International Centre for Hydropower

ICH 2019 Annual Report







Contents

Chairman's Note

ICH has developed its course portfolio gradually from 2-3 courses at the start-up in the mid-1990ies. In 2019, this number grew to over 25 courses. As we approach 2021, it is time to stop and consolidate. ICH has reached a level, which at least for a few years should be kept steady. The focus will be on quality and improvement rather than growth. The new monitoring and reporting system which has been developed during the last couple of years will be rolled out in full, based upon a revised strategy and an agreed results framework. All courses will be anchored in four defined clusters namely; "project management", "operation and maintenance," "energy policy, markets and trade", and "health, safety, human rights and the environment". Hopefully this will contribute to even higher quality in the courses in the future, and with an increased focus and more aimed result monitoring and reporting, I expect an increased thrust from our funders.

As gender is the main theme of this annual report, ICH will continue to focus on gender equality, where there has been a significant improvement during the last couple of years. Out of the 713 students who completed an ICH course in 2019, 261, or 37 percent were women. In Africa in particular, there has been a positive development, with several courses where the men/woman distribution was almost 50/50 percent.

On this background, I foresee a future with improvement in professional quality in our course portfolio, which hopefully again will lead to a growing and even more sustainable hydropower development.

> ICH will continue to focus on gender equality.

INTRODUCTION: BY LEARNING TOGETHER, WE BUILD A BETTER FUTURE

Line Amlund Hagen
Managing Director, ICH

Creating a more gender inclusive energy sector

In the energy sector, we have all experienced that time at a conference when you realize for every tenth man you have met, you have only met one woman. Similar to other Science, Technology, Engineering and Mathematics (STEM) career paths, women still need a greater presence in hydropower. Whereas, we know that a more gender equitable workforce promotes productivity and efficiency, women are only starting to emerge from the woodworks. We're working to disrupt tradition and demonstrate how a more inclusive hydropower sector can yield positive results.

At ICH our work to educate and empower women to advance their careers in the hydropower sector creates long-lasting social and economic opportunity and promotes prosperity. Through the participation of women in our courses, we're mobilizing change and promoting environmental sustainability in some of the most fragile economies of the world. With more than two decades of experience, we know that by learning together with women, we build a better future.

Our courses result in real change in the hydropower sector workplace: by promoting gender equity, we are creating places where women are agents of change. They are safe to grow, challenge status quo and be recognized for their contributions. Over time we have experienced policy change and a shift in leadership. Our boards are becoming more equitable and networks in hydropower are more frequently led by women. Women are visible and influential leaders in the hydropower sector, but it is not enough. For our work to be sustainable, we need to train more women to have the technical skills and leadership characteristics of her men counterparts. Our vision is for the hydropower sector to be a desired career choice for women.

In 2019, we travelled across the globe with our partners to explore innovative approaches to gender equity in the hydropower sector. Our team shared their experiences, tools and best industry practices on intersections between gender and risk assessments, stakeholder engagement and consultation, land acquisition, and health and safety issues.

With the support of our partners, we're making good progress towards sustainability. Together we're pushing new boundaries, challenging the norms, all while working to meet the needs of companies and society, without compromising resources for future generations.

HOW RESKILLING WOMEN CAN CREATE A MORE SUSTAINABLE TOMORROW

Laura C. Bull
Head of Studies ICH

In January 2020, the World Economic Forum (WEF) reported that that more women than men will experience negative impacts brought on by the disruptions from automation and technological advancements. Likewise, the Forum recently reported that in the next two years, 42% of core skills that are required to perform existing jobs could change globally. Women are more at risk because they lack representation in the field of science, technology, education and math (STEM) – the same fields where environmental specialist, hydropower operators and engineers are created.

With renewable energies taking a sharp turn towards digitization and automation, the time is now to empower women to reskill. In the same report, the WEF projects, "Eleven percent of jobs held by women are at risk of elimination," due to technological advancement. At ICH, our courses are geared to help participants continually grow and acquire new skills that will support the adjustment and climatization to a world that is more digitally oriented.

