

GlobalHumanitarianLab

Enabling bottom-up innovation powered by people, partnerships and networks



A partnership to incubate,
make and accelerate innovation
to address humanitarian needs

May 2016



incubate :: make :: accelerate



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Introductory note: the future of bottom-up humanitarian innovation is present

About six months ago ICRC and UNHCR triggered a growing flurry of activity and interest around the idea of a Global Humanitarian Lab. The energy was targeted at building momentum and buy in for two simple ideas:

1. The humanitarian sector and humanitarian disaster affected populations have yet to benefit from the same innovation and efficiency boosters that the digital revolution, new business models and bottom-up innovation have generated through successful developments in the private sector.
2. As representatives of the humanitarian sector agreeing to work on collective challenges we are inspired by the principle that together we can achieve more and better.

The idea of a Global Humanitarian Lab got sticky and attracted supporters, big and small, from all sectors, thrilled by the potential of change and the opportunities to leverage.

A few days ago the Global Humanitarian Lab idea got real, the partnership is now created thanks to our partners. We used to talk about the Global Humanitarian Lab and its activities in a tentative and cautious future tense. Now we can change this conditional attitude to reality. In this document the future of bottom-up humanitarian innovation is present. True, we have a lot to deliver yet, however since the Global Humanitarian Lab partnership is now live, we have the space to make it happen together.



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Global Humanitarian Lab, 22nd May 2016

Executive summary

The Global Humanitarian Lab (GHL) is a partnership of organisations coming together to work on common challenges in order to rationalise resources and ultimately accelerate the adoption of solutions fit for purpose resulting from an innovation process with at its centre the affected population.

The Global Humanitarian Lab envisions more efficient, effective and sustainable humanitarian action as a result of a forward-thinking, locally-driven, and globally integrated ecosystem in which innovation can flourish.

The mission of the GHL partnership is to work together by putting knowledge, agency, and tools in the hands of anyone affected by humanitarian challenges. It will foster a holistic, user-centred, open approach to innovation as a means of overcoming barriers faced by affected populations in their daily life and humanitarians in their daily work.

The GHL with its incubator, fab lab, and accelerator pillars functions as an enabler for humanitarian solutions. The GHL addresses challenges from humanitarian organisations that rise from affected populations' needs. It partners with the public- and private-sector and other networks to leverage the capacity of the local and global crowd.

