

# Highlights from the HYPOSO project

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## Hydropower solutions for developing countries

Ingo Ball

HYPOSO Project Coordinator

WIP Renewable Energies

17 March 2021, Virtual

[www.hyposo.eu](http://www.hyposo.eu)

#hyposoEU

**International Conference on Fishfriendly Hydropower**  
FIThydro final Conference

17 – 18 March 2021



# Outline

- General information & structure
- Objectives & impact
- HYPOSO and fishfriendliness



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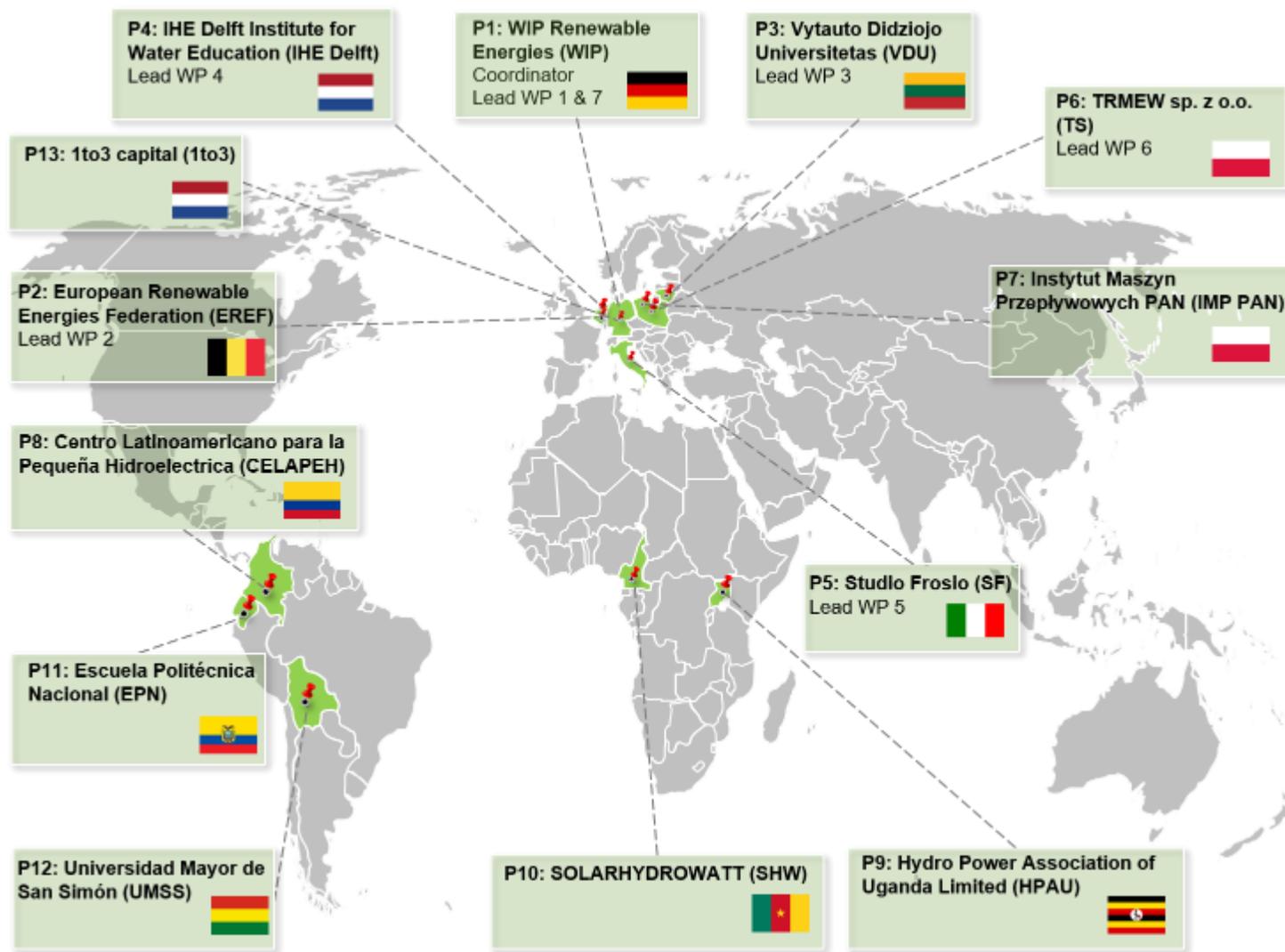
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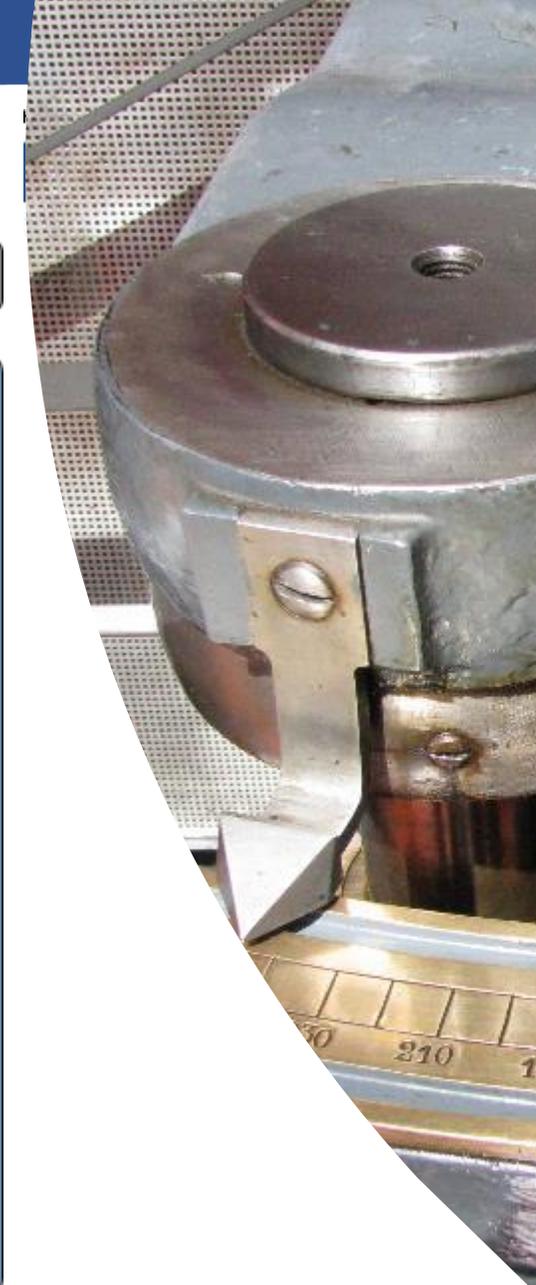
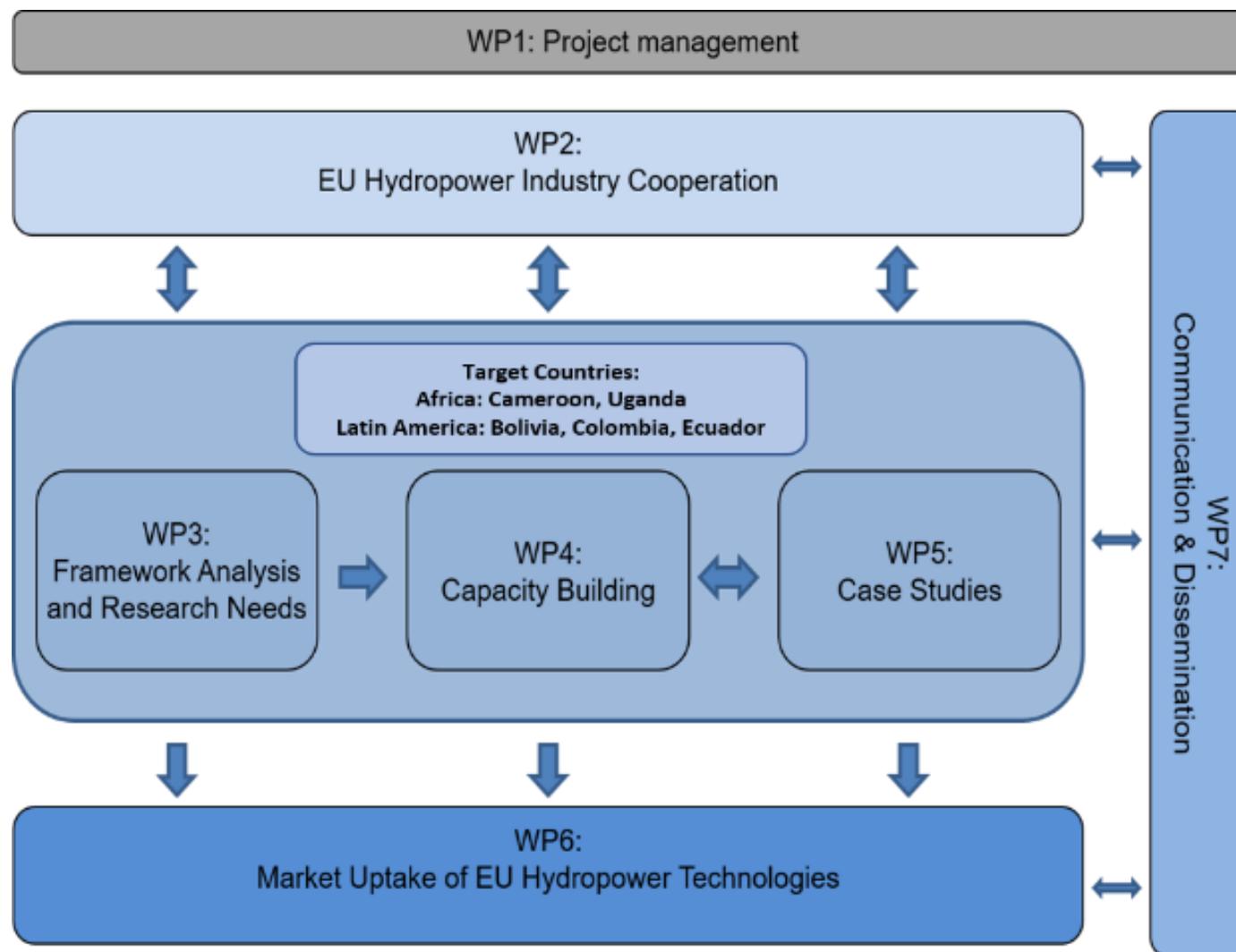
# General information

