiary, and the project was designed in partnership between the CPCB and VTT and support from the ICI Consultant FCG, but the design process took 2-3 years. <i>Note that MOEF is now the Ministry of Environment, Forests and Climate Change (MoEFCC).</i>
Other relevant projects (Finnish or international)	This ICI project was stand-alone. CPCB had received support from CIDA (Canada) up to 2006, and the CPCB lab received support from GTZ (Germany) in 2008.

2 Findings

2.1 Relevance vis-a-vis needs

Finding 1 The project captured the capacity building needs perceived by the CPCB leadership but was not based on any approved institutional capacity building strategy

The main focus of the project was on responding to the CPCB capacity building needs, building the institution's technical expertise, and providing exposure to SPCB officials through visits to Finland and workshops in India to gain first-hand knowledge of how things could work in practice. All Indian interviewees strongly felt that the project covered the capacity development priority areas very well. However, they also commented that the implementation time for the project was too short given the extent of the challenges, and they were not able to cover all issues in depth.

All those interviewed felt that the project objectives were strongly aligned with and met the broader capacity needs of the CPCB. The main intention was to augment existing institutional expertise and gain knowledge in the new area of odour monitoring. None of the CPCB staff could recall the existence of a capacity development strategy or plan for the Central Pollution Control Board. Instead, all noted that the identification of capacity needs emerged from the vision of the leadership at the line Ministry of

Environment and Forests (MoEF)¹⁰ and the CPCB, and opportunities arising from visits by senior Indian leaders to Finland. It is not uncommon in India that a leader decides what is relevant based on many factors (such as personal knowledge, networks, own views, political priorities). CPCB also has an internal training unit that plans a few training programmes at the start of each financial year. In that sense, it is likely that the ICI project was linked to wider capacity building intentions and implicit capacity needs.

The CPCB leadership at that time had expressed the need to train more people on emissions and odour monitoring, as these were emerging areas of concern, and there was a lack of standard norms in India. This was depending on personal views and not on the part of any institutional strategy; however, these views reflected the context of high air pollution that got much publicity as a national health problem. CPCB had also established Air Labs across various cities in India to analyse air samples of source monitoring. However, the capacity for odour measurement was completely lacking.

Box 1. Summary of the project's capacity building areas

Capacity for effective emission measurements

Quality assurance programmes for the national level (CPCB) and state-level SPCB. Revision of the Indian emission regulations part 3, including gaseous emissions such as volatile organic compounds (VOC)¹¹, and particulate emissions. Dissemination of information to stakeholders.

Capacity for odour¹² measurements

Techniques and odour nuisance¹³ demonstrated to CPCB and SPCB, to improve their capacities for monitoring and control of odour from different sources.

Capacity for fugitive emissions¹⁴ measurements, especially VOCs, from the organic chemical industry

Sharing of know-how on adoptable techniques for monitoring and measurement of point-source¹⁵ fugitive emissions.

Capacity for emission measurements

Sharing of know-how on adoptable techniques for monitoring and measurement of point-source stack emissions¹⁶, with focus on particle emissions.

Finding 2 Support on odour measurement became the project priority

Odour is a growing problem, especially in urban India, which faces several challenges, including multiple sources of odour such as landfill sites and open drains. CPCB had issued guidelines on odour (revised during the project), but it is a very complex area and the institution did not have any previous experience on how to measure odour. During the project, CPCB issued a report on 'Odour Monitoring and Management in Urban Management of Solid Waste Landfill sites', which looked at a case study in a landfill area and measured the intensity of odour. It also made recommendations for municipal corporations to contain and minimise odour from landfills.

The main intention of the CPCB leadership was to augment the institution's capacity on emissions from both specific sources and fugitive emissions, and develop new capacity on odour measurement. The project formed part of the CPCB leadership's broader vision for developing the institutional capacity on methods as well as standards for local monitoring and surveillance. During project implementation, the issue of odour became the most important and other project issues were given less priority.

According to one senior CPCB official, the opportunity for the institution to work on odour measurement was a significant trigger for engaging in the capacity development project. The rationale given was that

¹⁰ India's Ministry of Environment and Forests (MoEF) was the nodal ministry, in 2014 renamed Ministry of Environment, Forests and Climate Change (MoEFCC) in 2014. To ensure consistency with the original project documentation, this evaluation continues to refer to MoEF instead of MoEFCC.

¹¹ Volatile organic compounds (VOC) are organic chemical compounds whose composition makes it possible for them to evaporate under normal indoor atmospheric conditions of temperature and pressure³.

¹² Odour refers to the aggregate effect of a mixture of gases on the sense of smell. For animal effluent and manure, it is the composite of over 170 trace compounds, including ammonia (NH₃), amines, hydrogen sulphide (H₂S), volatile fatty acids, mercaptans, alcohols, aldehydes, esters and carbonyls (Sweeten et al. 2006).

¹³ A statutory odour nuisance is something that is so offensive and prolonged that it significantly interferes with the enjoyment and use of the affected property.

¹⁴ Fugitive emissions are leaks and other irregular releases of gases or vapors

¹⁵ A point source is a single identifiable localised source of something

¹⁶ Stack emissions are those gases and solids that come out of the smoke stack after the incineration process (e.g. from industrial chimneys).

CPCB was getting public and parliamentary questions that they could not address due to lack of data, infrastructure, and skilled workforce. CPCB had already made inroads into the source and fugitive emissions, for which they also needed improved capacity. Still, they completely lacked experience in odour measurement, which was a new and growing area of interest. Therefore, the focus of CPCB was to gain a basic understanding, train staff, and have some supporting infrastructure to proceed with this area.

The self-perceived capacity development needs expressed during interviews also included building capacity on research, development and technology for pollution management (e.g., wastewater treatment, municipal sewage treatment) that could be brought from Finland and adapted to the local conditions in India. This was, however, initially expected to be during more than one project phase, and the topic was not included in this ICI project.

Finding 3 The olfactometer prototype was not replicated

The project gave some minor support in instrumentation, including producing an olfactometer that was added towards the end. From the Project Board minutes, the evaluators noted that "*CPCB can manufacture olfactometers only for their own use and for the use of SPCBs. They are not allowed to sell these olfactometers on a commercial basis (due to VTT IPR, patent number FI20145725)*". However, a VTT official did not know about any replication done in India based on the prototype, and the CPCB interviewees were also not aware of such an opportunity. One official noted that CPCB has not procured any odour monitoring equipment and that the development of instruments and equipment are not in the ambit of the mandate of the CPCB.

Based on the available documents and interviews, it seems like the construction of the olfactometer was not relevant for capacity building of CPCB, and rather an after-thought. It was not included as a project activity in the original design, and as mentioned, it is not CPCB's institutional role to manufacture equipment. VTT comments that CPCB asked several times during the implementation about an olfactometer, and the idea came up again towards the end of the project when there was some budget money left, and VTT asked MFA for permission to use it that way. Since already nearly seven years have now passed since the project ended, it seems like the funding of the olfactometer has not led to further results.

2.2 Relevance vis-a-vis development goals

Finding 4 The project was aligned to the national environmental acts

India's Air (Prevention and Control of Pollution) Act 1981 and its Environment (Protection) Act 1986 established the regulatory framework, which is mainly focused on prevention and control of air pollutants.

Air quality monitoring is a key function of the CPCB, which, as the apex body in India, is responsible for providing technical services to the MoEF as well as to several other ministries. CPCB was already undertaking some work on fugitive and source emissions before the project started, but the senior leadership recognised that technical capacity needed to be increased. At the same time, the lack of capacity for the abatement and control of odour was recognised as an important emerging issue in urbanisation and industrialisation. This was a critical factor in influencing the focus and design of the project.

The project is indirectly related to Finland's development goals of climate change mitigation because the first step in low-carbon development (an ICI cross-cutting objective) is to understand and measure emissions. However, as the project developed with the most emphasis on odour, the evaluation team does not see a clear link to emission reductions. This could, of course, have been different if the project had a second phase (as it was expected) with monitoring and control of GHG emissions based on the training, regulations and guidelines that were developed during the project.

2.3 Coherence and harmonisation

Finding 5 The project was stand-alone and had no duplication of efforts, but also no synergies with other interventions

It is interesting to notice the low external project support for CPCB. The institution's executives interviewed commented that they had experienced some previous donor-funded projects (e.g. from CIDA, Canada until 2006 and GTZ, Germany in 2008), but there were no such projects in parallel with the ICI project and logically no duplication of efforts.

There was no formal CPCB capacity-building strategy, and logically no coherence with such strategy. The project had its own governance and management structures which worked well. Finnish and Indian agency experts were represented on the steering committee, which met every six months and monitored progress, looked at emerging challenges and any required orientation of project activities.

All interviewees said that the Finnish ICI project was stand-alone. None of those interviewed was able to offer any examples of missed opportunities for synergies or collaboration. They also consider that the project was focused on its unique objectives, which added value and did not duplicate with any other efforts. The evaluators think that it still could have benefitted from collaboration, synergies or lessons learned with other projects, such as the FMI collaboration with the Energy and Resources Institute (TERI) since 2013 and the UNIDO-GEF Cleantech Programme for Small- and Medium Enterprises in India from January 2013. Since the ICI project was focused on training and capacity building, some courses, workshops and seminars could have been organised in collaboration with these projects.

2.4 Participation, ownership, partnership

Finding 6 There were strong national partnership and agency teamwork

Those interviewed noted that the project was conceptualised as part of a broader partnership between Finland and India. The Minister of Environment and Forests and other senior Indian officials undertook early visits to Finland, which were important in cementing the bilateral relationship and identifying broad capacity building areas. Subsequently, the MoEF identified CPCB as the main project beneficiary, and the project was designed in partnership with the CPCB and VTT. One interviewee commented that CPCB was associated with VTT in the technical aspects. MoEF was also associated with overall Project design. All the interviewees noted that this was a collaborative partnership and that VTT were very responsive to the CPCB's needs.

The project fell within the broader bilateral agreement between the Governments of India and Finland, where it was agreed in the project document to establish a Project Board with representation from Finnish experts and Indian officials. Interviewees noted that this worked well and collaboratively.

The leadership of the CPCB were completely committed to this project as it fully met their capacity needs. There was strong interest during project implementation, but lack of follow-up after the project ended could indicate that the ownership was not good enough. Agency staff were incentivised through their participation in project training and visits to Finland, giving them first-hand exposure to advanced scientific knowledge and different ways of working. The CPCB also encouraged the participation of State Pollution Control Boards (SPCB) from across India in regional workshops and through the training programmes in Finland. The project intended to give state-level officials exposure and encourage them to take up these issues in their respective states. All interviewees spoke very highly of the relationship and expertise of the Finnish VTT team. Experts from both countries highlighted the trust that had been established.

"CPCB and VTT shared a good relationship. We appreciated the high quality of knowledge sharing and technical information exchange. Many of the VTT team mingled with the Indian colleagues and maintained a cordial relationship. This brought the feeling of a team – the nature of the group changed, there was a feeling of openness which encouraged good team working". CPCB Executive.

2.5 Implementation effectiveness

Finding 7 The project had a good level of effectiveness, but there was a need for adaptive management

Project reports and interviews reflect that project activities were implemented as planned, only with a few delays. The main achievements were related to three training visits by CPCB and SPCB officials to Finland; visits by VTT experts from Finland to train officials at regional workshops in India, and sharing of new knowledge, expertise and technology. These results are captured in Table 1 below. Project board members also met regularly in Finland and India to take stock of progress and plan the future course of action.

Table 1. Project results

Expected Result	Expected outputs	Progress
1. Improved institutional capacities to support effective emission measurements	1.1 National workshop (project kick-off)	Completed
	1.2 Handbook for emission measurements in India (revision of Indian emission regulations part 3)	Finalised after project
	1.3 CPCB staff trained	Completed
	1.4 Workshop on quality assurance of emission measurements with dissemination of information from expert visit to Finland	Completed
	1.5 Quality assurance program for emission measurements prepared	Completed
	1.6 Priority list for investments in emission measurements	Completed
	1.7 National workshop to CPCB, SPCB and other stakeholders to promote final project results	Completed
2. Improved capacities in odour measurement technologies	2.1 Existing CPCB guidelines on odour pollution reviewed	Completed
	2.2 Study tour to Finland on odour determination methodology and techniques	Completed
	2.3 Expert visit to Finland on odour determination methodology and techniques	Completed
	2.4 Workshop on different odour determination methods	Completed
3. Improved capacities of fugitive emissions, especially VOCs, from Organic chemical industry	3.1 Review of existing measurement protocols on fugitive and VOC emissions in India	Completed
	3.2 Workshop on VOC and fugitive emission measurements	Completed
	3.3 Study visit to Finland (content defined by needs identified in previous workshops)	Completed
4. Improved capacities in stack emission measurements	4.1 Monitoring protocols, methods and legislation related to emission measurements reviewed	Completed
	4.2 Workshop on emission measurements	Completed
	4.3 Study visit to Finland	Completed
	4.4 Expert visit to Finland, focus on emission measurement methodology	Completed

The main project results can be summarised as follows:

- **Result 1:** Standard Operating Procedure (SOP) for emission measurements was revised, and Q/A added on measurement of gases, particulates and fugitive emissions; Priority list for investments regarding emission measurement equipment was prepared; Uncertainty calculations were prepared by VTT and presented to CPCB; Final results were disseminated to all relevant stakeholders.

- **Result 2:** Existing guidelines on odour assessment (CPCB 2008) were revised; a field case study for odour assessment was carried out; Olfactometer was custom-made in Finland and transported to India.
- **Result 3:** VTT prepared SOP for determination of fugitive emissions; One case study was performed in Kolkata where VOC emissions from a paint factory were determined; 13 Indian staff members of CPCB and SPCB were trained in Finland on European practices; 50 scientists participated in workshops; 3 PID analysers with calibration sets were procured; Method document and SOP for fugitive monitoring was prepared.
- **Results 4:** Workshops and study visits on quality assurance and quality control on stack emission measurements related to sampling; One case study was performed in Chennai on the determination of particulate and gaseous emissions.

Two examples of **adaptive management changes** were highlighted from the interviews and deeply appreciated by CPCB, as follows:

1. **Instrumentation:** Due to the lack of Indian suppliers for odour measurement instruments, VTT used an innovative approach to get around this issue. VTT assembled one olfactometer in Finland, customised these to suit CPCB needs and sent these to India. Although this was not the most optimal solution, this was an important step in building CPCB capacity in a new area of odour measurement.
2. **Standards:** The Board decided to use unspent funds (towards the end of the project) to procure European Nation (EN) standards.¹⁷ CPCB received soft copies of publications (EN documents) with a disclaimer that the document should only be used by CPCB. These documents are costly and would otherwise have been difficult for an agency such as CPCB to procure through its routine work and budgets. CPCB greatly appreciated these methodologies and standards as they were relevant to future planning and certification, as well as for the online monitoring system.

Finding 8 The implementation complied with most of the ICI best practices for capacity development

The project was implemented in line with most of the ICI best practices (MFA 2012). There was a good understanding of the CPCB's capacity needs as reflected in the learning methods used (1); the leadership of CPCB and the central MoEF remained committed to this programme through its implementation (2); all interviewees spoke highly of mutual respect (3); VTT staff continued to stay in touch virtually with CPCB staff between face-to-face interactions (6), and brought knowledge and understanding of the local context so that training was adapted to local stakeholder needs (7). Furthermore, training engaged senior leadership as well as mid-level scientists, engineers, and management in CPCB/SPCBs (8). At the same time, the first-hand experience through exposure/orientation visits to Finland helped to motivate and incentivise participants (11).

Two interviewees felt that the overall capacity building programme was of too short duration. In particular, they felt that the individual training events were too short because the personnel were only able to get a broad orientation rather than in-depth knowledge. The beneficiaries of training also felt that the overall programme duration was too short. One senior interviewee noted that, within budget limitations, the intention was to extend the opportunity widely to central and state-level agencies so that people could get some first-hand exposure to how Finland was tackling these issues. Consequently, it was not possible to cover all staff, and the organisational development had to be planned accordingly.

¹⁷ The European Union (EU) has developed an extensive body of legislation which establishes standards and objectives for a number of pollutants in air.

2.6 Strengthened competencies and systems

Finding 9 New knowledge was incorporated in the daily work in India

In general, participants were able to gain new knowledge from the mix of training, workshops, and visits to Finland to experience more advanced systems first-hand. The participants valued access to the instrumentation – including the Volatile Organic Compounds (VOC) monitors, and olfactometer. The ICI project did, however, not finance the VOC instruments, only the protocols and training on their use.

The stakeholders noted that training on source emissions and exposure from visits to VTT helped them modify their protocols and learn new technical tips that they were able to incorporate into their daily work. One example offered was that participants became aware of the use of psychometric charts for humidity monitoring that could reduce error / improve accuracy and reduce lengthy processes, thus bringing efficiency gains – which are seen as essential for CPCB's role as a regulator. Participants subsequently adopted this in their methodology for source monitoring.

On fugitive emission, the participants felt that there was limited follow up after the technical discussions and workshop and recognised that more work was needed in this area. Participants also felt that work on odour management and measurement was still at a nascent stage. Odour is not included in the regulatory ambit in India as the problem is unique with multiple challenges that would make it difficult to enforce. As such, the focus is mainly on the control of VoCs. The participants felt that they benefitted from awareness, training, and instrumentation – but that their inputs would remain limited in the absence of regulation. Those individuals who received training through the study trips to Finland gained first-hand understanding and exposure and were able to bring improved knowledge back to India.

"Finland helped us develop confidence in the new arena of odour measurement – which was the objective". CPCB interviewee.

2.7 Implementation capacity of Finnish Agency

Finding 10 The teamwork with CPCB was challenging but overall strength for VTT project implementation

VTT seems to have been technically equipped and supported to implement the ICI project efficiently, but also to have lacked some experience on how to implement projects in the Indian context, but this gradually improved through the strengthening of the agency partnership. There were challenges with visas because VTT did not receive invitations from CPCB as promised, and had to contact the Finnish Embassy for help. It was also challenging to get the list of Indian participants for study tours approved by CPCB on time.

VTT follows transparent processes in money transactions, and typically, cash is not delivered to individuals, but all transactions are made through the bank. However, according to ICI rules, daily allowances shall be paid to partners when they visit Finland. This was first challenging but was resolved with support from the VTT financial department and a lawyer. VTT also made internal guidance for this¹⁸.

The project design was, according to the evaluation team's assessment, not very strong, which is reflecting that VTT is not an international development agency. The ICI consultant FCG could have given more support to VTT in preparation of the project, and especially a good results framework with concrete baselines and targets. The project document was also lacking a risk analysis. These items could have facilitated a stronger project implementation performance, as well as improved monitoring and evaluation.

The CPCB core staff, however, gave a very positive endorsement of VTT's expertise and capacity, personnel strength, and technical knowledge. Indian counterparts also emphasised that all Finnish personnel were

¹⁸ VTT: IKI-projektin matkakuluerittely

strongly aware of the cultural sensitivities and made efforts to integrate into the team. Even when asked specifically about any weak aspects, none of the interviewees could think of anything.

"The team spirit between the teams really helped. Although the working culture is different, the bonding between the two groups was really strong" - CPCB Executive.

2.8 Potential impacts on the agency and beyond

Finding 11 Improvement on individual activities but lack of long-term institutional impact

The project document and final report *do not consider the issue of the impact of the project*. As mentioned earlier, the project is a series of activities that would strengthen the national partner agency. The impact would therefore be a reflection of to what extent CPCB is using the knowledge and tools provided. The tools were mostly "soft", such as improved manuals and operating procedures, combined with several study trips to learn about how it can function in practice. Without an in-depth local study, the current evaluation is mostly based on the interviewees' information about whether the improved skills and tools were being used.

The participants in training expressed that introduction to odour measurement was very useful and that the training was instrumental in helping them to move forward with this in their work. All interviewees clearly saw the mandate of the CPCB as an apex statutory body whose role was to provide technical services. As such, they thought that strengthened agency performance could lead to better quality information and technical services, based on which government agencies could take more effective action in fulfilling their obligations to provide better services for the citizens. None of those interviewed suggested any external inhibiting factors.

One interviewee pointed out that while a single training program for a person can provide them with a short exposure to new knowledge, this is unlikely to bring significant results in terms of long-term institutional capacity improvements. More in-depth training sessions are required to develop deeper technical capacity and to enable staff to overcome the range of capacity and knowledge gaps. Another interviewee felt that, given limited resources, it was not possible for all staff to participate in training and study visits. Hence the idea was to build awareness and for the trainees to act as nodal trainers and help to diffuse skills within the agency. This was initiated as a project activity. The new tools were maintained within CPCB after the project ended, but the skills of operators are variable and has, in general, gone down.

Finding 12 Cross-cutting objectives were not highly prioritised

The evaluation team considers that the project design does not mainstream human rights issues, and only has an indirect effect on human rights, e.g. through improved air quality. From interviews in India, the importance of air pollution and odour measurement was seen as important in terms of India's economic growth. The rapid pace of urbanisation has significant impacts on air pollution and waste management. It impacts public health if not managed and monitored appropriately.

- **Gender equality:** The main gender equality consideration was the inclusion of female participants from CPCB and SPCBs in the training events. The project aimed for having at least 30% female staff trained, which CPCB understood as a clause imposed by the donor. One perceived constraint to meet this target was the lack of sufficient women scientists within CPCB/SPCBs. The progress reports inform that the target was not met but did not present any figure, and since the project was finalised seven years ago, it is difficult to obtain the data at this moment. VTT highlights that the project coordinator on behalf of CPCB was a woman, and one of the two participants in the one-month expert visit in Finland was also female. Even though gender equality was emphasised strongly in the Project Board meeting in September 2012 and the 3rd meeting held in Vadodara in February 2013, this did not seem to have given a major result.
- **Non-discrimination,** including the focus on persons with disabilities: Article 14 of the India Constitution says, *"Equality before law. -The State shall not deny to any person equality before*

the law or the equal protection of the laws within the territory of India. The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth or any of them". Given the technical focus of the project to build capacity on the source and fugitive emissions and on odour measurement, this cross-cutting objective was not directly related. No issues of discrimination have been observed or commented on, and the interviewees consider that as the programme was extended to state-level agencies, this was inclusive and non-discriminatory. The years that have passed and the small number of interviewees limit the possibility of drawing any conclusions.

- **Climate resilience:** this was not seen as directly relevant to the main focus of the project. Hence, there is no plausible contribution.
- **Low emission development:** The line Ministry of the CPCB was the Ministry of Environment and Forests (now Ministry of Environment, Forests and Climate Change). The interviewees consider that the project contributed to measuring and understanding climate change emissions. This has the potential to mitigate climate change and facilitate the transition to low emission development, reducing greenhouse gas emissions and enhancing sinks of greenhouse gases while considering wider development impacts.

2.9 Sustainability

Finding 13 While the project improved the skills of individuals, the overall impact on institutional capacity was limited

Most of those trained are still working in the respective agencies at the central and state levels. However, some key personnel have retired since the project ended seven years ago. These include the Chairman, the Member Secretary, and the Project Coordinator.

The interviewees explained that the context of the Indian work environment is an important consideration to the overall sustainability. The nature of the CPCB organisation is that staff are required to multi-task across different technical streams and work areas. While staff may have benefitted from highly specialised training under the project, they are still required to multi-task across several activities (rather than a model of being dedicated to one section). Hence, although staff may still be in the CPCB, they may now be working on other areas/fields within the same organisation. It is not clear to what extent the skills and knowledge acquired under the project were transferred to new staff after the project ended.