Our courses enable professionals in the hydropower and renewable energy sector to take on new roles and functions, promoting workplace agility and greater gender diversity. Additionally, in economies where women are unable to stay in the workforce, reskilling is also an opportunity to learn something new and reintegrate into new roles and professions. Ultimately, reskilling helps women stay relevant in a field that is rapidly changing.

Whereas our courses are inclusive to all genders, nationalities and ethnicities, we recognize that if we want to be at the forefront of promoting sustainability, we need to see more diversity in the classroom. For us, a more even gender distribution translates into more women in the boardrooms, greater innovation in renewable energy companies and stronger resilience in governments facing the impacts of climate change.

The **Board**

DIRECTORS

Kjell Repp
Chairman

Torbjørn Nielsen
NTNU (Deputy Chairman)

Hege Brende
HydroCen

Tron Engebrethsen
Statkraft AS

Hege Iversen
Norconsult AS

DEPUTY DIRECTORS

Leif Lia
NTNU

Einar Kobro
Energi Norge

Hans Arild Bredesen
Nord Pool Consulting

Christine Birkeland
Norwegian Energy and Water Resources Administration (NVE)

Bjarne Børresen
Multiconsult AS

4 board meetings were held in 2019, addressing a range of issues regarding the strategic direction and progress of ICH. Key issues included results monitoring, strategy for the period 2019–2025 and the plans for the next program period – 2021–2025.

The 2020 Election Committee comprises:
- Øivind Johansen, Norwegian Ministry of Petroleum and Energy, (Chair)
- Odd K. Ystgaard, Norconsult AS
- Vegard Willumsen, Multiconsult AS

ICH's Scientific Committee was established in 2010 and helps to ensure the quality of existing and new courses, participate in the evaluation of ICH's activities and propose new ones. The Committee provides valuable input for strategic planning. The Committee is called upon by ICH's Managing Director and includes,
- Meg Bishwakarma, Hydro Lab, Nepal
- Ole Gunnar Dalhaug, NTNU, Norway
- Pål Høberg, Statkraft, Norway
- Vegard Willumsen, NVE, Norway

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

With 80% women, the ICH secretariat walks the talk when it comes to gender equity in the hydropower and renewable energy sectors. Our team was supported in 2019 by outsourced professionals including accounting, ICT and other administrative roles.

Mission

- **To develop** and implement training and capacity building activities in renewable energy with emphasis on hydropower.
- **To collaborate** with other key Norwegian partners for and effective implementation of the government's commitment to clean energy in development.
- **To maintain** and further develop the network of public and private sectors, both nationally and regionally. This network is to the mutual benefit of members and the implementation of ICH activities.
- **To contribute** to institution-building and improved management through the dissemination of knowledge about hydropower and other renewable energy sources.
- **To provide** services to Norwegian and foreign partners of high international quality in courses and conferences, and in line with current guidelines for Norwegian development assistance activities.

Did you know?

Women in the renewable energy workforce

35 % Worldwide, women in the renewable energy sector represent 35 % of the workforce

46 % Of this, 46% of women in renewable energy companies perform administrative functions

28 % are technicians and 32 % are managers.

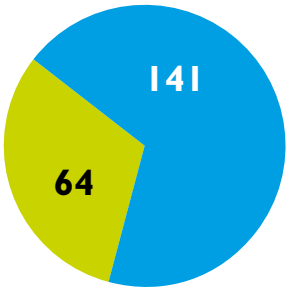
At ICH we're working to build the capacity of women that will become the leaders of the hydropower and renewable energy sector. Since 2011, we have maintained 20-30% participation of Women in our courses and actively promote our offerings to women professionals to see this number grow.