- Project title: **Hydropower solutions for developing and emerging countries**
- Project acronym: **HYPOSO**
- EU funded project within the **H2020** programme
- Grant Agreement (GA) No: **857851**
- Starting date of the project: **1 September 2019**
- Duration: **36 months**
- Participants: **13 (5 research organisations – 8 enterprises (4 SME))**
- Countries: **Belgium, Bolivia, Cameroon, Colombia, Ecuador, Germany, Italy, Lithuania, the Netherlands, Poland, Uganda**





# Structure



# Project aim

- Support the European hydropower industry

by providing tools to best facilitate and consult selected target regions in Africa (Cameroon and Uganda) and Latin America (Bolivia, Colombia and Ecuador) with their know-how and expertise and enable more technology export for European companies.

- Stimulate the energy transition in developing and emerging countries

by the market uptake support that shall lead to win-win situations and focus on sustainable and locally adapted solutions.



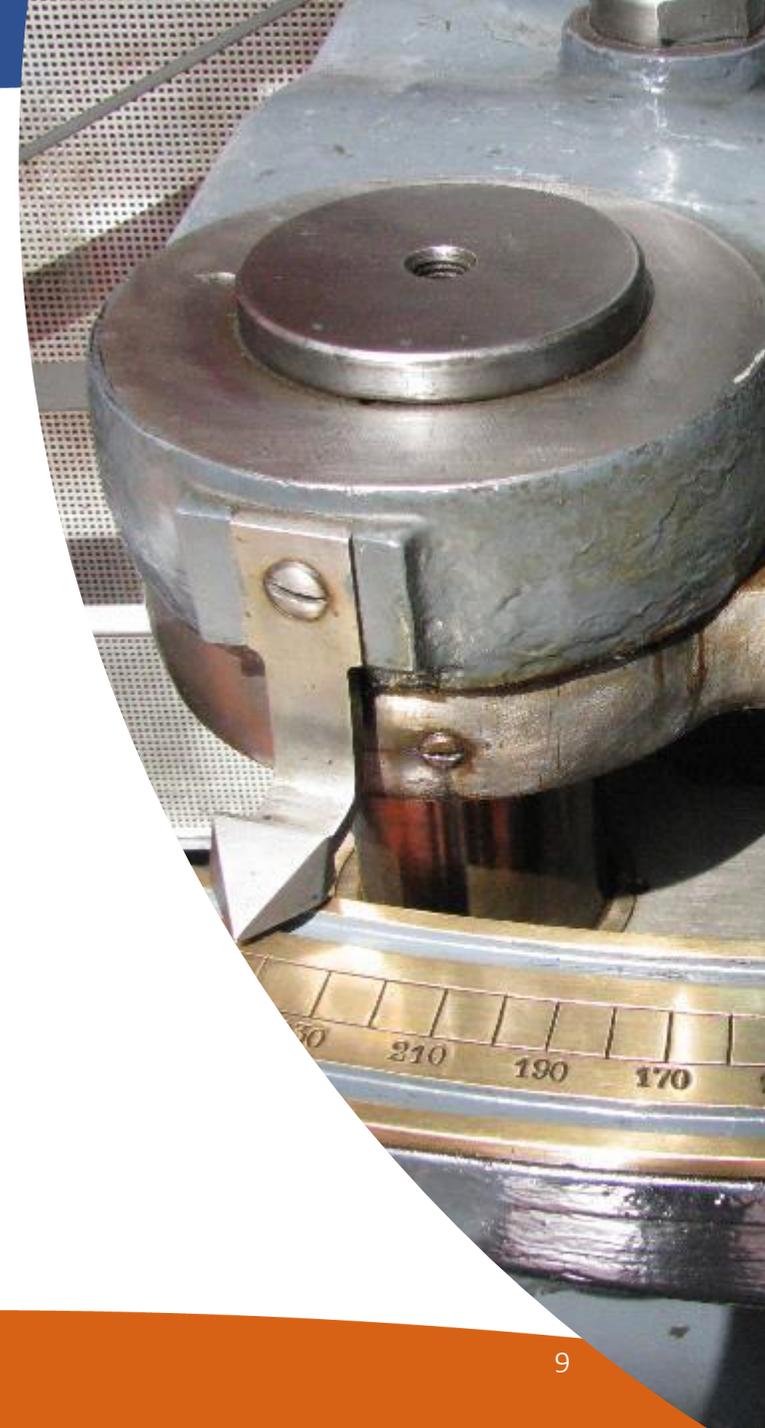
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# Objectives

- **Mapping** (EU hydropower industry, > 2,000 potential hydropower sites and stakeholders in target countries)
- **Framework analysis** of target countries
- **Capacity building** activities
- **15 Case studies** (5 MoU)
- **Online platform** (providing sector information, enabling contacts)
- **b2b Workshops** (in Colombia, Uganda and the Netherlands)
- **Business cooperation tour** in Europe



# Impact in numbers

Country		Bolivia	Cameroon	Colombia	Ecuador	Uganda	Total
Potential of Small Hydropower (SHP)	Total [MW]	50	615	25,000	296	210	<b>26,258</b>
	Remaining %	57	>99	>99	>75	>90	
Defined capacity limit of SHP [P]		0.5 to 30 MW	< 10 MW	< 20 MW	10 - 20 MW	< 10 MW	
Cost per installed kW		1,300 -8,000 US \$/kW					
Goal for installed MW per target country as consequence of HYPOSO (only SHP)		5	10	50	20	5	<b>90</b>
Amount of additional EU investment in target countries through project activities, million US \$ (roughly 50% of installed cost)		8	15	75	30	8	<b>136</b>



# Impact in target countries



	BOLIVIA	COLOMBIA	ECUADOR	CAMEROON	UGANDA
	 increase rural electrification (73%)	 increase share of Renewable Energies (10% coal)	 increase share of Renewable Energies (37% oil)	 increase electrification rate (overall: 60% rural: 21%)	 increase electrification rate (urban: 71% rural: 8%)
	➤ HP experts	➤ HP experts	➤ HP experts	➤ HP experts	➤ HP experts
	local jobs	local jobs	local jobs	local jobs	local jobs

