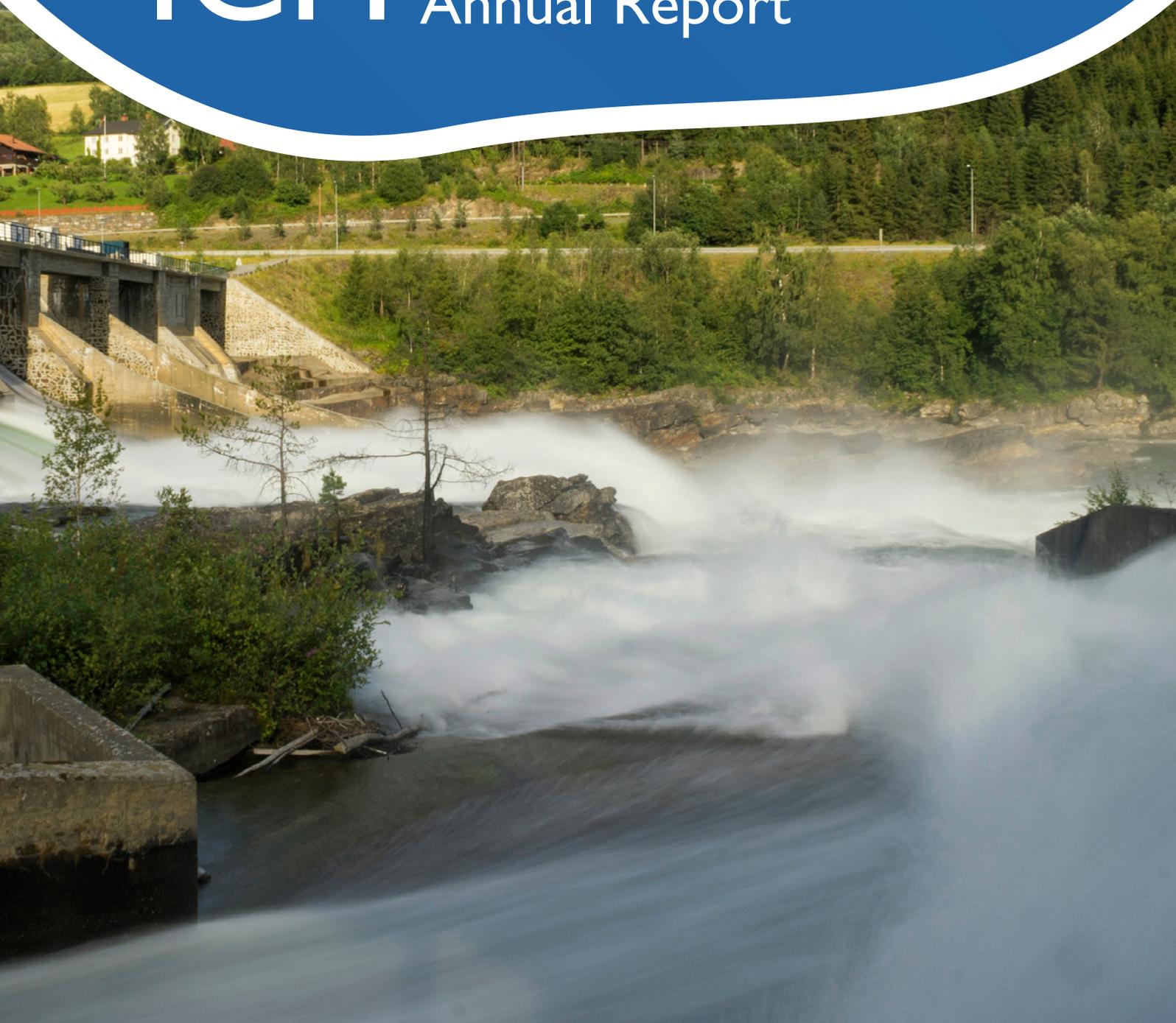




International Centre
for Hydropower

ICH 2020 Annual Report



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Chairman's Note

We have just put a strange and challenging year behind us. In January 2020 most of us had no idea what lay ahead and by mid-March, when the COVID-19 virus started spreading globally, most physical international relations and communication had decreased and then came to a halt. As a result, ICH had to review all courses planned in 2020. Thanks to devoted and hardworking staff, courses were revised to be delivered via digital platforms and were developed ready for roll out in a very short period of time. Of 28 scheduled physical courses, a total of 25 had to be cancelled and replaced by digital courses. During this process, there was an increased focus on quality and improvement. Most of the course programme was completed and the courses were conducted to everybody's satisfaction.



Even if the 2020 COVID-19 pandemic had – and still has – large implications for all of us, we have learned a lot and hopefully our whole course portfolio has been improved. The preliminary conclusion after nine months of online courses in 2020 is that it has gone remarkably well, albeit with a high workload on ICH employees and hired lecturers. It is also important to recognise the good cooperation with our local partners and how quickly they adapted. Lecturers and resource persons have had to learn a new platform for knowledge sharing but have adapted beautifully to the new environment.

It is clear that online courses are here to stay and that any future strategy needs to consist of a combination of digital and regular on-site courses. However, it is also clear that online courses cannot replace all that in-person courses offer – personal interactions and time spent together outside of the classroom are invaluable. The goal is to extract the best out of the two platforms.