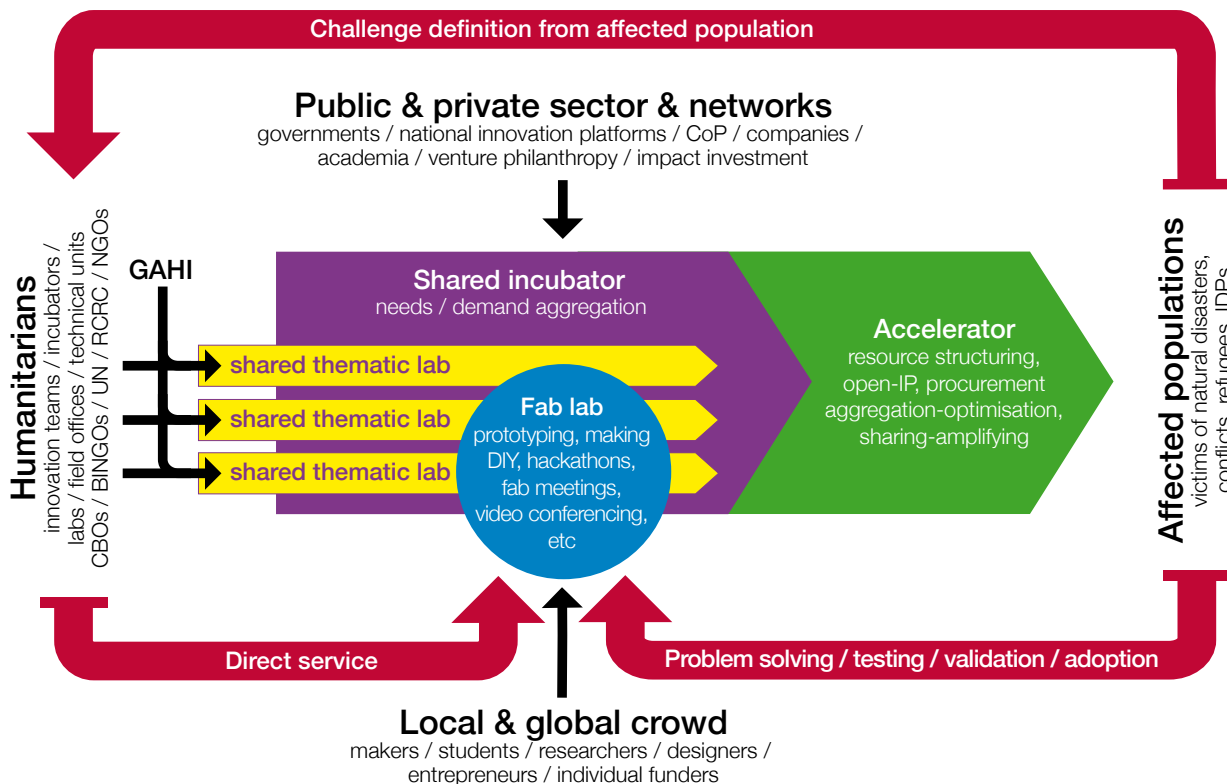


Figure 1. GHL ecosystem

Initiated originally by International Committee of the Red Cross (ICRC) and United Nations High Commissioner for Refugees (UNHCR) and joined by other Founding organisations including Handicap International (HI), Terre des Hommes (TdH), World Food Programme (WFP) and with the support

of Médecins Sans Frontières (MSF) along with founding governments (Swiss and Australian) the GHL is powered by networks of partnerships between affected populations, leading humanitarian organisations, researchers, private sector actors, technology enthusiasts, and governments.

In addition to the above mentioned founding partners, the initial list of supporter includes:

- Belgian Red Cross - Center of Evidence-Based Practice (CEBaP)
- Canadian Red Cross
- Catalyx
- Centre for Bits and Atoms at MIT
- CHIC
- Civic
- DLA Piper UK LLP
- EPFL College of Humanities
- Fab Foundation
- Field Ready
- Geneva Creativity Centre (GCC)
- Genève Design
- Hunt Consolidated
- IKEA Foundation
- Impact Hub Geneva
- IoT Bangalore
- London School of Hygiene & Tropical Medicine - Public Health in Humanitarian Crises Group
- Mass Challenge
- Pangloss Labs
- Permanent Mission of Estonia
- RCRC Climate Centre
- Redline at EPFL
- Social Solutions Research association
- Standby Task Force
- swissnex Boston
- swissnex China
- swissnex San Francisco
- Tent.org
- THE Port
- Ultimaker
- University of Geneva
- UNOG
- UPS Foundation
- Vodafone Foundation

Envisaged as “key node in a network of networks” the GHL mobilises and brings together the collaborative energies of innovators, whether they be refugee entrepreneurs, computer scientists, or digital volunteers, to ideate, design, test, and implement solutions, as varied as, for example, 3D printed solutions, information management solutions, or new operational models and ways of doing business.

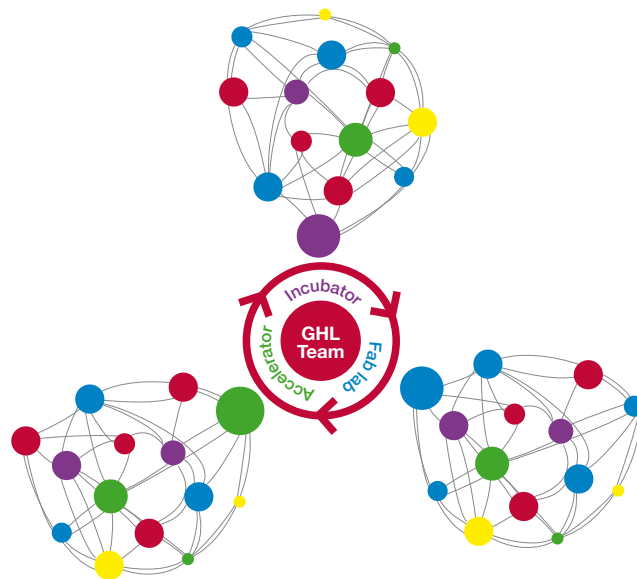


Figure 2. GHL is a network of networks

While very much a hands-on and active entity, the GHL doesn't duplicate or replace the efforts of its partners. Instead, it provides critically needed bridging, brokering, resource mobilisation, and knowledge exchange functions to the humanitarian innovation ecosystem at various stages of the innovation lifecycle.

Context

The world is witnessing extraordinary humanitarian situations affecting millions of people. There are more than 60 million refugees and forcibly displaced today, a number not seen since WWII. Due to the lack of political solutions, refugees are staying in forced displacement for an average of 20 years. Around 200 million people are affected each year by natural or manmade disasters.

These rising numbers, however, only capture part of the challenge. The context of humanitarian work, and thus the scope of operations, is qualitatively shifting. Changing and interrelated drivers of crises coupled with longer time horizons mean that we can expect increasing complexity in tandem with decreasing capacity in the years to come.

In this context, humanitarian actors are being asked to “do more with less.” The system is expected to address prolonged displacement, fill gaps in social safety nets, promote preparedness, cope with urban violence, and face climate-driven crises. While needs are skyrocketing resources to address them are not, creating significant shortfalls.

