

Hydropower Solutions

H **Y** **P** **O** **S** **O**



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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 857851.

WP4 CAPACITY BUILDING

Presentation by Miroslav Marence
May 12th 2023, Delft

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Overview

TASKS:

Task 4.1 Selection of Training/Teaching Methods

Task 4.2 Content and Amount of Training/Teaching
(Curriculum)

Task 4.3 Final Activity Schedule

Task 4.4 Evaluation

Task 4.5 Development of overall capacity building strategy

*Two papers on Capacity building for HYDRO conferences



Teaching plan for the short course

x	Topicx	Responsibilityx	Days-x		
			Onlinex	Face-to-facex	Onlinex
			Preparation-before-coursex	Short-course-x	Assignment-s-after-coursex
Week-1	Basics-of-hydropower-exploitationx	IHEx	0.5x	0,5x	-x
	Hydrologyx	IHEx	0.5x	1x	1x
	GIS&HP-potentialx	VDUx	1x	0.75x	1x
	Hydraulic-designx	IHEx	1x	1x	1x
	Computer-based-tools-for-hydropower-resourcesx	VDUx	1x	0.75x	1x
	Dams-and-storage-basinx	IHEx	1x	1x	1x
	Weirs-and-water-intakesx	SFx	0.5x	0.5x	0.5x
	Power-waterwaysx	IHEx	1x	0.5x	1x
	Total-week-1x		6.5x	6.0x	6.5x

x	Topicx	Responsibilityx	Days-x		
			Onlinex	Face-to-facex	Onlinex
			Preparation-before-coursex	Short-course-x	Assignment-s-after-coursex
Week-2	Hydraulic-Unitsex	IMPx	0.5x	1x	1.0x
	Electrical-equipment-&-linesx	IMPx	-x	0,5x	0.5x
	Environmental-and-social-impactx	IHEx	1x	-x	1x
	Hydropower-systemsex	SF¶ IHEx	1¶ x	1.5¶ 1.0x	1.5¶ 0.5x
	Operation-and-maintenancex	IMP/TRMEW/SFx	-x	1x	1x
	Financial-analysisx	1to3x	-x	-x	1x
	Design-trainingx	SFx	-x	1x	3x
	Total-week-2x		2.5x	6x	9.5x
Total-study-load (week-1+week-2)x			9x	12x	16x

HYPOSO platform (OpenCourseWare)

The screenshot displays the HYPOSO platform interface. At the top, there is a navigation bar with a menu icon, a 'Recent' dropdown, and the language 'English (en)'. On the right, the user's name 'Miroslav Marenc' is visible next to a profile picture. The main content area features the course title 'HYPOSO – Capacity Building for Small Hydropower Development' and a 'Turn editing on' button. Below the title, there are four statistics: 66 ENROLLED PARTICIPANTS, 0 PARTICIPANTS COMPLETED, 28 IN PROGRESS, and 38 YET TO START. A list of 17 course modules is provided, starting with '1. General' and ending with '17. Glossary'. At the bottom, there is a section for 'General Information' featuring logos for UNESCO and IHE DELFT.

HYPOSO – Capacity Building for Small Hydropower Development

Dashboard / Courses / HYPOSO / Start here

66 ENROLLED PARTICIPANTS

0 PARTICIPANTS COMPLETED

28 IN PROGRESS



38 YET TO START

[Start here](#) 1. General 2. Basics 3. Hydrology 4. GIS and HP potential 5. Hydraulic design 6. Tools for assessment HP projects

7. Dams & storage basins 8. Weirs & intakes 9. Power waterways 10. Hydraulic units 11. Electrical equipment & lines

12. Environmental impact 13. Hydropower systems 14. Operation & maintenance Topic 15 15. Financial analysis 16. Design training

17. Glossary Online Lectures and BigBlueButton Assignments Q&A and discussions Product information and pamphlets

United Nations Educational, Scientific and Cultural Organization

Institute for Water Education under the auspices of UNESCO

General Information

Schedule

AFRICA

- Uganda, online January 2022
- Cameroon, Face to face January/February 2022

SOUTH AMERICA

- Bolivia, Cochabamba, June 27th to July 3rd
- Ecuador, Quito, August 8th to 14th




Impressions from Africa Course

HYPOSO Capacity Building Course
Week 1 – Online lectures for SHP
professionals from Cameroon & Uganda



