

IAHR Perú Young Professionals Network

2020 Annual Report of Activities



IAHR Perú Young Professionals Network

2020 Annual Report of Activities

1. Introduction

The IAHR Peru YPN was created as a network of young professionals and students in science and engineering who are motivated to conduct research and improve their skills in the areas of hydraulics, hydrology, water resources and their connection with other sciences such as climatology, ecology, geography, geology and related environmental sciences. The network has the support of the Peruvian Association of Hydraulic and Environmental Engineering (APIHA).

Our mission is to forge a group of highly committed professionals dedicated to promoting the involvement of young people in the integrated management of water resources in Peru and to proposing solutions to different issues where water both plays an essential role and is vulnerable. Our vision is to form a highly competent network capable of fostering future professionals who will contribute to different disciplines, policies, and decision-making in our country.

2. 2020 main goal and key objectives

- Promote activities for the construction of the social, cultural, scientific and technological development of the country.
- Collaborate and participate energetically in activities for the dissemination and knowledge of relevant issues in water resources.
- Generate research through theses and scientific articles on topics related to Water Resources.
- Collaborate and support projects proposed by various groups related to Water Resources in any part of the country.
- Disseminate knowledge and progress using all the means of communication that are at your disposal.

In summary, we have tried to meet the objectives mentioned in our statute despite the complications that have occurred during this year, so we have chosen to carry out multiple events online, which has allowed us to connect with researchers from other countries.

3. Communications

Website and social networks

Website	https://www.iahr.org/index/committe/122
Facebook	https://www.facebook.com/iahrperu/

Twitter	https://twitter.com/ypnperu
Instagram	https://www.instagram.com/ypnperu/
Linkedin	https://www.linkedin.com/company/ypnperu/
Youtube	https://www.youtube.com/channel/UCue8hVI15dGSLJJI_oSEqog

Promotional and information materials

Newsletter/s	
Publication/s	
Other	

4. Activities


Activities organised in 2020:

Activity 1 :

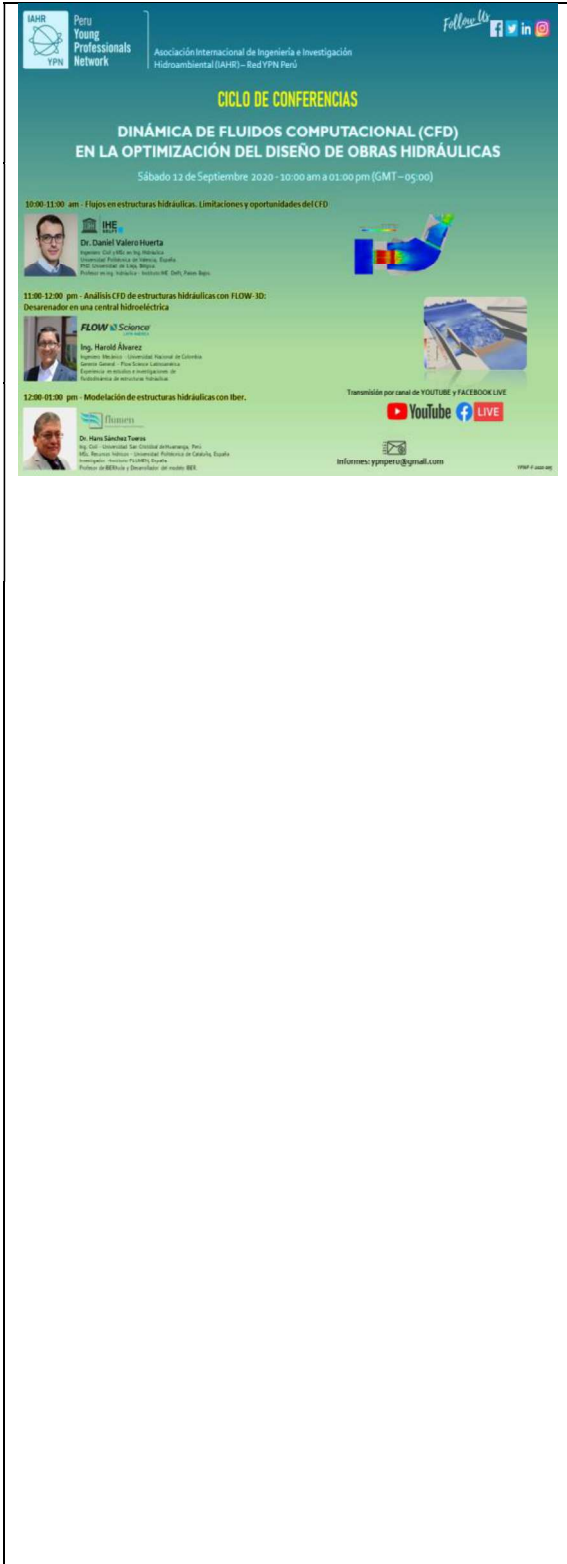
 <p>The poster is for an informative speech about the magazine 'Revista Hidrolatinoamericana de Jóvenes Investigadores y Profesionales'. It features the IAHR and YPN logos, the event title, date (Saturday August 22, 2020), and details about the magazine's focus on young researchers and professionals. It also lists the invited speaker, Dr. José María Carrillo Sánchez, and mentions that the event will be broadcasted on YouTube and Facebook Live.</p>	<p>Name of the activity:</p> <p>Informative speech about Young Professional Networks and publication of articles in the IAHR-YPN's Hydrolatin American magazine.</p> <p>Dates:</p> <p>Saturday August 22, 2020 - 10:00 am (GMT - 05:00)</p>
	<p>Objectives:</p> <p>Orient young researchers for the publication of their scientific work in the Hydrolatinoamericana magazine of young researchers and professionals.</p>