Another limitation to the overall sustainability is staff changes. The main reasons for any staff changes – as cited during interviews – are that staff have either retired or have been moved to other parts of the CPCB. However, several members of staff continue to serve in the same departments at the central and state levels. While interviewees explained the rationale for staff changes, the evaluators were unable to get hold of the hard data for two reasons: (i) the project concluded a long time ago, and interviewees relied mainly on their memory; and (ii) due to Covid-19, staff members are working remotely with no access to files in their office.

Diffusion of knowledge, however, also happens between staff working in the same team. One staff member noted that he had learned on the job and through learning-by-doing in this project. As such, he expressed to have progressed in his career.

The work of the CPCB continues to be governed by the Act that requires the Board to generate and disseminate air quality data. The project training focused on areas of the core business of CPCB – namely, aimed at augmenting its work on the source and fugitive emissions and in introducing new work on odour. Additionally, CPCB has Air Labs across several cities in India, VTT has trained personnel in the use of olfactometers, and the teams are undertaking good analytical work on air quality. All Indian interviewees, therefore, noted the likelihood of sustained performance. However, they also noted that work on odour remained at a nascent stage. Unlike other countries, India is yet to develop a policy and regulation as the field is complex.

Enabling factors for sustainability were:

- the identification and inclusion of staff who worked on a regular basis with the project
- positive collaboration and team spirit between both teams, and bonding between the two groups despite cultural differences.
- selection of new field (odour) generated enthusiasm on both sides
- quality of Finnish faculty and their subject expertise

Inhibiting factors for sustainability were:

- project duration, considered to be too short
- funding constraints beyond the project to enable CPCB to sustain and take forward new technical work
- change in top leadership and management after the project. This reduced the long-term impact and continuation of the capacity building in the areas that were covered by the project.

The project was a drop in the ocean considering the multiple capacity building needs, size and annual budget of CPCB. The project was expected to have a second phase to build on the achievements of the first phase. However, after VTT was turned into a company in 2015, it received the message from MFA that it was no longer eligible for ICI projects.

The potential sustainability of the project should also be seen in the light of India's national policy, especially on air pollution and climate change. The project was implemented between 2011 and 2014 and was in its last year when India had a new government from mid-2014. An article references a study in the American Economic Review commented at that time on India's priority for economic development and not for controlling pollution: <https://www.unep.org/resources/policy-and-strategy/air-quality-policies-india>. Five years later, and with climate change higher on the international political agenda, India introduced the 2019 National Clean Air Programme – a national-level strategy for reducing the levels of air pollution at both the regional and urban scales, with targets for the reduction of 20 to 30% of PM2.5 and PM10 concentration by 2024.

2.10 Effects of the Covid-19 pandemic

Finding 14 Covid-19 has severely affected CPCB and the present evaluation in India

Since the project closed seven years ago, the Covid-19 pandemic would not have any effect on the direct project result. It could, however, theoretically influence the sustainability of outcomes. During the period when the interviews in India were carried out, the country had the world's highest level of new Covid-19 cases. According to official Indian statistics, on June 15th, there were so far 29.6 million cases and 380 thousand dead <https://www.covid19india.org>. The levels have been so high that they have severely affected the daily work of CPCB and most other agencies in India, where people are working from home or not working at all because they are in quarantine or attending the sick and dying.

The level of new daily cases reached its peak on the national level on May 8, with 403,405, and has since then gone steadily down. The Covid-19 pandemic has greatly affected the present evaluation in India, eliminating the option of direct interviews and even leading to difficulties of achieving appointments for phone- or Internet interviews. Securing clearances for interviews in India takes time, which was particularly difficult as India peaked its second wave of COVID during the evaluation. Both the experts that visited Finland for one month in the framework of this project declined to be interviewed. After several attempts, they informed not to have the required clearances to speak with the evaluation team. India also has the lowest number of people responding to the evaluation's online survey.

2.11 Other observations

Finding 15 Proposals for training

Two Indian interviews noted that they found new potential areas of interest during their visits to Finland – particularly vehicular emissions monitoring and emissions measurement systems in which they thought

VTT had good expertise. They would have liked to have included this in a future area of cooperation between Finland and India. Still, they found no mechanisms to take this project forward, and since VTT is no longer eligible for ICI projects, it makes it even more difficult.

On training, one suggestion came up – whether Finland could provide some kind of exam or certification to support career progression. They felt that this would help as an incentive for people to undergo training. VTT, however, gave a certificate to the participants in study visits to Finland.

3 Conclusions

Conclusion 1 Low relevance to institutional strategies reduced project impact

Finding 1 shows that the project emerged based on individual politicians and executives' ideas and was not prioritised in formal CPCB capacity-building strategies. Even though there was great enthusiasm around the project - and especially for the topic of odour monitoring - during implementation, the lack of institutionalised and policy priority for this issue reduced the impact and follow-up once the project had been finalised.

Conclusion 2 The olfactometer prototype was not replicated due to low ownership

Finding 3 explains the production of the olfactometer prototype as an "after-thought" and available budget funds towards the end of the project. No replication was done in India, which could indicate low ownership, and also reflects that the development and production of instruments and equipment is not in the mandate of the CPCB. Since already nearly seven years have now passed since the project ended, it seems like the funding of the olfactometer has not led to further results.

Conclusion 3 Effectiveness of project implementation gradually improved with the strengthened partnership

Findings 6, 7 and 10 show that an important reason for the effectiveness of project implementation was the partnership developed between the Finnish and the Indian agency. This was partly based on the behaviours of individuals but developed gradually due to the creation of trust.

Conclusion 4 Logistic project issues are more challenging than the technical for the ICI agency

Finding 10 shows that for highly technical agencies such as VTT, even with support from a professional support team and procedures, the logistic issues such as international travel and visas for foreign visitors are a bigger challenge than the technical issues for implementation of developing projects. This has to do with cultural understanding of the time factor.

Conclusion 5 No important impact was achieved during only three years of capacity building

Finding 11 indicated that CPCB staff used new knowledge in their daily work. However, short-term exposure to new topics did not bring significant long-term capacity enhancement. Many participants in training events highlighted that it was a need for more training to sustain their new knowledge acquired.

Conclusion 6 Lack of gender equality mainstreaming in design affected women's participation

Finding 12 includes that the project had strong project women project managers in both countries. It was still not enough to comply with the target of at least 30% women participation because it was just a target not linked to gender equality mainstreaming or any concrete project activities. The target was not part of the results framework. The male staff understood it as an imposition from the funding agency (and the first time they had experienced this), without much consequence if it was not achieved.

Conclusion 7 The project results were not institutionalised

Finding 13 indicated that changes in the executive staff of the national agency negatively influenced the long-term impact and sustainability of the project. The improved knowledge through the project was not distributed broadly among the agency staff after the project ended.

4 Lessons learnt

Lesson learnt 1 Relevance to institutional capacity building strategies should be required for ICI project design

A lesson from this project is that project ideas from high-level politicians and executives would not give a satisfactory impact and sustainability if they are not defined in the institution's long-term strategies. This relation should be a requirement for the project design and reviewed before approval of the project document.

Lesson learnt 2 Available budget funds should not finance new initiatives

Financing the olfactometer with available funds towards the end of the project shows that what might seem like a good idea may not easily generate meaningful impact if it is not anchored in the mutually agreed project design. Since ICI projects are small and short, funds left over should be returned to MFA or finance more of the same activities, e.g. an additional training course.

Lesson learnt 3 Review of other initiatives should be an ICI project requirement

So-called "stand-alone" projects are often designed and developed isolated from other projects supporting the same agency or the same sector. In the worst-case scenario, this could lead to duplication of efforts, but even without duplication, there could be lost opportunities for synergies. A minimum requirement for an ICI project design should be to review the main content of ongoing and recently finalised ICI projects in the same country and ongoing and planned projects for the national partner agency.

Lesson learnt 16 Gender equality in terms of participation must be mainstreamed in the design phase; otherwise female participation will not be achieved

Strong and better participation of women in an ICI project could benefit from engaging more women and/or gender specialists in the project design. Gender equality mainstreaming must be more than headcount in project activities and influence all aspects of the project and its budget.

To achieve high participation of women during implementation, it is necessary to assure gender equality mainstreaming of the project document, have clear gender equality focused targets and the related measures to achieve them. These include, e.g. a diagnostic of the gender profile of the target institution, gender equality inclusion in the training content, TORs for recruitment of staff, and several other measures.

Lesson learnt 5 A "stand-alone project" will not easily achieve synergies

Stand-alone projects will not easily achieve synergies simply because they are designed without sufficient awareness of the context, including other initiatives carried forward by the partner agency and other projects. Nearly all climate and pollution-related projects would have opportunities for synergies, at least in the form of joint capacity-building efforts and exchange of lessons learned.

Lesson learnt 6 Partnership and mutual trust is key for results

An important reason for the effectiveness of project implementation was the partnership developed between the Finnish and the Indian agency. This was partly based on the behaviours of individuals but was developed and gradually strengthened due to the creation of trust.

Lesson learnt 8 New knowledge and procedures should be institutionalised

The improved knowledge, procedures and tools introduced through an ICI project should be institutionalised, and processes developed to ensure knowledge and skills shared are then transferred to

colleagues. This would avoid situations where any knowledge, tools and skills are not embedded in institutions due to changes in management and staff.

Lesson learnt 9 One 3-year ICI project phase is not enough for long-term change

Short-term exposure to new topics is unlikely to bring significant long-term sustainable capacity enhancement. More in-depth training is needed to overcome the capacity and knowledge gaps. A second project phase would have cemented the knowledge for some participants and elevated the capacity for others.

Appendix 4 Project-level findings FMI India

1 Project Summary

Name of project	CLIMOB, FMI/IMD, India Title: Climate Modelling and Observations, India
Timing	12/2014 – 12/2016
Budget	0.5 million Euro
Finnish agency	<p>Finnish Meteorological Institute (FMI). FMI is a research and service institute under the Ministry of Transport and Communications. The main objective of the FMI is to provide the Finnish society with the best possible information about the atmosphere in and around Finland. FMI is a leading expert in meteorology, weather services and several research areas. The institute has today 674 employees. The staff is highly educated and consists of meteorologists, researchers, operators of the specialised equipment and systems needed for weather forecasting, etc.</p> <p>Finland is a Member of several meteorological and oceanographic organisations as well as in networks formed between institutes in Europe. The Nordic cooperation in meteorology has a long history and an important role in the development of weather services. The FMI takes an active part in European and global research and work closely with other meteorological services around the world.</p> <p>FMI has expertise from development cooperation and strengthening the national meteorological services in more than a hundred countries since the 1980s and a strong commitment to participate in international cooperation and consulting as outlined in its strategy. It helps other countries, especially the developing world, in the development of their meteorological services, and is an important participant in several international organisations and projects.</p> <p>FMI has implemented many ICI projects, including one in India and one in Nepal, that are part of this evaluation.</p>
Partner agency	country India Meteorological Department (IMD). IMD was established in 1875 and is under the Ministry of Earth Sciences (MoES). It is the national meteorological services provider and the principal government agency in the areas of meteorology, seismology, weather and climate.
Other partners	project No other formal project partners
Project objective and purpose	<p>Objective: Increase the capacity of IMD in measuring the quality of air and in climate modelling.</p> <p>Purpose: To increase the capacity of IMD to produce air quality forecasts and -modelling and to increase the preparedness to mitigate climate change related risks in the future.</p>
Principal activities	<p>project</p> <p>1. Increased capacity of IMD to set up and use regional and city-scale air quality modelling according to own needs</p> <p>1.1 Mapping of resources and making implementation plan</p> <p>1.2 Installation of air quality models and basic training</p> <p>1.3 Setup of modelling systems for the Delhi metropolitan area</p> <p>1.4 Establishing IMD services related to air quality forecasting</p> <p>1.5 Revision workshop on the progress made, issues raised and roadmap for next phase. Evaluation and recommendation of workshop outcomes.</p> <p>2. Improved capacity and enhanced quality of using aerosol measurements in climate and air quality studies</p> <p>2.1 FMI support to IMD in operation and quality control of high-level aerosol and gaseous measurements at IMD pinpointed measurement station</p> <p>2.2 Procurement and installation of new aerosol instrumentation at IMD pinpointed measurement station to upgrade the measurements</p> <p>2.3 FMI support to IMD in gathering, processing and analysing the results of observations</p>

	<p>3. Capacity to set up and use climate-aerosol models according to own needs in India, including basic data processing</p> <p>3.1 Setup of ECHAM5-HAM2 and REMO-HAM for continental-scale modelling in India and basic training</p> <p>3.2 FMI support to IMD in processing, analysis and utilisation of climate model results</p> <p>3.3 A High-level seminar and workshop on the progress made and validation of base year simulations with measurements, issues raised and roadmap for the next phase</p>
Impact logic	The impact of the project would be reduced vulnerability for the Indian population to bad air quality and climate-related risks through improved forecasts, modelling and risk preparedness.
Project genesis	FMI collaborated with the Energy and Resources Institute (TERI) since 2003 and two major research projects in India started 2013. To maximise the benefit of the bilateral climate research collaboration between Finland and India, discussions and negotiations were made to join efforts between IMD and FMI. Most of the project ideas emerged on the sidelines of the WMO meetings. The IMD was also requested by the Ministry of Environment and Forests (MoEF) to start air quality forecast modelling. The project document draws from discussions between the directors, managers and key staff of the two agencies during FMI missions to India in 2013.
Other relevant projects (Finnish or other international)	FMI supported the Energy and Resources Institute (TERI) https://www.teriin.org separately through two other projects: (i) The Role of Black and Brown Carbon for the Indian Climate and Climate Change; and (ii) Absorbing Aerosols and the Fate of the Indian Glaciers. TERI was a research partner for both FMI and IMD, but on parallel issues. Other Indian institutions (e.g. IITM, IIM-A) were consulted, but not part of the formal project structure. IMD did not receive any other donor-funded projects at the same time, but continued collaboration with other agencies such as the Indian Institute of Tropical Meteorology (IITM), a sister agency of IMD, through the System of Air Quality and Weather Forecasting And Research (SAFAR) and the Indian Institute of Management Ahmedabad (IIM-A) on research-related issues, as well as the Central Pollution Control Board (CPCB) on emissions inventory.

2 Findings

2.1 Relevance vis-a-vis needs

Finding 1 National agency's strategies are unlikely to have directly shaped the project design

The project document refers to having addressed IMD's development needs set out in its strategy. One Indian interviewee mentioned that the project's capacity development strategic approach was aligned with IMD's broader strategy and five-year activity plan (2012 – 2017). Another senior stakeholder was aware of the strategy but unable to offer much detail. The consultants have not had access to the plan that was valid at the time of the design (due to the pandemic), and even though a strategy document probably existed and the project may be aligned with its priorities, it is unlikely that the strategy directly shaped or informed the project design. This view is strengthened by a review of newer documents, such as the IMD Institutional Report, 2016 (DOI: 10.16943/ptinsa/2016/48501), which outlines the vision and various services – attachment 1; and the current IMD strategy (March 2021) https://mausam.imd.gov.in/imd_latest/contents/pdf/pubbrochures/Vision%20and%20Mission%20of%20IMD.pdf.

Finding 2 IMD staff members consider that the project filled important knowledge gaps

The project document defines three specific capacity building needs that IMD had presented during the design period: (i) To increase the capacity to set up and use city-scale air quality forecasting; (ii) To enhance the quality of aerosol measurements in suitable IMD measurement stations for climate and air quality studies; and (iii) To enhance the capacity for climate simulations through climate modelling and results analysis.

During the interviews, IMD staff noted that the agency has traditionally been involved in weather monitoring, and has done some foundational work in forecasting, but robust air quality prediction and climate modelling were missing before the project due to gaps in capacity and knowledge. IMD recognised the importance of monitoring parameters of the atmospheric environment, given the role of aerosols in climate change – but this was also missing due to the capacity and knowledge gaps.

IMD was, therefore, keen to engage with the project to introduce air quality modelling at regional and city-scale levels, as well as to initiate aerosol monitoring. The strategic intent was to build skills and capacity of IMD staff with exposure to the latest systems and tools, to enable them to measure parameters of the atmospheric environment (e.g. aerosols), as well as predictive modelling for air quality. IMD saw this as important in being able to provide other parts of the government with timely data (up to 72 hours in advance) to enable them to plan their activities accordingly.

2.2 Relevance vis-a-vis development goals

Finding 3 There is satisfaction with the new air quality forecasting system and training

As IMD did not have any air quality forecasting system, this project had a strong capacity-building component leading to the transfer of tools and software source codes to customise and implement in India, and to initiate operationalisation of the system.

Scientists and researchers in IMD received hands-on training in the use of these forecasting systems and modelling. All interviewees were unanimous in noting their appreciation for the newly introduced SILAM and ENFUSER models – which were seen as the main components of the air quality forecasting system.

Finding 3 Climate aerosol models are important for future climate scenarios

In terms of developing capacity on climate aerosol models, a Comprehensive 3-dimensional Chemistry Climate Model (ECHAM-HAMMOZ) was installed at IMD and considered important for modelling future climate scenarios and predicting the long-term impact of aerosols on the climate. The model has also been used by an IMD staff member for his PhD research work.

Finding 4 The project was timely for complying with national goals

The context of the project is that at the time of the project formulation, climate change was fast becoming a priority in India, but there were limited policies on air quality monitoring and forecasting. The Government of India's National Action Plan on Climate Change (NAPCC), launched in 2008, aimed at fulfilling India's developmental objectives while also focusing on reducing the emissions intensity of the economy. Although air quality forecasting was not a stated priority within the NAPCC, the project document refers to its relevance in the context of air quality studies and data required in support of the NAPCC.

The project also has synergies with India's National Carbonaceous Aerosol Program (NCAP) - which focuses on black carbon, and for which IMD is a major stakeholder in terms of research and modelling.

Prior to the project, the Indian Institute of Tropical Meteorology (IITM) had initiated the country's first major initiative (System of Air Pollution Forecasting and Research (SAFAR)) to predict air quality levels during the 2010 Commonwealth Games (CWG) in New Delhi. The project sought to build a suite of models that were consistent with global standards, and to expand this to other metropolitan cities across the country.

Interviewees noted that air quality monitoring and climate change were high priorities for the Indian government, and the project was timely. IMD had already started a centralised monitoring and research centre and was augmenting instrumentation for air quality and aerosols. Accurate modelling, therefore, became important, and senior IMD officials explained the importance of such models to generate information that can be used by policymakers for concrete action.

Finding 5 The project was strongly aligned with national priorities in both countries

Interviewees described the project as strongly aligned to India's national priorities in the area of air quality and climate change. This is logical since IMD is the government's main agency in its thematic area. In fact, one senior person noted that the request to IMD to initiate work on air quality forecasting had originally come from the Ministry of Environment and Forests (MoEF). Even though the project closed several years ago, there is still a strong link between the project's content and IMD's vision and mission (as expressed in March 2021): https://mausam.imd.gov.in/imd_latest/contents/pdf/pubbrochures/Vision%20and%20Mission%20of%20IMD.pdf. On the other hand, the project is strongly aligned to the priority on climate change in Finland's foreign policy, including the two cross-cutting objectives for ICI on climate resilience and low emission development.

2.3 Participation, ownership, partnership

Finding 6 The IMD had high-level project ownership at an early stage

One senior interviewee noted that the project agreement was signed when the President of India (the late Pranab Mukherjee) [13th President of India 2012-17] visited Finland.

The Director-General of IMD at that time noted that most of the project ideas had emerged on the sidelines of the World Meteorological Organization (WMO) meetings where the DG and other senior IMD officials had the opportunity to interact with other international experts. The IMD subsequently received a request from the national Ministry of Environment and Forests (MoEF) to start the air quality forecast modelling.

All interviewees agreed that the main impetus for this project was that IMD did not have any air quality forecasting and early warning systems capacity before the ICI collaboration started. They wanted to partner with Finland as FMI was recognised as a leading expert agency in these technical areas.

The project Steering Committee was represented by both Finnish and Indian counterparts, and interviewees in IMD expressed that this partnership worked well in practice (as a collaborative partnership model).

Finding 7 There are opposing views on national project ownership

The evaluation team has triangulated information on the degree of ownership of the project and if that had any effect on the implementation efficiency and project outcomes. According to sources in the MFA, there was not sufficient interest from IMD's side to move things forward. This led to a long design period and a slow start with few results in the beginning. FMI informs that the start-up difficulties partly had to do with the executive person who had been the driving force behind the project was no longer in the position. This led to slower processes, the planned trip to Finland 2015 was cancelled, and proposals from FMI were often not responded. FMI staff thinks that there was maybe not sufficient interest from individual persons in this period, but on the institutional side, all was clear. An important issue in the first period was that FMI had expected to sign an MOU, but IMD informed that this was not possible. An MOU is not a legally binding document, and IMD wanted instead a signed agreement to accompany the project document.

The first FMI mission was carried out early in 2015, but MFA took a decision already in the same period that funding for the project would only be extended to the end of 2016. This had to do with the moment when the funding originally was reserved for the project, but it is still hard to understand why MFA agreed to start the project in December 2014 and only a short time later decided that it had to be finalised in 2016. In the meantime, the person that had been the driving force during the project conceptualisation came back as the Director-General of IMD from March 2015. From that moment, everything changed, and the project results were finalised in record time. During the last 18 months, both IMD and FMI worked full-time to comply with the project targets. It is, therefore, *two completely opposite ways of seeing this project*: -As a slow project that was stopped by MFA because of few initial results, or as the most efficient of the ICI projects because it was able to finish its goals in only half of the time!

There is unanimous agreement among all interviewees in India that IMD had full ownership and commitment to the project as it addressed priority capacity-building needs. They also strongly agree that the project had successfully built the capacity of the agency staff.

Finding 8 Both agencies appreciated the development of a strong relation

There were unanimous views from all IMD interviewees that the relationship between FMI and IMD personnel was excellent, and had been able to establish trust, respect, and effective working relations. FMI also appreciated the relationship that developed during the implementation. This is reflected in the following statements:

"A very pleasant warm relationship that continued even after the project ended". **IMD Executive 1**

"Problems were addressed, models were installed, and people were able to run the models". **IMD Executive 2**

"The last project period all changed, and the project was implemented smoothly and highly efficient". **FMI Project Manager.**

2.4 Coherence and harmonisation

Finding 9 The project coherence with national agencies was assured by IMD's key position

IMD officials interviewed informed that they did not receive any other donor-funded project support at that time. They had noted at that time that FMI was already engaged with the Energy and Resources Institute (TERI) <https://www.teriin.org>, but that this was on a small scale. FMI informs that TERI gave them information and advice on an early stage of project design. The new project enabled IMD with FMI support to take things to the national level. IMD continues to be in collaboration with other agencies such as the Indian Institute of Tropical Meteorology (IITM) <https://www.tropmet.res.in>, a sister agency of IMD, who had done some initial work on air pollution forecasting in 2010 through System of Air Quality and Weather Forecasting And Research (SAFAR) <http://safar.tropmet.res.in> and the Indian Institute of Management Ahmedabad (IIM-A) <https://www.iima.ac.in> on research-related issues, as well as with TERI. It also has cooperation with the Central Pollution Control Board (CPCB) <https://cpcb.nic.in> on emissions inventory, and with other government agencies. Note that one project output (1.4) was finalised in the framework of SAFAR (see Effectiveness). The project's coherence with other public agencies was assured due to IMD's key position linked to the central government.

Finding 10 There was little interaction between FMI's projects with different agencies

Inter-institutional collaboration was done routinely as part of IMD's work. On the other hand, FMI supported TERI separately through two other projects: (i) The Role of Black and Brown Carbon for the Indian Climate and Climate Change; and (ii) Absorbing Aerosols and the Fate of the Indian Glaciers, but interviewees noted that this project was managed as stand-alone. TERI was a research partner for both FMI and IMD, but on parallel issues. Other Indian institutions (e.g. IITM, IIM-A) were part of the project consultations and wider collaborative efforts but not part of the formal project structure.

