

IngOG⁺

Engineers Without Borders
Switzerland (IngOG+)

Annual Report 2021



Imprint

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About IngOG+

"We support geographically, politically or out of poverty isolated and disadvantaged communities to meet their basic needs in a sustainable way."

Engineers without Borders Switzerland (IngOG+) is a non-governmental organization that searches for engineering solutions to humanitarian problems. Our goal is to improve the living conditions of communities disadvantaged by poverty, geographical or political isolation and lack of support. With intensive involvement of the local population, appropriate measures are developed for the communities. IngOG+ follows a holistic approach to problem solving, which ensures that the projects improve the living conditions of the affected people in a sustainable way.

Our fields of activity in Switzerland and abroad include direct involvement in the planning, execution and maintenance of infrastructure projects as well as the exchange of knowledge and the support of other organizations in specific engineering tasks.



Project in Gradačac, Bosnia and Herzegovina
Photo of the construction progress, February 2022

Projects

Gradačac, Bosnia and Herzegovina (BIH001)

Purpose	Residential community for socially disadvantaged women
Location	Gradačac, Bosnia Herzegovina
Since	May 2016
IngOG+ Team	Nora Mühlberger, Nadine Fankhauser, Christian De Maddalena, Dominik Burkhart, Eric Carrera, Almir Susak
Partner	Hazima Smailović , TEN-Architekten, VIVE ZENE, FHNW, Shirana Shahbazi, Nemanja Zimonjic, Ognjen Krašna, Lukas Burkhart

In cooperation with Hazima Smailović, a partner organization founded before the civil war in Bosnia and Herzegovina, and the local authorities of the municipality of Gradačac, IngOG+ is committed to the establishment and operation of a social housing community for socially disadvantaged women in Bosnia and Herzegovina. Through this project, the women will live together in a shared flat and be able to support each other in everyday life. A trained nurse supports the residents in everyday life and regulates administrative tasks. IngOG+ supports Hazima in setting up the project, coordinates the actors involved and finances the construction of the building. The architectural design is created by a group of architects from TEN Group in cooperation with a Serbian architect. The facade of the building is designed by the Iranian artist Shirana Shahbazi. The operation of the project is supported by the NAS IZVOR Foundation established in Bosnia. IngOG+ acts as the founder of this foundation and provides a large part of the board of trustees.

In 2019, the development of the construction project was completed together with the architects and the necessary official permits were obtained. Various entrepreneurs were then contacted. After a careful selection process, the appropriate contractor was selected and the construction contract was signed. The construction phase began at the end of 2020 with the demolition of the existing building and the excavation for the foundation structures. In 2021 the main construction works were completed: execution of the foundation plates and the masonry walls, assembly of the steel beam on the roof, assembly of the windows and completion of the roof structure. The facade of the building will be completed by early 2022. The completion of the interior fittings and the assembly of the furniture is planned for mid-2022, so that the building will be ready for occupancy by the end of summer 2022.

Projects

Parallel to the construction work, the project team worked together with the Bosnian women's organization VIVE ZENE on the operational concept of the house and the selection criteria for the women. They train caregivers and provide support in selecting residents and in negotiations with authorities. In Switzerland, our project is accompanied by the Institute for Social Work at the University of Applied Sciences Northwestern Switzerland (FHNW). A lot of specialist knowledge flows into the project and we can create optimal conditions for a successful project. Around 90% of the project costs are currently covered. The remaining 10% must be covered by further donations until the project is completed.



Team IngOG+ and team VIVE ZENE

Projects

Hugua Chini, Paraguay (PRY001)

Purpose	Biological water filter system for drinking water supply
Location	Hugua Chini, Paraguay
Since	December 2015
IngOG+ Team	Lukas Allemann, Carina Doll, Dorothee Kurz, Katharina Schulthess
Partner	Ana Lucia Giménez, Federico Varas Lehner

In 2021 the activities of the project were again affected by the pandemic. In various video conferences with our partners from the University of Asunción, we learned that the Corona measures made it impossible to travel to the remote communities where it was planned to test further water treatment methods.

A success was the successful defense of Ana's master's thesis, which replicated a bio-sand filter and analyzed its water quality. The IngOG+ team is currently in close contact with the local partners and also supports Ana in her efforts to write and publish a scientific article based on her master's thesis.

In addition, the team used the time and started producing a short video about the project and the work at IngOG+. This should be published in the course of early summer.

The resumption of field work in the various communities in Paraguay is planned for 2022.