	<p>Description:</p> <p>Dr. Jose Maria Carrillo Sanchez, offered a seminar on August 22, 2020 in order to guide young professionals on the requirements and procedures to be followed for the publication of their papers in this journal.</p>
--	--


Activity 2:

 <p>The poster is for a webinar titled "GOOGLE EARTH ENGINE APLICADO A LOS RECURSOS HÍDRICOS". It is organized by IAHR Peru Young Professionals Network and the Asociación Internacional de Ingeniería e Investigación Hidroambiental (IAHR-Peru YPN). The webinar is scheduled for Saturday, September 05, 2020, from 05:00 pm to 07:00 pm (GMT-00:05). The speaker is Ing. César Aybar Camacho, a geographer and digital Earth expert. The poster includes the RIGEE logo and social media links for YouTube and Facebook Live.</p>	<p>Name of the activity</p> <p>Google Earth Engine applied to water resources</p> <p>Dates:</p> <p>Saturday September 05, 2020 - 05:00 pm - 07:00 pm (GMT-05:00)</p>
	<p>Objectives:</p> <p>Demonstrative webinar about google earth engine platform.</p>
	<p>Description:</p> <p><i>Google Earth Engine combines a multi-petabyte catalogue of satellite imagery and geospatial datasets with planetary-scale analysis capabilities and makes it available for scientists, researchers, and developers to detect changes, map trends, and quantify differences on the Earth's surface. During this webinar, César Aybar Camacho Saturday spoke about its application to water resources management.</i></p>

Activity 3:

	<p>Name of the activity:</p> <p>Computational fluid dynamics in the design optimization for hydraulic structures.</p>
	<p>Dates:</p> <p>Saturday September 12, 2020 - 10:00 am - 01:00 pm (GMT-05:00)</p>
	<p>Objectives:</p> <p>Webinar for strengthening capacities and gaining knowledge about state-of-the-art optimization methods</p>
	<p>Description</p> <p>In this conference cycle three presentations were given related to Computational Fluid Dynamics and hydraulic structures modelling. The following topics were exposed:</p> <p>Dr. Daniel Valero Huerta Flow in hydraulic structures. Limitations and opportunities of computational fluid dynamics.</p> <p>Harold Alvarez, Eng. CFD Analysis of Hydraulic Structures with FLOW-3D: Desander.</p> <p>Dr. Hans Sanchez Tueros Hydraulic structure modeling with Iber.</p>