When asked why the project was stand-alone and not more integrated into the broader work, IMD officials clarified that the aerosol monitoring is stand-alone because it is location-specific. It is not used in the modelling activities but for deepening research that is used by IMD scientists and the wider research community in India. The air quality forecasting is aligned with the overall objectives of the IMD and is therefore applicable country-wide. It is difficult for the evaluator to comment on any potential lost opportunities by the stand-alone approach so long time after the project is finalised. However, it seems like a stronger exchange of results and lessons learned between the projects implemented by FMI with IMD and TERI could have been a benefit for all these projects.

2.5 Implementation effectiveness

Finding 11 The project had a slow start but highly effective continuation

As previously mentioned, the project had a slow start, but two IMD senior interviewees noted that once the project activities started to be implemented, they went as planned, and the targets were met, except one output that was finalised in the framework of the SAFAR project. The final project accounts show that all the budget was spent, but that was due to adaptive management from FMI's side, using the funds for the study trip to Finland to cover more trips to India. When the evaluator queried the project implementation issues with the IMD counterparts, two senior respondents noted that this was due to the following reasons:

- (a) that experts from Finland could not come to India as 'they were discharging their own committed responsibilities'; and
- (b) that the visit of the Indian delegation to Finland could not take place at the last minute because the clearances from the Indian Ministry of External Affairs did not come through in time.

It seems to be agreement about (b), while as a reason for (a) FMI highlighted the problem that they during the first implementation period often did not get any reply from FMI on proposed plans and concrete requests.

Table 1. Project progress at the end of the implementation period

Expected Result	Expected outputs	Progress
1. Increased capacity of IMD to set up and use regional and city scale air quality modelling according to own needs	1.1 Mapping of resources and making implementation plan	Completed
	1.2 Installation of air quality models and basic training	Completed
	1.3 Setup of modelling systems for the Delhi metropolitan area	Completed
	1.4 Establishing IMD services related to air quality forecasting	Completed by IMD and IITM (SAFAR)
	1.5 Revision workshop on the progress made, issues raised and roadmap for next phase. Evaluation and recommendation of workshop outcomes.	Completed
2. Improved capacity and enhanced quality of using aerosol measurements in climate and air quality studies.	2.1 FMI support to IMD in operation and quality control of high-level aerosol and gaseous measurements at IMD pinpointed measurement station	Completed
	2.2 Procurement and installation of new aerosol instrumentation at IMD pinpointed measurement station to upgrade the measurements	Completed
	2.3 FMI support to IMD in gathering, processing and analysing the results of observations	Completed
3. Capacity to set up and use climate-aerosol models according to own needs in India, including basic data processing	3.1 Setup of ECHAM5-HAM2 and REMO-HAM for continental-scale modelling in India and basic training	Completed
	3.2 FMI support to IMD in processing, analysis and utilisation of climate model results	Completed
	3.3 A High-level seminar and workshop on the progress made and validation of base year simulations with measurements, issues raised and roadmap for next phase	Completed Completed Completed

Those interviewed noted that there were several visits by Finnish experts to India, and virtual moodle training, which enabled Indian scientists and researchers to learn in-country. They also noted that two IMD scientists were able to visit FMI in Finland but that this trip came later and was covered by other funding sources.

It seems clear that the previously mentioned end of the project after only two years was due to a budget decision taken in MFA, even though the collaboration was excellent, especially during the second year. Drawing on responses from interviews, the evaluators observe that it had developed a good collaborative working relationship between the Indian and Finnish agencies. They also valued the on-site training visits by Finnish experts. IMD also noted that they were not receiving any other donor funds and that the Finnish

assistance was greatly valued. The Indian respondents spoke highly of the Finnish experts, their engagement and responsiveness to IMD needs.

Finding 12 The project had good compliance with the ICI manual and best practices

The project was implemented in line with most of the ICI best practices as stated in the ICI Manual. For instance, the Project Board met twice a year (sometimes remotely) to take the formal decisions. The following list refers to the numbers in the ICI best practices for capacity development:

1. The Indian IMD personnel felt that there was a good understanding of their capacity building needs, as FMI was already a leading expert agency in the area covered by the project
2. The IMD officials interviewed noted that they were committed to this programme and also used other international forums to engage with experts.
3. All those interviewed in both agencies spoke highly of mutual respect and collaborative ways of working.
4. There was a good mix of institutional capacity development and personalised staff training
5. There was a realistic relation between the planned activities and the project budget
6. IMD officials noted that FMI staff visited India and continued to keep in touch through daily/weekly e-mails.
7. FMI staff were also aware of the local Indian context as they brought the previous experience of working in India with other institutional research partners, including TERI
8. While training engaged scientists, researchers and instrumentation engineers, senior leadership was able to engage in higher-level discussions, including through the WMO and through the Project Steering Committees
9. Although the study visit to Finland could not materialise, staff continued to benefit from face-to-face training in Delhi/India as well as through virtual online training
10. Even though the combination of theory and practice is nothing new, this project focus is relatively innovative in an Indian high-level setting.
11. The interaction with FMI experts seems to have worked as a motivation for the participation of IMD staff. The trip to Finland that could have been an added incentive was planned for 2015 but postponed. It was then proposed to carry it out in 2016, but finally agreed to cancel. The IMD staff noted that it was unfortunate that the visits to Finland could not take place as planned. Nevertheless, three scientists were able to visit FMI through other work programmes.

Finding 13 The technical issues of the project were more easily adapted than the communication

Regarding adaptation of the project activities to local circumstances, the technical side of it seems to have been very satisfactory. The most pertinent point that came up during interviews is that the two models (SILAM and ENFUSER) were customised to suit Indian conditions. This was greatly appreciated by the IMD. Interviewees also noted that this was done in a collaborative manner – that IMD provided the required data, and that FMI helped to build a locally suited system. The evaluator also learned that the aerosol monitoring instruments were procured by FMI and sent to IMD through WMO to minimise procurement delays.

What seems to have been a weakness was the FMI understanding of how to communicate with a central government agency in India. India is a huge country and, at the same time, a very formal society. IMD is a large institution directly connected with the central government. It can therefore not be treated the same way as most public organisations in other countries, and even the FMI experience in India (e.g. with TERI) might not always be applicable. This lack of complete understanding of the institution was reflected first by the request for an MOU instead of a formal project agreement, later on in the understanding of how long time the processes take (e.g. to get a green light for international travel), and it might also have affected the communication, where the Finnish counterparts were used to sending an e-mail and get a fast reply, while their Indian peers were used to more formal ways of communication. This issue was, however, greatly improved after the persons learned to know each other and established personal trust.

Despite the issue mentioned above, FMI was well equipped, both on technical and human capacity to support the project. IMD staff highlighted especially the technical knowledge and expertise of the FMI experts, their collaborative engagement, sensitivity to cultural aspects, accessibility, and on-going support. There were no reports of any constraints in engagement of Finnish experts in this project.

"They were understanding us well, and the level of cooperation was good so the discussion was at the same level" **IMD Executive**

2.6 Strengthened competencies and systems

Finding 14 The project gave an important contribution to improved staff knowledge

The project activities made an important contribution to the increased knowledge, skills, and abilities of IMD staff. The persons were trained in the use of the two systems, and in aerosol monitoring. This learning resulted in their use of high-resolution models, enabled staff to perform ensemble modelling using different data sets in the prediction process, and encouraged them to publish first of its kind research. This was commented on during evaluation interviews. However, all the model products are documented and available on the Internet: <https://ews.tropmet.res.in>. The current IMD Standard Operating Procedures (2021) refers to models introduced during the ICI project: https://mausam.imd.gov.in/imd_latest/contents/pdf/emrc_sop.pdf

Finding 15 The most important project contribution was forecasting systems

The most significant contribution of the project was the customisation and operationalisation of two forecasting systems. The System for Integrated Modelling of Atmospheric composition (SILAM) was operationalised during this project and continues to be used as the air quality forecast model for the country. Furthermore, IMD has also taken up Environmental Information Fusion Service (ENFUSER) in the capital Delhi to monitor urban air quality. The system was installed at IMD with the support of the ICI project, and operationalisation has happened more recently (post-project).

IMD staff noted the value of SILAM as it covers the whole of India by generating air quality predictions for 72 hours (3 days) and captures all the concentrations of major pollutions and secondary particulates generated by atmospheric chemistry and their distribution. It should be noted that this is the first time IMD is using such prediction frameworks, and unlike other general models, SILAM uniquely captures atmospheric chemistry.

2.7 Implementation capacity of Finnish Agency

Finding 16 FMI was technically well prepared, but not for unexpected long procedures

FMI was technically equipped and supported to implement the ICI project efficiently. Overall, several ICI projects show that FMI has an excellent capacity for implementation of these projects and knowledge of the ICI manual and best practices. The institutional cooperation and professional skills from the Finnish agency were the strengths of the project, while delays during the design and the inception period reflect that FMI did not know the Indian partner well enough and therefore was not sufficiently prepared for institutional challenges. This was also reflected in not sufficient understanding of how long time some procedures could take [the same was found for FMI's handling of a project in Bhutan in the same period]. It should be highlighted that the ICI consultant FCG only supports the Finnish agency, and has no relation with the national partner. FCG could still have supported FMI in preparing a stronger project design, including risk analysis with relevant mitigation measures, which could have given a faster and more efficient inception period. FMI was, however, well equipped with technical staff to carry out the planned project activities. Support from the ICI consultant was not frequently used, but FMI had relatively frequent exchanges with MFA due to planning and budget issues. The strength of the FMI perceived by IMD staff was the quality of its technical experts, including their technical capacity, human interaction, and language skills. They highlighted that the effectiveness of FMI collaboration greatly improved after personal trust had been established, especially in the last year of the project period.

2.8 Potential impacts on the agency and beyond

Finding 17 The main impacts were national air quality forecasting and aerosol monitoring

The IMD interviewees offered the following examples of improved quality of its work as results of the ICI project:

(i) **Enhanced international profile:** The project supported a successful brainstorming meeting on air quality and climate in India (5-7 October 2016), which brought together scientists and experts from the India Meteorological Department (IMD), the World Health Organization (WHO), the World Meteorological Institute (WMO), the United Nations Environment Programme (UNEP), other countries, and Indian agencies.

At that time, the Indian Ministry of Earth Sciences was developing a national policy on Atmospheric Chemistry. A senior IMD official noted that the outcomes from the workshop were helpful in informing this policy. However, when asked by the evaluator, the IMD was not aware of the status of this policy. An internet search did also not find the policy.

(ii) **Suit model now used on a national scale:** IMD had since 2010 initiated some forecasting under the SAFAR programme, but this was mainly for Delhi. However, there was a felt need to develop a suite of models. The cooperation with Finland enabled IMD to expand and develop a suite of models that are now being taken forward at a national scale and to other cities in India.

(iii) **First publication on aerosol growth affecting air quality:** The aerosol monitoring instrument was used during the extreme air pollution event in Delhi in 2017, which lasted 7-10 days. IMD was able to analyse how aerosols grow in the atmosphere and affect air quality. IMD scientists subsequently developed a first of its kind publication for Delhi. Another research publication looked at air quality and new particle formation in Uttarakhand during non-events.

"In this project IMD, with the help of FMI, could develop capacity for air quality forecasting for the first time. Another very good activity was the aerosol monitoring – this was the first time that capacity was developed in IMD and we are now using it across cities." **IMD Executive**

Finding 18 Research results published for the scientific community

In the framework of the project, IMD developed several research publications that their staff interviewed highlight as being used by the scientific and research community in India. IMD staff also noted that since SILAM came into full operation, they have started hosting this on their website. Other agencies, including the Delhi Pollution Control Committee, the Environmental Prediction Control Authority, and the Central Pollution Control Board (CPCB) are using SILAM to decide emission reduction activities in Delhi's National Capital Region.

During the evaluation, IMD presented some examples of their research publications:

- (i) New Particle Formation and Growth to Climate-Relevant Aerosols at a Background Remote Site in the Western Himalaya <https://doi.org/10.1029/2020JD033267>
- (ii) New particle formation and growth to climate-relevant aerosols at a remote background site at the Western Himalaya. Journal of Geophysical Research: Atmospheres, 126, e2020JD033267. <https://doi.org/10.1029/2020JD033267>) Attachment 2
- (iii) What caused the severe air pollution episode of November 2016 in New Delhi? - Attachment 3

No constraints were reported during the interviews. The main enabling factor cited was that the project strongly met IMD's priorities and hence the agency was invested in developing and applying these systems to its work.

Finding 19 The project had several enabling and inhibiting factors

The three main enabling factors noted by the national stakeholders were: (i) national interest in developing capacity in air quality forecasting and aerosols; (ii) ability to interact with WMO experts to identify needs and engage with Finnish expertise; and (iii) FMI expertise and project funds, without which it would have been difficult for IMD to secure this expertise through its routine procurement processes.

Although the question was asked, no inhibiting factors were cited during interviews. However, as previously mentioned, some inhibiting factors were: (i) communication problems during the design- and inception period, causing delays; (ii) not realistic perspective from FMI's side on how long institutional processes would take; and (iii) MFA's decision to close the project, making it a 2-year project only.

Finding 20 IMD's forecasting capability would reduce pollution impact on the population

The main impact of the strengthened IMD performance for development in India is, first of all, that the country achieved improved performance of its national meteorological agency in the areas covered. Both systems introduced through the project enable IMD to undertake real-time and forecasted information on air quality. This was previously a gap in IMD systems that were only able to monitor (and did not extend to modelling and forecasting). By strengthening forecasting capability, IMD interviewees noted that this could inform action to reduce pollution loads in the vicinity.

They also referred to the use of this forecast data as critical to the roll-out of the National Clean Air Programme (NCAP) from 2018, which has national targets, strategies, and monitoring systems for reducing air pollution at regional and urban scales. Timely forecasts could help to inform where the action taken is leading to change.

The evaluation found that the IMD and Ministry of Earth Sciences have subsequently published the first edition of Standard Operating Procedure for Air Quality Monitoring and Forecasting Services (2021), which are intended to inform operations, available at: [emrc_sop.pdf \(imd.gov.in\)](https://emrc.sop.pdf(imd.gov.in)). This also references FMI in relation to the SILAM and ENFUSER models.

Finding 21 Most cross-cutting objectives were not prioritised

The evaluation team considers that the project design does not mainstream human rights issues, and only has an indirect effect on human rights. Senior IMD officials interviewed were cognizant of the theoretical underpinning of the project in terms of the links between air quality and human health, impacts on nutrition, agriculture, and sustainable development of the economy. They emphasised the importance of tackling air quality issues through this project and the potential benefits that it could have on society at large.

Regarding the cross-cutting objectives of Finnish development cooperation, Article 14 of the India Constitution says "*Equality before law. -The State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India. The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth or any of them*".

Gender equality: AWARE. According to the Final Report, 4 out of 12 (33%) of the people that were trained were women. The people interviewed, however, remember only two female researchers from IMD that participated in the training events. Subsequently, one of these has been promoted from research assistant to research associate. Senior IMD staff that were interviewed noted the main constraint was the lack of more female scientists and researchers within IMD. The evaluation team interviewed a female research associate who spoke positively about the quality of training and how this had helped her to develop skills as part of her career progression within IMD.

Non-discrimination, including the focus on persons with disabilities. There is not found any plausible contribution in this area in the project document or other relevant project documentation. No examples of discrimination were detected in the project nor mentioned during the interviews. However, it does not mean that it couldn't have happened. The years that have passed and the small number of interviewees limit the possibility of drawing any conclusions.

Climate resilience and Low emission development (Sensitive): The project is due to its main topic strongly related to climate change mitigation and adaptation. Those IMD personnel interviewed were sensitive to the significance of air quality and short-lived aerosols and pollutants and their impacts on climate change. The models have recently been fully operationalised and it is therefore too early to tell how this data will be used for emission control strategies.

2.9 Sustainability

Finding 22 The IMD staff that was trained are still in the agency

Overall, four scientists and three researchers from IMD were trained through the project, plus two engineers that benefitted from specific training on instrumentation. All those that benefitted from the training are still in the IMD system and even in the same team. The DG has since retired, and there have been 1-2 other staff changes in the IMD management. This is a very low turnover considering that the project ended more than four years ago. On the other hand, being a staff member in IMD, there are few alternatives for higher-level positions without changing the field of work. One senior interviewee commented that the staff retention is high because there is not much scope for IMD staff to move to the private sector or to other agencies.

Finding 23 The technology and skills introduced continue in use

The project provided three types of instruments for aerosol monitoring, *which remain operational*, and trained the IMD engineers in their use. The people interviewed comment that skills are being transferred to new staff members. The virtual moodle system is still in operation and acts as a knowledge resource for the IMD. One member of the team explained that they had received training when they joined the team and diffusion of knowledge also happens within the team. Staff interviewed also noted that they gained new skills on data and analysis, on how to use a system, and how to run the model on different platforms, for instance, skills for air quality forecasting through the SILAM and ENFUSER models.

It is an important finding on the sustainability of the project that the IMD teams continue to use the models introduced and following on from the training. Another interviewee noted that, before implementation, IMD research fellows and scientists worked on their desktop computers. The combination of new knowledge and the installation of SILAM on a supercomputer has enabled IMD staff to work closely with bigger datasets, use the model for weather forecasting and its integration with chemistry transport models. IMD staff also gained exposure to international knowledge and have deepened their research activities, including through several publications.

Finding 24 Inter-institutional task force increases the likelihood of sustainability

The fact that both models developed during the project continue to be in operation by IMD shows a high likelihood of sustainability. All those interviewed spoke very highly of the two models that were customised for India in partnership with FMI. Some interviewees referred to the recent formation of a cross-agency task force (including IMD, IITM, CPCB, MoES, MoEF). All the model products are documented and available on <https://ews.tropmet.res.in> and used by the task force. This is intended to inform what actions are to be taken on the ground.

Senior IMD officials reiterated the importance of sustainability, expressing interest in a future MoU to sustain efforts. IMD officials stated that they used their own funding and resources from the Ministry of Earth Sciences to sustain this work. Additionally, FMI has continued to provide support to IMD, including installing new version updates to the software and providing virtual support to any glitches. During the installation of the aerosol equipment, two IMD engineers received training on operation and maintenance.

2.10 Effects of the Covid-19 pandemic

Finding 25 Covid-19 has severely affected IMD and the present evaluation in India

Since the project closed more than four years ago, the Covid-19 pandemic would not have any effect on the direct project result. It could, however, theoretically influence the sustainability of outcomes. India has today one of the world's highest level of infection; according to official statistics, 28.8 million cases and 338 thousand dead. The levels have been so high that they have severely affected the daily work of IMD and most other agencies in India, where people are working from home or not working at all because they are in quarantine or attending the sick and dying.

According to the Covid-19 tracker, the level of new daily cases reached its peak on the national level May 8, with 403,405, and has since then gone steadily down to 134,154 new cases on June 2, which is still a high figure. The Covid-19 pandemic has greatly affected the present evaluation in India, eliminating the option of direct interviews and leading to difficulties of achieving appointments for phone- or Internet interviews. India also has the lowest number of people responding to the evaluation's online survey.

2.11 Other observations

Some staff felt that it would have been very useful to gain first-hand exposure to FMI's operations in Finland and to learn from that experience. Unfortunately, due to delays in local clearances, the visit could not go ahead.

There is some inconsistency in reporting on gender equality. As mentioned, the project completion document notes that 33% of trainees were women (4 of 12). However, from interviews, it appears that only two women participated.

3 Conclusions

Conclusion 1 Opposing views on the national project ownership and effectiveness: -Lack of interest or project efficiency record?

Finding 8 shows that there are opposing views on the national ownership or lack of ownership of this project. A slow design and inception period led MFA staff to the conclusion that there was not sufficient interest from IMD's side to move the project forward. After having triangulated many sources and interviewed several persons in MFA, IMD and FMI, the evaluation team has concluded that the slow start partly had to do with an IMD executive person that was the driving force on the Indian side and left the position, and partly also had to do with FMI's lack of understanding for IMD's formal and slow institutional procedures. These issues were resolved through inter-agency dialogue, but in the meantime, MFA had decided to not extend the project beyond December 2016, leaving it in practice as a 2-year ICI project. The decision was based on the moment when budget funding for the project had been separated. The great change in project efficiency came after the decision had been taken, from the middle of 2015, when FMI-IMD achieved nearly all the project targets in half of the normal time, making the project one of the most efficient ICI projects during these 18 months.

Conclusion 2 Not enough integration with other closely related projects

Finding 11 shows that the project was treated as a stand-alone and not much integrated into IMDs further work, but IMD comments that it is because it was site-specific. The evaluation team considers that a stronger exchange of results and lessons learned between the projects implemented by FMI with IMD and TERI could have been a benefit for these projects.

Conclusion 3 FMI complied well with the ICI manual and best practices

Finding 13 reviewed the project in light of the ICI best practices, and concluded that the project had been well managed from the moment that the initial start-up issues had been resolved (see conclusion 1).

Conclusion 4 Effectiveness of implementation improved with the duration of the inter-agency work

Finding 14 demonstrates that communication was a key issue for achieving the project goals. The project was not able to achieve effective implementation in the beginning partly because the peer agencies did not understand each other, and FMI did not fully understand the formal long-term procedures that are used in a large governmental agency in India. The forms of communication between high-level staff in the two agencies also evolved before implementation effectiveness and efficiency improved.

Conclusion 5 The project had strong impact in technical areas but gave low priority to other cross-cutting objectives than climate resilience

Findings 18 and 21 show that the project provided important outcomes with a strong impact on a national level, such as the use of national air quality forecasting, aerosol monitoring, and the reduced effects of pollution on the population. Finding 22, however, highlights that the project gave low priority to the cross-cutting objectives in Finnish development policy, both in project design and implementation, except for climate change mitigation and adaptation that were the main topics of the operation.

Conclusion 6 The project has high expectations of sustainability

Findings 23-25 show that the project outcomes and impact gives high expectations of sustainability because the technology that was introduced is still in use by the agency staff, there is little turnover, and new staff members are being trained on how to use the systems. This is further strengthened through a cross-agency task force with common direct access to the systems.

4 Lessons learnt

Lesson learnt 1 It is necessary that the Finnish agency understands the national institutional setup and don't expect partner agencies to behave the same way.

This lesson is based on the expectations that FMI had for signing an MOU, while a central government agency such as IMD expected the signing of an agreement to accompany the project document. Also, the way of communication (e.g. e-mails from Finland, often without reply) and the time it takes to finalise a process are issues that have to be understood from the Finnish agency's side.

Lesson learnt 2 Communication and mutual understanding is necessary to achieve efficiency.

The Finnish public agency and the national agency in the beneficiary country have a similar institutional role and would often easy understand the challenges of the other partner. This would create trust and mutual understanding on an institutional and personal level, but before this trust has been created, the processes could often be moving very slowly.

Lesson learnt 3 Personal trust is often more important for effectiveness than institutional relationships.

Even though inter-institutional relationships and trust are important, personal relationships and trust are often more important to be able to implement an ICI project effectively and efficiently.

