Indo-Norwegian Cooperation Programme in Higher Education and Research

INCP
Final Report 2018
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Summary

The Indo-Norwegian Cooperation Programme in Higher Education and Research (INCP) supported 15 bilateral cooperation projects between Norway and India from 2015-2018.

The programme was co-funded by India and Norway.

The main findings of the report are as follows

- INCP has **strengthened the collaboration** between higher education institutions in India and Norway. All projects plan to continue their cooperation in some form, and many of them have secured funding from other programmes. The programme has paved the way for new collaboration and several institutional partnerships have been further formalised and expanded.

- Through course development, staff exchange and student involvement in research, INCP-funded projects have contributed to **enhancing the quality of education and research** programmes at the involved institutions.

- Norwegian and Indian institutions have **mutually benefitted** from the collaboration.

- INCP has facilitated regular staff and student exchanges between India and Norway, but some projects have experienced difficulties, particularly with student mobility. The scale of the projects seems in many cases too small to overcome **structural and administrative obstacles** for increased student exchange between the two countries.

- There are some **uncertainties related to the long-term sustainability** of the partnerships, as partners are to a large extent depended on external funding to continue their cooperation.
1 Background

The Indo-Norwegian Cooperation Programme in Higher Education and Research (INCP) was established in 2014,1 with an aim to develop and strengthen cooperation between high quality higher education institutions in India and Norway at the master and PhD levels. The partnership projects supported were required to have a long-term aim of linking educational cooperation to research, or to strategies for institutionally based long term cooperation. In addition to facilitating cooperation, the projects were expected to constitute a common ground for capacity building and for the transfer of good practices.

The Programme was jointly funded through matching grants by the Indian Ministry of Human Resource Development (MHRD) and the Norwegian Ministry of Foreign Affairs (MFA). UGC in India and Diku2 in Norway were the implementing agencies. Project and programme activities were jointly financed by UGC and Diku through matching grants. Funding was provided by UGC to Indian institutions and by Diku to Norwegian institutions3.

According to the agreement between MFA and Diku4 concerning the administration of the Indo-Norwegian Cooperation Programme in Higher Education and Research (INCP), a Final Report shall be submitted by Diku to MFA upon completion of the Programme.

This Final Report is produced in line with the requirements listed in the above agreement and is limited to activities directly related to Diku’s administration and implementation of the INCP.

1.1 Goals and objectives

The overall goal of INCP was to develop and strengthen balanced cooperation between high quality higher education institutions in India and Norway at Master and PhD levels.

The objectives were

- To strengthen institutional linkages between higher education and research institutions in India and Norway.
- To provide regular exchanges of academic staff and students at Master, PhD and postdoctoral level.
- To increase mutual knowledge of each other’s educational systems and to enable institutions on both sides to prepare for future cooperation.
- To foster high quality postgraduate and research programmes.
- Organisation of joint conferences and seminars.
- Organisation of training of administrative staff and teachers.

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1 Establishment of the INCP followed the signing of the Memorandum of Understanding between the Ministry of Human Resource Development of the Republic of India and the Ministry of Education and Research of the Kingdom of Norway on Cooperation in the Field of Education, and signing of the Agreement on Academic Cooperation between the University Grants Commission (UGC) India and the Norwegian Centre for International Cooperation in Education (SIU).
2 See supra note 1.
3 Diku granted unilateral funding to two projects.
4 The Norwegian Centre for International Cooperation in Education (SIU) merged with the Norwegian Artistic Research Programme (NARP) and Norgesuniversitetet 1 January 2018 under the new name Norwegian Agency for International Cooperation and Quality Enhancement in Higher Education (Diku).
1.2 Allocated projects

One call for proposals was issued under the Programme, in which Indian and Norwegian higher education institutions were invited to submit joint project proposals. Eligible applicants from India included the public funded universities recognised under Sections 2 (f) and 12B of the UGC Act, 1956 which are fit to receive development grants, and Institutions of National Importance funded by the Ministry of Human Resource Development. Norwegian applicants were required to be accredited higher education institutions.

Applicants were invited to submit proposals for three-year project cooperation with joint activities aimed at the development of long-term relationships and cooperation between higher education institutions in Norway and India. The call was open to all academic disciplines, but the proposals were required to address any of the following priority areas:

- Energy, especially clean energy
- Climate change, including ocean and arctic/polar research
- Health, especially public health
- Information technology, especially information security
- Urban planning and development
- Environment
- Biotechnology and the medical sciences
- Global development
- Development economics
- Marine sciences
- Management studies, especially in relation to innovation
- Social sciences, humanities and the arts
- Geohazards
- Teacher education

The maximum annual allocation per project was NOK 400,000 / INR 44 lakhs, with a maximum allocation of NOK 1.2 million / INR 132 lakhs for the three-year project period. This included funding from both the Indian and the Norwegian implementing agencies.

Proposals were submitted through Diku’s online application and reporting system Espresso. Eligible applications were then simultaneously assessed by independent panels of experts constituted by Diku and UGC. Allocations were made by the UGC-Diku Joint Committee.

In 2014, 13 joint three-year partnership projects were allocated funding by the UGC-Diku Joint Committee. Following the decision of the Joint Committee, Diku granted unilateral funding to two additional projects, bringing the total number of projects up to 15. Ten Norwegian higher education institutions and fourteen Indian higher education institutions participated as main partners in the projects. In addition, ten institutions, four Norwegian and six Indian, participated as network partners. The projects fell within seven thematic areas: clean energy, environment, information technology, public health, social sciences and humanities and the arts. The project period started 1 January 2015 and ended 31 December 2017.

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5 Diku also issued a call for preparatory visits aimed at Norwegian institutions interested in establishing cooperation with India prior to the launch of the call for project cooperation in 2014.

6 See appendix I for an overview of the supported INCP projects.
To support long term sustainability of the ongoing INCP projects, Diku and UGC invited the projects to apply for financial support for one additional project year in 2017. Seven projects were allocated additional funds from Diku, and two projects were allocated additional funds from UGC. Projects not applying for additional funding were able to apply for an extension of the project timeline of up to one year to complete delayed activities. All projects were completed by 31 December 2018.

7 Only bilaterally funded projects were eligible for additional funding.
2 Programme results

By the end of 2018 all the projects funded by INCP were completed. Five of the projects had already completed in 2017, while the remaining 10 projects finalised in 2018. All the projects submitted a Final Project Report containing results and effects of the project collaboration, as well as a description of challenges and experiences made along the way. The results presented in the following sections are based on the Final Project Reports submitted by the Norwegian project coordinator to Diku.

2.1 Effectiveness

To assess the effectiveness of the programme this section will assess to what extent each of the objectives has been achieved. As two of the objectives are focused on activity (organisation of joint conferences/seminars and trainings), these are integrated in the other objectives where appropriate.