In the development of this new course strategy, it is important to remember the focus on how hydro-power knowledge can contribute to the achievement of the Sustainability Development Goals (SDGs). Cross-cutting issues like gender, Anti-corruption, human rights and climate change, which are all vital parts of the SDGs, have to a continuous and increasing degree been included in all ICH courses, and must not be forgotten when restructuring the courses for digital platforms. Based upon our experience from the past, however, I am sure that ICH will succeed.



The Goal is to extract the best out of the online and the on-site platforms.



Line Amlund Hagen
Managing Director, ICH

CAPACITY BUILDING FOR THE HYDROPOWER SECTOR IN THE TIME OF COVID-19

The COVID-19 pandemic challenged us to be innovative. Reflecting on 2020, we can conclude that we came out of the year of the pandemic with renewed engagement and knowledge. We made use of the possibilities that were presented to us and we could offer our students a course portfolio of online courses which mostly corresponded to the planned on-site courses.

Here at ICH, we are more committed than ever to contributing our expertise and knowledge at the service of sustainable development of hydropower throughout the world. The commitment and positive response from ICH members and strategic partners have made online training possible. Facing this global pandemic, further adaptation and clear strategies to protect valuable hydropower infrastructure are needed.

In ICH we have adapted our educational methods to include online modules. This shift has also contributed to strengthening our on-site courses. Remote courses provide opportunities for students to prepare for the on-site courses that follow and contribute to improved learning outcomes.

To date, the online courses have been very well received. Our participants have been grateful not only that their training has not been interrupted but also for a positive experience of connection in an otherwise difficult time. Participants have shown true commitment to learning – enduring early mornings, long commutes, late evenings, corona-restrictions and sometimes poor internet access to be able to follow the courses.

Our lecturers and resource persons have had to learn new platforms for sharing their knowledge but have risen to the challenge in the new environment. However, it is clear that the online courses cannot replace meeting our students face to face. Over the past year, we have all experienced the loss of personal contact and hence have realised how important that is.

We miss you all. From the whole ICH Team, we cannot wait to see you again!

Until then – stay safe!

The Board

DIRECTORS



Kjell Repp
Chairman



Torbjørn Nielsen
NTNU (Deputy Chairman)



Einar Kobro
Energi Norge



Tron Engebretsen
Statkraft AS



Hege Iversen
Norconsult AS

DEPUTY DIRECTORS



Leif Lia
NTNU



Ole Gunnar Dahlhaug
NTNU/HydroCen



Hans Arild Bredesen
Nord Pool Consulting



Christine Birkeland
Norwegian Energy and
Water Resources
Administration (NVE)



Bjarne Børresen
Multiconsult AS

Five board meetings were held in 2020. All but one was held online. Important topics were the COVID-19 response and the subsequent changes in the workplace as well as changes to the delivery of the ICH course portfolio. The board also closely followed the process of negotiating the next NORAD contract which will hopefully be in place during the spring of 2021 for the period 2021-2026.

The 2020-2023 Election Committee comprises:

Øivind Johansen, OED (Ministry of Petroleum and Energy), (Chair)
Odd K. Ystgaard, Norconsult AS
Vegard Willumsen, Multiconsult

Supplementary elections for the Board of Directors were made at the Annual Meeting on 28th April 2020.

IN FOCUS AND ONLINE!

At ICH we are working to develop online courses as well as resuming in-person training in Trondheim and regional settings as soon as travel can be resumed.

727
participants

in **26**
courses

37%
women

48
countries

The Secretariat



Line Amlund Hagen
Managing Director



Tom Solberg
Project Director



Laura Bull
Head of Studies and
Latin America



Carole Rosenlund
Head of Africa



**Monde Lisulo
Hamududu**
Project Assistant

The move to online delivery required effort and hard work from the whole team. In January 2020, the ICH team was completed with a Project Assistant, Ms. Monde Lisulo Hamududu.

Throughout 2020 ICH engaged outsourced professionals for accounting, auditing, results monitoring, ICT and other administrative tasks.



“Energy connects us,
ICH keeps us together”

ICH Mission

- To develop and implement training and capacity-building activities in renewable energy with an emphasis on hydropower.
- To collaborate with key Norwegian partners for effective implementation of the government's commitment to clean energy development; and to strengthen networks between the public and private sectors to mutually benefit members and the implementation of ICH activities.
- To contribute to institution building and improved management through the dissemination of knowledge on hydropower and other renewable energy sources.
- To provide services to Norwegian and foreign partners of high international quality in courses and conferences that are in line with current guidelines for Norwegian development assistance activities.

Generating **Sustainability**

Our extensive results monitoring programme has shown that there is a clear link between courses provided by ICH and meaningful change in governments and organisations favouring the development of sustainable hydropower.

ICH alumni have themselves become valuable resources, contributing to course delivery, providing expertise and leading on policy development in their countries and regions. The ICH network is stronger than ever, seizing opportunities to collaborate and bring together different entities from different countries who face similar challenges and to work towards successes for mutual benefit.

Participants report regular application of acquired knowledge from the training in their daily work and benefits to their organisation as a whole. At ICH we are committed to increasing awareness of cross-cutting issues such as gender, human rights, climate change vulnerability and the unique needs of indigenous peoples as well as a clear stance on anti-corruption and how all issues affect the risk profile for a project.