Appendix 5 Project-level findings FMI/SHSB Bhutan

1 Project Summary

Name of project	SHSB Bhutan Title: Strengthening hydro-meteorological services for Bhutan
Timing	2013 – 2016
Budget	462,068 Euro
Finnish agency	<p>Finnish Meteorological Institute (FMI). FMI is a research and service institute under the Ministry of Transport and Communications. The main objective of the FMI is to provide the Finnish society with the best possible information about the atmosphere in and around Finland. FMI is a leading expert in meteorology, weather services and several research areas. The institute has today 674 employees. The staff is highly educated and consists of meteorologists, researchers, operators of the specialised equipment and systems needed for weather forecasting, etc.</p> <p>Finland is a Member in several meteorological and oceanographic organisations as well as in networks formed between institutes in Europe. The Nordic cooperation in meteorology has a long history and an important role in the development of weather services. The FMI takes an active part in European and global research and work closely with other meteorological services around the world.</p> <p>FMI has expertise from development cooperation and strengthening the national meteorological services in more than a hundred countries since the 1980s and a strong commitment to participate in international cooperation and consulting as outlined in its strategy. It helps other countries, especially the developing world, in the development of their meteorological services and is an important participant in several international organisations and projects.</p> <p>FMI has implemented many ICI, projects including one in India and one in Nepal that are part of this evaluation.</p>
Partner country agency	<p>National Centre for Hydrology and Meteorology (NCHM), Bhutan. When the project initiated it was supporting the Department of Hydro-meteorological Services (DHMS) that was converted to NCHM in January 2016.</p> <p>The NCHM is an autonomous scientific and technical organisation of the Royal Government of Bhutan responsible for understanding the behaviours of the atmosphere, its interaction with cryosphere and water bodies, the weather and climate and distribution of the country's water resources. It is the nodal agency responsible for the generation of information and delivery of products and services in Bhutan.</p>
Other project partners	There were no other formal project partners
Project objective and purpose	<p>The objective was to reduce weather and climate-related losses of life and property, to enhance potential for investments in the renewable energy sector and reduce vulnerability to climate change through improved weather and climate services.</p> <p>The purpose was defined as the improved capacity of NCHM (initially DHMS) to manage and produce high-quality weather information and services to the Bhutanese society.</p>
Principal project activities	<p>The project activities were divided into three components, each with its own outcome:</p> <ol style="list-style-type: none"> 1. Strategic planning capacity of DHMS strengthened <ol style="list-style-type: none"> 1.1 Study on the socio-economic impacts of services provided by DHMS 1.2 Development of standard operating procedures and processes for weather station maintenance, calibration and repair 1.3 Support DHMS to develop a National Hydro-met Services Policy 2. Enhanced services provided by DHMS <ol style="list-style-type: none"> 2.1 Developing a data management and quality control system 2.2 Data processing and analysis for climate change studies 3. Improved DHMS cooperation and communication with the public, disaster management, media and renewable energy <ol style="list-style-type: none"> 3.1 Stakeholder capacity building, education and awareness 3.2 Development of weather forecasting processes and verification 3.3 Development and pilot of new weather service to renewable energy, disaster management and public

	3.4 Development of Communication Strategy for DHMS 3.5 Project Results and Evaluation Workshop
Impact logic	The main goal was to upgrade the DHMS to strengthen the Bhutanese National Weather Service and thereby substantially increase its forecast skills, contributing to positive economic development of the country, reduce poverty and manage disaster risk in times of climate change. This would have positive impact in many sectors, such as agriculture, health, tourism, clean energy development, transport and communication.
Project genesis	In 2012 during the Bhutan Climate Submit one member from NCHM was asked to make a presentation of the weather and climate service to the international audience. During the meeting, NCHM met with the WMO Director General who was the former Director General of FMI. It was then suggested that NCHM should write a project proposal to the government of Finland through the MFA. FMI was technical advisor in the former HKH HYCOS project coordinated by ICIMOD funded by Finnish MFA, and FMI facilitated the connection between MFA and the Bhutanese officials, helping the two parties meet and discuss the proposed project.
Other relevant projects (Finnish or international)	During the same time there was a UNDP-GEF NAPA II project 2014-2018 financed by GEF with USD 11.9 million, focusing on the main climate change adaptation issues in Bhutan; one JICA project installed an early warning system in a basin; a Cryosphere project financed from Norway 2014-2020 built capacity of NCHM; and a World Bank study developed a hydro-met roadmap (World Bank 2015). After the Project, there is a new JICA Project phase; a long-term UNDP-GCF project supporting climate resilience in agriculture; and a regional World Bank Hydro-met services project is supporting NCHM. A new project proposal (SHSB-II) was presented from NCHM to Finland MFA in 2018.

2 Findings

2.1 Relevance vis-a-vis needs

Finding 1 The project responded to the needs of a weak national agency that had no development strategy.

Before the project, the DHMS (now NCHM) was separated from the Department of Energy. There was *no policy and no strategy for Hydromet Services*, no central hydro-met database, and weather forecasting was done for only 24 hours. According to the NCHM staff interviewed, before the project, the DHMS lacked skills in medium- and long-range weather forecasting, calibration of instruments, communication, and snow studies. There was also a lack of hydrological and data analysis and no prior study on the socio-economic benefit of Hydro-met services.

The project was designed in the context of high vulnerability to natural disasters and implemented strongly aligned to national needs, in line with Government priorities. It directly addressed the institutional needs mentioned above, helping the development of the capacity on soft skills for weather forecasting, instruction, and communication with other sectors. Based on evidence from the evaluation survey, 93% of respondents felt it responded directly to agency priorities, and 80% found it to be well integrated into the work plan. The project also provided hardware for Weather Research and Forecasting (WRF) modelling and calibration toolkits.

2.2 Relevance vis-a-vis development goals

Finding 2 The project was well linked to priorities in the 5-year National Development Plan.

The following plans and strategies influenced the selection and design of the project:

- The Government needed a science-based development plan, particularly in hydro-met services;
- The project supported the content of the 11th Five Year Plan, 2013-2018 "Self-reliance and Inclusive Green Socio-Economic Development" (Government of Bhutan 2013), which aimed to strengthen hydro-

meteorological data to facilitate reliable weather, GLoF and water-related forecasting. The key strategies to achieve these objectives are strengthening institutional and human capacity. Under "Sector key results" the 5-year plan mentioned specifically improved hydrological and meteorological observing and monitoring network and services with good national coverage, enhanced weather forecasting, and enhanced river flow forecasting.

- The project objectives were in line with the mentioned 5-year plan and the government's goal to strengthen science-based and evidence-based hydro-meteorology services. The project also helped enhance the hardware and software system in NCHM to support the same priorities.
- Finland has no official country strategy for Bhutan. However, a visit of the Finnish Ambassador to Bhutan in 2009 paved the way for a dialogue during the Bhutan Climate Summit in 2011, which led to the inception of the ICI project.

2.3 Coherence and harmonisation

Finding 3 The project was coherent and harmonised with other ongoing initiatives. For example, the introduction of Smart-Met was the result of inter-institutional synergies and collaboration.

During the project period, there was a range of other ongoing initiatives. For example;

- UNDP implemented GEF funded project "National Adaptation Programme of Action" NAPA II (UNDP 2012), implemented 2014-2018 with USD 11.9 million from the GEF and USD 55.9 million co-financing from the Bhutanese Government and other sources. The project focused on the main climate change adaptation issues in Bhutan and had a multi-sector approach.
- At the same time, a JICA funded a project from 2013 called "Capacity Development of Glacier Lake Outburst Floods (GLOF) and Rainstorm Flood Forecasting and Early Warning".
- A Cryosphere¹⁹ project financed from Norway 2014-2020 was building the capacity of NCHM in this hydrology area.
- A World Bank study (World Bank 2015) which developed a hydro-met roadmap that has later been followed-up in collaboration with WMO, EU and the Global Facility for Disaster Reduction and Recovery (GFDRR) (Dupchu, 2018).

The survey found that most NCHM staff agreed that the project was linked, coordinated or synergetic with other projects. For example, NCHM used the funds from different projects to complete one crucial task that was addressed during the ICI project's implementation, a system called **Smart-Met**, which is a **very successful spin-off from institutional cooperation** described by interviewees and in the FMI Self-evaluation. FMI supported NCHM in the installation of the system during and after the ICI project implementation. NCHM provides, for instance, services to the agricultural sector through Smart-Met for a decision support system. The system has aided the provision of weather forecasting services to agriculture and the establishment of linkages between the NCHM and agriculture systems.

After the ICI Project, there is a new JICA Project phase; a long-term UNDP implemented GCF financed project to support climate resilience in the agricultural sector; and a regional World Bank Hydro-met services project supporting NCHM. A proposal for a new ICI project (SHSB-II) of € 600,000.00 was presented from NCHM to the Finland MFA in 2018, but the financing is still not confirmed.

Finding 4 There were strong synergies between projects but also some lost opportunities

NCHM was supported by different projects that, despite not having a common forum, achieved synergies without any evident duplication of efforts. The most important of these initiatives was procurement and

¹⁹ The Cryosphere is the part of the earth's surface characterized by the presence of frozen water

installation of the FMI Smart-Met system financed through NAPA II, where the process initiated during the ICI project and finalised later.

Capacity building through the ICI project to set up and run the Weather Research and Forecasting (WRF) model was complimentary to the network expansion, with the installation of more servers. The ICI project also filled in the lack of calibration skills and tool kits. Even though there were close inter-institutional synergies, there were also some missed opportunities. The project activity to set up a common Hydromet Database Management System (DMS) fit well with the NAPA II network expansion plan. Still, this project did not have a sufficient budget to finance the system. The HydroMet Policy that was planned to be developed could not be completed due to the upgrading of NCHM. However, NCHM clarified that the ICI project was indeed a sound basis, but they didn't realise the time needed to formalise a policy. At the time of the current evaluation, the policy is in an advanced stage of approval by the Cabinet.

2.4 Participation, ownership, partnership

Finding 5 The project was strongly related to national policy.

The SHSB project is strongly related to the national 5-year plan, which was initiated simultaneously with the project. However, the project design was initiated in 2011 when a team from DHMS presented their weather and climate services and national needs during the Bhutan global Climate Summit. The Former DG of FMI suggested the team propose the same to the Government of Finland through MFA. It was the start of the institutional interaction, which, however, was based on national ownership from the first project profile.

FMI was responsible for ensuring that the project is carried out in compliance with the approved project document (FMI & DHMS 2013), as well as providing expertise and supporting the NCHM's capacity building activities. Planning and implementation were jointly carried out by FMI and NCHM, with project managers at both institutes. NCHM complied with the requirement to provide local support and staff in the project. The joint project Governing board offered strategic planning and supervisory guidance and meetings in Bhutan and Finland.

NCHM management and staff express to be pleased with the project and highlight the support from a dedicated FMI Project Manager. This was the first bilateral cooperation NCHM had with an international institute working in the same field. They highly valued the support and guidance from FMI. They found it more relevant than technical support from private sector consultants. This is believed to be because FMI has a similar institutional role, long-term experience and institutional memory. 93% of those that responded to the survey consider that there now is high national institutional ownership of the project results.

Finding 6 The strong partnership was highly valued and extended beyond the project period

All NCHM staff interviewed spoke highly about the FMI, its staff and the support provided. The positive inter-institutional relationship and the personal relations supported the development of a high level of trust through the ICI project. The strong partnership has continued, as demonstrated by the fact that the NCHM-FMI cooperation has extended beyond the project period and continues today. After the project, NCHM and FMI have worked on the previously mentioned FMI developed Smart-Met²⁰ Weather Forecasting system that was *installed at NCHM with support from FMI*, funded by GEF through the UNDP implemented NAPA II Project.

²⁰ FMI Weather Information and Forecast Production System

https://en.ilmatieteenlaitos.fi/documents/30106/486066512/SmartMet_Leaflet.pdf/7c6cfb50-1278-4caf-8840-19b79ca194ab

One of the most valued aspects of the project was the professional skills of FMI specialists and engagement with NCHM. An important point mentioned by interviewees was also FMI's systematic approach and the full setup in Finland. The exchange of information and ideas continue. NCHM claims to have gained a lot from this bilateral inter-institutional cooperation because the same type of agencies in different countries understand each other, and they consider that the same would not have been possible from a regular project with independent consultants. The project also presented the profile of Finland as a trusted development partner in Bhutan.

2.5 Implementation effectiveness

Finding 7 Most results were achieved, but two important outputs were delayed

As shown in Table 1, the most expected results of the project were achieved. The exceptions are, however, the hydro-meteorological policy and the central database system (DMS). Both of these results are important for the long-term impact of the project to be realised.

The SHSB Completion Report (FMI & NCHM 2017) shows that three out of four indicators for Expected Result 1 were completed, while the hydro-meteorological policy was drafted but not finalised due to institutional changes in NCHM. This shows a weakness in the design and also a lesson learned (see lesson 5).

For expected result 2, the indicators were completed or in the process of being completed at the time of the Completion Report. The inability to have the DMS implemented was due to internal problems and delays of the Nepalese firm Real Time Solutions Ltd, which was contracted by FMI. This highlights the difficulty with procurement processes in general, but even more when a Finnish agency contracts services abroad without sufficient knowledge about the service provider.

All outputs for the Expected Result 3 were completed.

Table 1. Project progress at the end of the implementation period

Expected Result	Expected outputs	Progress
1. Strategic planning capacity of DHMS strengthened	1.1 Study on the socio-economic impacts of services provided by DHMS	Completed
	1.2 Development of standard operating procedures and processes for weather station maintenance, calibration and repair	Completed
	1.3 Support DHMS to develop a National Hydro-met Services Policy	Not yet completed (2021)
2. Enhanced services provided by DHMS	2.1 Developing a data management and quality control system	Completed after project closing
	2.2 Data processing and analysis for climate change studies	Completed
3. Improved DHMS cooperation and communication with the public, disaster management, media and renewable energy	3.1 Stakeholder capacity building, education and awareness	Completed
	3.2 Development of weather forecasting processes and verification	Completed
	3.3 Development and pilot of new weather service to renewable energy, disaster management and public	Completed
	3.4 Development of Communication Strategy for DHMS	Completed

	3.5 Project Results and Evaluation Workshop	Completed
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It is interesting to note that no major changes to the project's original plan were made, which raise the question if adaptive management could have resolved the issues for the two outputs not finalised. However, the problem of delay in policy development is beyond the capacity of both NCHM and FMI. It is therefore not easily resolved during implementation. The issue of delays by the Nepalese firm is in another category, where many measures could have been taken, such as (i) initiating the procurement process at an earlier stage; (ii) including strict measures (late fees) in case of delays, and closing the contract in case of major delay; (iii) using an international procurement process; and (iv) working with partners such as UNDP that is used to carry out procurement processes in Bhutan and Nepal. Another alternative is, of course, that NCHM could have been in charge of the procurement, but that would have required a decision taken early on. NCHM comments that procurement of goods and services by FMI according to ICI regulation was more convenient for the national agency.

Finding 8 There were significant benefits from the FMI services and training activities

The project was implemented according to ICI best practices and adapted to local circumstances. The FMI staff well considered the needs of the NCHM. All project hardware, software, training sessions and mission activities were jointly planned and implemented. NCHM was also very responsive in the collaboration and participation. Several rounds of the capacity building were conducted via lectures, workshops and seminars covering more than 30 expert missions to Bhutan. The project board was also responsive in convening meetings and making urgent decisions.

According to interviewees in both FMI and NCHM, the technical training was well used according to its purpose. Training for technical agency staff was a combination of training courses and personalised technical support in Bhutan and study tours to Finland to learn about different technological and methodological alternatives. Higher-level executives did also participate in these trips. It is positive that the study tours were concentrated on technical programs that fit the target group well. Based on evidence from the evaluation survey, most of the participants are still working in the agency and identified that they had used the new knowledge in their jobs. It is, however, important to highlight that cost per participant is not a useful indicator. The cost of study trips to Finland should also consider that NCHM is a national agency. In that way, any improvement would benefit the whole national population and the diplomatic aspect of improved inter-relation between the countries.

NCHM highlights an excellent working experience with FMI, and the persons interviewed did not identify any weaknesses in the FMI staff. The quality of the FMI specialists that participated was highly regarded, including the skills of the experts, their technical knowledge, and communication with NCHM staff. According to NCHM, the FMI staff had good English skills, so communication was not a problem. The FMI, facilities, services and hospitality during trips to Finland were also appreciated.

2.6 Strengthened competencies and systems

Finding 9 Project gave a positive contribution to increased knowledge and skills of individuals

According to the evaluation survey among former participants in the project capacity building, as well as the interviews carried out, there was a high degree of satisfaction with the FMI training methods, including the combination of theory and practice. NCHM staff members were trained and improved their skills in equipment installation, calibration of instruments with portable kits, snow studies, and communication. The project also enhanced the NCHM capacity and skills for weather forecasting, giving increased lead time (see 2.8 Impact). Seventy-nine per cent currently *use daily the tools and skills they learned in the project (survey result), and this is the backbone of weather forecasting in Bhutan.*

Finding 10 Data management systems were strengthened but finalised after the project

Due to FMI support, NCHM improved its hydro-meteorological data management and increased weather forecasting from 24 to 72 hours. The preparation for the introduction of the Smart-Met System was initiated during the project period and was finalised later on. However, the development of a data management and quality control system was not completed during project implementation (see finding 11).

Finding 11 Both enabling and inhibiting factors for project outcomes were detected

The most important enabling factors for NCHM's application and use of the competencies and systems achieved were:

- FMI being an institute with a similar mandate in Finland to that of NCHM in Bhutan
- NCHM being a new agency formally established during project implementation, being eager for support and collaboration from international partners to improve its capacity. The national agency's staff members were therefore highly receptive and interested in the project activities.

The interviews mention as the most important inhibiting factor the lack of participation of many senior officials at NCHM to grasp the information and skills provided by the FMI experts. At the same time, the survey results pinpoint insufficient funding to carry out more activities.

2.7 Implementation capacity of the Finnish Agency

Finding 12 FMI showed strong implementation performance

Overall, this project showed that FMI had an excellent capacity for implementation of ICI projects and knowledge of the ICI manual. For instance, the Project Board met twice a year (sometimes remotely) to take the formal decisions. The institutional cooperation and professional skills from the Finnish agency were the strengths of the project. FMI was well equipped with the human capacity to implement the project efficiently. Support from MFA and the ICI consultant was therefore not frequently used. More involvement of the ICI consultant could, however, have supported FMI in developing a stronger project design, including improved results framework and risk analysis, thereby facilitated M&E and given improved implementation effectiveness. 86% of those that responded to the survey found that FMI staff carried out their tasks extremely efficiently. The strength of the FMI perceived by NCHM staff was the quality of its technical experts, including their technical knowledge, human interaction, language and communication skills. NCHM highlighted no weaknesses of FMI; however, interviews with FMI itself and MFA reflect that there were specific weaknesses in administrative issues. There was also a lack of knowledge about how to deal with Bhutan, which was a new country for FMI. This was reflected in the insufficient understanding of how long time some procedures could take and the mentioned procurement and supervision of a Nepalese company.

The following list refers to the numbers in the ICI best practices for capacity development:

1. The Bhutan NCHM staff express that FMI had a good understanding of their capacity building needs
2. The NCHM officials interviewed were all highly committed to the project and engagement with their FMI counterparts.
3. All those interviewed in both NCHM and FMI are very positive about the partnership approach mutual respect that developed.
4. There was a good mix of institutional capacity development and individual staff training
5. There was a realistic relation between the planned activities and the project budget
6. NCHM officials noted that FMI staff have maintained contact with Bhutan and gave concrete support after the project ended. This is often on a personal level based on the trust that was established.
7. FMI staff were also aware of the national Bhutan context even though it was a new country for the Finnish agency
8. While training NCHM researchers and other staff, the executive staff was engaged in higher-level discussions, starting with the 2012 Bhutan Climate Summit and through the Project Steering Committees

9. There was a positive, balanced combination of theory and practice during learning sessions in Bhutan and study trips to Finland. Some high management participants were not so used to the hands-on approach but took it with a positive attitude.
10. The mentioned combination of theory and practice is not innovative but still not common in an executive-level setting in Bhutan.
11. Both the positive interaction between NCHM and FMI experts and the study trips seem to have worked as incentives for the participation of NCHM staff members.

2.8 Potential impacts on the agency and beyond

Finding 13 National weather forecasting was enhanced by the project

The project was instrumental in upgrading the weather forecasting capacity of NCHM, increasing the lead time from 24 to 72 hours and with improved accuracy. Based on the project support, NCHM enhanced its communication skills and was also able to communicate and work with other stakeholders from the Agricultural and Disaster and Environment sectors, besides the usual energy and infrastructure sectors. It means a strengthened impact of NCHM activities on farmers and other local beneficiaries, as well as most sectors in the Bhutanese society. The outreach activities were strengthened by the development of a Socio-economic benefit report. The most important enabling factor was the formation of DHMS (NCHM's old name before it became independent) from the energy sector.

Finding 14 The NCHM seems to be more recognised

According to NCHM executives interviewed, there is a visible change in the perspective of other sectors to NCHM with their enhanced weather forecasting ability, as well as of its outreach and communication skills. There is, however, no baseline to be able to compare this perception with how it was before the project. Once the policy is endorsed (likely until the end of 2021), a process that started through the project, further support and recognition of the NCHM is expected.

2.9 Compliance with cross-cutting objectives

Finding 15 The project did not prioritise cross-cutting objectives

The evaluation team considers that the project design does not mainstream human rights issues, and the project document (FMI & DHMS 2013) considers that SHSB only has an indirect effect on human rights. The ability to provide better weather forecasting service to the nation, however, can reduce climate-related natural disasters that are affecting vulnerable people, indigenous peoples, persons with disabilities, women and children, and communities in remote areas. The benefits of improved weather forecasting for the agricultural sector may also indirectly improve access to food.

Non-discrimination, including the focus on persons with disabilities: Bhutan's constitution (especially art. 7 and 9) mandates the State to take appropriate measures to eliminate all forms of discrimination and exploitation. However, there was no reference or any plausible contribution in this area in the project document or other relevant project documentation. No examples of discrimination were identified in reporting on the project activities and were also not mentioned during the interviews. However, it does not mean that it couldn't have happened. The years that have passed also limit the possibility of drawing any conclusions.

Women's empowerment and gender equality is given high importance in the 11th Five-year Plan, which was the ruling document for the public sector during the whole project implementation period. Gender equality was addressed in the project planning documents, and according to the NCHM staff interviewed, gender equality was well-considered and incorporated in all project activities. They identified that NCHM *tries* to involve more women in activities by encouraging female participants and making the environment conducive for them; however, the project figures reflect that this effort was not converted to concrete participation results. The project was solely responsible for publishing the first Bhutan report on

"Socio-Economic benefit of Hydro-met Services". The study found that disseminating early warnings to women in rural areas was necessary for their safety and livelihoods.

Only one woman responded to the survey, but the (male respondents) believed that women had the same opportunities for participation (80%) and influence on the project content (67%). However, only 10% of those that participated in project training were women. At the same time, the participation in stakeholder meetings was higher, around 30%, according to the Completion Report (FMI & NCHM 2017). Presently the weather forecasting section is entirely operated by four women. Women are now approximately 40 of the 140 NCHM employees, but none of them at the executive level. Among the mid-level staff at the centre, six officers from a total of 20 are female. Some NCHM staff expressed that it is a challenge to increase women's participation since it is a technical agency in a small country with few qualified candidates. The institution has to recruit those that are most fit for the job. However, according to the survey, 46% think the agency changed its gender practices due to the project.

The project contributed to improved **climate resilience** by directly helping climate change adaptation through the provision of accurate and reliable weather forecasting services. This was studied and quantified in the study on the socio-economic benefits of the hydro-met services. The project has no direct impact on **low emission development**, but this is a clear goal from the Government. Bhutan decided already in 2009 to be carbon neutral, and this was confirmed in a letter 2015 letter to UNFCCC regarding the country's intended national contribution to the Paris Agreement²¹.