Activity 4 :

	<p>Name of the activity: Reduction of leaks through active pressure control in potable water distribution networks.</p>
	<p>Dates: Friday, September 18, 2020 - 06:00 pm to 07:00 pm (GMT - 05:00).</p>
	<p>Objectives: Webinar for strengthening capacities and gaining knowledge on the design and the optimization of potable water distribution networks</p>
	<p>Description: Prof. Martin Jimenez gave a conference of approximately one hour where he explained the use of artificial intelligence for the active control of pressures in potable water distribution networks. MSc. Martin Jimenez Magaña is an expert in the optimization and numerical modeling of potable water supply systems, and this conference was an opportunity to share his gained experience with young professionals.</p>

Activity 5 :

	<p>Name of the activity: FORUM FOR YOUNG PROFESSIONALS: "HYDRIC STRESS".</p>
--	---

ASOCIACIÓN INTERNACIONAL DE INGENIERÍA E INVESTIGACIÓN HIDROAMBIENTAL (IAHR)
Redes Peruanas de Jóvenes Investigadores

FORO DE JÓVENES PROFESIONALES
"ESTRÉS HÍDRICO"

El estrés hídrico está presente en aquellas zonas, países o regiones donde los suministros anuales de agua dulce caen por debajo de los 1700 m³ por persona (Falkenmark & Lindh, 1974). Según la ONU, a día de hoy, 1 de cada 4 personas en el mundo se encuentran en esta situación y se prevé su empeoramiento. En este diálogo entre jóvenes se compartirán experiencias e investigaciones relacionadas a la temática.

MICHELL FERNÁNDEZ VELARDE
IAHR PERU YPN

JESUS MIGUEL ARNAS ZALDIVAR
IAHR UNALM. CIGRHI YPN

LUCIA BUCCOSA HERNANDEZ
IAHR PUCP. GEMBA YPN

TOMI QUISPE CHACÓN
IAHR URC. CEDAROSA YPN

Sábado 19 Septiembre
04: 00 pm (GMT-05:00)

Síguenos en vivo por:

Dates:

Saturday, September 19, 2020 04:00 pm to 5:30 pm (GMT - 05:00)

Objectives:

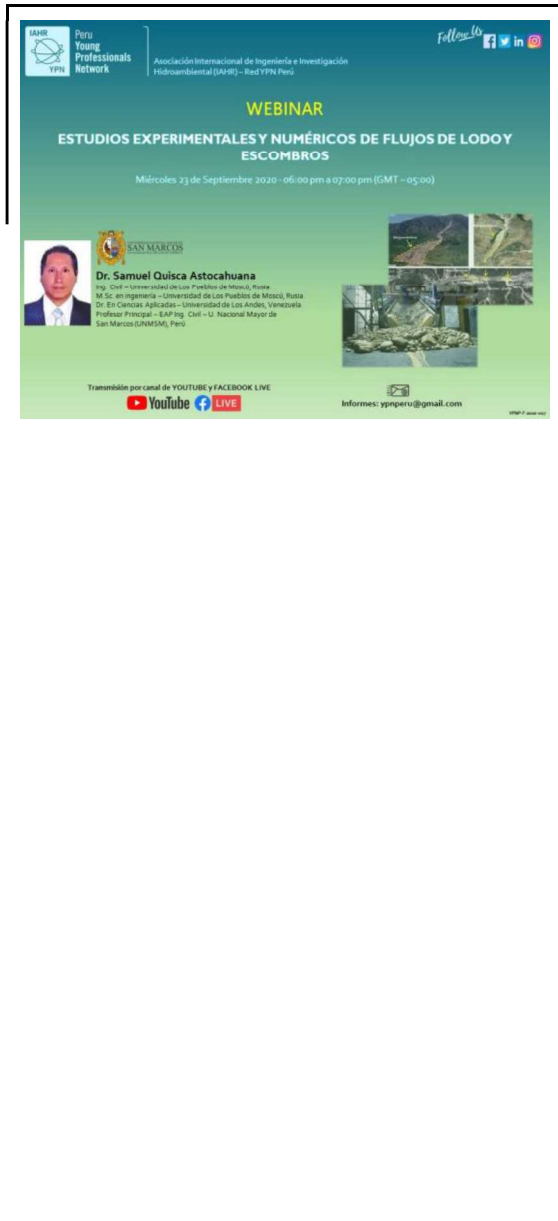
Dialogue among young people to exchange experiences and national research related to the difficulties and solutions to water stress