Cross-cutting issues are integral to the course material and learning is based on real world challenges and on the needs of the region where the course is delivered. ICH

is driven to improve the quality and efficiency of project delivery by helping participants to see the business case for inclusion of these important facets of sustainable energy production.

In our target countries, efforts are under way to meet the Sustainable Development Goals (SDGs). Hydropower and renewables have an important role to play in terms of equitable access to affordable and clean energy (SDG 7). Despite the promise of hydropower to contribute to equitable access, it is important that risk management, sedimentation, operations and maintenance and care of the social and environmental factors are considered to ensure that progress in other SDGs such as climate action (SDG 13), sustainable water and sanitation (SDG 6), food security (SDG 2) and gender equity (SDG5) are not lost.

Through our network and generating capacity to bring sustainability into focus, ICH drives forward sustainable practices in industry.



Moving to **Online Delivery**

Working to solve the challenges in the hydropower sector since 1994, ICH has shown that continuing professional education creates social, economic and environmental value. We believe that capacity building is a prerequisite for securing the development of sustainable hydropower throughout the world and was too important to be interrupted.

Over the last 25 years, ICH has developed a course portfolio with themes ranging from operations and maintenance, financing and project management to conflict resolution and revenue protection. Every year ICH offers more than 25 courses throughout Africa, Asia, Latin America and in Norway. The courses are normally held as intensive courses over one week, two weeks or three weeks.

The COVID-19 pandemic challenged us to be innovative. As a result of the pandemic, the decision was taken to adapt as many courses as possible for 2020 to be available as online courses. The commitment and positive response from ICH members and strategic partners around the world have contributed to making the online training series possible.

The use of virtual platforms for these programmes limited our capacity for comprehensive practical exercises as conducted during previous on-site courses. To compensate for this, all the courses presented additional case studies with regional perspectives, incorporated assignments and groupwork and maximised interactive and participatory learning. The sharing of experiences amongst participants and experts was highly valued. It was inspiring to see participants complete these online courses despite the connectivity issues and other challenges they faced as a consequence of the pandemic.

Responsiveness to the needs of participants is fundamental to the success of capacity-building activities and ICH will continue to custom design courses based on identified needs to address capacity gaps. Despite the constraints caused by the COVID-19 pandemic, the 2020 training agenda remained aligned with planned ICH capacity-building priorities tailored to each region to promote the sustainable development and operation of hydropower and other renewables.

Much has been learnt throughout this process that can be applied to future course development as it is clear that learning online with ICH in some form is here to stay.





Overview of the year



Laura C. Bull
Head of Studies, ICH

2020 WILL FOREVER IN THE HISTORY OF THE PLANET BE A YEAR IN WHICH WE WERE ALL DRIVEN TO CHANGE.

Living and working through a pandemic changed the way we live, work, relate and connect with the world. It changed the way we communicate, changed how we perceive the present and sharpened our desire for a better future.

The conversations changed in form and method, but not in purpose. The ICH team sought to understand the realities and reinforce concepts to meet both ongoing challenges as well as new ones brought about by the pandemic.

Building knowledge requires a connection. Our courses brought hydropower practitioners and specialists together from different world regions and cultures. Working together, reflecting, adjusting and building trust, we generated collective solutions. Transferring courses online required a new approach, sharpened communication skills and provided continued impetus to provide a valuable learning experience for participants.

Our experience mirrored that of practitioners in the industry and reinforced the importance of building trust between communities, companies, leaders, facilitators and stakeholders. The new approach provided a unique experience that transcended borders, languages and cultures.

Communication and connection across the planet without limits of space and time gave rise to powerful conversations, creativity, participation and active listening as vital tools that enabled us to understand each unique reality.

Using innovative methodologies, we understand what lies beyond obvious needs and deliver training that continues to bring environmental, economic and social value throughout the world.

The methodology to deliver training online was developed and adapted based on each course and its expected outcomes. Preparation for participants included a group work task assigned two weeks before the course, with mentors available to guide. The groups were specifically chosen depending on the task and the need for a regional or gender mix. Individual assignments along with compulsory reading formed the self-study phase of learning.

To date, the online courses have been very well received. Participants are grateful that their training has not been interrupted and that they can still take positive steps in their professional journeys.