2.10 Sustainability

Finding 16 There were few direct and many indirect beneficiaries

There are 25 direct beneficiaries of the project that attended training provided by FMI in Finland and were also followed up with personalised advice and training in Bhutan. Of these, eight participants left NCHM as of May 2021. Nevertheless, they are either on studies or working in other sectors in Bhutan in the same field, which could still be considered part of the project's impact. There are also approximately 200 direct beneficiaries who attended training sessions, workshops and seminars organised by NCHM as part of the project. According to the evaluation online survey, many of them have left for further studies. Others are in the private sector of Bhutan in the same hydro-met sector. In contrast, a few have left for positions in other countries. The online evaluation survey detected only one person that went to another agency, while three had changed jobs within NCHM. The weather forecasting system set up, calibration system instituted, and NCHM is still using snow measurement methods introduced through the project. The new staff is trained in these methods.

Generally speaking, the 700,000 people of Bhutan are all indirect beneficiaries of the project through the improvement in weather forecasting that increased from 24 to 72 hours, as well as improved climate resilience and disaster risk management.

Finding 17 Systems introduced continue operational

The project increased capacities and supported new systems to be operationalized that are still in use. The only drawback mentioned was the difference in equipment models/versions and technologies in FMI Finland and NCHM Bhutan. The technologies in Finland are State-of-the-Art, while Bhutan is still using old systems. Thus, not all skills learnt or exposure provided in FMI could be utilised due to the system in Bhutan being behind.

These improved systems will likely continue in the future, given that 65% of those that responded to the survey consider that NCHM has sufficient capacity to continue the processes and practices introduced by

²¹ Bhutan INDC: <https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Bhutan/1/Bhutan-INDC-20150930.pdf>

the project. The collaboration between FMI and NCHM is still ongoing. There is frequent person-to-person communication and support happening even without a project.

The main factors enabling sustainability are the ability of the Government of Bhutan to fund the operation and maintenance of the systems, employ more people, and achieve new projects to provide support for continued institutional development.

2.11 Effects of the Covid-19 pandemic

Finding 18 Low levels of Covid-19 infection is so far no threat to sustainability

Since the project closed more than four years ago, the Covid-19 pandemic would not have any effect on the direct project result. However, it could theoretically influence the sustainability of outcomes. Bhutan has had very low levels of infection during the Covid-19 pandemic, except for a small outbreak around the new year. The levels have been so low that they have not affected the daily work of NCHM. According to the Covid-19 tracker, an outbreak that started in April 2021 is somewhat concerning, with May 29th having the highest daily figure.

3 Conclusions

Conclusion 1 The project responded to the need for improved meteorological services

Before the SHSB project, the national agency was weak. Without a development strategy, there was no policy and no strategy for Hydromet Services, no central hydro-met database, and weather forecasting was done for only 24 hours. The Government five-year plan 2013-2018 presented the need for improved meteorological services to support improved disaster risk management and agricultural production. The project started at the same time as this plan and responded to identified gaps and needs.

Conclusion 2 The positive results were the outcome of a collaborative partnership

Planning and implementation were jointly carried out by FMI and NCHM from the design phase through the whole project period, with project managers at both institutes, which supported collaboration and mutual trust at both an institutional and personal level. Both agencies felt accountable for the project results.

Conclusion 3 Collaboration with other development efforts led to effective synergies

Despite not having a joint forum for support to hydro-met in Bhutan, the FMI specialists and counterparts developed a fruitful collaboration with other agencies and projects, and no examples of duplication were detected. The most important example of such inter-agency collaboration was the development and installation of the Smart-Met system, which is designed by FMI. The process was initiated during the project implementation, and the cost of the system was financed by the GEF through NAPA II (implemented by UNDP). FMI was advising NCHM during the whole process, while the World Bank has also been involved. JICA and Norad have financed complementary projects that give synergies in the institutional strengthening of NCHM.

Conclusion 4 Approval of a national policy was outside the project's control and has still not been finalised

The Output for Result 1 *Approved National Hydro-met Services Policy* has still not been finalised more than four years after the project ended. This is because the political process has not ended. It was a high risk to include approval of a national policy as an output for the project since the achievement of this goal was entirely outside the project management's control (see lesson 1).

Conclusion 5 Capacity building of DHMS has increased its ability to generate national impact

The project strengthened NCHM on two levels - its systems and its staff. The training resulted in increased knowledge and skills of individuals who appreciated the combination of theory and practice in FMI training. The areas covered were equipment, calibration of instruments, snow studies, and communication. The project improved the capacity for weather forecasting with triplication of lead time (24 to 72 hours), and is still used daily. All those that responded to the survey were very satisfied with the teamwork with FMI specialists.

Conclusion 6 The project's beneficiaries go far beyond those that were trained

25 NCHM staff members attended training by FMI in Finland, and of these, only eight have so far left the agency but continue in the same field. Approximately 200 people attended training sessions and other project supported events in Bhutan. Of these, many young people are currently studying, while others are in the hydro-met private sector and a few have gone abroad. More meaningfully, the skills and expertise introduced by the project are part of training and methods embedded and used by the organisation. Due to the improvements in weather forecasting, climate resilience and disaster risk management, it could be considered that the whole 700,000 population of Bhutan are indirect beneficiaries.

Conclusion 7 The project sustainability is high, as systems continue to be operational

The project outputs and activities were very sustainable as almost all the strengthened competencies and skills introduced by the project are still operational, and are likely to continue for the foreseeable future. The collaboration between FMI and NCHM is continued, and there is frequent person-to-person communication and support.

Conclusion 8 Gender equality gave limited results due to a lack of concrete action

Even though gender equality is given priority in the Bhutan Five-year Plan and the project design, only 10% of participants in the training were women, while 30% of stakeholders in other meetings were women. Women are now approximately 40 of the 140 NCHM employees, and four women operate the weather forecasting section. Still, there are no women at the executive level. It is challenging to recruit women to a specialized agency with few qualified candidates, which means that there would be no results on gender equality if there are no concrete project actions and targets defined in the project results framework.

4 Lessons learnt

Lesson learnt 1 Adoption of national law or policy as an expected project result is a design failure

This lesson is due to the fact that the political approval process is entirely outside the project's control. The lesson is especially valid for the ICI projects since they are for only three years, and the process to prepare a draft would typically finalise towards the end of the project period. The project output should be a draft, and it would then be up to the ministry and political representatives to take it forward to approval. It will then be part of the risks for project impact if the policy is approved or not.

Lesson learnt 2 Impact of an ICI project depends on mutual understanding due to similar roles.

The Finnish public agency and the national agency in the beneficiary country have similar institutional roles allowing them to understand the challenges faced by the other partner. This also creates trust and mutual understanding on an institutional and personal level that is important for a long-term sustainable relationship. The national agency highlighted that the support and guidance received from its Finnish peers was more relevant than technical support from private sector consultants.

Lesson learnt 3 A small ICI project could create synergies with a strong impact.

The key role of Finnish advisors to the national agency can result in synergies with other projects, inter-institutional coordination and support from international agencies that often have much higher budgets. This can create a multiplication effect from the funding spent on the Finnish side. A review of ongoing and pipeline projects in the same sector should therefore be part of the project design process.

Lesson learnt 4 It could be too difficult for a Finnish ICI agency to carry out procurement in developing countries.

The experience is not positive for FMI being in charge of procuring services of a Nepal firm for services in Bhutan. Even though this is only one example, it seems to reflect problems that could occur due to insufficient knowledge about local procurement rules, the background of competing firms, formal and informal procurement rules (including corruption), time for the processes, etc.

A lesson is, therefore, that an ICI agency should avoid being responsible for procurement in a developing country. Such procurement, if necessary, should be carried out by the national partner under strict supervision or working with an international partner such as UNDP that is used to carry out procurement in most countries. Another lesson is that, to avoid delays, the procurement process should be initiated at an early stage, impose strong late fees, and close the contract in case of major delay.

Lesson learnt 5 Results of study trips abroad would depend on the program and participants

According to the survey, all participants in the study trips to Finland found them highly positive. This is an indication of a good selection of the participants, to assure that they were interested in the content of the trip, but also that the organisers were able to establish an interesting program that fit the main topics the participants were interested in and their educational and technical experience level.

Lesson learnt 6 An ICI project of at least two phases would have a stronger impact and be more sustainable.

The ICI projects are small interventions during a short period. Since they most often were prepared without feasibility studies, they would not cover all the most critical needs of the national agency. In most cases, new needs would be discovered or appear during the implementation, which could give a baseline for an improved design of a second phase.

Appendix 6 Project-level findings FMI Nepal

This appendix summarises key facts about each project covered by this evaluation and describes the key findings at this level. It follows a detailed list of project-level questions that relate to the evaluation criteria and questions as summarised in Project-level findings for FNEP 2 and FNEP 3

1 Project Summary

Name of project	Finnish-Nepalese project for the improved capability of the Government of Nepal to respond to the increased risks related to the weather-related natural disasters caused by climate change (FNEP)
Timing	<ul style="list-style-type: none"> Phase 1: 2010 – 2012 (not evaluated) Phase 2: 2013 – 2016 Phase 3: 2018 – Ongoing (currently until 2021; with a possible extension until 2022)
Budget	993,479 Euros (excluding phase 1) <ul style="list-style-type: none"> Phase 1: 492,610 Euros (not evaluated) Phase 2: 493,479 Euros Phase 3: 500,000 Euros
Finnish agency	<p>The Finnish Meteorological Institute (FMI) is a research and service agency under the Ministry of Transport and Communications. It produces observation and research data on the atmosphere, the near space and the seas, as well as weather, sea, air quality and climate services for the needs of public safety, business life and citizens. The Finnish Meteorological Institute is an administrative branch of the Ministry of Transport and Communications.</p> <p>The Institute reported having 674 employees in 2021. The personnel are highly educated. Apart from meteorologists, about half of the employees work at various expert tasks as researchers or, for instance, as operators of the specialised equipment and systems needed for weather forecasting.</p> <p>Besides people who have studied meteorology at university, the Institute's personnel include chemists, physicists, mathematicians and engineers. They are employed in specialised fields of research, observation services, weather services, information management, product development or administration.</p> <p>Finnish Meteorological Institute is among the leading meteorological expert services and weather information systems worldwide. It provides tailor-made consulting to national hydrometeorological services, ministries, municipalities, energy companies and equipment manufacturers worldwide. They provide high-quality expert services to develop weather and climate services of the national hydrometeorological institutes worldwide. The consultation services extend in all areas and operations of an institute, from the observation services to the end-user forecast production.</p> <p>FMI is involved in a large number of other ICI projects in the same or similar field, in different geographical contexts.</p>
Partner agency	country
	The Department of Hydrology and Meteorology (DHM). The government of Nepal started hydrological and meteorological activities in an organised way since 1962. The activities were initiated as a

	<p>section under the Department of Electricity, and the unit department was created in 1988.</p> <p>DHM is a governmental organisation, part of the Ministry of Energy, Water Resources and Irrigation. It is responsible for activities in the field of hydrology, meteorology and climate, providing data, forecasts and warnings to governmental authorities, other stakeholders, the general public and various livelihoods such as water resources, agriculture, energy, aviation, transport and tourism, especially trekking, among others. For this purpose, DHM maintains hydrometeorological observations networks to analyse river state, climate variability and change, agro-climatic conditions, sediment movement, air and water quality, snow accumulation, glaciers and potential for wind and solar energy. The department has its headquarter in Babarmahal, Kathmandu and has four regional offices, namely the Office of Hydrology and Meteorology in Dharan, Pokhara, Bhairahawa and Kohalpur, respectively. The regional office in Pokhara has a field office called Narayani Basin Field Office, Narayanghat, which looks into the hydrometric network of Trishuli and East Rapti River system. Similarly, the regional office in Kohalpur has a field office called Mahakali Basin Field Office, Dhangadi, which looks into the hydrometric network of Mahakali River and Mohana River system, respectively.</p> <p>DHM is a member of the World Meteorological Organization (WMO), the Intergovernmental Panel on Climate Change (IPCC), the South Asian Association for Regional Cooperation (SAARC) Meteorological Research Centre (SMRC) and the International Civil Aviation Organization (ICAO). As a member of the World Meteorological Organization (WMO), DHM contributes to the global exchange of meteorological data on a regular basis.</p>
<p>Other project partners (according to the project document)</p>	<p>Internal stakeholder of the projects: FMI, Consulting Services Unit.</p> <p>Main beneficiary of the project: DHM, particularly the following divisions:</p> <ul style="list-style-type: none"> - Weather Forecasting Division (Weather, Aviation Weather and Communication Sections) - Climate Section - Meteorological Data Management Section - Instrument Section - Mid & Far Western Regional Office, Surkhet <p>Other planned beneficiaries at the project design phase:</p> <ul style="list-style-type: none"> - Citizens of Nepal, whole Nepalese society, both genders: Improved early warning services; improved services and information. - Groups that have special related needs for early warnings and weather, climate and environmental information, like farmers, aviation services, water management, energy, transport and tourism industry: Accurate weather forecasts - Government of Nepal: Receives improved information for decision making - Ministry of Science, Technology and Environment, of Nepal: Beneficiary FNEP 2 (DHM under this ministry) - Ministry of Energy, Water Resources and Irrigation: Beneficiary FNEP 3 (DHM under this ministry) - Nepal and potential donors: Significantly benefits from the increased knowledge about the impacts of hydrometeorological,

	<p>climate and environmental services on the socio-economic development of the country.</p> <p>External stakeholder and projects with which FNEP 2 and 3 planned to cooperate within the project design phase:</p> <ul style="list-style-type: none"> - MFA and the Embassy in Nepal: to participate in the meetings. - SAARC (FNEP 2), NRCS (FNEP 2), ADB (FNEP 3) - World Meteorological Organisation (WMO), World Bank, UNDP and other UN organisations (FNEP 2) - Finland-funded projects in Nepal: Strengthening hydrometeorological services in Bhutan (SHSB; ICI-project; FNEP 2); Rural Village Water Resources Management Project (RVWRMP; bilateral project; FNEP 3) - Civil society: WWF (FNEP 2), Practical Actions (FNEP 2), Mercy Corps (FNEP 2), Red Cross (FNEP 3), ICIMOD (FNEP 2) <p>Private sector:</p> <ul style="list-style-type: none"> - Vaisala: A Finnish company and world's leading manufacturer of meteorological observation equipment. - The FNEP 3 project also supports the development of business opportunities between Nepal and Finland. - Finnish technology presented during study visits, and suitable Finnish private sector representatives invited to seminars in the spirit of Team Finland.
<p>Project objective and purpose</p>	<p>FNEP 1 (not evaluated) The overall objective: Improved capability of the Government of Nepal to respond to the increased risks of natural disasters related to weather and climate. The purpose of the project: Increased DHM capacity in hydrometeorological observations, services and international data sharing.</p> <p>FNEP 2 The overall objective: Improved capability of the Government of Nepal to respond to the increased risks of natural disasters related to weather and climate. The main purpose: Increasing the capacity of DHM to provide new services to the society through advanced technology in hydrometeorological observations, services and international data sharing.</p> <p>FNEP 3 The overall objective: Improved capability of the Government of Nepal to respond to the increased risks of natural disasters related to weather and climate. The main purpose: Improve the capacity of DHM to deliver weather, climate and early warning services for the benefit of Nepali society.</p>
<p>Principal outputs project and activities</p>	<p>FNEP 2</p> <p>Result 1: Improved processes of DHM to produce weather forecasts and services</p> <ul style="list-style-type: none"> - Activity 1.1 Improving the capacity of the DHM weather forecasting division - Activity 1.2 Improve DHM personnel skills to determine feasibility to use modern technology/methods - Activity 1.3 Support DHM to draft National Hydro-Met Policy - Activity 1.4 Feasibility Study about potential calibration services for DHM both field and laboratory. Development of maintenance operation and services standard operation procedures (SOP). - Activity 1.5 Results and evaluation Workshop

	<p>Result 2: Enhanced customer relations, weather and climate service provision capacity of the DHM</p> <ul style="list-style-type: none"> - Activity 2.1 Sectorial stakeholder workshop of hydro/met information needs - Activity 2.2 Developing and releasing new climate services (e.g. seasonal forecasting, R-software and climate outlook products) - Activity 2.3 Developing and releasing new weather services (e.g. Early Warning Services, tailor-made services to different customer groups) - Activity 2.4 DHM communication plan (including weather forecasting, extreme weather and flood warnings etc.) <p>Result 3: Improved Data management and Data Quality Control to support service development</p> <ul style="list-style-type: none"> - Activity 3.1 Determine the most urgent needs in capacity building and data management development together with DHM and other partners - Activity 3.2 FMI support in technical design and documentation and training in data management - Activity 3.3 FMI support in developing and updating Metadata module for database - Activity 3.4 Exploring and planning sophisticated methods to implement hydrological data to meteorological database - Activity 3.5 Developing an upgrade plan to DHM data management system including new meteorological instruments <p>FNEP 3</p> <p>Output 1: Improved Capacity of DHM to manage and utilise the new observation systems</p> <ul style="list-style-type: none"> - Activity 1.1 Technical support on obtaining two new weather radars (Site selection and site survey, technical specification, tendering and evaluation) - Activity 1.2 Utilising the data from new weather radar, lightning detection network and radio sounding system - Activity 1.3 Data management training - Activity 1.4 Acquisition and installation of an AWS with a weather camera to a popular trekking route - Activity 1.5 Other project activities <p>Output 2: Improved production and service system of DHM</p> <ul style="list-style-type: none"> - Activity 2.1 Advanced tools for weather forecasting and end product generation - Activity 2.2. Promoting, developing and releasing new climate services - Activity 2.3. Promoting and developing new weather services - Activity 2.4. Developing new customer-based Aviation Weather Services <p>Output 3: Enhanced stakeholder relations and Warning Services of DHM to support Disaster Risk Management</p> <ul style="list-style-type: none"> - Activity 3.1 Developing and delivering tailored products to community level for Disaster Risk Reduction - Activity 3.2. Joined Disaster Risk Management training with Finnish Red Cross and RVWRMP for pilot community - Activity 3.3. Training for journalists
Impact logic	The FNEP 1 project built the basis for the modernisation of the National Hydrological and Meteorological Services (NHMS). A large World Bank

	<p>project, Building Resilience to Climate-Related Hazards (BRCH, 2013 – 2020), did a modernisation of the NHMS. FNEP 2 and FNEP 3 worked in parallel and in close synergy with BRCH, to support the capacity strengthening of the Nepalese experts and DHM to understand and use the new modern system. This also included a continuation after the BRCH to ensure the sustainability of the impact and to initiate the connection of the hydro-met information to some of the sectors that depend on this information.</p>
<p>Project genesis</p>	<p>FNEP 1 started as a result of a conversation at an international conference where both FMI and DHM representatives were present. They identified a need and a matching offer as a combination of FMI expertise and the fitting ICI instrument. As FNEP 1 developed several required assessments, FNEP was designed mainly based on the FNEP 1 results and recommendations, reflecting the needs and priorities, while FNEP 3 considered the broad DHM capacity building plan and roadmap elaborated under the BRCH project.</p>
<p>Other relevant projects (Finnish or other international)</p>	<p>There is a large variety of other related projects as hydro-met information is connected to many different fields of society. Here are presented the main ones.</p> <p>FNEP 1: (February 2010 - December 2012). The purpose of the project was "Increased DHM capacity in hydrometeorological observations, services and international data sharing". FNEP was developed to increase the quality and level of services of DHM to support the development of the Nepalese community in different socio-economic sectors and improve DHM capacity to participate in regional hydrometeorological cooperation and projects. The project had three results: 1. DHM planning and service capacity to respond to the society needs improved, 2. Role of DHM in national and regional early warning decision-making improved, and 3. Customer service capacity of DHM strengthened.</p> <p>Building Resilience to Climate Related Hazards (BRCH): Recognising the high levels of exposure to climate change risks, the Climate Investment Fund (CIF) selected Nepal as one of the nine pilot countries for the Pilot Program for Climate Resilience (PPCR) in 2009. In Nepal, PPCR is administered by the Asian Development Bank, the International Finance Corporation and the World Bank. Government of Nepal has prepared a Strategic Program for Climate Resilience (SPCR), which was approved by CIF. Through CIF, four projects were funded under PPCR; one of them being the Nepali Building Resilience to Climate Related Hazards (BRCH, 2013-2018; extended to 2020). BRCH is the largest project in DHM's history, with a total budget: 31 million USD. The BRCH project aims to enhance government capacity to mitigate climate-related hazards by improving the accuracy and timeliness of weather and flood forecast and warnings for climate-vulnerable communities, as well as developing agricultural management information system services (AMIS) to help farmers mitigate climate-related productions risks. Through the BRCH project, the governments hydrometeorological monitoring and service infrastructure is modernised under the guidance of the Finnish Meteorological Institute, selected as the leader of the System Integrator consulting firm for the project. In addition, BRCH project is focusing on Institutional strengthening and improving personnel and financial sustainability. Three components were implemented by DHM:</p> <ul style="list-style-type: none"> a) Institutional Strengthening, Capacity Building and Financial Sustainability of DHM b) Modernisation of the Hydro-meteorological and Environmental Observation Networks DHM

c) Enhancement of the Service Delivery System of DHM

Rural Village Water Resources Management Project (RVWRMP; 2006 – 2022): RVWRMP works with locals and municipal governments to achieve access to a safe drinking water supply and basic sanitation. In addition, it works for improving Nutrition and Rural Livelihoods of local people by providing Home Gardens, Income Generation Assistance and by Developing Local Cooperatives. The project provides renewable energy for the people living in the poorest areas of Nepal, with a focus on Micro Hydropower, Improved Cooking Stoves and Improved Water Mills. Climate Change Adaptation and Disaster Risk Reduction are integrated into all project activities. Gender Equality and Social Inclusion (GESI), Local Ownership, Transparency and Accountability are core values of the project. RVWRMP is a multilateral project funded by the Government of Nepal, the European Union, and the Government of Finland. The project area is located in Sudurpaschim and Karnali Provinces of Nepal (far west region).

In addition to the RVWRMP, there have been or are several projects implemented through Finnish development cooperation that are or could be benefitting or FNEP information.

SHSB – Strengthening Hydro-Meteorological Services for Bhutan: The overall objective of the SHSB is to reduce weather and climate-related losses in Bhutan and support the further use of renewable energy through improved weather and climate services. It is a capacity-building project between the Department of Hydro-meteorological Services (DHMS) and FMI. The project is funded by MFA, Finnish Government through the ICI instrument. SHSB and FNEP2 had several common activities as many study tours, and training courses were arranged to coincide in Finland.

2 Findings

2.1 Relevance vis-a-vis needs

Finding 1 The FNEP projects were synergetic with the large PPCR to strengthen DHM

The project was designed in the context of high national vulnerability to natural disasters and climate change. There was no long-term institutional capacity development plan for DHM when FNEP 1 started. The first phase (not part of this evaluation) therefore supported the initial planning for DHM capacity development. This went on simultaneously with the first phase of the CIF-financed Pilot Program for Climate Resilience (PPCR)²², which was initiated before FNEP1, in 2009. The plans and studies produced under FNEP 1 were used as inputs to formulate the PPCR implementation phase "Building Resilience to Climate-Related Hazards" (BRCH). A large 5-year plan and roadmap for capacity development of DHM were developed under this project, which has been ongoing since 2013 with a budget of USD 31 million. The capacity development plan built on FNEP 1 outputs such as Technical Feasibility Study, Socio-Economic Scan, Early Warning Strategy Plan, and Development of Climate Services in Nepal, but the 5-year plan was quite comprehensive and also included many other studies. Additional studies during FNEP 2 further strengthened the capacity building process, such as a feasibility study for potential DHM calibration services with related standard operating procedures (SOP), and the feasibility of weather forecasting division to use modern technology and methods.