Our Gender Footprint:
Where we're making a difference in women's lives, globally

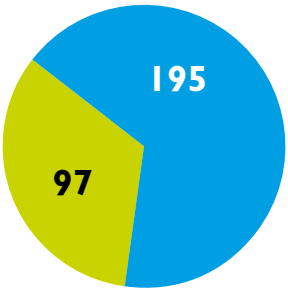

Norway 2
Georgia 19
Nepal 43
Bhutan 5
Myanmar 36
Laos 1
Vietnam 1
Cambodia 1
Philippines 10
Nigeria 3
Uganda 14
Rwanda 3
Kenya 13
Tanzania 10
Malawi 3
Madagascar 1
Mozambique 6
Swaziland 3
WOMEN
TOTAL
261

Why the woman's experience matters

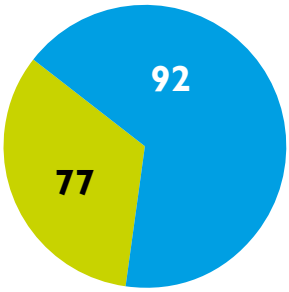
At ICH, we approach sustainability through a gender lens. We know that by training women, knowledge is transferred back to hydropower companies and government agencies taking into consideration the impact of decision making on women and their livelihoods. Our aim is for women that join our courses to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



AFRICA



ASIA



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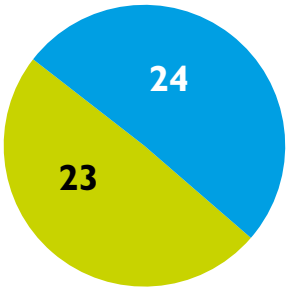
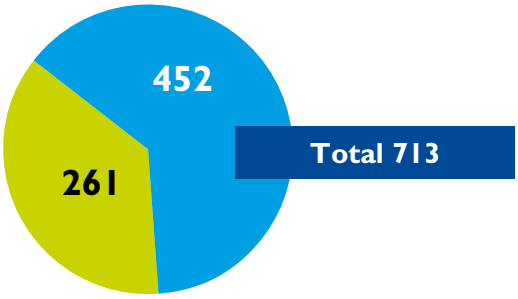


OTHER



Gender equity to me means more women participating and being actively involved in decision making in the hydropower sector. Women are good listeners and would become good decision makers.

Grace Nyaguthii Njeru
Senior Economist
Nairobi, Kenya

There are so many capable women out there that are intelligent and independent, but often we're not aware of one another. Events such as those hosted by ICH allow women to meet, collaborate and strengthen our networks.

Diana Carolina Salazar Ortiz
Environmental and Social Specialist
Empresas Públicas de Medellín, Colombia

Women need more career advice to steer them in the direction of sustainable hydropower. We also need the hydropower workplace to be friendlier towards women. An unfavorable working environment has forced women to join other careers.

Emmanuella Kokubanza Wanyoto
Sociologist
Kampala, Uganda

Where we worked in **2019:**

NORWAY

Due Diligence for Hydropower and Renewable Energy Projects II
April 1–12, 2019

Prevention and Administration of Social and Environmental Conflicts in the Renewable Norway Energy Sector
May 6–10, 2019

Small Hydro Development Pitfalls and Success
May 20–25, 2019

Hydropower Development and Project Management
August 26–September 12, 2019

AFRICA

Project Management
Uganda, April 24–26, 2019

Health, safety and environment
Tanzania, May 27–31, 2019

Regional Power Trade Programme Africa – Market platform
Kenya, Part I: June 11–13, 2019
Part II: October 1–3, 2019

The Process of Social Impact Assessment in Hydropower Projects (Mitigation and Planning in Hydropower Development)
Ghana, August 5–9, 2019

Advanced Revenue Protection Management for Africa's Energy Sector
Ghana, July 29 – August 2, 2019

Dam Safety Management for Sustainable Hydropower in Africa
Zambia, September 16–20, 2019

Environmental Compliance and Risk Assessment in Renewable Energy Projects: The case of hydropower
South Africa, October 14–18, 2019

Financial Modelling, Power Purchase Agreement (PPA) Structuring and Negotiations
Malawi, October 21–25, 2019

Small Hydropower Development: Reservoir Sedimentation and Sediment Handling for Sustainable Hydropower in Africa
Rwanda, November 18–22, 2019

Sustainable Hydropower Development and Operations
Mozambique, November 25–27, 2019