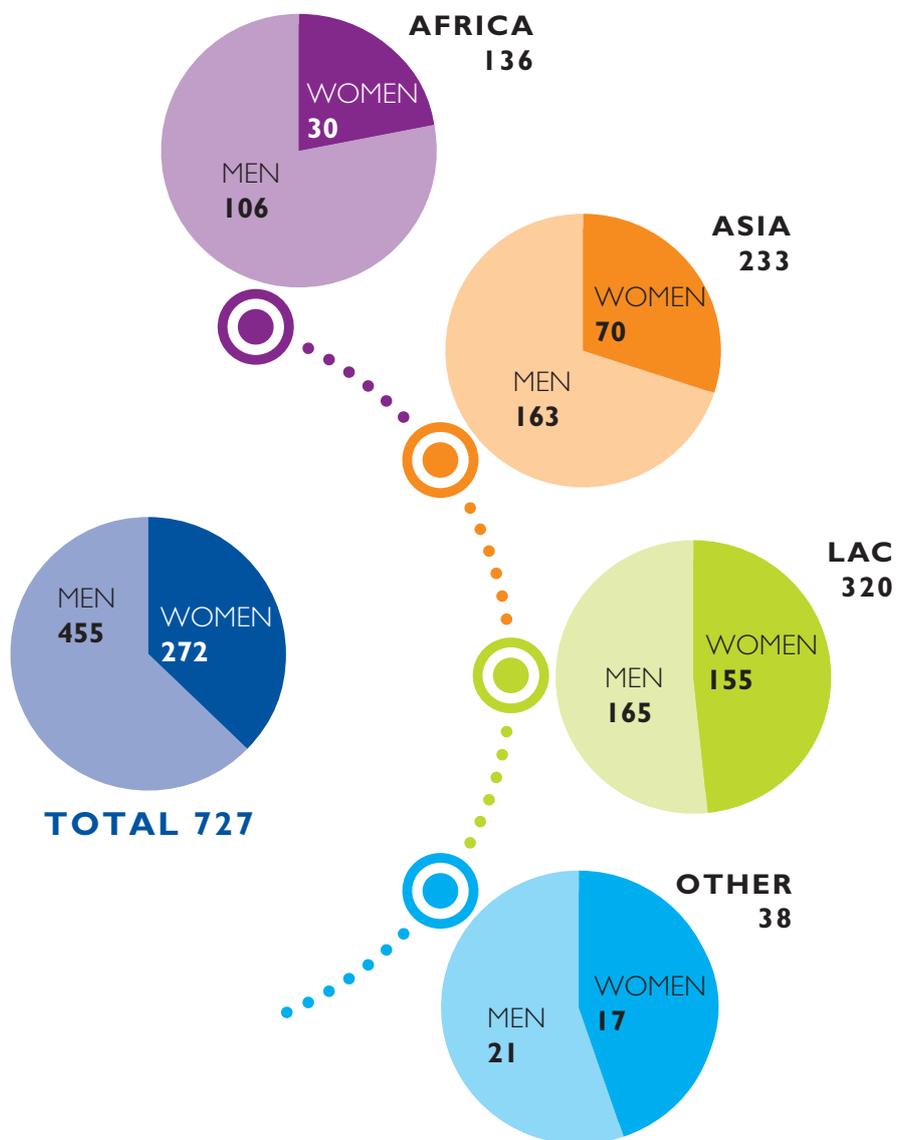
We look forward to welcoming the participants in person as soon as travel can be resumed.



The new approach provided a unique experience than transcended borders, languages and cultures.

Why the woman's experience matters

At ICH, we approach sustainability through a gender lens. We know that by training women, knowledge is transferred back to hydropower companies and government agencies taking into consideration the impact of decision making on women and their livelihoods. Our aim is for women that join our courses to become empowered and leaders in the decision-making process.



ICH courses in 2020: Promoting sustainable hydropower development throughout the world.



Costa Rica, On-site

Financial Risk Management
and Energy Transition
February 27 -28

Colombia, Online

Prevention and Administration of Social
and Environmental Conflicts in the Energy
Sector VI LAC Edition – SHM, Guidelines
for Dialogue with Ethnic Communities
November 17 – 18

Argentina, Online

Dam Safety Series LAC IV
September 28 – October 2

Latin America, Online

Sedimentation Specialised Training III
July 1-3

Environmental Monitoring
November 30 – December 4

Gender and Hydropower II
December 8 – 11

International, Online

Risk Management in Hydropower
Development
May 11 – 15

Prevention and Administration of
Social and Environmental Conflicts
May 25 – 30

Small Hydro Development
June 8 – 12

Hydropower, Renewable Energy
and the Environment
September 7 – 21

Africa, Online

Advanced Revenue Protection
Management in the 21st Century
August 3-7

The Process of Social Impact Assessment,
Compliance and Risk Management in
Hydropower Projects
September 21-25

Reservoir Sediment Management
for Sustainable Hydropower
October 19-23

Dam Safety Management for
Hydropower Development
October 26-30

Financial Modelling, PPA Structuring
and Negotiations
November 23-25

Sustainable Hydropower Development
and Operations
November 30 – December 4

Operation and Maintenance of
Hydropower Facilities – From Strategy
to Execution
December 14-18

Georgia, Online

Hydropower Development, Stakeholders
and Impact Considerations - Georgia
October 6 – 8

Nepal, Online

Financial Modelling of Power Projects
August 24-26 (Part 1)
November 9-10 (Part 2)

Sediment Management in
RoR Hydropower Projects
November 26 – December 02

Project Management for
Hydropower Development
November 12

Hydropower Development,
Turbine Testing Lab
December 10

Bhutan, Online

Financial Modelling of Power Projects
September 7-9 (Part 1)
November 2-3 (Part 2)

Cambodia, Online

Financial Modelling of
Power Projects, Cambodia

September 28-30 (Part 1)
December 8-9 (part 2)

Asia, Online

Cumulative Impacts in Hydropower
Projects
October 27-29

Prevention and Administration of
Social and Environmental Conflicts
November 23-27

NORWAY



The courses delivered under the international course portfolio reflected the broad range of topics offered by ICH and continued to benefit from the partnership with Statkraft, IDB Invest and IFC. This included topics under the project management cluster, environmental and social impact management as well as project management and operations and maintenance.

The course topics also reflect the changing needs of the industry to be more financially and economically sustainable and to be accountable to both affected communities and financial stakeholders.