2.1.1 Strengthened links between higher education institutions in Norway and India

One of the main objectives of the INCP was to strengthen the institutional linkages between higher education and research institutions in India and Norway. When the projects started in 2015, collaborations were established within wide-ranging disciplines like health sciences, engineering, information technology, energy and educational sciences. The projects have contributed to formalising pre-existing relationships at the researcher level and expanding them to the institutional level. This is evident by the expansion of some of the projects to include other departments and students from other disciplines in the established INCP projects. In addition, several institutions have formalised their relationships through MoU, and some have signed student exchange agreements which will continue beyond the project period.

All 15 projects report that they plan to continue their collaboration in some form. Several of the projects already have received funding from other sources, while others are still exploring options. Partnerships originating through the INCP have been awarded funding by other programmes, such as INTPART, UTFORSK, Erasmus+ International Credit Mobility, Intern Abroad, as well as research funding from the Research Council of Norway. This is an encouraging effect of the INCP.

Achievements though this project has been more than expected. Collaboration started between a few researchers from HVL and CIT, and now it has created a broad international network including several researchers and students in the field of nanomaterials for clean energy applications. [...] This INCP project has helped us to establish a dynamic research group for Advanced Nanomaterials for Clean Energy and Health Applications (ANCEHA, www.anceha.com). INCP project paved the way for many other collaborating projects including UTFORSK and NORDPART projects.

Final Project Report from project “Advanced Nano materials for Clean Energy Applications - A Joint collaborative project between Bergen University College, Norway and Coimbatore Institute of Technology, India” (INCP-2014/10045) between Western Norway University of Applied Sciences and Coimbatore Institute of Technology
In conclusion, the INCP has to a large extent been successful in terms of contributing to strengthened links between higher education institutions in Norway and India.

### 2.1.2 Provide regular exchanges of academic staff and students

INCP has supported a significant number of staff exchanges (see Table 1). A total of 202 exchanges are reported (one person has in many cases travelled more than once), of which 62 per cent are travels to India. The main purpose of staff mobility in both directions has been the organisation of joint seminars and workshops.

**Table 1: Staff mobility in INCP 2015–2018**

<table>
<thead>
<tr>
<th></th>
<th>To India</th>
<th></th>
<th>To Norway</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
</tr>
<tr>
<td>Administrative visits</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>7</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Joint courses</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Joint seminars / workshops</td>
<td>48</td>
<td>34</td>
<td>82</td>
<td>28</td>
<td>18</td>
<td>46</td>
</tr>
<tr>
<td>Joint teaching and supervision</td>
<td>11</td>
<td>6</td>
<td>17</td>
<td>5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Project planning</td>
<td>8</td>
<td>8</td>
<td>16</td>
<td>9</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>73</strong></td>
<td><strong>53</strong></td>
<td><strong>126</strong></td>
<td><strong>52</strong></td>
<td><strong>24</strong></td>
<td><strong>76</strong></td>
</tr>
</tbody>
</table>

In addition, a total of 131 student exchanges have taken place with the support of INCP from 2015-2018. These include both short term and long-term exchanges. Of these, 66 were outgoing students to India and 65 incoming students to Norway. The exchange of students through INCP has been balanced in terms of incoming and outgoing students, however, the share of students staying on a long-term stay (3 months or longer) is substantially lower for outgoing students to India than for incoming students to Norway (see Figure 1).

**Figure 1: Student mobility INCP 2015-2018**

![Bar chart showing student mobility INCP 2015-2018](chart.png)
Some projects report that it has been difficult to recruit students for long-term exchanges in India. This reflects the general status of student mobility from Norway to India. In a study published by Diku (then SIU) one of the central findings was that most Norwegian students stays in India for short-term stays. A challenge for the Norwegian institutions is to find regular courses at the Indian educational institutions with the required content and quality in order to fit into the Norwegian education programmes. Another challenge concerns the administrative and practical services for foreign students. This is also reflected in the INCP project reports.

Table 2: Student mobility 2015–2018

<table>
<thead>
<tr>
<th></th>
<th>To India</th>
<th></th>
<th>To Norway</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
</tr>
<tr>
<td>Intensive courses</td>
<td>2</td>
<td>32</td>
<td>34</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Internships / work placements</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Joint courses</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Joint seminars / workshops</td>
<td>13</td>
<td>2</td>
<td>15</td>
<td>4</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Semester mobility</td>
<td></td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Students’ participation in research activities / projects</td>
<td>8</td>
<td>5</td>
<td>13</td>
<td>23</td>
<td>8</td>
<td>31</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>23</strong></td>
<td><strong>43</strong></td>
<td><strong>66</strong></td>
<td><strong>35</strong></td>
<td><strong>30</strong></td>
<td><strong>65</strong></td>
</tr>
</tbody>
</table>

As shown in Table 2 the main purpose of student mobility has been participation in research activities, in intensive courses, as well as joint seminars and workshops. This indicates that several projects have successfully managed to link education and research in relation to student exchanges.

It is difficult to assess to what extent the objective of providing regular exchanges of staff and students has been achieved as there were no target numbers on the programme level. The number of student exchanges in each project varies from 1 to 17, and the average is 8 per project. Regarding staff exchanges, the number varies from 4 to 36 exchanges per project, and the average is 13 per project.

Student mobility seems to have been particularly challenging for some projects. The number of student exchanges between Norway and India was also relatively low on a national level before INCP were launched. Typically, Indian students in Norway were full degree-students, and Norwegian students were in India on shorter exchange stays, often in connection with field work or traineeships. The short-term stays of Norwegian students have continued through INCP. INCP have also facilitated a slight increase in Indian exchange students to Norway.

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9 SIU 2013. Landrapport India 2013. [https://old.siu.no/publikasjoner/Alle-publikasjoner/Landrapport-India/Landrapport-India-2013](https://old.siu.no/publikasjoner/Alle-publikasjoner/Landrapport-India/Landrapport-India-2013)
In conclusion, INCP has facilitated regular staff and student exchanges during the programme period, but with great variations in the contribution of each project. It is also uncertain to what extent the staff and student mobility will continue beyond the programme period, particularly if funding is no longer available.

2.1.3 Increase mutual knowledge of each other’s educational systems and to enable institutions on both sides to prepare for future cooperation

The Norwegian project coordinators report that it has been rewarding to cooperate with their Indian counterparts. Some report that communication and practicalities have been challenging, but overall, the projects report that running the cooperation projects have been a valuable learning experience. The project coordinators seem to appreciate the opportunity to collaborate in a partly exploratory manner, particularly due to the cultural and structural differences between the two countries.

As described in section 2.1.1 above, all the projects aim to continue their collaboration in some form. Several projects have already succeeded in obtaining funding for collaboration activities from other resources. Others are exploring different options. Some projects report that INCP has paved the way for new collaborations. As such, the objective of increasing mutual knowledge of each other’s educational systems and to enable institutions on both sides to prepare for future cooperation has been achieved to a large extent.