ASIA

Stakeholder Management and Conflict Transformation II
Myanmar, March 13–15, 2019

Prevention and Administration of Social and Environmental Conflicts I
Philippines, March 18–22, 2019

Geotechnical and Hydrological Issues
Nepal, April 1–5, 2019

Turbine technology mini course
Nepal, April 10, 2019

Risk Management
Bhutan, May 6–10, 2019

Strategic Impact Assessment and Gender with IFC Nepal
Nepal, May 28–31, 2019

Environmental Flows Nepal
Nepal, October 23–25, 2019

Social Awareness and Hazard Management in Dam Safety
Myanmar, October 29 – November 1, 2019

Hydropower Operation Optimisation Strategy
Cambodia, November 4–7, 2019

Power Purchase Agreements
Myanmar, November 4–8, 2019

EDC Mini-course Regional Energy Cooperation
Nepal, November 11, 2019

LATIN AMERICA

Achieving Sustainability in Generating Energy Projects
Costa Rica, February 27–28, 2019

Stakeholder Management and Renewable energy projects II
Chile, March 25–29, 2019

Gender Training during Sustainability Week for Latin America and the Caribbean region (in partnership with BID Invest)
Panama, June 24–28, 2019

Power Market II
Colombia, November 21-22, 2019

Sedimentation Specialised training
Colombia, June 17–19, 2019 / November 18–19, 2019

EUROPE

Hydropower development – balancing the long-term impacts on local communities
Georgia, September 16–20, 2019

NORWAY

Due Diligence for Hydropower and Renewable Energy Projects II

April 1–12, 2019

5 2

In 2019 we extended this course a week, offering a deep dive on financial and legal structuring as a means of proportioning risk between stakeholders. The course also examined the due diligence process for a buyer of new or existing hydropower assets, with a focus on hydrological and performance risk, combined operation of hydro-solar-wind, environmental flows and sedimentation. ICH welcomed course participants from Nepal, the Philippines, Vietnam, Honduras and Colombia.

Prevention and Administration of Social and Environmental Conflict in the Renewable Energy Sector

May 6–10, 2019

8 8

After this course participants returned to their home countries with an understanding of conflict; improved ability to prevent, mitigate and manage conflict; and a myriad of perspectives on conflict from indigenous peoples, developers, government agencies and third-party mediators. Participants applied their daily lectures and exercises to simulation case studies on conflict around sensitive ecosystems and indigenous peoples' rights. By applying IFC's Performance Standards, participants gained insight on how to prevent socio-economic conflict and promote environmental and social sustainability by addressing issues including labour and working conditions, resource efficiency and pollution prevention, community health, safety and security, Indigenous peoples and land acquisition and involuntary resettlement. Guest lecturers on health impacts in hydropower development and environmental sustainability from Statkraft provided participants with practicing resource persons to exchange with and engage.

Small Hydro Development Pitfalls and Success

May 20–25, 2019

2 9

Small hydropower schemes are increasingly on the agenda of governments and developers across the world. The course was design and piloted in Latin America. This year was the second roll out of the course, focusing on the evaluation of the current trends in small hydropower development. The course challenged participants by encouraging critical thinking on planning from a cumulative perspective. New to 2019 were technical visits to the Rainpower and NTNU laboratories and the small hydro schemes of Selbu Energi. Participants left with a stronger understanding of the impact of climate variability and its implications on energy project development and rural electrification. Additionally, participants learned how to assess Occupational Health and Safety measures taking into consideration differences in gender.

Hydropower Development and Project Management

August 26 – September 12, 2019

4 11

Building on previous years, this course helped participants gain knowledge specifically on river basin management and Integrated Water Resources Management, mix power development, institutional and legal frameworks, IFC performance standards, ESIA tools and sustainability. New to this year was a three-week case study where participants worked in small groups and were challenged by changing scenarios and extensive scene-setting over the time period. The technical programme this year highlighted the importance of sediment management as a core consideration in the operation and maintenance of hydropower facilitates.