In view of this situation, the Secretary General of United Nations has called for a World Humanitarian Summit to be held in May 2016 to explore, through a process of global consultations, new ways to tackle these historical problems and offer affected populations more dignified and appropriate solutions while optimising resources, reducing possible duplication of efforts, encouraging innovation and harnessing the private sector best practices in order to create efficient and sustainable responses.

The pace of change is accelerating, creating opportunities in the most remote places in the world. The humanitarian sector needs to be able to harness the transformative nature of these opportunities for with and by affected populations.

Advances in information communication technologies allow people all over the world—regardless of geographical proximity—to collaborate, in real time, on humanitarian issues, while the democratisation of production is offering a rich environment for “hacking” together and rapidly testing solutions on site. New collaborative models (digital fabrication, maker movement, DIY, the crowd, hackathons and makeathons) are offering up new approaches to addressing humanitarian and innovation challenges.

Innovation within the humanitarian sector has grown since 2009 with the emergence of innovative humanitarian initiatives, with UN agencies and NGOs dedicating staff to the development of innovation labs, grant programs, and other activities. Humanitarian innovation has also grown to include actors from outside of the traditional humanitarian sector, including business, entrepreneurs, and the academic community, amongst others.

Despite this progress, the current humanitarian system as a whole suffers from duplication of activities and investments, risk averse approaches, resource constraints at different stages of the innovation pipeline, budget rigidity and inflexible procurement rules, and a lack of a system-wide agenda with regard to the types of issues needing to be addressed and to bring innovation to scale.

To overcome these structural barriers to innovation, the humanitarian system needs to adopt a holistic approach to innovation, one that can crowd in non-traditional humanitarian actors (such as the private sector, academia, digital volunteer and technical communities, and affected populations themselves as innovators) and provide the systemic resources necessary to foster innovation-enabling environments.

It is in this context that a Global Humanitarian Lab (GHL) is being envisaged to offer practical ways to incubate, fabricate, prototype and accelerate innovative solutions for and with the affected populations.

The GHL is a key node in a network of networks and a partnership of leading humanitarian organisations, governments, academia, public and private-sector entities, and other interested parties. Its three main pillars, incubator, fab lab, and accelerator, work together to overcome challenges related to a lack of bottom-up, user-centric design and incorporation of local knowledge into the design and delivery of solutions. The GHL catalyses a shift from “delivery” to “facilitation” oriented approaches by empowering local communities to solve their own problems. And the partnership will together overcome problems related to the scaling up of innovative solutions.

The GHL is a service and action oriented entity with a local and global reach benefiting the humanitarian sector and affected populations to facilitate the development of new or more efficient solutions to shared problems.

Bottom-up innovation with new forms of collaboration

With new forms of collaboration, the sector might strive for more meaningful bottom-up engagement. Through the digital (fabrication) revolution, humanitarians can empower communities to solve their own problems. And by ensuring context appropriate solutions and aggregating demand in global innovation marketplaces, solutions that work can be brought to scale.

Despite some efforts to engage the capacities of crisis affected communities, much humanitarian innovation remains focused on improving organisational response at the expense of bottom-up innovation. As such, the humanitarian system so far lacks a good model of facilitating and nurturing innovation by refugees and other crisis-affected communities, missing the enormous potential of these communities. Amidst political insecurity, social discrimination, financial loss, and psycho-social trauma, for example, many refugees and displaced populations show great resilience and often bring a diverse set of skills, experiences, and motivations to bear for not only finding new ways to solve their own problems, but also often contributing to their own communities.

Research on user-centric design and participatory methods provide approaches that build on the capacities of affected populations. These approaches should be welcomed in humanitarian contexts: users have a high incentive to innovate, have the best understanding of the challenges they face, and represent a powerful source of innovation. For these reasons, there is increased potential for sustainable solutions to emerge and for widespread adoption and diffusion where ideas originate from the user's context and community.

Recent trends, especially around social networking and internet-enabled communications have amplified the importance and proliferation of user innovators, leading to the growing movement toward mass customisation and co-creation with users.

Open-innovation, referring to the rapid acceleration of an established trend around distributed sources of knowledge, offers additional potential in the humanitarian space. New actors and increased connectivity have fundamentally transformed the innovation landscape, and to be successful, organisations will need to break through knowledge silos and exchange ideas and frameworks between different disciplines and sectors.

Such practices are already underway through new ways to organise collaboration. The fab lab movement, maker spaces, communities of practices, entrepreneur and innovation hubs together with companies and academic centres are the new fabric of a transformed modern world where solutions based on the human centred design principle are emerging more rapidly and with higher impact. But this is also about the change of business models represented by the DIY (Do-It-Yourself) movement and the hackathons and makeathons initiatives. For instance, the first ICRC makeathon held in India and online for 60 days at the end of 2015 has generated ground-breaking low cost solutions for the disabled. Through a hackathon organised by the THE Port association at CERN in 2015, ICRC in partnership with Social Solution Research Association (SSRA) has designed a new body bag which is now entering into an acceleration phase.