2.1.4 Foster high quality postgraduate and research programmes

Several projects have worked together on course development, either for intensive courses, or summer schools, or for regular courses at the institutions. A total of 20 courses are reported as developed or revised during the project period. About half of these are ECTS-awarding courses. Most courses developed are offered at partner institutions in India. One example is the first university post-graduate level certificate course in agroecology in India planned and developed through cooperation between NMBU and University of Calcutta.

Enhanced quality in education programmes are also benefitting Norwegian partner institutions. One INCP-funded project reports that through their project Norwegian and Indian researchers have developed advanced microscopes which are now being heavily used by the medical scientist at UiT The Artic University of Norway and the clinicians at the University Hospital of North Norway. The microscopes will also be used in future lab courses at MA and PhD level.

One example of mutual benefit is the jointly developed online course module that will be used by both OsloMet and National Law School of India University in their regular MA-programmes. Another example is the improvement of field courses and learning methodology in agroecology (see text box below).
Staff exchanges have facilitated joint teaching and supervision, mainly in India, but also in Norway (table 1). This enable institutions to benefit from each other’s expertise and to offer an international perspective in different subject fields.

The high level of staff exchanges supported by INCP has also enhanced collaboration in research. This is also reflected in the number of publications reported by the project (see table 3). A positive aspect of the publications through the INCP is the high student involvement and contribution. Several of the articles include students as co-authors, students have also contributed with conference papers and in one case most of the content in a book published through an INCP project.10

Table 3: Publications through INCP (by type), 2015–2018

<table>
<thead>
<tr>
<th>Type</th>
<th>Publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Article published in scientific journal</td>
<td>65</td>
</tr>
<tr>
<td>Book</td>
<td>7</td>
</tr>
<tr>
<td>Chapter in edited volume</td>
<td>9</td>
</tr>
<tr>
<td>Master thesis</td>
<td>4</td>
</tr>
<tr>
<td>PhD thesis</td>
<td>8</td>
</tr>
<tr>
<td>Refereed conference paper</td>
<td>19</td>
</tr>
<tr>
<td>Scientific report or working paper</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>115</strong></td>
</tr>
</tbody>
</table>

Through course development, staff exchange and student involvement in research, INCP-funded projects is likely to have contributed to enhancing the quality of their education and

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10 INCP-2014/10093
research programmes. Evident from the project reports is that both Norwegian and Indian institutions have benefitted from the collaboration.

2.2 Impact and sustainability

INCP has affected the involved higher education institutions to a varying extent. The programme has in many cases improved the quality of education and research at involved institutions. Complementary expertise and resources have been utilised through joint research, guest lecturing and course development. A high level of student involvement in the international research activity have also been facilitated, thus increasing the participant’s academic and intercultural skills.

Some project outcomes will have lasting effects on the quality of programme and courses at Indian and Norwegian institutions. Credit-awarding courses been developed or improved as a result for the cooperation that will continue to run beyond the project period. However, only about half of the projects report to have resulted in such lasting improvement of their regular courses. The majority of these are to be offered at the Indian partner institution. Other courses that have developed have been short courses and workshops. These forms of courses are useful for academic collaboration but have to a lesser extent impact on a structural level.

INCP has in some cases effected other stakeholders beyond the higher education institutions. Although not explicitly stated as one of the objectives of the Programme, a few projects have successfully involved industry and business in their collaboration. This has enabled project partners to focus their research on areas that are useful for the industry, which in turn may increase the quality of education and employability of students. Other stakeholders, for example in the health and agricultural sector, have also been benefitted or been involved in innovation and research through INCP.

The main impact outside the framework was on the innovation. Due to two patent applications, the Technology Transfer Office at UiT (Norinova Technology Transfer, NTT) and FITT (Foundation For Innovation And Technology Transfer), New Delhi has started interacting. This has kick-started the technology transfer offices to investigate development of strategic ties between the two innovation offices.

Final Project Report from project “Indo-Norwegian collaborative research programme on optics and photonics for bio-medical imaging and environment monitoring” (INCP-2014/10024) between UiT the Arctic University of Norway and Indian Institute of Technology Delhi

One of the strengths of the INCP has been its ability to strengthen the institutional linkages between higher education institutions in India and Norway, and to prepare them for future cooperation. However, there are uncertainties related to the sustainability of cooperation beyond the programme period, as partners are to a large extent depended on external funding to continue their cooperation. It is also uncertain to what extent the student mobility will continue between project partners beyond the programme period, particularly between those who have not obtained new funding for collaboration activities.
2.3 Cross-cutting issues

2.3.1 Environmental issues
Serval projects address environmental and climate-related issues in their research activities. Environmental awareness can also be observed in other projects, for instance through increased use of information technology in the communication between the partners in Norway and India, and some projects organise teaching and supervision, seminars and research activities back-to-back in order to reduce the number of travels needed to conduct the activities. The INCP project coordinators have, however, not been asked to report on the possible environmental impact of their projects. Thus, it is difficult to measure the concrete output on this aspect of the projects. This may be improved if there is to be a next phase of INCP.

2.3.2 Anti-corruption / project management
The contract between Diku and the partner institutions in Norway states the Norwegian institutions shall ensure that the implementation of the INCP project comply with all applicable statutes, laws and regulations, as well as recognised norms for good project governance, and that adequate steps are taken to prevent/mitigate risk of irregularities, corruption and/or other unethical practices. The institution in Norway warrants that the funds from the INCP on the Norwegian side will be used exclusively for the purposes of implementing the project, and that the project management will establish suitable procedures for managing the project’s financial aspects (budgeting, accounting, reporting, etc.). Diku has not been informed of any suspicions of mismanagement and have not had cause for concern based on the content of the annual project reports.

2.3.3 Equitable access
The impact of higher education on development is widely recognised, and the Government of India clearly emphasises the principle of inclusive growth in its Twelfth Five-year plan (2012–2017). The government has therefore formulated policies and affirmative actions on national level to prevent inequality in access to higher education based on differences in caste, religion, gender and regional background. The INCP does not include specific requirements or measures to target equitable access, other than the adherence to the general principle of equitable access. INCP projects are expected to secure impartial selection of participants, students and staff, based on merit and academic qualifications at all levels of the projects, also considering the question of gender balance. Diku’s impression is that the project partners on both sides have adhered to these expectations and are concerned about equitable access in the implementation of the project activities. Some projects have had challenges in gender balance among students and/or staff, given that the pool of qualified participants in some cases are male-dominated. However, on a programme level, there is gender balance for incoming students coming to Norway, but for outgoing students to India there has been twice as many females as males.