Kraftverkene i Øvre Otta
Breidalsoverføringen


AFRICA

Knowledge Is Power, Learning Is a Journey

Looking back, Emmanuella Kokubanza Wanyoto would have one message to herself 15 years ago: "Knowledge is power, learning is a journey." Emmanuella's message is timeless and one that ICH stands by in all its courses.

As a sociologist in Uganda, Emmanuella would like to see more career guidance to women in the hydropower and renewable energy sector. "Hydropower has always been associated with studying engineering, which boys are always encouraged." As Emmanuella explains, cultural norms and a negative mentality towards what girls can or cannot pursue is a challenge to the sector as achieving sustainability in the renewable energy sector requires all types of people and backgrounds.

"There is a direct benefit of women taking on leadership roles in the hydropower sector," explains Emmanuella. "Women play a great role in empowering others and mentoring. Additionally, women promote an inclusive workplace, supporting the development of policies aimed at creating an enabling environment for the implementation of gender equity."

Emmanuella's dream is to empower women through the work she does as a sociologist. She says, "the ICH courses I took enabled me to identify opportunities that show the relevance and importance of women, upholding their rights and empowering their families through sustainable livelihood strategies."

"Knowledge is a fundamental road map to achieving goals and fulfilling your purpose in the world. Be open to learning and mentoring young generations to help them achieve new heights," she says.

Women in my country, due to a shortage of opportunities in the past lack, the requisite skills to pursue a career in sustainable energy. They still face gender-based stigma where they are assumed not to be fully dependable especially during their child bearing ages. It's assumed they will miss work to bear and nurse children. They are also assumed to be the weaker sex hence cannot participate in certain roles. There is also the assumed place for women in the kitchen and not the board room.

Grace Nyaguthii Njeru
Senior Economist



Regional Power Trade Programme Africa – Market platform – EAPP

Nairobi, Kenya | Part I: June 11–13, 2019 / Part II: October 1–3, 2019

8 9

In part one of this course, participants represented national utilities and authorities from Kenya, Uganda, Tanzania, and Rwanda. The course explored future market frameworks and how national power sectors can improve their planning and daily operations. The impacts of short-term market trading on the planning and operation of the national power systems was addressed in detail.

Part II of the course applied a practical, hands-on approach simulating actual trading on a platform modelled on SAPP operations. Different market scenarios were presented, and participants role played through the simulated regional market model.

The Process of Social Impact Assessment in Hydropower Projects (Mitigation and Planning in Hydropower Development)

Akuse, Ghana | August 5–9, 2019

11 12

This was the second consecutive year this course was hosted in Ghana with support from the Volta River Authority. Once again, the course drew from both African and international perspectives and provided participants with the essential tools, approaches and mitigations that are essential for a sound social impact assessment process in the sustainable development of hydropower. Participants were provided with the time and support to self-reflect throughout this course on the skills and tools they were provided to improve their stakeholder management and engagement. The content aimed to help participants strengthen their decision making in hydropower project planning.



Advanced Revenue Protection Management for Africa's Energy Sector

Takoradi, Ghana
July 29 – August 2, 2019

6 14

This course aimed at developing awareness for effective revenue protection and management at all levels, strengthening the efficiency and effectiveness of revenue cycle management approaches for utility companies' success. Participants gained hands-on experience from case studies presented by African Utility Companies. By the end of the course, participants gained knowledge on how to measure and report distribution losses appropriately; apply correct data analytics to effectively reduce losses; design robust processes for revenue management within their businesses; and adopt proven strategies for revenue management best practices within their business.

Dam Safety Management for Sustainable Hydropower in Africa

Siavonga, Kariba, Zambia | September 16–20, 2019

5 18

This training was designed to build and strengthen the region's human resource capacity for operating and managing dams. The course content focused on the importance of dam safety and the key practical measures required to minimize the risks of dam failure and reduce potential risks to people, infrastructure and the environment, while safeguarding the sustainable use of water resources in the region. The course gave participants a better understanding of the operational challenges of various dam types and how these should be monitored. The technical visit to Kariba dam gave a real insight to the important features and current status of ongoing activities at the dam site.