The humanitarian sector needs to be able to leverage local, regional and global know-how and provide a way for the Crowd to effectively participate in the design of solutions. However, the sector has not yet fully engaged to harness the fruits of these new organisational models and opportunities created by the Crowd. How could the humanitarian sector overcome these barriers and harness newly emerging opportunities?

Enable Makeathon

Co-Creating for Accessibility



Over the course of a 60-day program, the ICRC brought together engineers, designers, makers, investors, and people with disabilities to prototype frugal solutions to accessibility challenges in rural India. The three winning prototypes were: a sitting/standing modular wheelchair for children with cerebral palsy; an outdoor attachment for wheelchairs to facilitate movement across distances; and a low-cost, energy-storing prosthetic foot. The event produced 15 products that the ICRC hopes to replicate and scale.

More info: www.enablemakeathon.org

crowdsourced

Empowering communities through the digital fabrication revolution

The humanitarian community, through globally adopted strategic change agendas articulated through the World Humanitarian Summit and elsewhere, is coming to grips with the need to re-define how we frame displaced communities and how we situate the work we do. Humanitarian actors are shifting from top-down, delivery-based, and beneficiary-centric dominant models towards an interoperable, bottom-up, facilitation oriented response. As such, humanitarian actors are having to learn how to leverage the comparative advantage that new, non-traditional actors (including affected communities) can offer, requiring entirely new strategic thinking that abandons “delivery based approaches” in favour of new models of facilitation.

Such frameworks advocate for participatory, enabling, and empowering approaches that reinforce, not replicate, existing local capacities and coping strategies so that humanitarian organisations can see the whole picture and “enter with an exit.”

Advancements in information communication technologies and innovation management techniques have the potential to operationalise such frameworks into action. For example, digital fabrication technologies and remote manufacturing approaches empower people to design and fabricate customised solutions (products and services and even new processes) when and where needed, challenging traditional supply chain models, customising solutions to meet specific community needs, and empowering communities to solve their own problems. Not only are humanitarian operations supported through an increase in production speed, fabrication quality, and choice of material and local procurement, but such approaches are context-appropriate and sustainable.

As reported by the World Economic Forum, the Fourth Industrial Revolution presents incredible opportunities for humanity. For example, objects can now be downloaded from specialised databanks and printed in the field in matter of hours and even minutes. 3D printing technology can be also explored to construct temporary buildings in the aftermath of an earthquake by recycling damaged materials and using them to print new structures. From use of drones for field delivery to 3D printing, from cloud-driven crowd-based jobs to optimising supply chain with private sector best practices, and from the use of augmented reality software to smart home technology and wearable technologies for remote based monitoring, the possibilities seem endless.

However, it is clear that the humanitarian sector has not yet fully leveraged the formidable potential that digital age represents. The Fourth Industrial Revolution presents an opportunity to catalyse systemic change through rapid prototyping of solutions in the Field, stimulating the creativity of affected communities and humanitarian workers to create solutions fit for tackling the effects of disasters. This revolution coupled with the mobile revolution and access to connectivity are creating the conditions for empowering affected populations in a way not possible before. How will the humanitarian sector take advantage of this?

Scaling innovation through aggregation of demand and context-appropriate solutions

The scaling of appropriate evidenced solutions is hampered by barriers (low tolerance for risk, budget and procurement rigidity) that are inherent to the humanitarian sector (lack of demand aggregation for specific solutions of the various humanitarian actors resulting from missing opportunities as economy of scale and inappropriate price point) in tandem with the complexity of applying innovative products, services, and processes to diverse local contexts.

Recent research illustrates how the full complexity of the Scaled Up solution (part of the Missing Middle, the space between the conclusion of a pilot program and ultimate wide-scale adoption and optimisation of an established program) is not yet understood: while the Pilot phase harnesses speed, flexibility, and agility to simplify problems, during Scaling Up, a very different system is at work as complexity acts as an obstacle to developing value creation that works in the real world.

In addition to this, the humanitarian system as a whole suffers from duplication of activities and investments, resource constraints at different stages of the innovation pipeline, and a lack of a system-wide agenda with regard to the types of issues needing to be addressed and to bring innovation to scale.

The private sector in general does not regard the humanitarian sector as an opportunity for investment given the entry barriers: fragmentation of the actors (where to start? who to partner with?) and lack of demand predictability coupled with a lack of guaranteed uptake limiting the R&D investment in the humanitarian sector. The budget rigidity of most organisations and the perceived short term nature of emergencies have left the humanitarian sector ill-equipped for dealing with investment in R&D, large scale procurement and consequently unable to develop solutions and bringing them to scale.