2.3.4 Risk mitigations
To mitigate factors that may hamper the implementation of project activities, the project partners were asked at the start of the project period to do a risk analysis and reflect on ways to prevent or mitigate the effects of negative events and uncertainties. The risk analysis was then incorporated into the project document of each individual project and is also part of the annual project reporting to Diku for the Norwegian institutions. In the final report, the projects are asked to revisit the risk assessment and describe what been the challenges and lessons learned in terms of project implementation.
All projects have to some extent experienced different issues that have hampered the implementation of project activities. Administrative issues in both India and Norway appear to be the primary cause of delays.

2.4 Lessons learned

Although the INCP collaboration has been described as very rewarding by most of the supported projects, there have been challenges related to certain aspect of the project collaboration which warrants attention. Examples include difficulties in recruiting enough students and staff for mobility activities; delays in implementation and postponement of activities; and difficulties in securing participation from both Indian and Norwegian students in joint activities.

Several Norwegian project coordinators also report difficulties with the financial management and planning when funding is received from two sources (Diku and UGC). In addition, there is differences in the financial year in Norway and India which further complicates the financial planning and management. Projects report that they have learned the importance of meeting in person on a regular basis, and to include both administrators and academics from both sides in such meetings. It is vital with detailed planning for each semester and realistic time schedules as in other international cooperation projects. Preferably the project coordinator should be released from other duties during the project period to have enough time to administer the project.

Several projects also report on the importance of early recruitment and proper preparation of outgoing students to ensure a successful exchange experience. Projects report that to motivate Norwegian students to go India for an exchange stay, both the cultural aspects (housing, food etc) have to be addressed, in addition to offer them a solid scientific programme for them to see the added value of travelling to an Indian institution. In terms of incoming PhD candidates to Norway, there are also reported issues regarding funding that affected their stay.

Close communication and well-established relations between partner institutions are key to successful implementation. It takes time to establish and demands continuous efforts from both sides, particularly due to the cultural and structural differences between the two countries.

2.5 Follow-up of projects

During the programme period, Diku has followed up the projects through the annual reporting and project visits. In addition, Diku has had close contact with projects when different issues and difficulties have occurred. The following events have been held:

- Joint start-up seminar together with UTFORSK-funded projects in Oslo in 2015
- Mid-term workshop for project coordinators in New Delhi in 2016
- Project visits at Savitribai Phule Pune University and Indian Institute of Management in 2017

Diku also allowed for an extension of the project period to 2018 for most of the projects, as mentioned in section 1.2.
3 Project summaries

This section provides a summary of each project. The text is written by the project coordinators.

INCP-2014/10024

Indo-Norwegian collaborative research programme on optics and photonics for biomedical imaging and environment monitoring.

The United Nations announced 2015 as the “International Year of Light and Light-based Technologies (IYL 2015)”. This truly demonstrate the multi-disciplinary impact that optics and photonics plays in modern human society, including communication, safety, medical healthcare, entertainment, internet, sports and providing solution to global crisis.

The main theme of this Indo-Norway bilateral project is the field of optics/photonics with a focus to develop novel high-resolution and label-free optical microscopy platforms for biological imaging and clinical applications. Participants partners are The Department of Physics and Technology, UiT The Arctic University of Norway and The Department of Physics at Indian Institute of Technology (IIT) Delhi. The research interests of the participants from UiT are in the area of nanoscopy and nanotechnology and biological applications in the field of women health and vascular biology. The Department of Physics at Indian Institute of Technology (IIT) Delhi has strong expertise on fundamental optical sciences and applied photonics. This symbiotic bilateral program plans to marry broader application-driven research (at UiT) with strong fundamental optical sciences (at IIT Delhi).

This project has facilitated 40+ mobilities of staff and student between the two countries bolstering complementary research activities between the two institutions. Providing research, education and mobility opportunities for students and young scientist is an important part of this proposal. During the course of INCP project 27 peer-reviewed journal and conference papers (joint publications) have been contributed. This INCP project has also contributed towards the innovation, two IPs are being filled related to the newly developed imaging platform, namely highly stable common-path phase microscopy and transmission structured illumination microscopy. The INCP project has also provided a platform for technology transfer offices from the universities to jointly develop the pre-commercial roadmap of the joint IPs. The INCP project has organized 2 joint summer schools in Tromso (5 ETCS) with over 30+ participants; and 2 joint workshops in New Delhi (2016, 2018) with 50+ participants.

This project has incorporated the mobility of both the academic and the administrative staff between two countries. The project has built a long-term academic and scientific collaboration between two the institutes using joint Master/PhD supervision, sandwiched PhDs and future joint projects/proposals are being planned harnessing bilateral and EU level funding opportunities.
Building global perspectives: An Indo-Norway interdisciplinary educational network

The Indo-Norway proposal builds on an UTFORSK collaboration, funded by the Research Council of Norway (RCN) and SIU, and which has served as phase one in our work towards institutional synergy building in education between HiOA and institutions in the BRICS countries. The UTFORSK collaboration is in turn based on the research project Poverty and shame: Perspectives and Practices Concerning Anti-Poverty Measures in a Global Context, coordinated by HiOA and funded by the RCN Welfare, Working Life and Migration (VAM) programme.

The UTFORSK project strengthens research-education collaboration between two partner institutions in Norway and China. India has been an associate partner in this effort. In the current proposal, we enhance cooperation between the two partners in India and Norway, and elaborate the research focus by also including two related thematic streams, as a way to initiate an exploration of connected social processes and political practices relevant to social protection. Our focus is on longer-term institutional collaboration between the Department of Social Work, Child Welfare and Social Policy (SCSP) at Oslo and Akershus University College of Applied Sciences (HiOA) and the Centre for the Study of Social Exclusion & Inclusive Policy (CSSEIP) at National Law School of India University (NLS). The activities outlined below furthermore strengthen the master’s programmes at the partner institutions by forming a system of scholarly exchange for educational purposes. The exchange participants have been carefully chosen so that we will draw on the strengths of each institution in order to strategically expand selective curricular areas of the other.

Three research streams form the foundation for this proposal and speak to the new wave in policymaking. The first – ‘Poverty and Social Exclusion’ – explores the psychosocial experience of living in poverty and of receiving anti-poverty policy measures, considering the links that may exist between poverty, shame and social exclusion. The second – ‘Urban Policies, Planning and Social Exclusion’ – focuses on the urban realm, central to the understanding of public policy, planning and social exclusion, poverty and welfare in both the Indian and Norwegian urban contexts and beyond, whereby a comparative perspective strengthens the understanding of general and particular dimensions of urban challenges to public policies and development. The third stream – ‘Human Rights and Local Contexts’ – speaks to the question of human rights, exploring whether and to what extent universal human rights are translatable into varying local contexts, including those characterized by absolute or relative poverty. The proposed project provides the structure to establish a synergy network between the three streams, with a focus building connections between research and education, as well as long term institutional connections across India and Norway. The internationalization activities that make up our proposal answer the Norwegian government’s call to increase international collaboration in research and education within the University college sector, with a focus on rapidly developing countries such as India (Meld. St. 18, 2012–2013). The Indian government is introducing radical changes in the higher education sector in an effort to increase its quality comparable to international standards through research and publication. The government is also making academic institutions more responsive to social realities by encouraging them to take up research that contributes to policy decisions. This international collaboration aims to meet both of these government objectives (Knowledge Commission of India, 2006).