Projects

Suswa, Kenya (KEN002)

Purpose	Use of rainwater to supply water to a school
Location	Suswa, Suswa county, Kenya
Since	October 2019
IngOG+ Team	Jean Randhahn, Reto Michel, Patrick Eberle, Samira Cabdulle, Fabian Achilles, Brain Rakvica, Andreas Walder
Partner	IAPS: Michael Muntet, Joel Korir, Roland Harting

At the end of 2019, IngOG+ was contacted by the IAPS (Ilkeek Aare Primary School) in Suswa, Kenya with a request for technical support with their water problem. In 2020, the evaluation was successfully carried out with an on-site visit and the first resulting technical recommendations could be made to IAPS.

In 2021 the relationship with IAPS has grown closer and IngOG+ has positioned itself as an engineering partner for IAPS and its supporting organisations. In the meantime, IAPS is happy to involve IngOG+ in every construction project in order to receive engineering advice. As a result, IAPS invests its funds in meaningful and long-term sustainable projects as the engineering choices fit the existing realities and long-term engineering goals.



Team IngOG+ meeting the local representatives of the school

Projects

In particular, the construction of the rainwater utilization for the newly built classrooms was supported by the project team in the conception, in the detailed engineering (planning and parts list) up to the monitoring and processing by the contractor. As a side effect, the local project manager has gained experience and understanding of the handling of construction projects.

A second support is provided for the construction of the teachers' houses. The rainwater harvesting and the building concept are mainly designed there. This second sub-project will be continued and completed in 2022.

A third activity is organizing the re-qualification of a local installer to perform maintenance tasks. This will continue in 2022. For this activity, the project is actively looking for technicians/installers who are willing to spend time at the IAPS for knowledge transfer.

One of the partner organizations of the IAPS has changed. The Lions Club Münster-Landois has established itself through the newly established foundation "Jörg Baetge Foundation. Home4Education" (registered in Münster, Germany, 21.13 - B 79).

In 2021, the project has neither spent money nor actively collected donations. The main work has so far been done by the volunteer team members without external support.

Projects

Khema, India (IND002)

Purpose	Solar powered water supply
Location	Khema, Region Ladakh, India
Since	October 2020
IngOG+ Team	Dorothee Kurz, Johrina Cron, Carola Bänziger, Churchill Agutu, Samuel Balula, Katharina Schulthess, Simon Matter
Partner	Himalaya Help and Care, Navikarana Trust

In 2020, the Luxembourg organization "Himalaya Help and Care" asked IngOG+ about a project collaboration to provide technical support to the villagers in Khema and to improve their water supply during the winter months.

The village of Khema is located in the Himalayan mountains at an altitude of 4,200 m above sea level in the autonomous region of Ladakh, which was until 2019 and is characterized by the Tibetan culture and is only sparsely populated. Around 150 people live in Khema, spread over 22 households, which farm in the summer and livestock all year round. The water supply works well in summer, but only to a limited extent in the winter months because the fresh water used from the glacier does not reach the village. The situation is getting worse from year to year not only in Khema but in the whole region affected by glacier retreat and lack of rainfall.



Plan of the region of Khema



Visit of the local water-supply infrastructure

Projects

The water supply in winter is currently ensured by a pump that transports the water to the village. The pump is powered by a diesel generator, but due to limited fuel, it can only run for half an hour a day. The water is therefore only sufficient for drinking water and not for service water supply. For the additional fresh water that is needed, the villagers have to undertake the arduous hike to the source, the pump often fails and when it snows, animals have to transport the water from the river.

In August 2021, Johrina Cron and Simon Matter traveled to India and visited the village to get an idea of the situation on the ground. The aim was to talk to the villagers in particular and to find people who could take responsibility for the project during and after the construction phase. The trip was co-organized with Laurence Christophe from Himalaya Help and Care, who assisted the IngOG+ team with the organization before and during the trip. During the trip, the IngOG+ team was able to find out a lot of information about the current situation in the village, the local structures and the infrastructure. The IngOG+ team had the opportunity to visit the local fresh water source and the pump-pipe system together with Sushant Galerie and Nishit Sangomla from the Indian partner organization "Navikarana Trust" and discussed the future project cooperation based on partnership.

The project idea envisages a solution to improve the water supply by means of a solar-powered pump system and water storage tank. The technical goal is also to ensure that the pump and pipe system does not freeze in winter and that the drinking water quality of the water stored in the solar storage tank can be guaranteed.