Risk Management in Hydropower Development – the first course to be run online in 2020 – was modified to be an introductory course and remains in high demand. The second module will be delivered face to face. The course covered the wide range of risks that need to be assessed, mitigated and prioritised in the development and implementation of hydropower schemes.

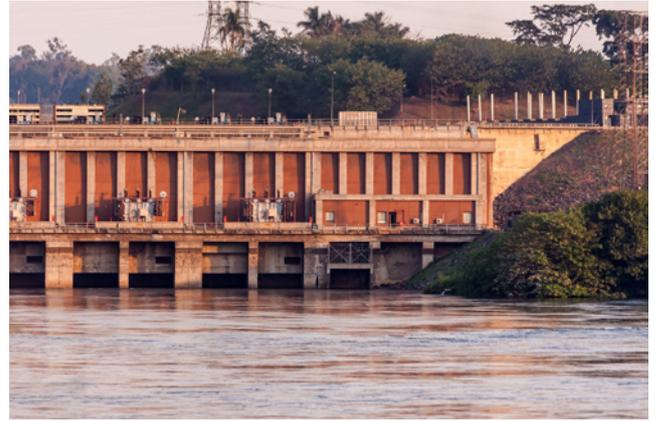
Adaptation of **Prevention and Administration of Social and Environmental Conflicts in the Renewable Energy Sector** to an online course was a particular challenge due to the high level of interaction needed to develop negotiation and communication skills. The aim was to equip participants with fundamental knowledge of triggers of conflict and the impact of conflict on project development and implementation. Participants were provided with tools for planning as well as for implementation of monitoring, and developed competence in

identifying common triggers to conflicts within the global context. The success of this course led to the development of a course designed specifically for issues relating to resettlement in Asia.

Small Hydro Development is a technically demanding topic which continues to garner global interest. Good design is required to ensure minimal environmental impact and can be especially useful for rural areas without developed electricity grids. The course reinforced sustainable foundation concepts for small hydropower project development and provided updates on technological advances in recent years, both in drilling penstocks, intake design and other trends in turbine and powerhouse design.

Hydropower Renewable Energy and the Environment promoted the principles of good management of environmental impacts. The links between the environment and social issues related to indigenous peoples, livelihoods, resettlement and conflict were well received and signal a strong desire for further learning on those topics as well as an environmental and monitoring module to complement this training.

AFRICA



Hydropower is an important contributor in the generation of electricity and Africa is uniquely positioned to reap the benefits of renewable resources to meet the increasing energy demand in a sustainable way.

Strengthening institutional capacity by enhancing skills and increasing knowledge plays a critical role in achieving sustainable hydropower development and the utilisation of water resources.

As a continuation of the long-established course series, Advanced Revenue Protection Management offered a comprehensive introduction to revenue protection management in the 21st Century in the power distribution sector. Special focus centred on revenue protection principles, pandemic planning and how utilities should prepare for the TID rollover.

A resurgence in construction of large dams for electricity generation and other water uses calls for appropriate safety regulations, especially after recent dam collapses in the region. Dam Safety Management was targeted towards dam owners and operators as well as water resource planners. The course advanced participant knowledge on safety management and presented them with the necessary tools not only to minimise risks of failure but also to optimise sustainable utilisation of water resources. In response to participant feedback, a new course on Instrumentation is to be developed expanding focused coverage of dam safety.

Reservoir Sediment Management for Sustainable Hydropower continues to be a pertinent issue for Africa's hydropower and dam operators. This ICH training continues to contribute to the ongoing efforts of mitigating sedimentation issues related to reservoirs. The course

included practical methods to ensure sustainable strategies that are viable for the long term.

Lack of proper training and poor operation and maintenance of hydropower facilities can cause a myriad of issues that lead to lost energy production and loss of revenue.

The Operation and Maintenance of Hydropower Facilities - From Strategy to Execution programme emphasised the importance of developing robust operation and maintenance strategies and practices being key to ensuring the longevity of a hydropower facility. The course addressed the fundamental issues facing operations and maintenance in Africa's hydropower sector and developed the capacity of participants to identify performance indicators that support the maintenance decision-making process. Participants were then able to develop solid internal condition assessment tools for consistency within power plants.

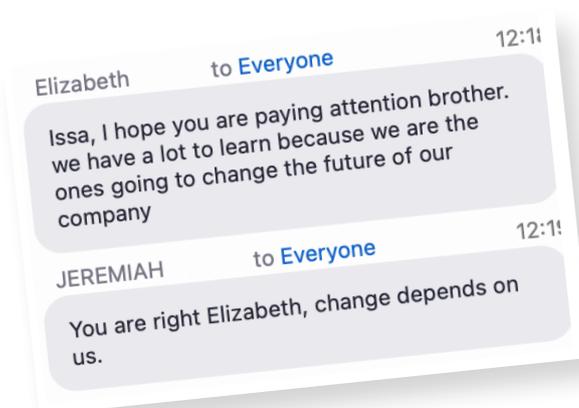
Africa continues to experience challenges in attracting and securing affordable financing for its renewable projects. Financial Modelling, PPA Structuring, and Negotiations provided participants with the skills to efficiently develop, modify, and analyse financial models for projects in the renewable energy projects.