Description:


In this virtual forum, the young investigators of the four networks exposed their works about problems and solutions to the hydric stress at national level, the exposed topics were:

- Analysis of droughts in the regulated system of the chili river watershed.
- Proposal of a system of amunas in response to hydric stress in the Ilo and Moquegua river.
- Amunas as a solution to hydric stress in Lima.
- Efficiency in water treatment with electromagnetic resonance fields of very low frequency in corn crop using drip system irrigation.


Activity 6 :

	<p>Name of the activity:</p> <p>Webinar: Experimental and numerical studies of mud and debris flows</p>
	<p>Dates:</p> <p>Wednesday, September 23, 2020 - 06:00 pm to 07:00 pm (GMT - 05:00)</p>
	<p>Objectives:</p> <p>Webinar to share international and Peruvian experiences in the implementation of physical models in the laboratory and the development of numerical models in the mud and debris flows.</p>
	<p>Description:</p> <p>Dr. Samuel Quisca Astocahuana, expert in external geodynamic phenomena, gave a conference about national and international research about debris flows. And measures that are now being used for the prevention and risk mitigation for this flow.</p>

Activity 7:

	<p>Name of the activity:</p> <p>Webinar: Implementation of a combined hydraulic-hydrological model for flood risk assessment</p>
	<p>Dates:</p> <p>Friday, September 25, 2020 - 05:00 pm to 06:00 pm (GMT - 05:00)</p>
	<p>Objectives:</p> <p>Webinar for strengthening capabilities and the gaining knowledge on construction a hydraulic and hydrological model for the risk to floods prevention</p>
	<p>Description</p> <p>In this virtual seminar it was exposed about the prevention service in floods in France, and the preliminary hydrological and hydraulic modeling results of the study that is being developed by M. Sc. Alexander González Alfaro in France.</p>

Activity 8 :

	<p>Name of the activity:</p> <p>Online conference: The cybernetic water balance</p>
	<p>Dates:</p> <p>Saturday September 26, 2020 - 10:00 am to 11:00 am (GMT - 05:00)</p>
	<p>Objectives:</p> <p>Webinar for strengthening capacities and gaining knowledge about water balance considering watershed wetting.</p>
	<p>Description</p> <p>The first part of this seminar focused on the importance of considering the watershed wetting for the calculation of the hydric balance. Dr. Victor Miguel Ponce, expert in hydrology and hydraulics, explained that the wetting concept was given by L'vovich (1979) and allowed obtaining a better water balance because the L'vovich method allows calculating the matrix of precipitation-run-off, surface run-off-flow, base-wetting-vaporization.</p> <p>In the 2nd session of this seminar was explained how much water can be extracted from an aquifer without being sustainable, explaining that before the extraction of groundwater the vertical recharge must be evaluated using the L'vovich equations,</p>

which are based on the hydrological equilibrium.

Activity 9:



Name of the activity:

Webinar: Modelling river water temperature as a sustainable ecological indicator (based on energy balance with SWAT tool)

Dates:

Wednesday October 14, 2020 - 05:00 pm to 06:00 pm (GMT - 05:00)


Objectives:

Webinar for strengthening capacities and gaining knowledge about the temperature modelling of water ways, which is influenced by different meteorological and hydrological factors and is dominant for river species health and biodiversity.