House in Khema

Projects

Lifuwu, Malawi (MW001)

Purpose	Medical clinic
Location	Lifuwu, Malawi
Since	October 2021
IngOG+ Team	Lilla Szabo, Lisa Oswald, Bannet Kenneth Zakeyu, Gautam Ilango
Partner	Bannet Kenneth Zakeyu

In the rural regions of Malawi, near the shores of the lake of the same name, a large part of the population lives without access to adequate medical care. There is currently only a small makeshift clinic in Lifuwu Village, run by a retired doctor, Mr. Kenneth Javes Zakeyu, and his small team. About 15-30 patients are treated daily in this clinic, who walk long distances from the neighboring districts, often more than half a day, to be treated. Especially at peak times, supply cannot meet demand and sometimes patients have to wait for days. In addition, patients in serious emergencies are hopeless because there is no emergency clinic within a radius of 25 km.

The project request to IngOG+ was started by the son of the doctor of the existing clinic, Mr. Bannet Kenneth Zakeyu, who has recently established Zakeyu Medical Clinic and has already acquired a plot of land in Lifuwu for a new facility. He turned to IngOG+ for project support in the areas of engineering and planning.

IngOG+'s goal in this project is to increase the capacity of the healthcare facility by building a new clinic. In 2022, the new building of this clinic is planned, the fundraising will start and a project website will be created: www.zakeyu-medical-clinic.org.



Existing clinic



Aerial view of the site for the new clinic building

Projects in Evaluation Phase

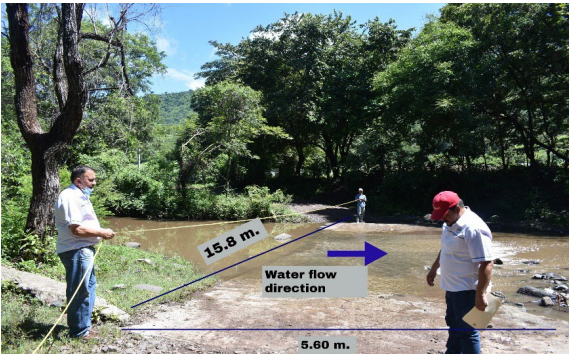
La Cañada, Nicaragua (NIC001)

Purpose	Bridge building
Location	La Cañada, Nicaragua
Since	January 2020
IngOG+ Team	Emmanuelle Sallin, Dionysis Stathas
Partner	EWB USA-Nicaragua: Edrulfo Rodriguez

In cooperation with our partner organization "Engineers Without Borders USA" - Nicaragua Office IngOG+ evaluates a bridge project for vehicles in La Cañada, Nicaragua. La Cañada is a municipality in the district of La Trinidad, department of Estelí, in north-western Nicaragua. The community consists of about 140 inhabitants, whose main economic activity is agriculture.

La Cañada, along with the two neighboring communities, has problems with the road during the rainy season as it is flooded by the river overflow. The river that crosses the site empties into the La Trinidad River. The existing bridge is an underwater bridge that is flooded and impassable during the rainy season. Furthermore, the bridge was severely damaged by the last hurricane, which endangers the safety of users even in the dry season. The residents of La Cañada use the road to transport their agricultural produce to neighboring towns. The street therefore has a great economic impact on local people. During the harvest season, around 6 to 10 trucks full of agricultural produce cross the bridge every day. When the river floods, La Cañada residents have no access to the hospital and school.

The new bridge will mainly serve the three communities of La Cañada, Las Gavetas and Las Tablas. When the proposed bridge is built, approximately 1,500 people will benefit, according to EWB-USA.



On-site survey work



Location of the planned bridge

Projects in Evaluation Phase

Lahaul, India (IND003)

Purpose	Heating system for a school
Location	Lahaul-Spiti district, Himachal Pradesh, Northern India
Since	Autumn 2020
IngOG+ Team	Christoph Schärli, Pascal Rünzi, Johrina Cron
Partner	Helping Humans: Mohammad Nafil, Yowan Williams

In the summer of 2020, IngOG+ got in touch with a young team of engineers from North India, who recently founded the non-profit organization "Helping Humans". This tries to implement infrastructure projects to improve the living conditions of the population in the remote and often cut off villages in the district of Himachal Pradesh (western part of the Indian Himalayas).