Better Shelter

Accelerating an innovative temporary shelter solution for women and children



The humanitarian sector has been working to improve emergency shelters for decades, yet plastic sheeting and tents remain ubiquitous. Better Shelter is set to change this. Better Shelter is unlike the top-down solutions that have come before it because affected populations were at the heart of the design process. Some 90% of its original design was changed during testing and consultation.

The result is a better emergency shelter that is proven to provide safety, dignity and comfort – in particular for women and children. This innovative solution is ready for acceleration. Economies of scale must now be harnessed to help balance its up-front costs against its significantly longer lifespan, and to ensure that humanitarian needs are better met across humanitarian response. Originally incubated by UNHCR, Better Shelter is now being trialled by ICRC and MSF in the field for deployment in their respective operations.

More info: www.bettershelter.org

scaled-up

Vision

The Global Humanitarian Lab (GHL), a partnership of leading humanitarian organisations working together to tackle common challenges, envisions more efficient, effective and sustainable humanitarian action as a result of forward-thinking, locally-driven, and globally integrated ecosystem in which innovation can flourish.

Mission and Operational Strategy

The GHL partnership works together by putting knowledge, agency, and tools in the hands of anyone affected by humanitarian challenges. It fosters a holistic, user-centred, open approach to innovation as a means of overcoming barriers faced by affected populations in their daily life and humanitarians in their daily work.

It enables this by building partnerships inside and outside the humanitarian sector to incubate, make and accelerate innovation to address humanitarian needs.

Foster humanitarian innovation

First and foremost, the Global Humanitarian Lab is geared towards enabling and fostering humanitarian innovation through digital networks and using digital fabrication technologies. This is the 'raison d'être' and the hallmark of the Global Humanitarian Lab. Through its rooting in the humanitarian community, the GHL's activities specifically have a humanitarian focus, addressing its needs and challenges. This hallmark also supports and enables the following two aspects of its mission: empowering communities and supporting humanitarian operations.

Note that the Global Humanitarian Lab is also an engine to stimulate innovation in the humanitarian sector by bringing innovation out of the organisational boundaries into an open innovation ecosystem. In the private sector Open Innovation has long been adopted to be able to take steps forward.

Empower communities

The Global Humanitarian Lab enables and encourages affected populations, social entrepreneurs, small businesses, and digital volunteer communities (the crowd) to become involved in crafting innovative solutions to humanitarian challenges, in some cases their own challenges, to develop new solutions and to adapt solutions that have been successfully implemented elsewhere.

The GHL aims to facilitate access to learning or discovering digital fabrication and related technologies. These new technologies and fabrication capacities can contribute to local people designing and making products appropriate to contextual needs, develop new livelihood skills, knowledge transfer and other creative opportunities. Community empowerment contributes to resilience and overall sustainability of solutions.

Support humanitarian operations

The digital fabrication capacities are constantly evolving towards an increase in production speed, fabrication quality, choice of material and local procurement. The Global Humanitarian Lab aims at supporting humanitarian operations, by working with the technical and innovation units, with up to date and practical advice on technology and workflow choices (for example on using digital fabrication to improve supply chain efficiency).

The GHL also helps design and make products that include design inputs from users, and allow for local adaptability. Solutions that are developed by local communities have a greater chance of being truly appropriate and therefore have a greater chance of being maintained and build the resilience of communities to multiple hazards.

Key pillars

The Global Humanitarian Lab has three pivotal activities powered by the innovation process: incubator, fab lab and accelerator. The GHL is a partnership of leading humanitarian organisations to combine and rationalise the use of resources to develop new or more efficient solutions to shared problems. It is also a partnership with governments, academia, public- and private-sector, networks, and other interested parties.

The GHL is established in Geneva as the birthplace of the humanitarian movement. It is an agile and nimble inter-agency structure plugged into the humanitarian, innovation and industrial eco-systems of Geneva and the world.

The GHL first leverages the unique set of public and private entities located in Geneva-Lausanne area together with the rich humanitarian network based in Geneva; in parallel it is a truly open and global oriented entity leveraging the national innovation networks, communities of practice, the crowd, entrepreneurs, venture capital and philanthropy.

The GHL starts small in order to prototype activities for the first year of operation, to fine tune its business model and its offering with the ambition to be a truly global entity leveraging the affected populations, the Crowd, companies, academic centres and venture funders.

GliaX

3D printed stethoscope



A fully functional stethoscope composed of a few 3D printed parts (in red) and some easy to source materials like a few centimetres of tubing, a cut out from a report cover for the membrane and a rubber band to fix it on the 3D printed head. The ear plus are cast of plumber's sanitary silicone in a 3D printer mould. The pieces are printed on an open-source 3D printer. The complete stethoscope costs less than 5USD to fabricate and it is a welcome tool for doctors in a part of the world where even procuring stethoscopes is almost impossible.