We propose three primary activities. First, cross-institutional collaboration through an exchange of guest scholars within selected master’s programmes at the two partner institutions. This includes courses co-developed and co-taught by staff from both institutions. Second, the exchange of master’s (and select PhD) students between the two partners. Third, preparatory activities leading to the creation of a PhD Programme of Public Policy at CSSEIP. The activities will strengthen the global perspective and expertise in comparative methodologies at both partner institutions. The project moves beyond the teaching collaboration begun with UTFORSK providing a framework at the institutional level for continued synergy between on-going research and the education of graduate (MA and PhD) students within and between the partner institutions.
INCP-2014/10045

Advanced Nano materials for Clean Energy Applications - A Joint collaborative project between Bergen University College, Norway and Coimbatore Institute of Technology, India

Among the clean energy resources, solar energy is the best choice to meet the projected electrical energy demand, but the current cost of solar technologies and their intermittent nature make them hardly competitive on an energy market still dominated by cheap fossil fuels. Both Norway and India have been active in high quality research on solar cell technology, and the higher education and research institutions have to be motivated to educate their students to innovate new efficient and cost-effective technologies for future clean energy applications.

In January 2011, Western Norway University of Applied Sciences (Formerly known as Bergen University College), HVL, Norway and Coimbatore Institute of Technology (CIT), affiliated to Anna University, India, signed a memorandum of understanding (MoU) in order to promote joint research activities. This research collaboration resulted in high quality research in the field of thin films and nano structures for solar cell and health applications. The research groups at HVL and CIT have wide expertise in modelling, synthesis and characterization of nanomaterials for clean energy applications. The research profiles and competencies of these two research groups have complemented each other in their high quality research on nanomaterials for several years. In 2015, the INCP-project - Advanced Nano materials for Clean Energy Applications was awarded funding by DIKU (Formerly known as SIU). The project was initially funded for three years 2017 and was extended for another year till 2018.

The main objective of the project was to strengthen and expanding the research collaboration between the partner institutions resulting in close ties in educational activities and increase in student and staff mobility within the field of nano materials for clean energy applications. The project implemented all the activities planned, accomplished all the goals and produced excellent results. In the project period, a total number of 16 student mobility and 19 staff mobility both from India and Norway were realized, and these research stays and visits have helped in enhancing the quality of higher education and research in this particular field at both institutions. Two master projects and one PhD at HVL and 3 PhD studies at CIT were successfully completed in the project period through joint supervision. A New 10 ECT PhD/MSc course is developed by the project coordinators jointly and taught at CIT. The administrative leaderships at HVL and CIT have had mutual visits and held several meetings in the project period, and this has helped in developing administrative routines and mechanisms at HVL and CIT for student and staff exchange. High quality research carried out by the project group has resulted in 36 joint research articles from 2015 and 2018 in highly reputed international journals. In addition, over 50 conference disseminations have been carried out by the research students and staff in this period.

The joint research has contributed to new knowledge for the nano materials research community working on third generation solar technologies such as Dye sensitized, Quantum Dots sensitized, polymer and perovskite solar cell technologies. Results obtained from these studies have been widely cited by the researchers around the world.

The research group and the two institutions have gained widespread reputation through this project. Five international conferences and four Indo-Norwegian workshops have been arranged in the project period in additional funding from the Norwegian Research Council. A number of researchers from HVL, UiB, UiO, IFE and UoA from Norway have participated at these conferences in India, and these arrangements have been the catalysts for new
partnerships between other Indian and Norwegian institutions. Five proceedings from these conferences and two special issues for renowned journals have been published. With close planning, both HVL and CIT have now established experimental facilities in both places such that the researches have access to the much-needed facilities.

The biggest achievement from this INCP project is that the project group had submitted six joint research project proposals to various funding organizations and had already received funding for a UTFORSK project from 2017 to 2020. During the project period, both HVL and CIT have expanded the research network not only in Norway and India, but also in other countries such as Sri Lanka, South-Korea, England and Singapore. Visits to private sector establishments in clean energy sector and guidance from a few mentors from the private sector have helped the students to understand the needs of the industry.

The best result from the project is that the students and staff involved in the project at both institutions have developed close ties, and all have had exposure to multicultural research environments. The project has high impact on assuring a sustainable partnership between the institutions. The encouragement and commitment from DIKU have played a pivotal role for the success of this project, and it is greatly appreciated.

**INCP-2014/10049**

**Developing Indo-Norwegian cooperation within Law**

Through the project, the National Law University Delhi (NLUD) and the University of Bergen Faculty of Law (UiB) have developed a framework for student exchange. Student exchange was implemented as part of the project and is now taking place on a regular basis.

Through three joint workshops, researchers and PhD-students from NLUD and UiB have gotten to know each other and shared knowledge about various areas of law from the two jurisdictions. Relations between researchers have been developed especially within the areas of Competition Law and Private International Law. Contact between researchers from the two institutions will be maintained also after the project period, and the relations that have been developed are expected to lead to further cooperation in the future. The project also included guest lecturing at each of the institutions, by lecturers from the other institution.

During the INCP project period, the two partners also developed joint mobility projects within the Erasmus+ International Credit Mobility scheme. Both student and staff mobility will continue beyond the project period with funding from Erasmus+ ICM.

**INCP-2014/10060**

**Research and education within advanced hybrid separation techniques in industrial wastewater treatment**

As a consequence of urbanization, significant amounts of once freely available natural resources have been consumed by industries. This has led to a severe issue in international agenda to reuse wastewater as an attractive economic alternative. There exist several methods to treat wastewater, however, many of these are ruled out due to cost, environmental capability, versatility and so on. One of the techniques opted for within the scope of this project is gas flotation.
The project facilitated exchange of people at several levels and transfer of knowledge in the field of wastewater science and technology. Two short-courses, focusing on membrane technology (at NTNU) and produced water treatment (at JU), respectively, and two workshops (one at JU and one at NTNU), focusing on wastewater processes and treatment technologies, were arranged. They were well attended by PhD and master students at both institutions. Presentations were given by invited lecturers and PhD students from JU and NTNU. Furthermore, close collaboration was achieved by joint supervision of a PhD student from JU that spent 18 months as visiting researcher at NTNU. This work resulted in new knowledge of how water soluble components influence the surface properties of gas bubbles, which is important for gas flotation efficiency. The PhD dissertation became integrated in the project. Overall, the project established a base for future collaboration in the field of wastewater processes.