Description

In this seminar were commented about the importance of the river temperature, river water temperature modeling, energy balance, equilibrium temperature (ET) concept, ET implementation in model SWAT (SOIL WATER ASSESSMENT TOOL) and some results obtained with SWAT.

Activity 10 :

	<p>Name of the activity:</p> <p>Webinar: Numerical modelling applied to studies of maritime hydraulics and coastal processes.</p>
	<p>Dates:</p> <p>Sábado 17 de Octubre 2020 – 03:00 pm a 04:00 pm (GMT – 05:00)</p>
	<p>Objectives:</p> <p>Present numerical modeling tools that allow evaluating coastal processes</p>
	<p>Description</p> <p>The webinar showed the importance of knowing in detail the behavior of the waves to develop studies of sediment transport and design of structures, it is also important to carry out measurements in the field in order to validate the results of the numerical model.</p>

Activity 11 :

	<p>Name of the activity: Hydrogeological modeling of cadmium and BOD contamination due to the "Landspreading" technique in agricultural soils.</p>
--	---



WEBINAR

MODELIZACIÓN HIDROGEOLOGICA DE LA CONTAMINACIÓN POR CADMIO Y DBO DEBIDO A LA TÉCNICA "LANDSPREADING" EN SUELOS AGRÍCOLAS

Viernes 23 de Octubre 2020 - 03:00 pm a 04:00 pm (GMT - 05:00)

FRANCISCO TORRES MEDINA
 Ing. Mecánica de Fluidos - U. Nacional Mayor de San Marcos (UNMSM)
 Esp. en Modelización Hidrológica e Hidráulica con HEC e Iber - CCEP
 Demarcación Andalucía, España
 Estudiante de maestría en Ingeniería Hidráulica y Medio Ambiente - U.
 Politécnica de Valencia (UPV), España
 Ingeniero consultor en el Banco Interamericano de Desarrollo (BID), Perú

Regístrate en el Formulario para recibir novedades!

Transmisión por canal de YOUTUBE y FACEBOOK LIVE

Informes: yppperu@gmail.com

Dates:

Friday October 23, 2020 - 03:00 pm to 04:00 pm (GMT - 05:00)

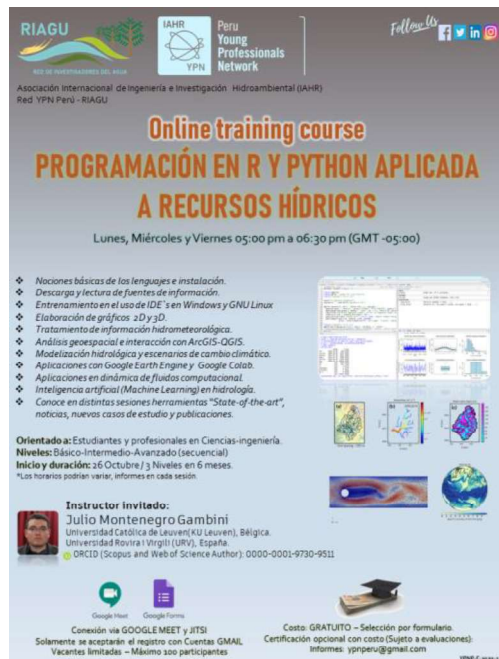
Objectives:

Learn to interpret the files check.lis (MODFLOW) and output.mt3 (MT3D) to solve errors

Description

Presentation of the conceptual models to model groundwater flow and chemical processes, as well as show the usefulness of the program files

Activity 12:



RIAGU | **IAHR Peru Young Professionals Network**

Asociación Internacional de Ingeniería e Investigación Hidroambiental (IAHR) Red YPN Perú - RIAGU

Online training course

PROGRAMACIÓN EN R Y PYTHON APLICADA A RECURSOS HÍDRICOS

Lunes, Miércoles y Viernes 05:00 pm a 06:30 pm (GMT -05:00)