More info: www.github.com/GliaX

Do-It-Yourself

Incubator

The GHL is organised around shared thematic labs grouping common challenges experienced by affected populations and humanitarians in the Field. The GHL is a safe place to incubate new solutions through rapid prototyping, testing and iteration. Where appropriate, incubator functions are embedded in partner organisations as a more appropriate environment for effective solutions to emerge, that is as close to the challenge as possible. One of the first projects of the GHL will be to create the Humanitarian Innovation Kit (a minimal but expandable kit) for large distribution to field operations.

Fab lab

The GHL fab lab is one node of the global fab lab network created by the MIT Center for Bits and Atoms and coordinated by the Fab Foundation and the broader maker movement. As such and with its deep roots in the humanitarian sector it plays a pivotal role in connecting the humanitarian needs with the global maker Crowd.

Central to the GHL, its fab lab represents a unique structure open to humanitarian staff and affected populations alike, enabling them to work on solutions, test solutions and exhibit interesting new products, services, systems or business models. This will be happening physically in Geneva and virtually around the world.

The fab lab is established in accordance with the movement governed by the Fab Foundation. In line with the MIT fab lab standard, the GHL fab lab will be an interactive place featuring:

- Rapid prototyping equipment like 3D printers, laser cutters, open source electronics, etc.
- Creative space for design activities, hackathons and makeathons.

This humanitarian fab lab adapts to the context and the specific needs of affected communities and humanitarian actors in the Field.

Accelerator

The concept of accelerator is already prevalent in the private sector and in particular in Silicon Valley. The function of the accelerator is to help the sector move beyond pilot projects and achieve scale for evidence based solutions. The GHL takes an inclusive approach to help address the bottleneck of pilot innovations and produce concrete outcomes beyond the sector's current innovation capabilities by rethinking traditional funding models, developing or partnering for large scale productions, supporting distribution channels to reach countries affected by humanitarian emergencies enabling procurement aggregation and providing scaling coaching to organisations.

Facilities

The Global Humanitarian Lab features the following facilities:

- Humanitarian fab lab and maker space with standard digital fabrication equipment;
- Video conferencing room: for virtual interactions with field (affected populations and agencies);
- Web platforms: GHIL website, online platform of curated humanitarian open source products, crowd ideation platform;
- Thematic Labs space;
- Accelerator space.

Fundamentals

The Global Humanitarian Lab aims to be a nimble, agile, rapid, open organisation geared towards outcomes for the affected populations. The fundamental characteristics of the GHIL are grouped under Functions, DNA, Process, Output and Outcomes.

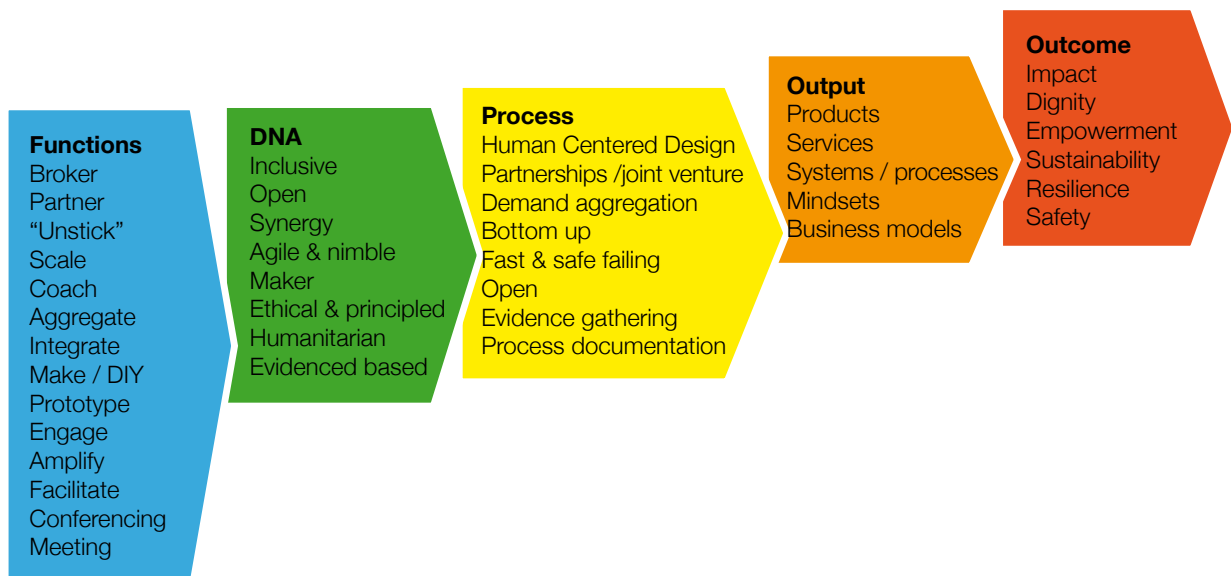


Figure 3. Fundamental characteristics of the GHIL

A “better body bag”

A hackathon’s forensic solution



During THE Port humanitarian hackathon at CERN (in 2014), the International Committee of the Red Cross (ICRC) set the challenge for a new body bag design to better identify victims of natural disasters and war. The Social Solutions Research Association (SSRA) took on the challenge. The new design is lighter than existing models. It preserves bodies longer and it contains odours. A field test is scheduled for 2016. The partnership between ICRC and SSRA resulted in an affordable solution that will aid post-mortem identification. It protects the dignity of victims, and potentially provides more families with closure.