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# HYPOSO and fishfriendliness

## WP2 - Handbook (ENG, FRA, ESP)

2 chapters (input from FIThydro) :

- 1.3.3 Fish friendly Innovative Technologies for Hydropower
- 3.7 Fish Passage Measures



**3.7 Fish Passage Measures**

This handbook originates from the FIThydro project (project coordinator: Peter Ruckstuhl), which was originally funded by the European Union (EU) under the Horizon 2020 research and innovation programme. The handbook is a result of the collaborative work of the project partners: FIThydro, Hydropower Solutions, and the European Union.

**3.7.1 Introduction to fish upstream and downstream migration**

Many fish species undertake migrations between their habitat and their spawning grounds. These migrations are essential for the survival and reproduction of the species. The handbook provides information on the different types of migrations and the factors that influence them.

**3.7.2 Fish passage structures**

The handbook describes various types of fish passage structures, including weirs, spillways, and bypasses. It discusses the design and construction of these structures to ensure they are fish-friendly and do not cause any harm to the fish.

**3.7.3 Innovative technologies**

The handbook introduces several innovative technologies for fish passage, such as the use of artificial channels, bypasses, and fish ladders. These technologies aim to improve the fish passage efficiency and reduce the impact of hydropower on the environment.

**3.7.4 Assessment and monitoring**

The handbook provides guidelines for the assessment and monitoring of fish passage structures. It includes methods for evaluating the effectiveness of the structures and for identifying any potential problems.

**3.7.5 Conclusions**

The handbook concludes by summarizing the key findings and recommendations. It emphasizes the importance of fish passage measures in the design and operation of hydropower projects and encourages the use of innovative technologies to improve fish passage efficiency.



# HYPOSO and fishfriendliness

## WP4 - Capacity building

Environmental impact part

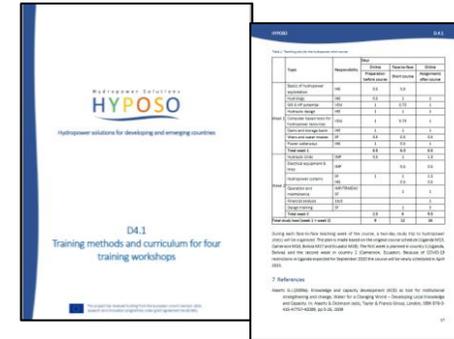
- fish mobility upstream and downstream, and also the problems with fish mortality will be addressed

Design training

- fishfriendly solutions, according to the state of the art, will be addressed and recommended

## WP5 – Case studies

Where applicable, fishfriendly solutions will be proposed within the prefeasibility studies



# Get involved

Join the [HYPOSO Platform](https://www.hyposo.eu/en/hyposo-platform/), an exclusive online forum, free of charge, for stakeholders from the EU and the HYPOSO target countries, meant to facilitate business contacts.

See more at:

<https://www.hyposo.eu/en/hyposo-platform/>

The screenshot shows the HYPOSO Platform website. At the top, there is a navigation bar with links for Home, About, HYPOSO Map, HYPOSO Platform, Sector Information, News, and Events. A 'Languages' dropdown and social media icons for Newsletter, Twitter, and LinkedIn are also present. The main heading is 'HYPOSO Platform'. Below this, a text block explains that companies and organizations active in the hydropower sector are invited to join the platform. A 'Login to HYPOSO Platform' button is visible. A 'Filter categories' section shows a dropdown menu for 'Stakeholders (all)' with options: Stakeholders (all), System supplier/Manufacturer, Project Developer, Engineering Services & Consultants, Installation/Operation & Maintenance, Universities/Testing & Training Facilities/Research Institutes, Investor, and Other. Below the filter, three organization cards are displayed: IHE Delft (with UNESCO logo), HPAU (Hydropower Association of Uganda Ltd.), and STUDIO FROSIO hydro engineering.

# Get involved

Next occasion to get updates from the project, including the African cases:



Find out more at:

<https://www.hyposo.eu/en/>

Hydropower Solutions

**HYPOSO**

Thank you!

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