- ◆ Nociones básicas de los lenguajes e instalación.
- ◆ Descarga y lectura de fuentes de información.
- ◆ Entrenamiento en el uso de IDE "en Windows y GNU Linux
- ◆ Elaboración de gráficos 2D y 3D
- ◆ Tratamiento de información hidrometeorológica.
- ◆ Análisis geoespacial e interacción con ArcGIS-QGIS.
- ◆ Modelización hidrológica y escenarios de cambio climático.
- ◆ Aplicaciones con Google Earth Engine y Google Coteb.
- ◆ Aplicaciones en dinámica de flujos computacional.
- ◆ Inteligencia artificial (Machine Learning) en hidrología.
- ◆ Conoce en distintas sesiones herramientas "State-of-the-art", noticias, nuevos casos de estudio y publicaciones.

Orientado a: Estudiantes y profesionales en Ciencias-Ingeniería.
Niveles: Básico-Intermedio-Avanzado (secuencial)
Inicio y duración: 26 Octubre y 3 Niveles en 6 meses.
 *Los horarios podrían variar, informes en cada sesión.

Instructor invitado:
Julio Montenegro Gambini
 Universidad Católica de Leuven (KU Leuven), Bélgica.
 Universidad Rovira i Virgili (URV), España.
 ORCID (Scopus and Web of Science Author): 0000-0001-9730-9511

Conexión vía **GOOGLE MEET** y **JITS**
 Solamente se aceptarán el registro con Cuentas GMAIL.
 Vacantes limitadas - Máximo 200 participantes

Costo: GRATUITO - Selección por formulario.
 Certificación opcional con costo (Sujeto a evaluaciones).
 Informes: yppperu@gmail.com

Name of the activity: Training online course: Python and R programming applied to water resources

Dates:

Monday October 26, 2020 to the present.

Objectives: Provide tools and theoretical knowledge that allow students to improve their skills in programming in R and Python with applications related to water resources.

Description

Event organized by the leadership team of our YPN, dictated by our president with the support of the other members of the leadership team.

The course was aimed mainly at our members, however, we also had participants from other YPNs, as well as students related to the country and Latin America.

Activity 13:



Name of the activity:

Webinar: Channel Hydraulics with C ++ and Python Languages.

Dates:

Saturday November 07, 2020 - 03:00 pm to 04:00 pm (GMT - 05:00)

Objectives:

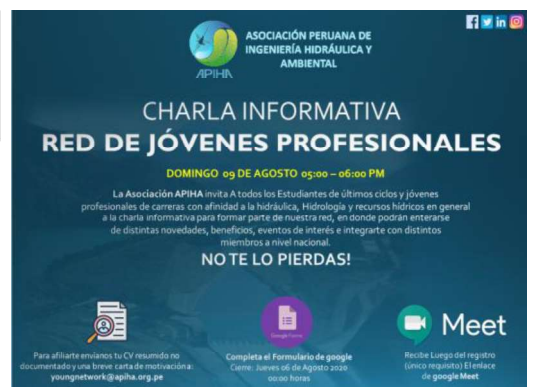
Present the Hydraulics of Channels book

Description

Webinar focused on the book release of the speaker regarding to Hydraulics of Channels book that contains the most common equations and codes in languages such as: C ++, Python and Hpppl, to solve common problems.

Activity 14 :

	<p>Name of the activity:</p> <p>Conference cycle on glaciers and climate change</p>
	<p>Dates: November 26, 27 and 28, 2020, from 5:00 pm-7:00pm</p>
	<p>Objectives: Disseminate the importance of tropical glaciers and the problems they are facing due to climate change.</p> <p>Give a space to researchers investigating the subject in order to increase the broadcasting of their work.</p>
	<p>Description</p> <p>Event organized in conjunction with other YPN that aimed to highlight the importance of tropical glaciers in Peru since it is the country that has 71% of them worldwide (INAIGEM 2018), also, it was considered important to inform about the possible scenarios that could traverse the glacial mountain ranges of Peru due to climate change and the risks that are currently occurring such as the Glacial Lake Outburst Flood.</p>