Environmental Compliance and Risk Assessment in Renewable Energy Projects

Ladysmith, South Africa | October 14–18, 2019

4 8

Participants experienced a hands-on training in this course, focusing on enhancing knowledge in assessing risks and adapting, employing and implementing appropriate compliance tools such as the ISO 14000, industry leading international standards, such as IFC Performance Standards on Environmental and Social Sustainability and Guidance Notes. With these tools, participants were equipped with an understanding of compliance tools and can demonstrate effective risk assessments processes and environmental compliance skills related to various project phases. A technical visit to Ingula pumped storage plant helped participants contextualize the knowledge gained in this course.



Financial Modelling, Power Purchase Agreement (PPA) Structuring and Negotiations

Lilongwe, Malawi | October 21–25, 2019

4 13

This course was a real eye opener and offered skills to efficiently develop, modify and analyse financial models for renewable energy projects. Participants learnt the basics of building a mathematical model designed to represent the future performance of their project, an asset or a portfolio based on facts, assumptions and projections including changes in the basic assumptions. Power Purchase Agreement (PPA) essentials were taught and participants learnt about risks, how to structure PPAs, negotiating win-win solutions that will make projects bankable and facilitate obtaining financing. This equipped them with tools to better structure PPAs.

Small Hydropower Development: Reservoir Sedimentation and Sediment Handling for Sustainable Hydropower in Africa

Kigali, Rwanda | November 18–22, 2019

5 15

The course gave participants extensive knowledge in practical methods and strategies of mitigating the sedimentation problems of reservoirs for more sustainable uses. Participants obtained tools to develop cost-effective, innovative, technical solutions to handle sediments at their hydro power plants. There were a special appreciation and improved understanding of climate change and the impact this will continue to have on reservoir sedimentation. Participants were updated on the possible strategies for managing sediments in their reservoirs and techniques for data collection and forecasting.

Sustainable Hydropower Development and Operations

Maputo, Mozambique | November 25–27, 2019

6 9

Participants gained knowledge on how sustainability assessment and environmental impact assessments are carried out, and how to find mitigating measures. They gained an insight into licensing procedures, legal frameworks and the implementation of international standards and directives. Participants applied the IHA sustainability protocol to strengthen their knowledge of the sustainable development of hydropower projects.

ASIA

Understanding gender in negotiations and conflict prevention

In the Philippines, pursuing a career in hydropower or sustainable energy is a new trend for women. As a Provincial Officer for the National Commission on Indigenous Peoples in Lagawe, Esther Nalliw-Licnachan has experienced this first hand, "Traditionally, only men would enrol in engineering-related courses, as they were perceived to be better dealt with by men."

Ester's vision is for the hydropower sector to be gender equitable. As she explains, "equity would mean more women in leadership roles, bringing about system changes for the betterment of the industry." She continues, "Equity and inclusivity should not be limited to the workplace where women's needs should be appropriately addressed; it also includes gender-fair labor relations and standards."

Esther is an alumna of the ICH course, Prevention and Administration of Social and Environmental Conflicts in Renewable Energy Sector. "I believe that this course had an impact on my career and roles as a field worker on protecting the rights of indigenous peoples in Ifugao." Esther learned negotiation skills in her trainings that are a first step to help prevent and mitigate conflict.

As a woman, Esther feels that negotiation skills are important to ensure that hers and other women's voices are heard. "Gender equity means no discrimination on women or gender bias. There needs to be greater inclusivity in development – and that's what I keep in mind when I am at work in the field."

If we want to achieve gender equity, we need to ensure gender inclusive planning across the entire hydropower sector. If we plan women's involvement and equitable workplaces from the start, we will promote women's confidence building and we will create new opportunities.

Hsit Hsar
Deputy Director
Thoolei Co. Ltd
Myanmar

Stakeholder Management and Conflict Transformation II

Yangon, Myanmar | March 13–15, 2019

14 11

In partnership with IFC and guidance from the Norwegian and Australian embassies, this course was tailored for the Myanmar context. The course walked participants through the different stages of project development and talked them through how to address challenges they encountered, focusing on how to prevent and manage complex social and environmental conflicts. By the end of the course, participants were able to successfully outline the consultation process and identify negotiation tools and strategies, including IFC's Performance Standards on Environmental and Social Sustainability.