In a village in the district of Lahaul & Spiti, which is located at an altitude of more than 3,500 meters above sea level, there is a school building that is heated by existing wood stoves in the classrooms. The problem is that the burning produces a lot of smoke emissions, so the windows have to be opened during school classes and the heat escapes, school classes are restricted by the poor air quality, and the health of students and teachers is endangered. In addition, in the past, the procurement costs for wood often exceeded the school's annual budget, which often meant that heating was not possible at all and school operations were canceled.

The project envisages insulating the building energetically and implementing a heating system that will enable the school to run independently (regeneratively) and functionally all year round.



Classroom with wood stove



View of Himachal Pradesh

Projects in Evaluation Phase

In 2021, several online meetings took place between the "Helping Humans" team and IngOG+. In addition, an exchange to clarify needs took place with the teaching staff of the school. The representatives of "Helping Humans" also did the translation work. A local architect then developed the plan for the future school building.

Due to the pandemic situation, many villages in northern India were inaccessible in 2021 and most schools were also closed. In the coming year, IngOG+ is hoping for financial support for the project from the local government. Once confirmation of this has been received, the project team will plan a trip to the site. A decision on further project implementation is made on the basis of the knowledge gained.

Projects in Evaluation Phase

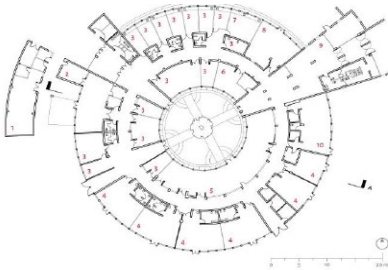
Puente Tierra, Chile (CHL001)

Purpose	Community center for indigenous people
Location	Puente Tierra, Chile
Since	December 2020
IngOG+ Team	Lena Birkhäuer, Andrea Blanco, Christian Aguayo
Partner	ISF Chile, Santiago Mallagray, Gabriela Quintana

The aim of the project is to build a new community center for the Mapuche community in Puente Tierra. The Mapuche form the largest group of indigenous people in south-central Chile. They used to fight against foreign invaders like the Spanish conquerors and before that the Incas. Today, the Mapuches are marginalized and even stigmatized by Chilean society, and they struggle to keep their land and culture alive in modern Chile. Living in communities and being connected to nature and the past is the main way of life of the Mapuche. The intersocial exchange between them and their elders is an important pillar of their society. In this context, their community center is a place where they can gather to discuss internal affairs, celebrate ceremonial traditions, and settle other matters. For 40 years, the community has been gathering in a small place that is no longer suitable for this purpose and is planning a new building.

Christian Aguayo, a Swiss-Chilean architect based in Zurich, launched the project and is in close contact with the president of the Millanao Ancaten municipality. Due to the size of the project, IngOG+ was asked to support him as a partner in planning and implementation. IngOG+ was also able to gain a local partner in “Engineers without Borders Chile” (ISF Chile), who knows the Chilean building laws and earthquake safety requirements and can also support the project team.

The project partnerships are currently being maintained and expanded. Further steps in the project planning depend on the not yet issued confirmation of the developability of the planned property.



Reference of a modern interpretation of Mapuche architecture

Financial Report

Assets

At the end of 2021, IngOG+ had total assets of CHF 62'728.71, which were distributed across our three accounts at Postfinance, PayPal and the cash register.

Assets	2020	2021	±%
Liquidity cash accounts	98.00 CHF	98.00 CHF	±0%
Liquidity Postfinance	106'519.34 CHF	60'739.29 CHF	-43%
Liquidity PayPal	7'192.98 CHF	1'891.42 CHF	-74%
Total Assets	113'810.30 CHF	62'728.71 CHF	-45%

Income

The income consists of donations and membership fees. CHF 11,340 was received as non-specific donations, CHF 41,295 specifically for projects and CHF 4,730 as membership fees. Our biggest contributors with 1'000 CHF and more were:

- LOING AG / Lombardi AG
- Basler & Hofmann AG
- Mobimo Management AG
- Reformierte Kirche Rüslikon
- Anna Maria & Karl Kramer Stiftung
- Gunnar Gärtner
- Alain & Eveline Bidaux
- Hugo Saner
- Gisela Zeller-Steinbrich
- Marianne Dörfel
- Reto Weishaupt

Income	2020	2021	±%
Donations			
Unspecific donations	13'070.00 CHF	11'340.00 CHF	-13%
Donations for project BIH001	29'106.00 CHF	41'295.00 CHF	+42%
Donations for project KEN002	2'184.00 CHF	0.00 CHF	-100%
Donations for project NPL004	1'600.00 CHF	0.00 CHF	-100%
Membership fees	9'845.27 CHF	4'730.00 CHF	-52%
Total Income	55'805.27 CHF	57'365.00 CHF	+3%

Financial Report

Expenses

A significant part of the expenses were used for the completion of the construction project in Bosnia (BIH001). The detailed expenses in 2021 are made up as follows.