Sustainable Hydropower Development and Operations introduced sustainable management of water and hydropower resources. Participants obtained a better understanding of the methodologies and tools necessary for assessing the sustainability of hydropower projects, with a

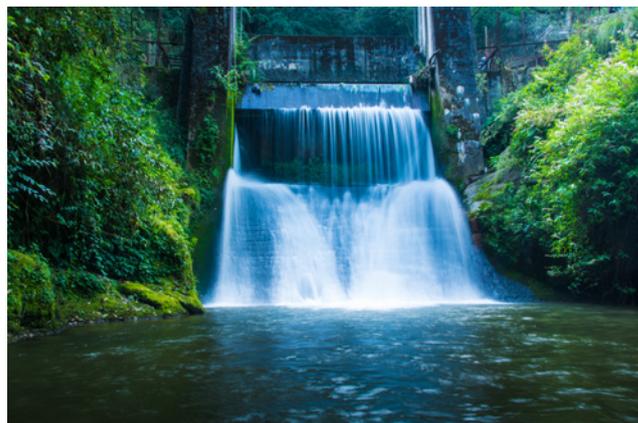
focus on the environmental aspects of sustainability. The need to integrate human rights, equality, and gender were key issues covered within the course.

With a continued focus on sustainability, The Process of Social Impact Assessment, Compliance and Risk Management in Hydropower Projects drew from both African and international examples and introduced participants to the essential international standards of practice and compliance procedural requirements for a sound social

impact assessment process. The course illustrated social impact assessment and thematic cross-cutting needs and approaches to hydropower development, including vulnerability and gender, climate adaptation, payments for ecosystem services and management of stakeholders. Human rights in a project perspective was also covered. Building the knowledge and skills of Africa's energy sector professionals will continue to reduce existing gaps, therefore providing solutions to support the continent's energy access roadmap.



ASIA



Cooperation with the International Finance Corporation (IFC) in Asia continued in 2020 through mutually beneficial cost sharing, exchange of lecturers and joint development of course curricula.

IFC entered the hydro and water sector through a co-ordinated World Bank Group energy programme which includes both investment and advisory work in the region. In 2017, the first regional training on cumulative impact assessment was delivered by ICH and IFC in Lao PDR for stakeholders in Lao PDR and Myanmar. A second module Cumulative Impact Assessment in Hydropower Projects for Lao PDR and Myanmar was delivered online in October 2020, complementing the ongoing IFC advisory work and strengthening capacity and partnerships in an important region for hydropower development.

Nepal in Focus

The cooperation in Nepal with HydroLab, Independent Power Producers' Association, Turbine Testing Lab of Kathmandu University and Energy Development Council continued in 2020. HydroLab and ICH arranged a course on Sediment Management in RoR Hydropower Projects with 16 participants and contributions from almost as many lecturers with 15 resource persons sharing knowledge from different parts of the world including Norway, Nepal and the Netherlands.

Two one-day courses were run in Nepal: Hydropower Development in partnership with Kathmandu University and Project Management for Hydropower Development

together with Energy Development Council with 27 and 21 participants, respectively. Both courses had a practical focus related to the Himalayan setting. Together with the training on Financial Modelling with the Independent Power Producers' Association, all the courses targeted the need to develop management skills alongside technical ones to create highly competent practitioners.

A common need on the Financial Modelling of Power Projects was identified in two other countries leading to three similar programmes being held focusing on Bhutan, Cambodia and Nepal (38, 24 and 19 participants, respectively). The feedback from all courses confirmed the practical usefulness of the training despite the fact that it was conducted online. Participants expressed the need for future in-person opportunities to take the knowledge gained to the next level.

The objective of the online course on Prevention and Administration of Socio-environmental Conflicts is to provide participants with fundamental knowledge of conflict triggers and the impact of conflict on project development. The programme examined the underlying issues and lessons learned that could be applied in project planning with a specially designed pivot towards Asia and resettlement as a central theme. This leaves the course ready for roll out to a wider global community with plans to develop the second online module of conflict transformation in 2021.

LATIN AMERICA



The ongoing contribution and support from IDB Invest to ICH programmes continued, leading to stronger regional networks and greater opportunities for 2020. This included IDB Invest clients joining training courses that were held as well as significant contribution from team members who were able to share their experiences, best practice and tools.

Colombia in Focus

While sediment management is known to have an impact on energy generation assets, limiting free movement of sediment can also have environmental and social impacts downstream of dams. This can be a trigger for social conflicts in the territories surrounding hydropower structures. The range of programmes developed reflects the importance of the identification and management of a holistic range of factors vital in decision-making for environmental authorities and generation companies in Colombia, which may have implications for other countries in the region.

A significant milestone was reached with the delivery of Sedimentation Specialised Training III in July as an example of the ICH strategy to bring stakeholders together to meet regional challenges and share creative solutions based on lessons learned. The programme started in Colombia in 2017 as part of the technical assistance provided by ICH members at the first ICH international conference in Latin America. With continued support from ICH, a complete training course was developed and first delivered in Colombia for members

of the Colombian Association of Power Generators (ACOLGEN) and the National Environmental Licensing Authority of Colombia (ANLA). The training was due to be concluded in 2020 with Costa Rica as the host country and was to include a technical tour of the Reventazon River hydropower project. However, training was adapted to be delivered online and participants were invited from other countries in the region such as Peru where similar challenges with sedimentation are found.