INCP-2014/10062

Developing needs based on-site or distant education courses in public health in India and Norway

SIU project: Department of Health and Nurse science (HSN) have collaborated with Department of Health Science, SP Pune University 2015-2017. The scope of cooperation is exchange of students and staff, exchange of academic material, joint research projects and curriculum development.

Some activities during the project period:

- Students and staff mobility from Norway to India and from India to Norway 2 times each way, 8 students and 4 staff from Norway, 2 students and 2 staff from India
- Joint teaching: Both Norwegian Students and staff have lectured at the Pune University for PhD student and Professors.
- Staff from Norway have lectured at the Bharati Vidyapeeth Medical University
- Staff from Norway have participated and been key speakers at a Global Health conference in Pune, India
- Norwegian students and PhD students at the University of Pune have participated in onsite course on public health and health systems in India, and have visit District Health Centers and fields

Results from the project:

- A Norwegian screening tool for children used by the Norwegian Public Health nurses was translated into Indian in 2015. The screening tool was used by an Indian PhD student in 2016 as a part of the Indian PhD student thesis
- India and Norway have developed an online course in Global health at Master and PhD level
- The Norwegian team have a scientific paper in progress of publishing: Global health student characteristics and preparation before travelling to India.
- Two abstracts from the project were presented on a conference in Milano in 2015
INCP-2014/10074

Integrative Education and Research in Human Health, Environmental Sciences and Bioinformatics: an Indo-Norwegian initiative

Modern day research in biology incorporates high-throughput (-omics) approaches. This has transformed biology into a data-rich and multi-disciplinary field. Complexity of biological systems in ecology, evolution and human diseases can be studied using various types of biological data such as genomes of human and other species. Analysis, interpretation and application of voluminous data requires knowledge of biology, bioinformatics, systems biology, mathematics and statistics.

Norway has been on the forefront of research involving various aspects of human health and environmental science and has been generating high-throughput experimental data. India, on the other hand, has achieved excellence in bioinformatics, computational biology and data mining. This was indeed the reason for the Department of Environmental Science and Health at University College of Southeast Norway (SPPU) to initiate a collaboration with the bioinformaticians at Savitribai Phule Pune University (SPPU) five years ago. Thus, the scientists working at USN and SPPU have complimentary expertise that can be harnessed to address and resolve complex research problems in the areas of mutual interests. The interactions between the two groups for the last five years have (a) resulted in an interdisciplinary research environment for students and (b) emphasized the need for development of short modular courses with an inter-disciplinary curriculum between the two institutions. Such courses will directly benefit students from both the countries to embark upon various types of careers in research, industry or medicine. The courses having components of experimental and computational approaches in the field of -omics will offer the students an edge over the traditional courses.

INCP-2014/10077

Environment and Development in India

The overarching goal of the proposed project was to strengthen and formalize the existing cooperation in higher education and research, specifically in the field of 'Environment and Development' between Noragric and the two Indian institutions CDS and IDSJ. Intensive Field course was organised every year in the project period with 14-17 students from Noragric participating. Joint research was undertaken on three themes related to environment and development- Environment, development and social justice in Kerala, Degradation of pastoral commons in Rajasthan and land grabbing in Orissa. The data is being analysed and written up. The teaching will draw on the research projects. We plan to publish three articles and two monographs based on the research. We have identified research themes for development of two applications to be submitted to NFR and ICSSR for funding. We achieved the exchange of 6 staff (3 from Noragric and 3 from IDSJ). Gender was paid attention in terms of the field course syllabus, participation by students and teachers, exchange of staff. The project coordinators in all the three institutions were women.
**INCP-2014/10086**

**Road map for decarbonization of Indian energy system: exploring innovative solutions.**

The aim of the project, “Road map for decarbonization of Indian energy system: exploring innovative solutions”, was to initiate discussion and disseminate knowledge regarding sustainable energy solutions and energy system in transition. This has been achieved through seminars and workshops, jointly organized by the University of Stavanger, Norway and Jadavpur University, India. Several large one-day workshops and seminars were organized in both India and Norway, along with several smaller group meetings with external and internal experts. Between 40 and 100 people, representing academia and research community, industry and local authorities participated in the seminars and workshops, providing a forum for discussion and information exchange. Beside state of the art in the field of energy transition, issues related to education and training of employees at industry and modernization of energy education programs at universities were discussed during these seminars, workshops and meetings. As an outcome of the discussions concerning modernization of energy education programs, a new master program with the title “Master in Energy, Environment and Society” was established at University of Stavanger.

The meetings organized in smaller groups of 10-15 participants were mostly focusing on ongoing research activities and possibilities for knowledge transfer between the project partners. As result of these meetings and knowledge sharing, several scientific publications were generated throughout the project period.

Active involvement of the Bengal Chamber of Commerce and Industry (BCCI) in the project resulted in several workshops with strong industry representation. In collaboration with Indian industrial partners, issues related to education and training of the employees at industry were discussed and suggestions concerning development of online courses were presented.

This project has been very meaningful in terms of knowledge and experience exchange between the two countries. The close collaboration with local authorities and industry in India has enabled knowledge transfer to decision makers, which will have strong impact on the long term.

**INCP-2014/10093**

**Integrated Action on Health and Climate Change in India**

The latest Global Burden of Disease (GBD) study indicates that exposure to particulate matter from household and ambient sources remains a major cause of death and disability in India. More than half of PM2.5 pollution in India is a consequence of solid fuel burning for residential or domestic cooking as a result of continued reliance on solid fuels burnt in primitive and inefficient stoves. Such emissions also contribute significantly to the outdoor air pollution burden both in urban and rural areas. Recent assessments also suggest that short lived aerosols, in particular black carbon both from ambient and household sources are significant contributors to climate change. Policy approaches to tackle outdoor air pollution in India are directed at a wide range of sectors while policies tackling household air pollution have been largely directed at promoting increased access to clean energy and encouraging the development and diffusion of more efficient and less polluting biomass stoves policies (e.g. smokeless cook stove, biomass gasifiers, biogas plants, solar cook...
stoves, solar home systems, kerosene and LPG subsidies etc) but the impact of such policies has up till recently been limited. Recent developments have, however, been more successful. In 2016, the Indian government embarked on a drive to provide free cooking gas connections to women from extremely poor households, aiming at reducing the use of polluting fuels such as wood and dried cow dung. The initiative includes programs encouraging people to give up the LPG subsidy and transfer the subsidy to poor households, and programs that provides free LPG connections to poor households. The current project has explored the different design, weaknesses and feasibility aspects of ongoing policies to enable a broad scale household energy transition in India. Particularly, the benefits to human health through avoided air pollution exposure and climate change related outcomes have been addressed.

**INCP-2014/10096**

**Action research and education in Agroecology – Cooperation and Comparison**

This project initiated cooperation in teaching and research in agroecology between Norwegian University of Life Sciences (NMBU) and University of Calcutta (UoC) and have organized pilot courses based on experiential and action-oriented learning.