At the institutional level, DHM's long-term capacity development plan was reflected in its annual work plans, including also the hardware and software components to be installed.

Finding 2 FNEP gave hands-on training that responded to DHM capacity building needs

Prior to the initiation of the FNEP and PPCR projects, the DHM's forecasting capacity was limited due to capacity gaps in its technical human resources, as well as a lack of real-time weather observations and forecasting models. This inhibited Nepal's capability to respond to increased risks of climate-induced natural disasters. The FNEP projects contributed towards fulfilling these institutional needs by aiming to improve both the human and technical capacity of the institution, complementary to investments and capacity building financed. The finding was consistent throughout most of the interviews and supported by the review of project documents, FNEP 2 completion and mission reports.

Given that the PPCR/BRCH project financed and installed the meteorological and hydrological forecasting hardware and software in accordance with the 5-year plan, FNEP covered some complementary but critical needs for capacity building of DHM. These areas were operational efficiency, system maintenance, data management system (analysis and interpretation of data), and service delivery. Even though the evaluation team has not had enough data to carry out an analysis of the financial efficiency of this joint effort, it is considered to have been a highly efficient division of main tasks. The DHM officials interviewed were all of the opinion that it was a good choice that FMI capacity building focused on practical and result-oriented trainings.

"We do not want theoretical sessions. Instead, we require more numbers of hands-on, practical and result-oriented trainings that will enhance our service delivery" -DHM Official

2.2 Relevance vis-a-vis development goals

Finding 3 FNEP was aligned with the national climate change policy

The FNEP projects are relevant for national policy due to their alignment with four of the seven objectives of Nepal's Climate Change Policy (2011) that was applicable during the design of both phases:

1. Strengthening of existing institutions.
2. Implementing climate-related programs.
4. Enhancing climate adaptation and resilience capacity.
6. Developing capacity for identifying and quantifying present and future impacts of climate change.

This alignment was important as the projects envisaged to improve the capability of the Government of Nepal to respond to increased risks of natural disasters such as flooding and landslides due to climate change.

²² The PPCR implementation phase in Nepal has the title "Building Resilience to Climate-Related Hazards (BRCH). This phase was implemented from 2013 by the World Bank with DHM as responsible national agency and a total budget of USD 31 million.

Finding 4 FNEP responded to Finland's international development goals

FNEP complied with the goals for Finland's international development cooperation, especially goal number 4: **Climate change and natural resources**, where the emphasis is given to several aspects covered by the FNEP projects, such as *strengthening adaptation alongside mitigation of climate change, meteorology and disaster risk prevention*.

FNEP was part of the country programme and country strategy for the Finnish development cooperation in Nepal.

2.3 Coherence and harmonisation

Finding 5 FNEP is complementary and harmonised with other projects and initiatives

As mentioned in finding 1, the FNEP projects complemented the objectives of the PPCR/BRCH project, financed with a donation from the Climate Investment Funds (CIF)²³ complemented by a loan operation from the implementing agency the World Bank with DHM as the main national agency. DHM executives mentioned in interviews that FNEP's harmonisation with this project was important since BRCH was DHM's flagship project. Interviewees explain that the rationale was to harmonise the two projects and add value by aligning FNEP training and capacity development to BRCH interventions and thereby avoiding duplications. FMI was later on awarded a contract through global bidding as a system integrator for the BRCH project. FMI staff was therefore involved in both the FNEP and BRCH projects, which significantly contributed to the coherence and harmonisation of these two projects. For instance, the procurement evaluations were done by FMI staff, and FNEP supported the training needs assessment for the new system installed by the BRCH project.

Two trainings were organised in collaboration with the FMI implemented ICI project "Strengthening hydrometeorological services for Bhutan" (SHSB). The main Finnish funded project in Nepal that FNEP 3 has relation with is the Rural Village Water Resources Management Project (RVWRMP), which is also supported by the EU. The project started in 2006, and its third phase is scheduled to complete in 2022. FNEPs collaboration with RVWRMP focuses on disaster risk management training in the far west (planned for May 2021). It was strongly delayed, mainly due to the Covid-19 pandemic. DHM, however, explains that their role in this project so far was only in a small component regarding hydro/met data usage for disaster risk reduction. More concrete collaboration with RVWRMP and other projects could be possible, but this is a good start. There have also been coordination efforts between FNEP and Red Cross, as well as with WWF.

FNEPs connection to the National Disaster Management Agency (NDRRA) is recently established but seen as important to enable the hydro-met information to be used in disaster management, sectors and communities. The NDRRA was established in 2019, with coordination mandate of several Government (sectoral) agencies contributing to disaster risk management and connecting to the municipality level. NDRRA staff interviewed mentioned that disaster management is being strengthened at the municipality level in Nepal since 2017, and that there is a decentralized model giving the municipalities more power. The capacity is, however, still low, and the implementation of this model seems to be slow.

Finding 6 DHM assured inter-project coordination

It was important for DHM to assure coordination, linkages and synergies between the different capacity-building projects that supported the institution, and FNEP complied well with this goal.

Though separate DHM staff members were assigned to oversee the implementation of various projects, periodical in-house meetings among DHM staff to share experiences and learning contributed to inter-project harmonisation and coordination. Further, the same group of staff was involved in capacity development events across the projects, which facilitated the exchange of experiences and lessons learned, and contributed to improving coordination.

2.4 Participation, ownership, partnership

Finding 7 Designs of FNEP 2 and 3 were built on DHM capacity building plans

Towards the completion of the first phase, the partners FMI and DHM realised that there was a need to give continuity to and build on the capacity building initiatives of FNEP 1. The project design was informed by lessons learned, good practices, and overall experience of the first phase. It was also a great advantage for the design

²³ <https://www.climateinvestmentfunds.org/topics/climate-resilience>

of FNEP 2 that the capacity building needs of DHM were already defined, and the project had prepared a capacity development plan. Experts from FMI, following extensive consultation with DHM officials, designed FNEP 2 and agreed with DHM on the projects' scope and content. The design of FNEP 3 followed a similar process, giving continuity to FNEP 2 and filling in gaps in the capacity development support provided by PPCR/BRCH. In this case, the project design considered the broad DHM capacity development plan and roadmap that was elaborated by World Bank consultants during PPCR 2 (BRCH implementation phase).

Finding 8 The roles and responsibilities of project partners were clearly defined

The project document clearly defined the roles and responsibilities of the two partners FMI and DHM. An arrangement with a definition of how the responsibilities were shared was instituted for project implementation and oversight, in line with the inherent institutional strength of the partners.

Although there was no staff dedicated exclusively to FNEP, the implementation and oversight arrangements were adequate for the smooth operation of the project phases. The project manager in DHM, supported by designated DHM staff, was in charge of overseeing the implementation of the FNEP, while FMI was responsible for providing all necessary support, and each partner was held accountable for its specific tasks. Project activities included study tours/trainings in Finland and providing human resources for project-related missions that aided the implementation of project activities in Nepal.

The responsibilities of monitoring progress and preparing periodical progress reports were joint initiatives. The Project Board comprising of the senior management of DHM and FMI, together with a representative of the Ministry of Energy, Water Resources and Irrigation (DHM's line ministry) provided project oversight.

According to interviews, both agencies consider that their project partner fulfilled its roles and responsibilities. All project activities except one were satisfactorily implemented (see 2.5 Implementation Effectiveness). Planning of the events and activities was done jointly between the two agencies. To the extent possible, changes were made to align capacity building initiatives to the local context and consider the views of DHM staff during the process.

Finding 9 The strong partnership was built on mutual trust

According to all interviewees in the two agencies, FMI and DHM were able to establish mutual trust, respect and a harmonious working relationship. Both partners were highly committed to the project, with top management involved in exercising oversight and the mid-level in overseeing project implementation. They comment that the strong work together was possible due to the long partnership, learning from each other, and reacting to the needs. DHM officials expressed that they felt that their needs were heard and included in the design or adjusted during the implementation when needed. This can also be observed in the project and mission reporting, as several changes were adopted according to the DHM requests based on specific situations.

The partnership and trust between the two agencies were validated by all the FMI and DHM officials who interacted with the evaluation team. Some relevant quotes reflect this:

"The interactions between FMI and DHM were open and frank. We told them what we wanted, and they were quite flexible in accommodating our needs". - DHM Official

"Having cooperated with DHM for a long time has helped the implementation. The cooperation is very strong, and DHM relies on FMI expertise". - FMI Official

2.5 Implementation effectiveness

Finding 10 FNEP 2 complied with expected results

All FNEP 2 result indicators were completed, except one, which gives compliance of 95%. One sectoral stakeholder workshop was cancelled, justified due to duplication with a similar BRCH project activity. Two activities were also considerably changed: (i) The goal of improving the capacity of DHM local observers in the Far or Mid-West to improve the staff understanding of the importance of timely measurements was considered as reached. These trainings were, however, organised in Kathmandu due to an overlap with the BRCH project and earlier incurred delays caused by the large earthquake. (ii) The task of drafting a hydro-met policy was also changed. Since the draft was already finished, it was replaced with a high-level study tour to Finland for six people to learn about the FMI meteorological operations. During FNEP 2 a total of 24 missions from FMI to Nepal and 4 DHM study tours to Finland were completed.

Table 1. FNEP 2 compliance with expected results based on output indicators

FNEP 2			
Expected Result	Indicator	Progress	Comments

1: Improved processes of DHM to produce weather forecasts and services	The weather forecasting division development plan	Completed	Cooperation with BRCH
	Radar site selection survey ready	Completed	The radar activity proceeded into the procurement phase
	Pilot training arranged to DHM local observers in one selected area	Completed	Agreed to be installed closer to DHM HQ, on the ridge of Kathmandu valley instead of the Jomsom airport.
	Improved DHM local observer's (in Far or Mid-West) capacity to understand the importance of timely measurements	Completed, with indicator change	Trainings were organised in Kathmandu e.g. during Missions 12 and 21
	Draft of national hydro-met policy ready	Completed	N/A
	Feasibility study about calibration services ready and SOP documented and in use	Completed	Cooperation with BRCH
	Capability to use numerical weather prediction (NWP) models and remote sensing data improved	Completed	DHM needs to allocate enough time for the designated staff to focus on running and tweaking the NWP model
	The result and evaluation workshop organised	Completed	Held on 4 May 2016
	4 weather forecasters participated in training and 2 weather forecasters trained as chief trainers at FMI	Completed	Two trainings in collaboration with Bhutan HSB with instrumentation and additional climate training
	Support DHM to draft National Hydro-Met Policy: This was replaced with 6 senior management staff who participated in the hydro/met policy study tour	Completed, with indicator change	As hydro-met policy was already drafted, replacing the former indicator with 'High-level Study Tour activity for six people' was agreed
Four administrative or technical staff participated in instrument/calibration training in Finland	Completed	N/A	
2: Enhanced customer relations, weather and climate service provision capacity of the DHM	A sectoral stakeholder workshop organised and conclusions published	Cancelled	No completed due to its duplication with BRCH
	3-day weather forecast in use	Completed	DHM currently runs an operational NWP weather model, which produces a 3-day forecast, including all the specified and automated products.
	One new climate service in use	Completed	A high-resolution (1 km x 1 km) temperature and precipitation interpolation is in operational use in climate map production. Monsoon monitoring is operational and seasonal forecasts are issued prior to monsoon season, and will in the future be issued in other seasons.
	The meteorologists in duty (6 persons) from DHM trained for the new services	Completed	N/A
	DHM communication plan available	Completed	Draft DHM communication plan guidelines produced during 4-day communication training in 2014 and discussed in 2015. Further actions expected from DHM.
3: Improved Data management and Data Quality Control to support service development	Data management workshop arranged and conclusions of the workshop documented	Completed	In November 2015 during mission 20.
	Data management refresher training arranged	Completed	In November 2015 during Mission 20. An additional 1-week DMS training was also held in late 2015.
	Metadata module upgraded	Completed	The upgrades by RTS were completed and demonstrated in November 2015 during Mission 20.
	Upgrade plan of data management system ready	Completed	Cooperation with BRCH

FNEP 3 is still ongoing, and the rate of implementation effectiveness has been seriously affected by the COVID-19 pandemic. Seven missions were completed before the COVID-19 situation stopped international travel. Some indicators are in the process of being reached, some have not advanced much yet, and one has been completed.

Table 2. FNEP 3 progress on expected results until the end of 2020 based on output indicators

FNEP 3			
Expected Result	Indicator	Progress	Comments
1: Improved capacity of DHM to manage and utilise the new observation systems	DHM's progress in radar acquisition process components being: a) site selection b) site evaluation c) technical specs d) procurement documents	Completed	DHM has completed components a-d. FMI experts gave support in all of the components during 2018-2019
	Number of new observations utilised to prepare warnings (DRR products)	In progress	Problem identification and problem-solving with the lightning location network of DHM in progress
	DHM can prepare new AWS's + camera's data flow and deliver data to database	No progress	N/A
	Number of DHM employees (gender disaggregated data) trained	In progress	1) Human quality control training regarding observations given (half-day). 4 men participants from DHM 2) Sounding training (9 men, 8 women).
2: Improved production and service system of DHM	Number of new weather forecasting tools in use	In process	Identification of current tools in use in 2018 and GAP analysis. Evaluation for numerical weather prediction (NWP) forecast quality in process.
	Development of Customer management process	In process	Support for DHM for preparation of a TOR for bidding an online customer feedback platform. Customer needs (aviation) already scoped several times so implementation of the customer satisfaction survey for aviation customers was decided to be postponed.
	Number of DHM employees (gender disaggregated data) trained related to new forecasting tools	No progress	N/A
3: Enhanced stakeholder relations and Warning Services of DHM to support disaster risk management	Number of tailored DRR products designed and delivered to designated community	In process	Collaboration and planning have been started. Due to delays in FNEP3 no actual collaboration yet.
	Training for journalists completed and new services and products promoted	No progress	N/A

Finding 11 Challenging external context was resolved by adaptive management and extensions

The mission reports reveal some typical smaller delays that happen as a result of communication between two cultures. It seems, however, that FMI has been quite persistent in delivering according to the agreed inputs and the FMI effort was notable in carrying out the activities in given timelines and approved extensions. A no-cost extension was applied and received at the end of FNEP 2. At the end of the FNEP 2 extension, FMI organised a multi-mission to Nepal in cooperation with DHM, where several experts were going through the final activities in parallel, while also conducting the closing workshop of the project. A no-cost extension has also been discussed for FNEP 3 due to the context influenced delays of BRCH and COVID-19.

DHM officials acknowledge that the institution's procurement processes could become quite cumbersome, and before the FNEP projects, it was a challenge to access technical experts from the international markets, leading to delays in project implementation. An important value of the FNEP projects was timely access to quality technical international human resources.

It was not an easy road to reach the good implementation rate achieved in FNEP 2. Two of the three risks mentioned in the FNEP 2 project document did materialise during the implementation. The FNEP 3 project document mentions a higher number of risks, but was not expecting the impact of a disease such as COVID-19. The project risk analysis improved from phase 2 to phase 3, when impact and mitigation measures were included. However, no updating of the risk matrix was done, and it is not clear if the risk analysis had any influence on

project management since the topic is not mentioned in the progress reports (that only see risk from the angle of disaster risk management).

Two risks included in the FNEP 3 risk matrix were not included in the table below because the project has more than enough information to consider the issues in its ongoing project management: (i) limited capacity of competent DHM staff: Since the project is in its third phase and the main topic is capacity building of DHM, this is not a risk for project performance, but rather the question of complying or not complying with the main project goal. A similar but real risk would be the mentioned high staff turnover. (ii) Overlapping with other projects: This is not a risk because it is completely under project management's control. In this case, the risk is very low because strong coordination is carried out by the partner agency, and duplication of efforts would therefore be minor, with a low effect on project results.

The project was affected by several external risks where the impact on implementation was difficult to mitigate. Implementation of FNEP 2 was delayed in the early period due to the Constituent Assembly elections in November 2013, which brought the project to a standstill. The timely implementation of activities was also adversely impacted by the earthquake in 2015. During FNEP 3, the main and continued challenge has been the COVID-19 pandemic.

Table 3. Risks detected in the project documents and challenges issues that occurred during implementation

Type of risk	FNEP 2		FNEP 3	
	Detected risk	Occurred	Detected risk	Occurred
Political	Sudden change in the political situation	Implementation delayed due to the Constituent Assembly elections Nov 2013	<ul style="list-style-type: none"> New administrative structures Limited political will to decentralise 	No information in progress reports (last report for the period until Dec 2020)
Institutional			<ul style="list-style-type: none"> Limited capacity (DHM, local) Delays in delivery of goods 	Implementation delayed due to BRCH delays
Economic-financial	Economic situation reduces funding		<ul style="list-style-type: none"> Devaluation Inadequate Org & Management and revenue collection 	No information in progress reports (last report for the period until Dec 2020)
Environmental	Natural disasters	Implementation heavily impacted by 2015 earthquake (project standstill 6 months)	Natural calamities	COVID-19. Missions stopped since the first semester of 2020

According to the DHM staff interviewed, both FNEP 2 and 3 also faced implementation challenges posed by multi-tasking of a limited technical human resource base. This human resource, besides regular work, was involved in multiple trainings and workshops of different projects.

"Practically the same group of people is repeatedly targeted by various projects. These days it has become difficult to recall and pinpoint project-specific workshops and trainings". - DHM official

2.6 Strengthened competencies and systems

Finding 12 The project activities were implemented with good quality and in accordance with ICI best practices

Best practices of institutional capacity development include many issues, such as organisational strengthening and the development of staff competencies. FNEP 2 and FNEP 3 focused on both aspects, engaging the broad DHM staff base on the executive level, middle management, officers and specialists. The capacity development package comprised a mix of institutional strengthening such as SOP for the Meteorological Weather Forecasting Division, review and further development of HydroMet Policy, DHM Communication Plan, development of new automatic weather forecast products, as well as individual development that consisted of components such as NWP training, various training on weather forecast, and climate products.

The ICI best practices report that many studies have shown that classroom training is a relatively inefficient method, especially when it is used as the main method in adult training. The capacity development activities of FNEP 2 and 3 focused on practical application and were mostly a "learning-by-doing" process. However, this process is now challenged by the COVID-19 situation and the difficulty of implementing it in the remote training model.

The project activities reflected and appropriately adapted to DHM's requirement to a good extent. Given that the relationship between FMI and DHM dated back to 2010, Finnish experts on missions to Nepal were sensitive to and generally understood the local context. The knowledge and interactions with relevant DHM officials and other key stakeholders during project design and in workshops contributed towards contextualisation and adaptation to local circumstances.

The collaborative engagement between FMI and DHM has become more proactive and constructive, resulting in a responsive and reliable partnership. It was a clear message from the interviewees that FMI has been responsive to the DHM needs. It was also mentioned that when all disagreements had been resolved through dialogue and mutual respect between the two agencies and their staff members. *This is an ICI best practice*, as the key to efficient capacity development is mutuality and respect.

The Ministry of Finance in Nepal was not equally collaborative, because as a non-technical ministry, it was more focused on the funding volume of the project. The two project partner agencies were able to jointly convince the Ministry of Finance of the country's need for the FNEP 3 project.

"The relationship with FMI is over a decade old. It has been proactive and constructive. Differences have cropped up time to time, but they have always been resolved through dialogue resulting in mutually agreed compromise".
– DHM Official

Finding 13 The FNEP projects made a significant contribution to institutional capacity

The capacity development activities focused on practical application and were mostly a "learning by doing" process. The process was highly participatory and mainly focused on improving the operation of newly installed systems and equipment. The significance of the FMI technical support and staff training goes far beyond what was financed through the FNEP projects since it was based on the DHM capacity development plan and included training in hardware and software financed by multiple sources, especially through the PPCR/BRCH project. To an appreciable extent, the project activities reflected and appropriately adapted to DHM requirements.

The resource persons from FMI were expert practitioners in their fields and had a good understanding of the subject matter. The training requirements of DHM were mutually discussed and agreed upon. The Finnish experts, who had strong practical and theoretical knowledge of the subject matter, applied practical and participatory learning processes, which, according to the DHM officials interviewed, were easy to comprehend.

On the personal level, DHM staff interviewed mention that the training and capacity development activities of the projects significantly contributed to the increase of their knowledge, skills and abilities, and the opportunities to take part in different activities. For instance, weather forecasting was significantly enhanced through extensive capacity-building activities in meteorology related areas, such as weather forecasters that were trained in Finland for four weeks combined with several trainings during FMI missions to Kathmandu.

DHM officials interviewed comment that the FNEP projects have been instrumental in increasing competencies and strengthening the weather forecasting systems. All across the board, the DHM staff affirmed that the trainings significantly enhanced their competence level, enabling them to efficiently operate the improved forecasting and climate observation systems.

On the systems level, FNEP made an appreciable contribution to the strengthening of hardware and software systems. For instance, following the installation of the new Numerical Weather Prediction (NWP) system, FMI provided several trainings on its development and operation. This resulted in the establishment and operationalisation of an NWP environment with 72 hours forecasts and initialisation of the verification process for NWP.

Finding 14 DHM executive management support was critical for project implementation

The DHM management's emphasis on developing competency of technical human resources and incorporating capacity development components through the FNEP projects was a critical enabling factor to operational efficiency. It is interesting that the DHM executives gave such a strong role to the FMI specialists, despite the low level of the project budget compared with the BRCH project. The explanation mentioned during evaluation interviews is that DHM had learned to trust the FMI technical capacity and had established a working relationship.

They also mention feeling safe that the FMI partners could guide them through difficult institutional changes. Migrating from established systems to more advanced systems is very challenging, given the limited human resources at hand.

"Though vendors also provide a training package for operation, it is highly challenging to efficiently migrate to new systems. Transition management can be a tricky issue. Sometimes upgrading of the existing system is better". - DHM official

2.7 Implementation capacity of the Finnish Agency

Finding 15 FMI was equipped with experienced experts supported by the headquarters

FMI was sufficiently equipped and supported to implement the ICI project efficiently. FMI has strong expertise and know-how in the subject areas of the FNEP projects and has gained knowledge on DHM capabilities through a long partnership. Both FMI and DHM staff interviewed comment that the resource persons from FMI are expert practitioners in their fields with a good understanding of the subject matter. The efficiency of DHM capacity building efforts was strong because FMI, through the FNEP projects, filled the capacity gaps in the BRCH project. This contributed towards making DHM systems and especially the forecasting system fully operational. The Finnish experts applied practical and participatory learning processes, which, according to the DHM officials, were easy enough to comprehend. According to the evaluation survey, 100% of the respondents in Nepal considered that the people from the Finnish agency carried out their tasks either somewhat efficiently or extremely efficiently.

During the desk study and interviews, it became clear that there had been four project managers during the implementation of FNEP 2 and FNEP 3, and one more change of project manager was taking place during the evaluation process. These changes were due to FMI internal processes and staff interests, and the project managers were persons that had participated as FNEP experts, so the project was not new to them. Also, the head of FMI external services remain unchanged and engaged in FNEP, including as a member of the project board. While both of these are good mitigation factors to enable fluent change and continuity, and no direct problems related to this were reported, MFA reported they would have preferred a more stable project management structure.

Finding 16 The FMI is recognised for its technical expertise, not for being a development agency

The strengths of FMI lie in its high-level expertise in its specific work area, which is internationally recognised. It makes FMI capable of dealing with challenging geographical and hydro-met contexts such as those found in Nepal. For the FNEP projects, it also clearly helps that FMI has a long history with Nepal and DHM.