More info on SSRA: <http://www.socialsolutionsresearch.com>

crowdsourced
& scaled-up

Workplan overview

Under its three strategic pillars (incubator, fab lab, accelerator) the Global Humanitarian Lab delivers specific, tangible outcomes through projects, such as geographical, thematic or community specific projects. Projects are comprised of a number of tasks undertaken by each of the contributors within the GHL workplan.

Consultations

The Global Humanitarian Lab team serves its community through the guidance of the weekly Steering Committee attended by the heads of innovation units of the respective humanitarian organisations.

The GHL undertakes periodic consultations with its partners as well as other actors in the humanitarian innovation ecosystem through surveys, action-field research, interviews, and collaborative workshops. These consultations serve as the basis for identifying and prioritising the activities of the GHL, for example, determining Thematic Labs, or identifying course corrections of our Activities.

Convening a humanitarian innovation forum

As a key node in a network of networks the Global Humanitarian Lab plays a convening role and establishes a multi-stakeholder dialogue connecting practitioners, humanitarian makers, humanitarian organisations, corporate supporters and communities in need of support.

This humanitarian innovation forum is an opportunity to discuss challenges, solutions developed and lessons learned and so-called best practices identified. The forum extends online.

Platforms

The GHL provides critical brokerage and exchange roles by fostering a humanitarian innovation “marketplace”, whereby those facing challenges (consumers) can be connected to problem solvers (producers), whether they be refugees, humanitarian field staff, or social entrepreneurs (see solutions mobiliser below).

The GHL facilitates the sharing of curated, tested and well documented open-source humanitarian solutions (think water supply solutions, medical consumables, and spare parts, etc.) for self-use by the humanitarian community and anyone who can benefit from it (a person with disabilities or their support person; a humanitarian worker in the field; a person in a refugee camp with access to connectivity and adequate tool set, etc.). Testing procedures and protocols are provided when appropriate to provide quality assurance.

Thematic labs

In the first year the Global Humanitarian Lab supports the creation of up to six Think Tanks which will form the basis for the creation of Thematic Labs. The Thematic Labs are envisioned as grouping mechanism of projects around unifying themes, whereby priorities are set by the needs of affected populations and humanitarian operations determined through action research and partner consultations. Each lab will be led by a Lab Manager.

Toolkits

The Global Humanitarian Lab empowers non-traditional actors to solve humanitarian challenges by introducing conceptual frameworks as well as technology-powered out-of-the-box toolkits, whereby affected populations, students, engineers, and field workers can ideate, design, and test solutions using the latest digital fabrication, information management, and cloud computing tools and technologies.

For example, the development of a Humanitarian Innovation Kit will offer a field oriented solution intended both for rapid deployment and remote locations, a balanced set of conceptual innovation tools and frameworks, as well as digital fabrication tools, power tools and traditional craft tools, to support affected populations and humanitarian actors.

Collaborative spaces

Affected communities and humanitarian workers can benefit from the Global Humanitarian Lab's "intermediary" and "facilitation" roles, as the network provides digital and physical entry points for refugee entrepreneurs, teachers, scientists and specialists to gain meaningful access to spaces that allow for locally-driven problem identification, ideation, design and production of innovative products, services, and processes.

The GHL works to establish regional "satellites". Initial locations considered include the Innovation Lab in the logistics hub of the International Humanitarian City in Dubai, Kigali and other field locations which leverage partnerships and structure overlays. These GHL satellites enable humanitarian workers and affected communities alike to benefit, access and participate meaningfully in GHL supported activities.

Solutions mobiliser

The Global Humanitarian Lab fills critical humanitarian innovation knowledge gaps by continuously gathering evidence, developing standards, and transmitting knowledge about best practices and processes for humanitarian innovation. The GHL will provide models, guidance protocols, and other approaches for innovative practice that might be adopted or adapted for crisis contexts.

Connect and expand networks

The Global Humanitarian Lab works with existing networks to integrate and coordinate activities and leverage the existing ideation and local “making” capacities provided by these networks. For example, thanks to a partnership with the Fab Foundation the GHL is connected from day one with the inventors and makers of the existing fab lab network (comprising approximately 1,000 globally distributed fab lab instances by May 2016). Similarly, partnering with the Impact Hub network (incubators of social enterprises) provides the GHL with access to a global community of budding social entrepreneurs.