Prevention and Administration of Social and Environmental Conflicts I

Manila, the Philippines | March 18–22, 2019

9 12

This regional course provided participants with tools to identify and analyse elements contributing to social environmental conflicts; and to develop strategy for approaching, managing and transforming conflicts in the Southeast Asian region. Participants simulated four case studies to better understand key stakeholder positions and how to negotiate. This course required participants to explore creative solutions and to think outside the box. Video testimonials were recorded of selected participants on the value of the training in terms of knowledge and learning gained, and future application to their work.

Geotechnical and Hydrological Issues

Kathmandu, Nepal | April 1–5, 2019

1 16

In collaboration with the Independent Power Producers' Association, Nepal (IPPAN), this course helped participants learn how to investigate and mitigate geotechnical and hydrological issues related to hydropower development. The course brought in examples that were particularly relevant for the South Asian and Himalayan regions due to a combination of young geological features and extreme weather conditions. This course aimed to highlight the necessary procedures and best practices for ensuring a sound development process of hydropower projects.

Turbine Technology Mini course

Kathmandu, Nepal | April 10, 2019

1 26

This one-day course aimed to share experiences and learnings of field experts working in the field of turbine technology, with the intention for the participants to share with larger audiences. Participants discussed how to better identify and mitigate the challenges of climate effects and sediments in power plants of the Indian Sub-continent.

Risk Management

Thimpu, Bhutan | May 6–10, 2019

5 20

Deigned to help participants better understand the various risks associated with hydropower development, it focused on how to identify, qualify, evaluate and design measures to monitor and manage risks on a strategic level. Case studies provided participants with practical learning applicable to their everyday work.

Social Impact Assessment and Gender

Kathmandu, Nepal | May 28–31, 2019

18 11

Inspired by the work ICH and IFC have collaborated on in Myanmar, this course tailored learnings and advice on how to conduce social and gender impact assessments for projects in Nepal. ICH and IFC teamed up to help participants develop an action plan based on IFC's Performance Standards for Environmental and Social Sustainability. Participants found the action plans to be very practical and a necessary step to better incorporate gender into their local institutions. Additionally, the course helped participants with how to establish respectful workplaces and effective anti-harassment mechanisms.

Environmental Flows Nepal

Kathmandu, Nepal | October 23–25, 2019

11 19

Based on experiences gained in Myanmar with IFC, this course adapted the training programme to contextualize the content for the Nepal market. IFC and ICH worked together to improve participants' knowledge of e-flow calculator procedures, which is critical for sustainable hydropower. Participants finished the course with knowledge to share to counterparts and officials to help influence policy and decision making that support environmentally friendly hydropower development.

Social Awareness and Hazard Management in Dam Safety

Yangon, Myanmar | October 29 – November 1, 2019

9 16

First conducted in Lao PDR, this course was replicated and specialised for the Myanmar market. Disaster risk is a critical concern for Myanmar's infrastructure and human safety due to floods, tropical cyclones, droughts, landslides and earthquakes. This course heightened participants' attention to policy frameworks and core technical aspects of dam safety, regulatory frameworks, social awareness and disaster risk preparedness. The course reviewed recent dam crises to ensure participants valued the importance of independent reviews of dam design and supervision during construction.

Hydropower Operation Optimisation Strategy

Phnom Penh, Cambodia | November 4–7, 2019

1 19

This new course provided participants with an updated knowledge of the fundamentals of hydropower production planning and resources development and management. By focusing on both theoretical and practical issues, participants should be able to contribute more effectively in the development and management of the water and energy resources in Cambodia, and to understand the possibilities for cooperating on a regional scale.