Even though FMI, during the years, has gained much project experience, it should not be expected that a technical agency has the same efficiency of international project management as some of the agencies that have this as their core activity. MFA staff mentioned that high-quality technical experts and engineers might not be the best profile for development cooperation and communication. According to the analysis done by the evaluation team, this is reflected in the project documentation, such as the results framework and risk analysis, as well as the way of reporting progress. Sometimes the indicators and activities are mixed up in the design and reporting. The emphasis is on the activities and partly on the outputs, but much less on outcomes, impact and sustainability. Some indicators are also defined in a way that FMI cannot have a real influence on them, such as whether DHM is going to use or approve something or whether the Government of Nepal is going to increase the DHM budget. The weaknesses in project design is surprising considering the support from the ICI consultant FCG, which has supported FNEP since the first phase. FCG comments that their contracts are won through public bidding, but that they have won each time. The mentioned weaknesses in project design and reporting do, however, not seem to affect too much the actual implementation of the project activities, but it hinders the external evaluators' ability to calculate compliance indicators and give concrete answers on project impact. The pros and cons should, however, consider the special and limited scope of ICI projects and the value a specialised core agency as FMI has to offer. The evaluation team considers that, for ICI projects, the FMI's key competence outweighs the weaknesses in project management skills, but that there are also good opportunities for improvement.

2.8 Potential impacts on the agency and beyond

Finding 17 Improved DHM performance is the main direct project impact

The improvement of DHM capacity in its core fields of operation is the main direct impact of the FNEP projects. Especially relevant areas are improvement in the weather forecasting from the earlier 24 hours to 72 hours, and the operational NWP environment that was integrated into the institutional systems. The improved weather forecast is a service to the whole population that is used by the public and private sectors.

Finding 6 There is improvement in DHM services to multiple sectors

As results of improved institutional capacity, there is evidence of improvement in the services that DHM is providing to the sectors of aviation, tourism, and agriculture, as well as disaster risk management that protects life and infrastructure. These services are now demanded by the sectors and the Government.

Aviation: Though still insufficient, new radars were installed in multiple new locations during the projects period. The radars were not financed by the project, but FNEP project training on utilising data from new radars contributed to better service delivery to the aviation sector.

Tourism: Nepal is a major global tourist destination. Himalaya mountain climbers and trekkers need reliable weather forecasts for the whole country, for their planning, and to avoid accidents. Improved weathers forecasts and early warning make Nepal a safer place for visitors and maintain the high income from the tourism sector. Protection of rural roads and local airports is also important for the tourism sector.

Agriculture: In the agricultural sector, DHM's forecast of data and information, including the release of new climate services, are being utilised and give added value to the plans and programs of the agricultural sector. This is especially important in this period when the local farmers experience of seasons and ecology is less relevant than before due to climate change.

Disaster risk management: A major impact of the project is more efficient mitigation of the impacts of natural disasters such as flooding and landslides. DHM is contributing to disaster risk reduction and management through monitoring, forecasting and early warning services. For instance, the national disaster management agency NDRRMA relies on DHM's seasonal forecasting information for its monsoon preparedness plan. NDRRMA's response plan, 4-hour warning, and other initiatives are also based on DHM's information.

This warning is immediately conveyed to district administration offices, which in turn transmit the same to the communities that are likely to be affected. The army, police, civil society organisations and the local structure of NDRRMA (local disaster management committees) are mobilised to respond to the expected disasters. Impact-based forecasting information provides information to act before disasters strike, to minimise the socio-economic cost of weather and climate hazards and save lives. It is still a need for improving the risk assessment to make impact-based forecasting more effective.

"We take the lead in early warning and response while DHM provides us with the information". - NDRRMA official

2.9 The Human Rights Based Approach (HRBA) and Finland's Cross-cutting Objectives

Finding 18 The FNAP projects did not show a profound understanding of HRBA, gender equality and non-discrimination

The evaluation team considers that the project design does not mainstream HRBA, and the project documents were not directly designed with HRBA as one of its central themes. No direct connection to human rights was found, but the development of weather and climate services were mentioned to serve all groups of society. The ability to provide better weather forecasting service to the nation can reduce climate-related disasters that are affecting vulnerable people, indigenous peoples, persons with disabilities, women and children, and specifically, communities in remote rural areas. The benefits of improved weather forecasting for the agricultural sector may also indirectly improve access to food, which are part of human rights. Some FNEP 3 reports state that "by improving weather services and early warning capabilities of DHM, this project indirectly decreases the losses caused by dangerous weather phenomena, floods, drought and landslides, which usually hit hardest to the poorest people". However, this logic is often questionable, as explained in finding 22 of the main report.

Non-discrimination, including the focus on persons with disabilities: Provision of weather-related data and information is presented in a neutral and non-discriminatory manner. According to stakeholders interviewed, there is, however, the scope for improvement in a more targeted approach to disseminating information. It was emphasised that usage of local languages for information would be more effective in areas where people have difficulty in comprehending Nepali, but no project activity has been carried out in this sense. No concrete examples of discrimination were identified in reporting on the project activities, and they were also not mentioned during the interviews. The DHM's staff members the evaluation team spoke with seem to be sensitive to both human rights and gender equality issues. However, it does not mean that discrimination couldn't have happened. For instance, the discrimination of Dalits (cast-less) is common in Nepal but would not be detected without a specific study or by giving emphasis to the participation of this group in training and other project activities.

Gender equality: Given that gender equality and social inclusion (GESI) is a priority issue in most of the Nepal government plans and programs, DHM as a public agency also adopts the same line. Despite DHM staff being male-dominated in numbers, FMI informs that several efforts have been implemented with "gender equality", particularly in FNEP 2 and FNEP 3. However, the FNEP projects understand and address gender equality in a

rather superficial way. The evaluation team notes that EWS and disaster management are usually designed from a male perspective (see finding #22 in the main report) and would require a more structural approach, while in FNEPs, gender equality is only understood as trying to increase the percentage of female participants. During FNEP 1, the list of participants in trainings registered 90% men. However, in FNEP 2 and FNEP 3, this number is said to have increased (no lists provided).

The FNEP 2 Completion Report mentioned that women personnel were prioritised in invitations to all the project activities and that four of the five trainings or study tours in Finland *not related to technical instrumentation* had at least one female participant! The same report mentioned that several women participated in most of the project events in Nepal, including the closing workshop in 2016, where approx. ¼ to 1/3 of participants were women. FMI reports that FNEP has placed increasing effort on gender balance in trainings and study tours. One of the interviewees mentioned that FMI was "leading by example", by having a strong gender balance on its side in project management and experts. The evaluation survey results show that the project's most positive change in policies or practices towards different groups was towards women, where 42% estimate this to have happened to *some extent* (33% answered "I don't know"). This is not surprising since other groups were not even considered.

No gender studies have been carried out in the framework of the FNEP projects, and there are no baselines with gender-disaggregated data on participation in DHM. The FNEP 3 project had the goal of providing gender-disaggregated data for the project activities since the start, but so far, no such data have been presented in progress reports. The argument from the project's side is that the indicators required have not been completed yet, even though there is not much time left of the implementation period.

Several external partners interviewed mentioned that the opportunities to include HRBA, gender equality and non-discrimination are more difficult to technical fields (such as hydro-met), in comparison to the social science aspects of the early warning systems that are linked to the communication of alerts and the preparedness to respond to them. The true potential of the HRBA, gender equality and non-discrimination, particularly their transformational value, was seen to lie in the output 3 of FNEP 3 that connects the hydro-met services to the communities and disaster management (as a pilot practice). This output had not been implemented at the time of the evaluation, but HRBA, gender and non-discrimination were seen by the interviewees as potential areas to focus on in the future. FNEP is cooperating with the Red Cross to integrate this expertise in the project.

Finding 19 Improved climate resilience is an important project contribution

The project strongly contributed to improved **climate resilience** by directly helping climate change adaptation and disaster risk reduction through the provision of accurate and reliable weather forecasting services mentioned in previous sections. The project has no direct impact on **low emission development**, even though this is a goal for the Nepal Government in the framework of the Paris Agreement. The relatively high adverse impact of frequent international flight travel in ICI projects has been greatly reduced during the COVID-19 pandemic.

2.10 Sustainability

Finding 20 Sustainability of achievements is based on enhanced public service with public demand

The project has a high expectation of sustainability, mainly because the results are complying with an important demand from both the Government and the general population. The improved performance achieved by DHM thanks to PPCR/BRCH and the FNEP projects is due to a combination of improved systems, hardware and software, combined with staff training. It is especially in the training area where FNEP has given an important contribution, but the sustainability would depend on the maintenance of staff skills, workload, staff turnover and retirement. There are measures that can be taken from DHM's side, but it is important that this is a continuous process to not permit that the institutional capacity goes down again after the projects.

The directly targeted beneficiaries of FNEP 2 and FNEP 3 are particularly the DHM technical human resources. At least 43 persons, mainly from DHM, participated in the trainings and workshops during FNEP2. Some participated in more than one training, and there are a few persons in the "core group" of beneficiaries that have participated frequently. Within this group, many have been promoted inside DHM and therefore keep the knowledge and skills of the trainings as part of the decision-making. However, sustainability would depend on training persons to take over their previous tasks.

A large majority of the main technical human resource trained by FNEP 2 & 3 are still intact, providing DHM with the capacity to operate the installed weather forecasting systems. Of the survey respondents (FNEP beneficiaries), 70% still work at DHM. However, 77% of them considered that there were insufficient human resources or too frequent rotation of staff in the agency to implement the learned practices. FNEP 2 recognised in the planning phase that there is a generational shift ongoing at DHM. This could lead to a decrease in DHM capacity in the short term in several areas. This also means that a lot of additional training is needed to be able to fully run and

develop the institution. Retirement and transfers to other public institutions are the primary reasons for losing staff. About 20% of DHM's core technical staff that was trained through the project have retired or was transferred to other government agencies.

The DHM interviews show that new staff replacement and handover is an ongoing process in the DHM and are done according to institutional rules, regulations and practices. Of the survey respondents, 73% considered that the capacity strengthened through the project had been handed over to new incoming staff somewhat efficiently or extremely efficiently. New staff members are provided orientation training before they join the work. They undergo on-the-job training for a period of six months to one year when they are mentored and provided hands-on support by the core technical human resource of DHM. Given the sensitive nature of DHM's service, satisfactory performance evaluation has been compulsory for their induction into full-time work. Many staff members are being promoted within the DHM, and the interviewees comment that this is partly because of the highly specialised field of hydro-met, which is positive about maintaining the sustainability of the knowledge base.

According to DHM staff interviewed, they are, however, under heavy workload, as the hydrological and meteorology divisions are understaffed, which negatively affects DHM's public service delivery. There is also a very limited number of people who know how to run certain systems, which is a risk in case they leave the institution.

Finding 21 Political support gives an expectation of sustainability but still with challenges

The Government and the Ministry of Energy, Water Resources and Irrigation support the FNEP project, which is the first step towards sustainability. Recently, the budget allocation to DHM for hardware component has increased, and the importance of the software component is also being accorded more significance by DHM's line ministry.

The planning of the previous FNEP 2 and the ongoing FNEP 3 projects was done in a dialogue between FMI and the Nepal counterpart DHM. The project documents, therefore, paid attention to address the issues that will support the sustainable development of the Nepalese society, in line with the DHM institutional development plan and roadmap elaborated in partnership with the PPCR/BRCH project. The FNEP 3 project document identifies the following measures for sustainability and exit strategy: Long-term presence; supply of spare parts; training plan; technical documentation; enhancing cost recovery-based funding from services, and; cooperation with other projects and organisations. These have been put in practice to different extents, which is, in fact, be an argument for finalising the project at the end of FNEP 3.

The improved capacity of the technical core team has gone a long way in the sustained operation of the weather forecasting systems, which has been significantly enhanced and fully operational. Likewise, the Numerical Weather Prediction is also operational. Migration to more advanced systems and system integration is also happening, which augurs well for operational sustainability.

Sustainability can be further enhanced with the institutionalisation of the standard operational procedure (SOP), which is yet to be approved by the line Ministry. It also needs to be revised and updated periodically. A DHM official highlighted that documentation is an area that needs improvement.

There is a risk that because the activities of the BRCH project ended, and FNEP 3 will soon come to a closure, it could result in a period with lack of funding, reduced maintenance of systems, and potentially a reduced number of staff members. International cooperation should not be used as institutional budget support, and the rest of the ICI project should therefore try to guide DHM towards improved institutional sustainability. Important aspects are, apart from technical support for systems maintenance, to implement the exit strategy, where all aspects of sustainability should be considered, including human, technical and financial resources.

"The participation of Ministry officials in study and high-level tours to Finland and elsewhere has enhanced the visibility of the FNEP in our Ministry. This facilitates more comprehension and clearer understanding of our needs".
– DHM official

There are some enabling and inhibiting factors for the sustainability of the project outcomes. The strengthened DHM performance is expected to continue, given the improvement in available forecasting systems and human capacity. Availability of a pool of well-trained technical human resources and proactive engagement of the DHM management in enhancing operational efficiency are key factors enabling sustainability. This pool of technical human resource staff will be there for some time to keep the systems fully operational and to train and mentor new staff. However, in-house human and financial resources are still inadequate, inhibiting sustainability. System maintenance is another challenging issue. High dependence on donors for system upgrading and capacity development is another factor inhibiting sustainability in the long run.

"To a large extent, we depend on donors for improving our systems and developing the capacity of our human resource. Sustainability in such circumstances can always be challenging". – DHM official

2.11 Effects of the Covid-19 pandemic

Finding 22 COVID-19 caused delays in the project implementation.

According to a mission report, the first half of 2020 was seen as an important time for FNEP 3, because PPCR activities were about to be concentrated in the latter half of 2020. A mission was still implemented in January 2020, after which COVID-19 stopped the project for a while. Implementation of FNEP 3 activities have therefore been delayed, mainly due to: (i) lockdown imposed by the government to control the spread of the disease; (ii) inability of FMI missions to come to Nepal as planned due to travel restrictions and safety; (iii) reduced efficiency of project activities due to cancellations of events and more remote work; and (iv) COVID infections of DHM staff.

The second half of 2020 in the project implementation concentrated on remote collaboration between DHM and FMI. The remote collaboration has, however, given some positive effects in training sessions and several problem-solving meetings.

According to the 2021 plan, FNEP 3 has planned to implement business-as-usual in terms of the number of activities. Virtual training sessions have been used as an alternative to complete capacity development activities.

External partners report innovative practices of doing distance trainings, for example, training the external partners in Output 3 at the local level, who then in turn train the local authorities. Missions are planned for the end of 2021. However, live practical sessions were not possible and severely limiting the effectiveness of training. Virtual trainings were not very effective, and practical hands-on in-person training was not possible. Thus, the learning by doing process with experts at the side to guide trainees was not possible. According to a small questionnaire from the FMI, 50% of the Nepalese participants also experienced slow Internet connectivity and screen freezing during the trainings. They also missed the practicality that it may be difficult to organise remotely to the same extent.

Further, the lockdown imposed by the government to contain the spread of COVID-19 infections will delay the implementation of project activities. Solutions can and have been identified, but they do not correspond to the original methods in quality.

As a positive element, COVID-19 has improved the IT skills of DHM staff and the related project adjustments to remote work have contributed positively to the Finnish cross-cutting objective of low emission development by dramatically reducing the flying.

"Virtual training is a less effective substitute to in-person sessions. Interactions are limited, attentiveness goes down, and the learning by doing element is missing". – DHM official

3 Conclusions

Conclusion 1 The FNEP 2 and FNEP 3 projects have strengthened the DHM competencies, despite several context-related challenges

Overall, the FNEP projects have provided critical and much needed institutional and individual development support to the DHM. This has significantly enhanced DHM's capacity to efficiently deliver hydro-met services, especially in the area of weather forecasting.

Conclusion 2. The FNEP 2 and FNEP 3 projects were strongly complementary and synergetic with the large PPCR/BRCH project that modernised DHM

The first project phase (FNEP 1) went in parallel with the World Bank implemented PPCR 1, which was the design phase for BRCH. During this phase, FNEP designed a capacity-building strategy for DHM, which was embedded in the broad institutional development strategy and roadmap that was developed during BRCH. FNEP 2 also provided other inputs for the BRCH design, and FNEP 2 and 3 was complementary for this project, especially in giving training and staff support needed to be able to manage the new systems.

Conclusion 3. FMI's support to DHM goes much further than the small ICI projects

The impact of FMI's support to Nepal goes beyond the support provided through the ICI projects. FMI advisors worked closely with the DHM management to influence the institutional capacity building strategy, including the broader strategy and roadmap mentioned above. FMI even won a World Bank contract through global bidding to be the system integrator for the BRCH project. FMI staff was therefore involved in both the FNEP and BRCH projects, which significantly contributed to the coherence and harmonisation of these two projects.

Conclusion 4. The FNEP projects respond directly to climate resilience, while the HRBA, gender equality and non-discrimination had low priority

A strong impact of the project was in the area of climate resilience, especially the provision of data for disaster risk management, including early warning. Gender equality mainstreaming and non-discrimination had low priority in practice, even though gender equality is included in project documents.

Conclusion 5. The direct project impact is improved DHM performance

The improvement of DHM capacity in its core fields of operation is the main direct impact of the FNEP projects. Especially relevant areas are improvement in the weather forecasting from the earlier 24 hours to 72 hours, and the operational NWP environment that was integrated into the institutional systems. The improved weather forecast is a service to the whole population that is used by the public and private sectors.

Conclusion 6. The project improved DHM services to multiple sectors

As results of improved institutional capacity, there is evidence of improvement in the services from DHM to the sectors of aviation, tourism, and agriculture, as well as disaster risk management that protects the population and infrastructure. These services are now demanded by the sectors and the Government. This gives expectations of sustainability, but challenges are maintenance of human resources and technical skills, as well as sufficient funding after the large BRCH project ended.

4 Lessons learnt

Lesson learnt 3: FNEP is a best practice on how an ICI project can work with a large partner

FNEP 1 project cooperated actively with the World Bank implemented PPCR/BRCH, and shared its results and assessments. These then contributed to the BRCH selection and design. It enabled Finnish expertise during FNEP 2 and 3, and the Finnish agency FMI to strengthen the interrelation between the actors that supported the same national agency.

Lesson learnt 2: The technical agency can have more impact than the size of the ICI project

The FNEP projects show that a technical agency such as FMI can have a great influence on a national partner, based on its know-how and development of trust during several project phases. This resulted in FMI advisory through different channels, including a contract as a system integrator for the BRCH project. This key role could, however, not have been achieved without the initial ICI support.

Lesson learnt 3: Limited ICI support can give multi-sector impact and sustainability

The FNEP projects support enhanced weather forecasting in Nepal has given the rising demand for the DHM data and services from the public and private sector, including agriculture, tourism, and disaster risk management.

5 Recommendations

Recommendation 1 In its remaining time until 2022, FNEP 3 should assure that all project results remain coherent with the outcomes of the BRCH project that recently finalised implementation under the leadership of the partner country agency DHM.

Recommendation 2 **FMI and DHM** should develop and implement the exit strategy that is part of the project design for FNEP 3, focused on the sustainability of achievements.

Recommendation 3 **The MFA should consider at least a minimal level of "maintenance" support from FMI to DHM after 2022**, as long as DHM cannot guarantee to sustain the achieved capacity increases without outside support.

Recommendation 4 The MFA should consider at least a minimal level of "maintenance" support from FMI to DHM after 2022, possibly for a long time. The evaluation team recommends that whenever possible, the project manager should be maintained even when there are new project phases to assure accumulation of experience and coherent support.

Appendix 7 Terms of Reference

Appendix 8 Methodology – templates and tools

1 Overview

The methodology used for this evaluation is summarized in the main report. This annex provides additional detail on some of the tools used:

- A simple ICI Theory of Change;
- Detailed project-level evaluation questions;
- A country-level interview guide;
- Syntheses of best practices and guidance on cross-cutting objectives;
- An analysis of goals and cross-cutting objectives in Finland's Development Policy Programs; and
- The distribution of roles and responsibilities in the evaluation team.

The online survey conducted as part of this evaluation is described in a separate annex (Appendix 10).

2 Theory of Change

To guide the evaluation and clarify different levels or results, a simple Theory of Change for ICI projects was developed during the inception phase of this evaluation (Figure 2.1) based on feedback received during initial interviews and the review of overall guidance on the ICI document, including ICI best practices for capacity development (MFA 2010, MFA 2012, including Appendix 31).

Figure 2.1 Simple ICI Theory of Change

Project	Output	Output	Impact
GTK / AGS Afghanistan	Capacity development for mineral exploration in AGS	More and better information about mineral deposits	Sustainably growing mining sector in Afghanistan
VTT / CPCB India	Strengthen technical capacities of CPCB/SPCB	Improved pollution control services	Improved water and air quality in India
FMI / IMD India	Strengthen modelling and measurement capacities of IMD	Improved weather forecasts and climate modelling	Reduced vulnerability to weather and climate risks
FMI / NHCD Bhutan	Strengthen modelling and forecasting capacities of NCHM	Improved weather forecasts and models	Reduced vulnerability to weather and climate risks
FMI / DHM Nepal	Strengthen modelling and forecasting capacities of DHM	Improved weather forecasts and models	Reduced vulnerability to weather and climate risks

This Theory of Change was useful throughout the evaluation process. While simple, it allowed to clearly differentiate between effects the project had on the agency (the middle box) and beyond (the right box). The general assumptions underlying the results chain were also found to be useful; they reflect good practices already known but also some of the lessons derived in the present evaluation.

In practical terms, the Theory of Change was used to guide the development of the set of more detailed project-level evaluation questions (Section 3).

3 Project-level evaluation questions and templates

The nine evaluation questions for this evaluation were broken down into 35 more detailed questions that also served to build a template to guide the work and the reporting of the four country evaluators (Table 3.1).

Table 3.1 Specific project-level questions.

Evaluation criteria (6)	Evaluation questions (9)	Project-level questions (35)
Relevance	1. How relevant were the projects in view of the capacity development needs of the partner country agencies?	Relevance vis-à-vis needs <ol style="list-style-type: none"> 1.1 What capacity development strategies and plans did the partner country agency have before and during the project period? 1.2 What implicit (self-perceived) capacity development needs did the organization have before and during the project period? 1.3 To what degree and how did the project cover these capacity development needs?
	2. What plans, strategies and frameworks – both Finnish and from the partner country – have influenced project selection and design?	Relevance vis-à-vis development goals <ol style="list-style-type: none"> 2.1 What high-level plans, strategies, and frameworks – both Finnish and from the partner country – have influenced project selection and design? 2.2 To what degree does the project fit into those plans?
Coherence and aid effectiveness	3. To what degree were the projects linked, coordinated, compatible and synergetic with other interventions in the partner countries? (both Finnish and other development cooperation)	Coherence and harmonization <ol style="list-style-type: none"> 3.1 What other interventions with similar or complementary objectives took place before, during or after the project? 3.2 To what degree and how was the project linked, coordinated and synergetic with these other interventions? 3.3 Were there issues or missed opportunities because of lack of linkages and coordination?
	4. To what degree did the partner country agencies have responsibility and ownership of the projects?	Participation, ownership, partnership <ol style="list-style-type: none"> 4.1 How was the project first conceptualized (from first contact/idea onwards) and to what degree and how did the partner country agency contribute to defining the project scope and content? 4.2 How were roles and responsibilities distributed between the Finnish and the partner country agency? 4.3 To what degree did the partner country agency take responsibility and was committed to and felt accountable for the ICI project and its results? 4.4 To what degree were the Finnish and partner country agencies able to establish trust, respect, and effective working relations?
Effectiveness	5. Did the projects succeed in strengthening the institutional capacities of partner country agencies? (both as intended and in unintended ways)	Implementation effectiveness <ol style="list-style-type: none"> 5.1 To what degree were project activities implemented as planned? 5.2 What changes were made compared to original plans, and to what degree were these changes required and/or justified? (5) 5.3 To what degree was there good collaboration and participation from the partner country agency?