	<p>Name of the activity: Informative Talk: Young Professionals Networks</p>
	<p>Dates: 9 August 2020</p>
	<p>Objectives: Publicize the proposal of our YPN and extend the invitation to be part of us.</p>
	<p>Description: With the help of the page of the Peruvian Association of Hydraulic Engineering, we made our first invitation to the public to want to be part of our YPN IAHR network. The objective was to make known both the objectives of the IAHR and those that we as a group will have.</p>

5. Partnerships and collaborations

Partner organisations and/or interaction with related national organisations

Organisation	Description of partnership
Peruvian Association of Hydraulic and Environmental Engineering (APIHA)	Presentation event of our network, where members were recruited

Collaboration with other YPNs

YPN name	Description of collaboration
IAHR Pontificia Universidad Católica del Perú Young Professionals Network	It was developed with them, the event of a forum for young professionals with a theme to hydraulic stress (September 19th, 2020). It was developed together with them, the cycle of conferences on glaciers and climate change (November 26th, 2020).
IAHR Universidad Nacional Agraria La Molina CIDRHI Young Professionals Network	It was developed with them, the event of a forum for young professionals with a theme to hydraulic stress (September 19th, 2020). It was developed together with them, the cycle of conferences on glaciers and climate change (November 26th, 2020).
IAHR Universidad Peruana de Ciencias Aplicadas (UPC) CEDIARHMA's Young Professionals Network	It was developed with them, the event of a forum for young professionals with a theme to hydraulic stress (September 19th, 2020). It was developed together with them, the cycle of conferences on glaciers and climate change (November 26th, 2020).
IAHR Universidad Nacional de Ingeniería-GEAHH-Young Professionals Network	It was developed together with them, the cycle of conferences on glaciers and climate change (November 26th, 2020).
IAHR UTEC Water and Environmental Research Young Professionals Network	It was developed together with them, the cycle of conferences on glaciers and climate change (November 26th, 2020).

6. Contributing to the strategic plan

7.1. Please describe how your activities in 2020 have contributed to and advocated for IAHR's vision and strategic plan (<https://www.iahr.org/index/detail/101>)

Our events have been very well received internationally, proof of them are the successful numbers that we got through our social networks despite the 4 months that we have been as a group, this reception was achieved due to the high academic quality of the guests that we had, with which we are quite grateful for their time.

Likewise, at the local level we have had multiple comments from people from the interior of our country (Peru) who write to us wanting to participate or learn more about our activities,

with whom we are trying to provide new spaces with which we can interact, such as reading clubs of scientific articles or short interviews with students and professionals who want to share their experiences.

Our goal is to be able to make more scientific production, likewise, to inspire the people who observe us to dedicate themselves to the investigation of the multiple topics that have been presented throughout all the activities, this will be a more difficult goal to achieve in the long term. This aim has not yet been finalized due to the short created time that we have.

Our group will always be interested in disseminating research on environmental issues and those involving water, so we feel that we are on track and related to the vision and institutional strategic plan of the IAHR and we will continue to do so in the future.

7.2. Please describe how your YPN contributes to the IAHR YPN high-level aims

Despite our short operating time, we have been quite active through various events held both on our part and in coordination with other YPNs in our country. Our approach has always been to publicize the contributions in our fields of study made by multiple researchers in our country, especially those from the interior of the country who do not have the media to support them.

One of the main objectives of our group is to give a voice to researchers from universities that do not have a YPN or that do not have access to a broadcast channel with a greater number of possible recipients such as our social networks or IAHR's pages.

Likewise, we have held online events in which we have had the participation of people involved in the IAHR from other countries such as Mexico and Spain, with which we are quite grateful, the topics that have been dictated through our events have had a great level in the academic aspect, proof of the quality of the presentations is the great reception that our events have had by the public from other Latin American countries such as Chile, Paraguay, Ecuador, Brazil, Argentina, among others.

Our group aims to continue holding events that facilitate cooperation with other groups involved in water resources and the environment, either with other YPN networks or with associations related to the issue at the national and international level, all without neglecting the growth of our own members.