At UoC there were already courses that covered important parts of agroecology in a certificate course on pollination ecology and agroecosystems. Teaching, learning and evaluation of these courses at UoC followed conventional methodologies, with teaching focused on lecturing, providing reading materials and evaluation of students on the basis of written examinations and assignments. Initiating courses in agroecology with participatory, action-based research and education methodology, like that at NMBU, have introduced a holistic and system-oriented approach to learning, which is considered necessary for dealing with complex, dynamic situations regarding agriculture, food and public health.

This project also supports continued cooperation between NMBU, UoC and KU in teaching and research in agroecology. UoC has cooperated in setting up the course in Kerala, and this has initiated the cooperation between UoC and KU as well. Through courses and research in India and Norway, the partners at UoC, KU and NMBU learn from shared experiences and have strengthened the cooperating institutions. Cross-cultural experiences and lessons help instructors improve educational programmes in both countries.

Through a four-year H2020 project ‘Nextfood: Educating the next generation of professionals in the agrifood system’ (2018-22), where the model of participatory action-based research and education is at the core, both UoC and KU are education-cases with their courses.

This project has further strengthened the institutional linkages between UoC, KU and NMBU, and we will continue and expand the connections already successfully in place. We are very pleased with this opportunity to develop new ways of integrating disciplinary and transdisciplinary knowledge within the domains of agriculture and the environment, build generic action learning competencies transferable to other areas of higher education, and disseminate this learning model internationally. It was our goal and expectation that agroecology-courses in the frame of this learning model would flourish and continue at both UoC and KU after this project is over.
Design and Development of Real Time Multimedia Cloud (RTMC) for implementation of Indian Norwegian Digital-Meta University (INDU) for Sustainable Collaborative Teaching, Learning and Research Activities

The project has key agenda of 'education for sustainable development'. This project has facilitated in developing education policy and guidelines not only for the partner university IGNTU, but also through the New Education Policy Seminar organized under this project at IGNTU at national level. The key points on implementation of new education policy guidelines were to empower the learners for taking informed decision and responsible actions, aim is that learning of the students should be interdisciplinary considering socio-economic and environmental perspective, and learner-centered and action-oriented pedagogy approach. By considering these points, short-term education and training courses were organized at the IGNTU on renewable energy technologies, socio-economic development of rural area, rural electrification, off-grid hybrid renewable energy system for remote tribal regions, etc. Through this project joint conferences, workshops, seminars, courses have been organized and the proceedings of the select conferences have been published after peer review process. The joint publications of the proceedings as well as research articles on the related topics have been published in the peer-reviewed conference proceedings and journals. The two joint PhDs at IGNTU are progressing and the theses topics are on key objectives of the project.

This project has facilitated for additional projects under the Norwegian Framework Agreement in partnership with the Energy and Resources Institute (TERI) and the University of Agder in the area of clean energy and sustainability. Also sustainable relationship with the Norwegian industries operating in India has been developed for students' internship program during their mobility to India.

PhD candidate from the University of Agder had mobility to India for participating in the World Sustainable Development Summit Feb 2019, Feb 2018 and also for participating in IEEE conferences as well as on collection of research data.

NTNU - IIT Bombay International collaboration in Urban hydrology, flood management and urban Studies

The UrbanIndia project had a main objective to build a collaboration opportunity between NTNU, Department of Civil and Environmental Engineering (IBM) and IIT Bombay, Department of Civil Engineering - Urban Studies in the areas of urban hydrology and urban flood management. The increasing pressure on urban areas both in India and Norway together with climate change pose a growing challenge in managing rainfall runoff in a safe and sustainable manner in our urban landscapes. Urbanization and urban sprawl, increased pressure on already densely populated areas, together with increased intensities and frequency of rainfall events creates new challenges in how we manage urban runoff in a sustainable manner. Both IIT Bombay and NTNU IVM both have strong track records in the field with mutual overlapping interest. The different climate region of India and Norway created knowledge transfer opportunities and collaboration opportunities. Several master students from IITB spent time at NTNU working in collaboration with master students and NTNU on common topics in urban stormwater management and climate change. Students from IITB and NTNU also participated in course work at the host institution. The project built a good foundation on which to further the collaboration between the two institutions. The
project produced academic results in form of publications and conference participations, in addition to the student mobility opportunities.

INCP-2014/10113

A Microcomparative Study of ‘Doubling’ in Dialects of Meeteilon and Norwegian as a case of Syntactic Variation

Although the study of language variation and mixing falls largely within the purview of sociolinguistics, this project has been set within a narrower, yet highly significant and understudied concern, namely, morpho-syntactic variation and mixing. Recently, the studies of morpho-syntactic microvariation across language varieties have led to the creation of successful large-scale corpora across the world, including the Nordic dialect corpus NorDiaSyn. However, no such corpus exists within the Indian language spectrum. Given that phenomena of multilingualism and language mixing, as well as the existence of multiple (spoken) varieties of one standard language, are ubiquitous facets of the Indian language situation, the absence of any corpus constitutes an impediment for linguistic research. The current project has been addressing one aspect of this lacuna by carrying out focussed studies on varieties of and language mixing involving Meeteilon (a Tibeto-Burman language in Manipur, India), and comparing it with variation and language mixing involving dialects of Norwegian, in particular the Halsa dialect. More specifically, the project has concentrated on phenomena of syntactic doubling and agreement/concord in the varieties involved, as well as on the structure of language mixing between English and Norwegian, on the one hand, and between English and Meeteilon, on the other, in order to investigate any systematic similarities or differences in the mixing patterns. The project has resulted in several (joint) papers, as well as quite extensive researcher and student exchange between the institutions involved (NTNU and the University of Delhi). Several joint workshops have been organized as a direct result of the project, and researchers from NTNU have been involved as teachers at the LISSIM summer school (in Solang Valley, Himachal Pradesh, India) for two consecutive years (2017 and 2018). Moreover, the project has not only been concerned with language variation and mixing as an end in itself, or even restricted to structural analysis. It has also been concerned with the significance of syntactic variation and mixing in classroom and teaching practices. A dedicated project workshop on that topic was organized at the University of Delhi in February 2017.