Expenses	2020	2021	±%
Project expenses			
BIH001	104'052.90 CHF	105'828.01 CHF	+2%
PRY001	1'200.00 CHF	0.00 CHF	-100%
KEN002	6'024.44 CHF	0.00 CHF	-100%
NPL004	1'766.57 CHF	0.00 CHF	-100%
Operational expenses			
Evaluation trips	4'007.01 CHF	2'224.14 CHF	-47%
Administrative costs	1'322.18 CHF	1'286.74 CHF	-3%
Total expenses	114'366.09 CHF	109'338.89 CHF	-4%

Return/Loss

A loss of CHF 51,973.89 was recorded for 2021, 11% less than 2020. The years 2020 and 2021 were characterized by the high project costs of the Bosnia construction project (BIH001).

Return/Loss	2020	2021	±%
Total Income	55'805.27 CHF	57'365.00 CHF	+3%
Total Expenses	114'366.09 CHF	109'338.89 CHF	-4%
Total Return/Loss	- 58'560.82 CHF	- 51'973.89 CHF	-11%

Financial Report

Starting balances

- **Project Bosnien (BIH001)**

BIH001 Starting balance 2021	67'927.33 CHF
BIH001 Expenses	- 105'828.01 CHF
BIH001 Revenues	+ 41'295.00 CHF
BIH001 Unspecific donations	+15'000.00 CHF
BIH001 Starting balance 2022	18'394.32 CHF

- **Project Paraguay (PRY001)**

PRY001 Starting balance 2021	5'723.06 CHF
PRY001 Expenses	0.00 CHF
PRY001 Starting balance 2022	5'723.06 CHF

Assets and Reserves

- Overview of **undesignated reserves**

Starting balance 2021	39'959.93 CHF
Member fees	4'730.00 CHF
Unspecific donations	11'340.00 CHF
Donation BIH001	- 15'000 CHF
Administrative costs	- 1'286.74 CHF
Internal Events	- 95.30 CHF
Evaluation trips (IND002)	- 2'128.84 CHF
Starting balance 2022	37'519.05 CHF

The allocations (opening balance sheets and liabilities) correspond to the total assets.

	2021	2022	±%
Starting balance BIH001	67'927.33 CHF	18'394.32 CHF	-73%
Starting balance PRY001	5'723.06 CHF	5'723.06 CHF	±0%
Starting balance NPL004	0 CHF	0 CHF	±0%
Starting balance KEN002	0 CHF	0 CHF	±0%
Starting balance reserves	39'959.93 CHF	37'519.05 CHF	-6%
Liabilities	200 CHF	1092.28 CHF	+446%
Total Assets	113'810.32 CHF	62'728.71 CHF	-45%

Financial Report

Summary and Outlook

In 2021, the IngOG+ project team's evaluation trip to Ladakh, North India was funded by the uncommitted reserves. The amount of around CHF 38,000 as an unrestricted reserve exceeds the expected target of around CHF 20,000. IngOG+ continues to be in a financially comfortable situation. With the ongoing projects in Bosnia, Ladakh and Malawi and the end of the pandemic, we expect an increase in activities in 2022. IngOG+ will continue to support projects as an association in the coming year if they cannot raise all the financial means through project-specific donations. The Board of Directors will decide on the use of such related support and expenses.

Events

In 2021, IngOG+ was able to hold several events and thus strengthen club life. There was a summer barbecue, an autumn hike and a Christmas party at the Christmas market.



BBQ



Hike



Christmas market

Thank You

IngOG+ would like to thank all motivated and energetic, **active members** for their engagement in 2022. We look back on a successful continuation of our projects and on new commitments. Thanks to the commitment of everyone, we continue to work on a purely voluntary basis and can use almost all of the donations and grants for our projects.

Furthermore, IngOG+ would like to thank all **donors** who make our work and projects possible through generous financial contributions.

Many thanks to our numerous **passive members and supporters**, whom we can always count on and who ensure our association and project work with their support.

This year, IngOG+ would particularly like to thank the Kramer Foundation, the magazine MØdulor and Giuseppe Mastrodomenico for their commitment and support.



On behalf of the entire Board,

Andreas Wende
President

Zurich, 28. Februar 2022