The growing number of dams in Latin America requires continued work to improve design, construction, operations and in some cases the safe decommissioning of structures. The region has been exposed to accidents and failures that have put the safety of these structures and the challenges they present at the centre of public concern. Dam Safety Series LAC IV provided participants with foundational knowledge of health and safety, risk assessment and the fundamentals of disaster management.

The Costa Rican Institute of Electricity (ICE) hosted a pilot course on Environmental Monitoring. Topics included internal and external factors for monitoring as well as requirements for continued quality improvement. The course also covered the role of national legislation, business guidelines and multilateral banking requirements and aimed to provide practical tools for the planning and implementation of monitoring programmes. With these tools, participants improved their capacity to demonstrate the fulfilment of environmental and social obligations and commitments. This has now become a new course in the ICH portfolio.

Financial Risk Management and Energy Transition LAC is an advanced course which was delivered in San Jose, Costa Rica and was the only course in 2020 to be delivered in person. The close management of contracts is a proven mechanism for risk reduction and is an essential risk mitigation measure with technological excellence that results in efficiency. Another critical tool introduced in training was alternative dispute resolution mechanisms. The course reached a high-level target group of financial officials and decision-makers.

Prevention and Administration of Social and Environmental Conflicts in the Energy Sector developed specific guidelines for dialogue with ethnic communities in Colombia. The training shared the latest methodologies that have achieved positive outcomes with ethnic communities using hydropower as a catalyst for conflict management. The training enabled the participants to identify the fundamentals of conflict in preparation for the subsequent module on conflict transformation.

Continuing to incorporate the focus on gender is highly relevant as Latin America occupies a special place in the development discussion with the region experiencing high prevalence rates of physical and sexual violence among

women. Six Latin American countries accounted for 81% of global cases of gender-based violence against women. Protect to Promote - Gender and Hydropower – LAC II provided participants with tools to identify and analyse elements that contribute to the implementation of mitigation measures around gender management in the business case for energy projects. This issue affects all genders and with profound and lasting consequences, thus affecting not only the health, employment and productivity of the person, but also their ability to exercise power and participate meaningfully in society.

The title of the course reflected the influence that the private sector can have in addressing this important issue and an excellent IDB Invest resource publication of the same name. This training was lead and prepared by ICH, collaborating with gender experts and specialists from IDB Invest.

The importance of gender equity in hydropower has led to a special mentoring programme currently under development by ICH in Latin America. With so many inspirational, professional women working in the sector, this initiative is already leading to stronger connections in the region with much to look forward to in the years ahead.



WORDS FROM



The experience of online learning with ICH was great, with the 'new normal' as a result of the pandemic. It was very effective especially given that the organiser had prepared well. The presentations and teaching methods were very professional. I learnt several important things from the course on Sustainable Hydro-power Development and Operation on biodiversity and climate change but the knowledge on environmental flow computations was the most valuable to me.

Gerald Opolot Kadapawo,
Project Manager – East African Power, Uganda



My experience of learning online with ICH was very exciting and insightful. A lot of knowledge was acquired in the Advanced Revenue Protection Management course that I participated in. There were challenges experienced during the course, network problems being the main culprit. I am so grateful that despite the challenges experienced, ICH never gave up and utilised alternative ways to relay the information to everyone, ensuring that there is value acquired from the training. My role in my organisation is to ensure that energy is efficiently measured. Knowledge acquired from the training will assist in quantifying technical and non-technical losses and assist in recommending and at times implementing better means to reduce them. We learnt that this is the time to be on guard more than ever, close monitoring of energy supplied versus energy sold is very crucial and efficient and effective systems to monitor such must be implemented.

Goodness Maziya,
Metering Engineer – Eswatini Electricity Company, Eswatini



The training on sedimentation featured 15 lectures related to sediment, some of which have already benefited my work in one way or another. I am sure that the things I have learned during the training will also complement my work in some ways in the future. As sediment erosion is one of the major causes for the failure of hydro turbines in the Himalayan region, I am studying different ways to develop erosion-resistant designs of hydro turbines. Having basic information on sediment formation, transport and management gives an insight into the direction I have to focus my work on.

Amul Ghimire,
*Researcher – Turbine Testing
Laboratory, Kathmandu University,
Nepal*



I completed two training courses in a row with ICH in 2020 and it was an amazing experience during this period of isolation.

The courses reinforced that sustainability is a business approach to creating long-term value by taking into consideration how a given organisation operates in the ecological, social and economic environment. It is built on the assumption that developing such strategies fosters company longevity. Reducing business costs and going green improve the reputation of the business and provide a competitive advantage.

Priyanka Rauniyar,
*Financial Analyst
– Butwal Power Company Limited,
Nepal*



From online learning with ICH during this COVID-19 pandemic, I have gained a lot of technical skills related to hydropower engineering, development and management. The financial modelling of hydropower was especially useful as an indispensable component in enhancing the capacity of EDC staff as part of human resource development in Cambodia. The ICH experts and coordinators are really friendly and energetic during sessions which meant that participants were always active. Although online, I could communicate and interact with other participants from different countries during Small Hydropower Development and from different backgrounds and departments during Financial Modelling of Hydropower. In the near future, I am sure that I will apply some of these training techniques in my workplace as I am optimistic that they will be effective and efficient.