Working together for a #sustainable future



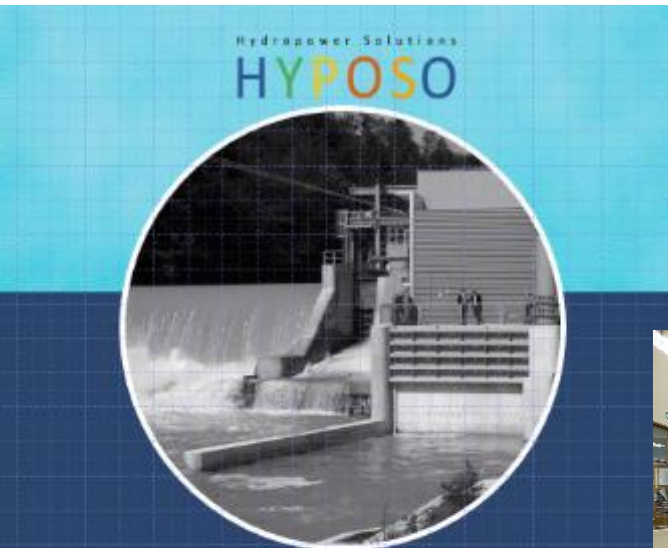
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Hydropower Solutions
HYPOSO
Capacity Building Course – Week 2
31 January to 5 February 2022
Ebolowa, Cameroon



Impressions from S. America Course



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HYPOSO

**HYPOSO CAPACITY BUILDING
IN SOUTH AMERICA**

*Training and Capacity Building
in small hydropower.*

1st week	July 4th - 10th.	COCHABAMBA-BOLIVIA
2nd week	August 8th - 14th	QUITO- ECUADOR

Presented by the San Simón University - UMSS from Bolivia and the Escuela Politécnica Nacional - EPN University from Ecuador.



Implementation of objectives

Capacity Building Courses (WP4)

Realisation of Capacity Building Courses.



Comments/reactions on the Course

- **Single reactions** – very positive and with lot of thanks to the lecturers and organisation
- **Questionnaire** very positive with less comments for improvements
- All topics have been seen as very important and interesting
- In South America the course was a possibility for networking between countries but also the initiation for the networking between participants inside countries. In the both countries a network of the experts and interested people have been established and these networks should work further together. Also contacts between HYPOSO partners is intensified.



Comments/reactions on the Course

Course review:

- more than **50 participants** have taken part in the each of two-week course (127 participants registered totally) . Most of the participants had MSC degrees and relatively uniform distributed experience stage, small overweight in junior age which has been seen as an advantage.
- Representatives ranging from government regulatory agencies and research institutions to private developers actively participate.
- Participants **physically converge under one roof** during the training was a big advantage compared to the online course. Face-to face-participation has advantage that the participants are out of their standard environment and are much stronger concentrated on the course
- Video lecturing had advantage that also the participants not sponsored by the project were able to participate the whole course (one week online and one week face-to face in their own country
- In some instances, however, the intermittent **internet connections** would occasionally disrupt the flow of the lectures; This also affected the response to assignments given online.
- The **practical design training** appeared to be the most engaging and challenging part.
- The participants are **very satisfied with the course**, and especially admired the knowledge and praxis exchange between the two countries.
- the **availability of all teaching material** and full transparency during lecturing have been seen as a specialty of the course.
- Some of the participants complained about the **short available time** for so intensive training, but also like the possibility that the course material will stay available for a longer period and the possibility to communicate with the lecturers also after the course.
- Nevertheless, it was a **very concise and comprehensive exercise, one of the highlight deliverables of the HYPOSO project!** (Dan and Joseph)



Comments/reactions on the Course

Questionnaire (in Moodle):

- Positive response on all of questions, strongly agree to agree (neutral)
- Slightly negative answers (1-2) on course organisation and discussions
- All like to recommend course (mostly strong recommended)
- Field trip very positive evaluated and seen as important part of the course
- Positive and negative issues biased by individual interest of the participant
- Which topic you want to learn more about – all topics specified
- General thanks to all lecturers on patience and availability during the course



Conclusion

Course organization and implementation:

- success on both continents,
- Learning effective setup (2*1 week + site visits)
- The face-to-face course was better evaluated than the online course, but online courses has an advantage that could be used in the future for the deepening of knowledge and also for the education of the new staff
- Course organization with preparation, course and post assignments increase the teaching load and improve the learning efficiency
- Interaction between course participants of the continent, but also in each of the countries.
- Interaction between course participants and HYPOSO partners
- Interaction between course participants and European hydropower community
- Full transparency of the course and availability of the material will increase the course value
- Practical design training has been seen as summary of all learned and is important part of the training
- Need for the continuous further development of the participants by further courses/events and also refreshments have been seen by participants as a requirement in the future

Future strategy

The course material stays available for the course participants and the new participants.

The course will stay on the IHE Open Course Ware (OCW) platform.

Selection of the possible additional participants, criteria, countries, and requirements have to be defined in the next steps



DISCUSSION



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Thank you!

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