Evaluation criteria (6)	Evaluation questions (9)	Project-level questions (35)
		<p>5.4 To what degree were capacity development activities implemented according to ICI best practices?</p> <p>5.5 To what degree did project activities reflect and were appropriately adapted to local circumstances in the partner country agency?</p> <p>Strengthened competencies of (individuals) and new/improved systems</p> <p>5.6 To what degree did project activities contribute to increased knowledge, skills, and abilities of individuals?</p> <p>5.7 To what degree did project activities contribute to new or strengthened soft- or hardware systems?</p> <p>5.8 To what degree were the increased competencies and strengthened systems actually applied and used?</p> <p>5.9 What were the most important enabling and inhibiting factors in the partner country agency for applying and using these competencies and systems?</p>
Efficiency	6. Were the Finnish ICI agencies sufficiently equipped – especially in terms of human capacity – and supported (by the MFA and the ICI consultants) to implement the ICI projects efficiently?	<p>Implementation capacity of Finnish Agency</p> <p>6.1 To what degree was the Finnish ICI agency sufficiently equipped – especially in terms of human capacity – and supported (in Finland) to implement the ICI projects efficiently?</p> <p>6.2 What were perceived strengths and weaknesses of the Finnish ICI agency?</p>
Impact (and cross-cutting objectives)	7. How likely is it that the projects have affected (or will affect) the work of the partner country agencies?	<p>Potential impacts on the agency and beyond</p> <p>7.1 To what degree did the project contribute to increased volume or quality of the work of the partner country agency?</p> <p>7.2 What were the most important enabling and inhibiting factors external to the partner country agency for strengthened agency performance?</p> <p>7.3 What are logical/plausible consequences of this strengthened agency performance for the development of the partner country?</p>
	8. To what degree did the projects mainstream the Human Rights-Based Approach (HRBA) and the cross-cutting objectives of Finland	<p>Cross-cutting objectives</p> <p>8.1 To what degree and how was the Human Rights-Based Approach (HRBA) considered in the project?</p> <p>8.2 To what degree and how were Finland's four cross-cutting objectives considered in the project and what (if any) are logical/plausible contributions a strengthened agency could make towards these?</p>
Sustainability	9. To what degree did the projects mainstream the Human Rights-Based Approach (HRBA) and the	<p>Sustainability</p> <p>9.1 Who – and how many – people can be considered direct beneficiaries of the project?</p>

Evaluation criteria (6)	Evaluation questions (9)	Project-level questions (35)
	cross-cutting objectives of Finland	9.2 How many are still working in relevant positions in the partner country agency? 9.3 What were the principal reasons for retaining or losing this staff (if any)? 9.4 To what degree have strengthened competencies been successfully transferred to new incoming staff (if any)? 9.5 To what degree are strengthened competencies and new or improved systems still operational and applied? 9.6 To what degree is the strengthened agency performance likely to continue into the future? 9.7 What are the key factors enabling or inhibiting sustainability?

Source: Terms of Reference and team analysis.

4 Interview template for project-level interviews

To provide guidance for project-level interviews, an interview guide was produced and used, with examples of questions to be used in interviews.

In a group coaching session with the country evaluators, it was clarified that they were guiding questions and not meant to be all covered in a check-the-box survey top-to-bottom style. Instead, all evaluators were encouraged to feel free to change the order, to focus only on a few of these questions in each interview, and to add their own questions. Overall, interviews were held as fluid conversations and help the team to get the extra information behind the primary facts in project documents.

Relevance

- What were the main capacity development needs of your agency prior to the project? (did your agency have a related strategy or plan at the time of the project? → get those as documents)
- To what degree did the project address these needs?
- How relevant was the project in the context of the development policies, strategies, and priorities of your country (in the project period)? (what were the most important of those policies, strategies, and priorities? → get those as documents, or refer to them)
- How did the project start? (ask for where the initial idea came from and how much influence your agency had on defining the project)
- To what degree did/does your agency have ownership of the project? (you can follow up by e.g.,
 - pointing out that ICI guidelines place financial and legal responsibility clearly with the Finnish agency,
 - by asking the interviewee what he/she understands with "ownership",
 - by asking to what degree the project outputs were integrated into the agency's regular work processes,
 - by asking for who the key "champions" for this in the agency are)
- How would you describe the relationship between the two agencies and their involved staff? (after initial answer you can prompt for criteria like trust, respect, and effective working relations)
- How has this relationship evolved over time? (*and has it continued after the project?*)

Coherence

- To what other interventions was this project linked?
- If any:
 - Please describe how these were coordinated with each other. (check for coordinating mechanisms and role of project boards)
 - Where there any significant synergies or duplications of effort? (why?, distinguish between i) core funded activities and ii) projects)

Effectiveness & efficiency

- Were the project activities carried out as planned?
- What changes were made and why?
- To what degree was there good collaboration and participation from your partner agency? (*probably best answered by project managers*)
- How was the quality of the capacity development activities?
(you can follow this up:
 - by asking what good quality means for the interviewee,
 - by referring to some of the ICI best practices (Annex A),
 - by separating into technical/scientific versus didactic/learning approach quality,
 - by asking how the periods between face-to-face interactions were bridged,
 - by asking to what degree activities were adapted to the local context)(also cover soft- and hardware systems if any were part of the project)
- What capacities were developed to what degree by the project?
(you can guide the discussion by moving along a simple results chain:
 - (1) Quality of capacity development
 - (2) What has been learned
 - (3) Application of what has been learned
 - (4) Individual behaviour change & performance increase
 - (5) Institutionalization
 - (6) Increased organizational performance)
- How many people in your agency were participating directly in project activities? (e.g., in trainings, study tours etc.)
- Which factors have defined the success of the project?
- Which factors have reduced the results the project was able to achieve?
- Was the Finnish agency sufficiently equipped in terms of the number of staff and their skills and resources?

Impact

- What services and products of the agency would not be there (or in less volume/quality) without the project?
- What development benefits for your country may these extra products or services of your agency contribute to?

Cross-cutting objectives

- Was a Human Rights-Based Approach (HRBA) considered by the project? (*only go into detail if concrete examples are mentioned*)
- To what degree and how were cross-cutting objectives addressed by the project?
(explain Finland's four cross-cutting objectives if needed – see annex B)

Sustainability

- What share of the participants in project activities still works at the agency? (*get overall feedback and some concrete examples with explanation*)
- What were the main reasons for staff remaining or leaving?
- How are acquired knowledge and skills handed over from outgoing to incoming staff?
- To what degree are competencies (and improved systems) that were strengthened through the system still operational and used?
- What are the key factors enabling or inhibiting sustainability?

5 Synthesized information on best practices and cross-cutting objectives

For issues in which not all evaluators had experience, the core team synthesized additional short guidance the team could rely on during interviews and when preparing the project-level findings. In the guidance provided to the country evaluators, these guidance documents were referred to as Annexes A, B and C:

- Annex A summarized key best practices for capacity development based on Appendix 31 of the ICI manual (MFA 2012);
- Annex B provides short definitions of the four cross-cutting objectives in Finland's development policy and cooperation based on a comprehensive MFA guidance document (MFA 2020); and
- Annex C offers an (optional) rating scale for qualitatively describing the level to which cross-cutting objectives are pursued by a project.

Annex A. ICI best practices for capacity development (based on MFA 2012, Appendix 31)

1. Good understanding of capacity development (and of andragogy = the method and practice of adult learning)
2. Leadership, commitment, ownership by partner country agencies
3. Mutuality and respect
4. Mix of organizational development and individual-level development of staff competencies
5. Organizational development component planned realistically in view of limited ICI resources
6. Ways/motivation to keep the project ongoing between visits, e.g., through e-learning and video/voice calls
7. Understanding the local context
8. Engage top and middle management leadership
9. Meaningful learning modalities (e.g., classical classroom sessions are often inefficient). Methods must ensure that participants need to be challenged to express their social, organizational, and theoretical frames of mind.
10. Use of innovative learning approaches
11. Appropriate incentives for participation, including travel

Annex B. Cross-cutting objectives in Finland's development policy and cooperation (based on MFA 2020)

- **Gender equality:** ensure that all people, regardless of their gender, can equally contribute to and benefit from development. It does so by systematically assessing and addressing gender-based discrimination.
- **Non-discrimination** (with focus on persons with disabilities): ensure that critical forms of discrimination are considered when interventions are planned, implemented and evaluated. Thus, in order to ensure the realization of the principle of non-discrimination, an assessment of the lack of equality in society is needed.
- **Climate resilience:** enhance climate change adaptation, to reduce vulnerability and to strengthen the resilience of people, ecosystems and societies to climate risks and the impacts of climate change.

- **Low emission development:** mitigate climate change and facilitate the transition to low emission development, and soon after to climate neutrality, that minimizes greenhouse gas emissions and enhances sinks of greenhouse gases while considering wider development impacts.

In the implementation of the cross-cutting objectives, MFA applies an approach of both mainstreaming and targeted action. For example, a project may address climate change mitigation both as one overall (ultimate) objective as well as throughout its planning and implementation.

Annex C. Rating scale for cross-cutting objectives (adapted from CBI 2021, p. 31)

1. **Blind:** Does not recognize the cross-cutting objective as a factor.
2. **Aware:** Is aware of the importance of the cross-cutting objective to some extent but does not make or makes only minor adjustments to address it.
3. **Sensitive:** Proactively considers the cross-cutting objective, making some adaptations to respond to it. Does not address the matter in a profound or results level.
4. **Progressive:** Considers the cross-cutting objective at results level and systematically includes it also to participation structures, context/needs analysis, objectives, indicators, and implementation.
5. **Transformative:** Understands the cross-cutting objective profoundly and addresses it also on the structural level; Designs and redesigns approaches, policies and practices to address the cross-cutting objective.
 - the key factors enabling or inhibiting sustainability?

6 Guidance on Finland's Development Policy Programs

The core team reviewed Finland's Development Policy Programs since 2007 and produced two tables to guide the evaluation team in its inquiry and analysis:

- Table A about the overall goals and priorities in Finland's development policy programs; and
- Table B specifically about the cross-cutting objectives in Finland's development policy programs.

Table A. Goals and priority areas in Finland's development policy since 2007

	2007 DPP	2012 DPP	2016 DPP	2020 MFA Theories of Change
Main/overarching goal	Eradicate poverty and promote sustainable development in accordance with the UN Millennium Development Goals	Eradication of extreme poverty and securing a life of human dignity for all people in accordance with the UN Millennium Development	The core goal of Finland's development policy is to eradicate extreme poverty and to reduce poverty and inequality	Sustainable Development (Agenda 2030): <ul style="list-style-type: none"> - No poverty (SDG1) - Reduction of inequalities (SDG 10) - Climate action (SDG 13 and Paris) - Addis Abeba Action Agenda

	2007 DPP	2012 DPP	2016 DPP	2020 MFA Theories of Change
		Goals.		
Priorities and priority areas	(No priority areas as in later DPPs)		The rights and status of women and girls have strengthened	Rights of women and girls
		An inclusive green economy that promotes employment	Developing countries' own economies have generated jobs, livelihood opportunities and well-being	Sustainable economies and decent work
		A democratic and accountable society that promotes human rights	Societies have become more democratic and better-functioning	Education and peaceful democratic societies
		Sustainable management of natural resources and environmental protection	Food security and access to water and energy have improved, and natural resources are used sustainably	Climate and natural resources
		Human development		
	Humanitarian Assistance	Humanitarian Assistance	Humanitarian Assistance	Humanitarian Assistance
		(the 2012 DPP also defines 16 specific measures, three of which may be of relevance for this evaluation:		

	2007 DPP	2012 DPP	2016 DPP	2020 MFA Theories of Change
		<p>1/16: Inclusion of the human rights-based approach in all activities.</p> <p>2/16. Enhancement of aid effectiveness.</p> <p>4/16. Improving policy coherence for development)</p>		
ICI-specific guidance in DPPs	<p>The Government will create a new instrument to fund cooperation between institutions. One particular aim is to strengthen cooperation between universities and research institutes.</p>	<p>The expertise and capacity of other government institutions and stakeholders influencing Finland's development policy and implementing development cooperation will also be utilised and strengthened.</p> <p>Networking and institutional cooperation with expert practitioners is encouraged.</p> <p>(However, in the context of strengthening the MFA and its staff, hence possibly not relevant for ICI)</p>	(ICI not mentioned)	(ICI not mentioned)

Source: (MFA 2007a, 2012a, 2016, 2020a) and team analysis

Table B. Cross-cutting objectives in Finland's development policy since 2007.

2007 DPP (referred to as "cross-cutting themes")	2012 DPP	2016 DPP	2020 MFA guidelines for cross-cutting objectives
Promotion of the rights and the status of women and girls, and promotion of gender and social equality	Gender equality	(no cross-cutting themes or objectives described)	Gender equality
Promotion of the rights of groups that are easily excluded, particularly children, persons with disabilities, indigenous peoples and ethnic minorities, and the promotion of equal opportunities for participation	Reduction of inequality		Non-discrimination
(not included)	Climate sustainability		Climate resilience
			Low emission development
Combating HIV/AIDS; HIV/AIDS as a health problem and as a social problem	(not included)		(not included)

Source: (MFA 2007a, 2012a, 2016, 2020) and team analysis

7 Roles and responsibilities in the evaluation team

Task	Team Leader	Core team member	Core team member (emerging evaluator)	Country evaluator Afghanistan	Country evaluator Bhutan	Country evaluator India	Country evaluator Nepal
Inception Phase							

Task	Team Leader	Core team member	Core team member (emerging evaluator)	Country evaluator Afghanistan	Country evaluator Bhutan	Country evaluator India	Country evaluator Nepal
Formulation of inception report	X		(X)				
Preparatory phase of the implementation phase							
Formulation of evaluation 1-pager	X						
Development of data collection tools	X	X	(X)				
Stakeholder mapping	X	X	X				
Data collection and analysis							
Global (not project-specific)							
MFA interviews	X	(X)	(X)				
Other stakeholder interviews	X	(X)	(X)				
Desk review	X						
Project evaluation: VTT/CPCB India							
Desk review		X				X	
Interviews		X				X	
Project evaluation: FMI/IMB (CLIMOB) India							
Desk review		X				X	
Interviews		X				X	
Project evaluation: FMI/NHMS Bhutan							
Desk review		X			X		
Interviews		X			X		

Task	Team Leader	Core team member	Core team member (emerging evaluator)	Country evaluator Afghanistan	Country evaluator Bhutan	Country evaluator India	Country evaluator Nepal
Project evaluation: FMI/DHM (FNEP) Nepal							
Desk review	(supervision)	(support)	X				X
Interviews	(supervision)		X				X
Project evaluation: GTK/AGS Afghanistan							
Desk review	X			X			
Interviews	X			X			
Other data collection							
Online survey	(X)	X					
Self-evaluation (optional)	X	(X)	(X)				
Data analysis and synthesis							
Data analysis and synthesis	X	X	X				
Reporting							
Formulation of draft final report	X	X	(X)				
Formulation of final report	X	(X)	(X)				
Dissemination							
Final presentation	X	X	X				

Appendix 9 ICI actors, roles, and responsibilities

The 2012 ICI manual (MFA 2012) summarizes the roles and responsibilities of the six principal ICI actors as follows:

1. The **Department for Development Policy** in the Finnish Ministry for Foreign Affairs takes the main responsibility for managing the ICI as an instrument of development cooperation with relevant and appropriate management documents and instructions.
2. Project level management in the Ministry is handled by the **Regional Departments** responsible for assessing, approving, financing and monitoring of ICI projects.
3. **Finnish embassies** support the Regional Departments, especially in assessing the project proposals and project documents.
4. Responsibility for project implementation is borne by the **Finnish agency**, which in cooperation with the partner country agency, ensures implementation of the project in accordance with the approved project document and provides expertise and support to the planned capacity development activities in the partner country agency.
5. The **partner country agency** has the final responsibility for the capacity development and, as the ultimate owner of the project objectives and activities, has a crucial role in ensuring that the project is relevant regarding the needs, and that the objectives and activities of the project are appropriate.
6. The **Facilitation [ICI] Consultant** (a consulting company contracted to support all ICI projects) supports the Ministry in ensuring that the projects and project documentation meet the normative and qualitative requirements set for ICI projects and development cooperation in general. This is accomplished by the provision of support services to the Finnish agency in project planning and implementation.

Project-level actors, roles and responsibilities

	PROJECT PROPOSAL PREPARATION AND ASSESSMENT	PROJECT DOCUMENT PREPARATION AND ASSESSMENT	FINANCING DECISION	CONTRACTING AND SIGNING OF AGREEMENTS	IMPLEMENTATION, REPORTING AND MONITORING
PARTNER COUNTRY AGENCY	<p>Establishes initial contact with a Finnish agency</p> <p>Prepares project proposal in accordance with the ICI manual</p> <p>Submits the proposal to the Finnish embassy (or relevant MFA Department if the submission is entered by a Finnish agency)</p>	<p>Participates actively in project document preparation</p> <p>Prepares the project document preparation mission</p> <p>Prepare the draft MOU</p>		<p>Signs the Memorandum of Understanding with the Finnish Agency</p>	<p>Supports project implementation in accordance with the responsibilities and tasks defined in the Project Document and Memorandum of Understanding</p> <p>In cooperation with the Finnish agency prepares relevant planning documents</p> <p>In cooperation with the Finnish agency prepares</p>

	PROJECT PROPOSAL PREPARATION AND ASSESSMENT	PROJECT DOCUMENT PREPARATION AND ASSESSMENT	FINANCING DECISION	CONTRACTING AND SIGNING OF AGREEMENTS	IMPLEMENTATION, REPORTING AND MONITORING
	Deadlines 1 March and 1 September.				progress and financial reports
FINNISH AGENCY	<p>Establishes initial contact with a partner country agency</p> <p>Supports project proposal preparation</p> <p>Submits the proposal to the relevant MFA Department (or to the Finnish embassy if the submission is entered by a partner agency)</p> <p>Deadlines 1 March 2009 and 1 September.</p>	<p>In cooperation with the partner agency prepares the Project Document in accordance with the ICI manual</p> <p>Submits a signed Project Document with the required Appendices, including the draft MoU, to the Facilitation [ICI] Consultant for review</p>		<p>Signs the Assignment Contract with the MFA</p> <p>To be annexed to the Memorandum of Understanding</p> <p>Signs the Memorandum of Understanding with the Partner Agency</p> <p>Signed Memorandum of Understanding should be available when the Assignment Contract is being signed</p>	<p>Assumes responsibility for the implementation of the project</p> <p>In cooperation with the partner agency prepares project planning documents (annual plans or Terms of Reference for expert missions)</p> <p>In cooperation with the partner agency prepares progress and financial reports according to the Assignment Contract</p> <p>Sends the reports to the Facilitation [ICI] Consultant for review</p> <p>Provides additional information if requested</p> <p>Ensures functioning of the project's decision-making arrangements</p> <p>Invoices MFA regional department</p>
MFA REGIONAL DEPARTMENTS	<p>Assess proposals against established criteria</p> <p>May request for additional information</p>	<p>May provide funding for project document preparation</p> <p>Assesses the Project Document against the</p>		<p>Prepares and signs the Assignment Contract with the Finnish agency</p> <p>Assignment contract to be annexed to the</p>	<p>Reviews progress and financial reports</p> <p>Pays invoices</p>

	PROJECT PROPOSAL PREPARATION AND ASSESSMENT	PROJECT DOCUMENT PREPARATION AND ASSESSMENT	FINANCING DECISION	CONTRACTING AND SIGNING OF AGREEMENTS	IMPLEMENTATION, REPORTING AND MONITORING
	<p>Inform Finnish and partner country agencies on the decision in writing</p> <p>In case of positive decision, inform the Facilitation [ICI] Consultant about approval of the project proposal and provide relevant documentation</p>	<p>established criteria.</p> <p>May request for additional information</p> <p>Informs project partners on the decision in writing</p>		<p>Memorandum of Understanding between the cooperating partners</p>	
MFA EMBASSIES	<p>Support matchmaking between partner country and Finnish agencies</p> <p>Provide comments on the proposals to the Regional Departments</p>	<p>Provide comments on the proposals to the Regional Departments</p>			
ICI CONSULTANT		<p>Supports the Finnish agency in project document preparation for 30 hours</p> <p>Checks that the Project Documents meet the formal requirements and minimum qualitative criteria</p>			<p>Supports the Finnish agency in project inception and mobilisation for 25 hours</p> <p>Supports project implementation for 20 hours per year</p> <p>Reviews progress and financial reports to ensure that the formal and qualitative requirements are met</p> <p>Forwards progress and financial reports to the relevant MFA Regional Department with comments</p>
THE MINISTER			<p>Makes the decision on financing on the</p>		

	PROJECT PROPOSAL PREPARATION AND ASSESSMENT	PROJECT DOCUMENT PREPARATION AND ASSESSMENT	FINANCING DECISION	CONTRACTING AND SIGNING OF AGREEMENTS	IMPLEMENTATION, REPORTING AND MONITORING
			basis of the recommendation of the Quality Assurance Board and the submission by the regional department of the MFA		

Source: (MFA 2012)

Instrument-level actors, roles and responsibilities

	LEARNING ABOUT ICI	ICI MONITORING AND DEVELOPMENT
PARTNER COUNTRY AGENCY	Study available background material and the ICI manual	
FINNISH AGENCY	Study available background material and the ICI manual	
MFA REGIONAL DEPARTMENTS	Inform potential/interested state agencies in Finland and in partner countries Help agencies to familiarise themselves with the material available on the ICI web page	
ICI CONSULTANT	Supports MFA material production Provides training for interested Finnish agencies	Reports on the overall progress of the ICI to the MFA Department for Development Policy Provides recommendations for improvements and possible revision of the ICI Manual
DEPARTMENT FOR DEVELOPMENT POLICY	Prepares background material and administrative instructions, and maintains the ICI web page [...] Provides training for interested Finnish agencies	Monitors the functioning of the ICI Makes revisions concerning administrative instructions and the ICI manual Monitors the work of the Facilitation [ICI] Consultant.

Source: (MFA 2012)

Appendix 10 Survey results

This appendix provides more information on the online survey and its results. The survey was administered by using the online tool SurveyMonkey for the collection of responses and analysis of the results.

A list of contacts including names, organization, and e-mail addresses from former participants of various capacity development activities was obtained for each country, totalling 225 contacts. Some of these contacts referred to the same person that had more than one email. Invitations for responding to the survey were sent by e-mail on 12th May 2021 for Bhutan, India and Nepal contacts, while for Afghanistan, the invitations were sent only on 19th May 2021, after the Ramadan holiday had passed. On 24th May, the deadline was extended until 26th May, and then again until 27th May. Reminders with deadline extension were only sent to those recipients that hadn't filled out the survey or that had only filled it partially.

E-mail invitations assured confidentiality and anonymity to all respondents when disclosing the results. For this reason, we do not present here the answers to open questions, as they could potentially allow the identification of respondents. The survey had 35 questions distributed in 7 pages, and it took approximately 20 minutes for respondents to answer them.

After the response collection was closed, answers were treated to avoid inconsistencies. A few respondents had selected the wrong project or country, and this was corrected as responses were attributed to e-mail addresses. Summary results were presented for each project (except for the two projects in India, which together had 4 responses only), and compared by gender and by position level (either technical or high-level/management). The information on position level was obtained with the Country Evaluators and then inserted on SurveyMonkey to allow easy comparison of responses. In this appendix, we present only the summary data for each question, without any comparisons.