EDC Mini-course Regional Energy Cooperation

Katmandu, Nepal | November 11, 2019

9 37

Introduced as a tailored course topic for the first time for ICH in Nepal, this one-day mini-course aimed to improve participants knowledge of regional trading and power tools and production optimization and integration of energy sources.

LATIN AMERICA

More inclusive workplaces in hydropower needed

Hebe Barber is a civil engineer in Argentina. Over the years she has noticed a considerable improvement in the attitude to close gender gaps in her society; however, as she describes, "the hydropower sector lags behind. Due to the secluded nature of the hydropower installations, culturally these positions are reserved for men."

Until recently, as Hebe explains, "The sector lags behind in some very simple ways that lay the foundation for inequality. For example, until recently, safety gear was only sold in larger sizes for men. Safety shoes were only available in large sizes. And, women safety jackets only came in bold feminine colours. It seems that, until recently, it was very important to make a visual difference between women and men."

Achieving equality isn't only about what employees are wearing, it's also about providing the right infrastructure for women working in the sector, "We need technical curricula to be gender sensitive as well. We see that women are completely wiped out of trainings and also the infrastructure built – we need gender equality in the workplace – for example we need to have the possibility for childcare rooms for both mothers and fathers."

A more inclusive work place would consider installation facilities and protective equipment suitable to women and disable people. It also should promote respect for differences.

Diana Carolina Salazar Ortiz
Environmental and Social
Empresas Públicas de Medellín, Colombia

Achieving Sustainability in Generating Energy Projects

Costa Rica | February 27–28, 2019

ICH joined forces with with ICE, BID, Bid Invest, WB, IFC, and other acting cooperation agencies in Central / South America such as GIZ and relevant ICH members in Latin America. This course presented an entirely new curriculum in Costa Rica, analysing the trends that are setting new challenges and opportunities for Latin American electricity companies to incorporate sustainability criteria into their business strategies, governance, technology and innovation. The course tackled critical cross-cutting themes including climate variability and its implication for energy project development. It also discussed anti-corruption aspects including value chains and procurement, international cooperation as a mechanism for transparency practices, and social challenges.

Gender Training during Sustainability Week 2019 for Latin America and the Caribbean Region

Panama | June 24–28, 2019

In strategic partnership with Bid Invest, this course was adopted from a 2018 course for a Latin American audience and Bid Invest clients. The training facilitated the development of a gender action plan outline for every participant by Women Initiative and the EDGE Gender Equality Assessment Tool developed by Bid invest. Statkraft show case with Chile and Peru projects in the region, the Lao case and Albania amongst the case study gender approach methodologies. The course promoted dialogue and understanding related four themes: gender equality approach that includes preventive & proactive measures, screening for risks, and opportunities; case studies of lessons learned from hydropower projects; gender risk assessment, stakeholder engagement, meaningful stakeholder consultation, land acquisition and resettlement, health and safety & women empowerment; and development of a gender action plan outline.

Power Market II

Bogota, Colombia | November 21–22, 2019

This training focused on providing participants with the tools and skills they need to build a more efficient market platform overcoming country-specific challenges. By learning from Norwegian models and best practices, participants analysed Colombia's power market from an environmental, technological and economic perspective. Participants had the opportunity to explore topics including the development of regulation; decoupling of production/distribution; intra-daily markets; demand response; operation of Norwegian markets; decentralization and price formation.

Sedimentation Specialized Training

Medellin and Bogota, Colombia | June 17–19 and November 18- 19, 2019

Participants benefited from the learnings of experts from CELSIA, EPM, ISAGEN and URRA, as well as representatives from the Colombian Association of Energy Generators (ACOLGEN), which brings together 70% of the agents form the generating sector from Colombia. Additionally, representatives of national authorities such as the National Environmental Licensing Authority (ANLA), the Ministry of Environment (MIA), the Energy Mining Planning Unit (UPME) and scholars from the National University joined to engage and exchange knowledge. The interaction between developers, consultants and academics promoted in-depth analysis and discussion at the technical level. Participants gained hands-on experience through a field visit where monitoring techniques were demonstrated and discussions on sediment management were contextualised by the environmental authorities of Colombia.

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