Panha Hok,
*Water Resources Engineer –
Electricite Du Cambodge, Cambodia*



As an institution committed to the sustainable growth of the region, it is important to work together with private sector partners in addressing the fact that in Latin America and the Caribbean, women, girls and members of the LGBTQI+ community are more likely to experience violence and harassment because of their sex, gender or gender identity. Strong leadership from the private sector can bring about significant changes. Combatting gender-based violence and harassment can propel communities and regions one step further to achieving the sustainable development goal of gender equality.

Michelle Muhringer Shayer,
Head of gender risk management and lead social specialist - IDB Invest



Through the mentoring programme and ICH training my knowledge and experience of gender equity has changed. I see the need for a deeper understanding of the subject not only for women but also for men who must increasingly accompany these processes. EPM works from the strategy of cultural evolution in different initiatives that strengthen the importance of gender inclusion at the business level. At EPM we respect and empower women because we are diverse and authentic, we believe in a level playing field because gender does not define our abilities.

Ana Milena Joya Camacho,
Environmental and Social Manager of Engineering Projects – Empresas Publicas de Medellin, Colombia



The training was really rewarding and a challenge as it was the first time I had the opportunity to share my knowledge and experience with participants from around the world. It was also an honour to join the panel with experts who have repeatedly mentored the institution for several of our developments.

Traditionally, construction work is male dominated. Despite this, our focus on gender managed to break with that paradigm, raising awareness and demonstrating the capacities of men and women alike. It also laid the foundations of programmes that promote women towards employability in what were previously unusual sectors.

Kristela Dávila Ibarra,
Environmental Planning – Instituto Costarricense de Electricidad, Costa Rica

ICH Members

Norwegian members



Bærekraftig Investering AS



Norconsult AS



EAST AFRICAN POWER LTD

Dynavec AS



NVE (Norwegian Water Resources and Energy Directorate)



SN Power



Energi Norge



NTNU - Department of Civil and Environmental Engineering



Statkraft AS



Multiconsult AS



OED (Norwegian Ministry of Petroleum and Energy)



SWECO Norge AS



Noord Pool Consulting



Volue AS



Trønder Energi Kraft AS



Tinfos

Mutual members



CELAPEH (Centro Latinoamericano para la Pequeña Empresa, Colombia)



IC-SHP (International Center on Small Hydro Power)



NORWEP (Norwegian Energy Partners)



HydroCen



IHA (International Hydropower Organization)



NABA (Norwegian-African Business Association)



International members



Acolgen



AURSA



CIMEQH - Colegio de Ingenieros



ENEE- Empresa Nacional de Energia Eléctrica



Agro Engineering Works Pvt. Ltd.



AVCV Management Consultancy



Di Avante



Energy Development Council (EDC)



ACOPE



BFL Latinoamerica, B Fouress (P) Limited



EDL Generation public company



Energy Regulatory Commission - ERC



Alternate Hydro Energi Centre



Butwal Power Company LTD - BP



Druk Green Power Corporation



Environmental Resources Group Pvt. Ltd, NEPAL



AHPPER - Asociación Hondureña



CDL (Consejo Departamental de Lima del Colegio de Ingenieros del Peru)



EAST AFRICAN POWER LTD



Escom, Malawi



Arusha Technical College ATC



Central Engineering Concutancy Bureau - CECB



Electricidad de Cortés - ELCOSA



FEDEAGRO S.A.



Aryabhata Group of Institutes



Celsia S.A.E.S.P



Electricite du Cambodge EDC



Frontier Energy



Asociación Hondureña de Energía Renovable (ASER)



Cemedar



Electricity Control Board - ECB



Hydro Lab Pvt. Ltd



Asociacion Salvadoreña de Energias Renovables - ASER



Empesas Públicas de Medellín EPM



Himal Power Ltd.



HMV Ingenieros Ltda



Institute of energy studies and research (IESR) - (KPLC)



Kafue Gorge Regional Training Centre - KGRTC



NACEUN



Hobuka



Institute of Water Resources Planning



Kaizen Africa Ltd



Newplan Ltd



Hydroambiental Consulting S.A



Instituto Costarricense de Electricidad -ICE



Makerere University



Sanima Hydropower Ltd



Independent Power Producers Associations Nepal IPPAN



INTEGRAL S.A.



Kenya Electricity Generation Company Ltd - KENGEN



Payandab Tavan Consulting Engineers



Hydroelectricity Investment and Development Company Limited (HIDCL)



Iran Water and Power Resources Development Company - IWPCO



Ludhiana Holdings



PBP Power Business Partner



Ingetec



ISAGEN S.A. ESP



LUNSEMFWA HYDRO POWER COMPANY LIMITED (LHPC)



SAPP (Southern African Power Pool)



Institut de Technologie ITC



Jammu and Kashmir energy development agency (JAKEDA)



Mercados Electricos de Meso-america S.A. - MELESCA



SARDC



Mulanje Renewable Energy Agency - MuREA



Savimaxx Ltd.



SEDIC S.A.



TETYS International PJS



Zambezi River Authority



TANESCO Limited, Head Office



UEGCL



ZESCO



SIGET



UETCL



Sustainable Strategies



University of Dar es Salaam,
Department of Civil Engineering



Sustainability Framework



University of Medellin



Tanahun Hydropower Limited



Volta River Authority

Gaining Through Training



Norad



International Centre
for Hydropower



International Centre for Hydropower

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