INCP-2014/10119

Understanding Oxide Materials for Renewable Energy (UnOREN)

This UnOREN project has aimed at strengthening scientific interactions, as well as exchange of ideas and expertise between Norway and India by establishing common study programs and exchange of students and researchers. We have focused the educational activities on fundamental aspects of inorganic functional materials of importance for sustainable energy/environment technologies. We have aimed to bridge teaching, student supervision with high-level research and thereby to motivate young students for carriers committed to Renewable Energy Research. Our expertise, on Materials Synthesis, Advanced Characterization, and Computational Modeling has been a vehicle for innovative, interdisciplinary research and students have been trained within these fields. Intensive courses have been given along with hands-on training on computational modelling, whereas cutting-edge techniques in synthesis and characterization of materials useful in renewable-energy applications have been taught during lectures and seminars. A basic idea has been
to establish new courses in such a way that these are seen as modules that can be given at CUTN, Anna and/or UiO in the future. Ideally, students from all institutions ought to distribute between the different nodes, each with their field of expertise, in theoretical knowledge and on complex synthesis and characterization, however, that requires more substantial resources than currently available. Based on the success of such efforts, steps can be taken towards joint degree programs. Mobility and short-term visits of researchers and students for effective interactions have been successfully achieved. We have provided supervision and education/training of to master and PhD students, training of young researchers, supported and encouraged female students and scientists and helped providing an international high-level working environment that stimulates research and development.
## Appendix I – List of INCP projects

<table>
<thead>
<tr>
<th>Project number</th>
<th>Allocation from Diku (NOK)</th>
<th>Project title</th>
<th>Main partners</th>
<th>Network partners</th>
<th>Discipline areas</th>
<th>Project start</th>
<th>Project end</th>
</tr>
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<tbody>
<tr>
<td>INCP-2014/10024</td>
<td>800 000</td>
<td>Indo-Norwegian collaborative research programme on optics and photonics for biomedical imaging and environment monitoring.</td>
<td>University of Tromsø (before 2016) (NO), Indian Institute of Technology Delhi (IN)</td>
<td>Electronics and electrical engineering (404), Health sciences (503), Environmental technology (411)</td>
<td>01.01.2015</td>
<td>31.12.2018</td>
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<td>INCP-2014/10038</td>
<td>788 175</td>
<td>Building global perspectives: An Indo-Norway interdisciplinary educational network</td>
<td>Oslo and Akershus University College of Applied Sciences (NO), National Law School of India University (IN)</td>
<td>Social work (214), Human geography (208), Law (213), Other social sciences (216)</td>
<td>01.01.2015</td>
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<td>INCP-2014/10045</td>
<td>1 050 000 (Diku unilateral)</td>
<td>Advanced Nano materials for Clean Energy Applications - A Joint collaborative project between Bergen University College, Norway and Coimbatore Institute of Technology, India</td>
<td>Bergen University College (before 2017) (NO), Coimbatore Institute of Technology (IN)</td>
<td>University of Bergen (NO)</td>
<td>Physical sciences (303), Material technology (402), Other engineering and technology (412)</td>
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<td>Developing Indo-Norwegian cooperation within Law</td>
<td>University of Bergen (NO), National Law University, Delhi (IN)</td>
<td>Law (213)</td>
<td>01.01.2015</td>
<td>31.12.2018</td>
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<td>INCP-2014/10060</td>
<td>600 000</td>
<td>Research and education within advanced hybrid separation techniques in industrial wastewater treatment</td>
<td>NTNU - Norwegian University of Science and Technology (before 2016) (NO), Jadavpur University (IN)</td>
<td>Chemical technology and engineering (406)</td>
<td>01.01.2015</td>
<td>31.12.2017</td>
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<td>INCP-2014/10062</td>
<td>514 670</td>
<td>Developing needs based on-site or distant education courses in public health in India and Norway</td>
<td>Telemark University College (Historic name) (NO), Savitribai Phule Pune University (IN)</td>
<td>Public health (504), Cultural sciences (103), Health sciences (503)</td>
<td>01.01.2015</td>
<td>31.12.2017</td>
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<td>Project number</td>
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<td>INCP-2014/10074</td>
<td>522 123</td>
<td>Integrative Education and Research in Human Health, Environmental Sciences and Bioinformatics: an Indo-Norwegian initiative</td>
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<td>Biological sciences (306)</td>
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<td>Institute of Development Studies, Jaipur (IDSJ) (IN)</td>
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<td>Road map for decarbonization of Indian energy system: exploring innovative solutions.</td>
<td>University of Stavanger (NO), Jadavpur University (Main Campus at Jadavpur) (IN)</td>
<td>Global Change Research (IN), International Research Institute of Stavanger (IRIS) (NO), University of Kalyani (IN)</td>
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<td>INCP-2014/10093</td>
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<td>Integrated Action on Health and Climate Change in India</td>
<td>University of Oslo (NO), Indian Institute of Management, Ahmedabad (IIMA) (IN)</td>
<td>Center for International Climate and Environmental Research – Oslo (CICERO) (NO), The Norwegian Institute of Public Health (NO)</td>
<td>Ecology, Environmental Sciences (307), Public health (504)</td>
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<td>INCP-2014/10096</td>
<td>790 000</td>
<td>Action research and education in Agroecology – Cooperation and Comparison</td>
<td>Norwegian University of Life Sciences (NO), University of Calcutta (IN)</td>
<td>centre for sustainable agriculture (IN), DRCSC (IN)</td>
<td>Educational sciences, pedagogy and didactics (207), Other agricultural sciences (604), Ecology, Environmental Sciences (307), Agriculture (601)</td>
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<td>Design and Development of Real Time Multimedia Cloud (RTMC) for implementation of Indian Norwegian Digital-Meta University (INDU) for Sustainable Collaborative Teaching, Learning and Research Activities</td>
<td>University of Agder (NO), Indira Gandhi National Tribal University (IN)</td>
<td>Computer sciences (302), Information, computer and communication technology (405), Electronics and electrical engineering (404)</td>
<td>01.01.2015</td>
<td>31.12.2018</td>
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<td>Project number</td>
<td>Allocation from Diku (NOK)</td>
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<td>Main partners</td>
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<td>INCP-2014/10112</td>
<td>237 915</td>
<td>NTNU - IIT Bombay International collaboration in Urban hydrology, flood management and urban Studies</td>
<td>NTNU - Norwegian University of Science and Technology (before 2016) (NO), Indian Institute of Technology Bombay (IN)</td>
<td>Environmental technology (411), Ecology, Environmental Sciences (307), Earth sciences (304)</td>
<td>01.01.2015</td>
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<td>INCP-2014/10113</td>
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<td>A Microcomparative Study of 'Doubling' in Dialects of Meeteilon and Norwegian as a case of Syntactic Variation</td>
<td>NTNU - Norwegian University of Science and Technology (before 2016) (NO), University of Delhi (IN)</td>
<td>Linguistics and Languages (101)</td>
<td>01.01.2015</td>
<td>31.12.2017</td>
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<td>INCP-2014/10119</td>
<td>600 000</td>
<td>Understanding Oxide Materials for Renewable Energy (UnOREN)</td>
<td>University of Oslo (NO), Central University of Tamil Nadu (IN)</td>
<td>Material technology (402), Chemical sciences (305), Physical sciences (303), Environmental technology (411)</td>
<td>01.01.2015</td>
<td>31.12.2018</td>
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