Structure

The Global Humanitarian Lab’s strength lays in its numbers: an initial Declaration of Interest meeting held at the ICRC headquarters on 12th February 2016 resulted in the establishment of the GHL partners and supporters network.

Initiated as a collaboration between ICRC and the UNHCR through a joint letter between the International Committee of the Red Cross (ICRC) President Peter Maurer and UN High Commissioner for Refugees (UNHCR) Filippo Grandi, the GHL now boasts over 36 entities from the humanitarian sector, government, private sector, academia, and social philanthropy, which have encouraged the GHL project Steering Committee to pursue the creation of the GHL, and pledged to support it.

The GHL has been created as a hybrid organisation modelled after the GAVI or other UNOPS hosted partnerships in order to provide the necessary flexibility to come up with solutions to unstick organisations trying to incubate or scale solutions.

The GHL started with a small core group of supporters from governments, organisations and the private sector in order to remain manageable with a skeleton staffing (with volunteers or donated time). Since it’s been recently launched, the GHL will now open up to more partners and activate the various support groups such as the partnership and advisors groups.

Legal entity creation

Under the leadership and guidance of the Global Humanitarian Lab Steering Committee and thanks to the support of the Swiss and Australian governments and many other partners, the Global Humanitarian Lab is now established under a partnership program hosted by UNOPS. For the Global Humanitarian Lab, UNOPS will perform the back office functions, inclusive of human resources management, fiduciary management, procurement and travel.

Governance

The GHL is governed by two entities:

- Governing Board (composed of a high-level manager from each founding partner and founding entities/partner).
- Steering Committee (an agenda-setting entity composed of heads of innovation of the humanitarian organisations).

The GHL is supported by:

- Advisors (a technical support entity composed of recognised experts from communities of practices).
- Partnership Committee (composed of one representative from each of our Partners).

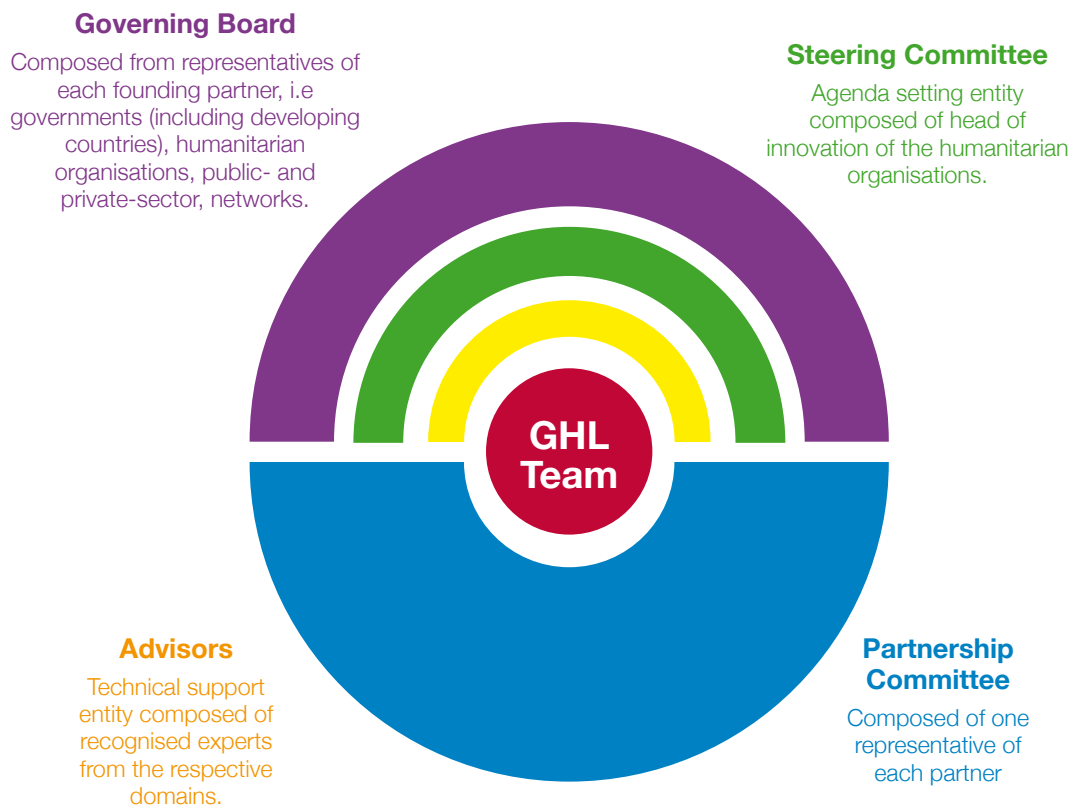
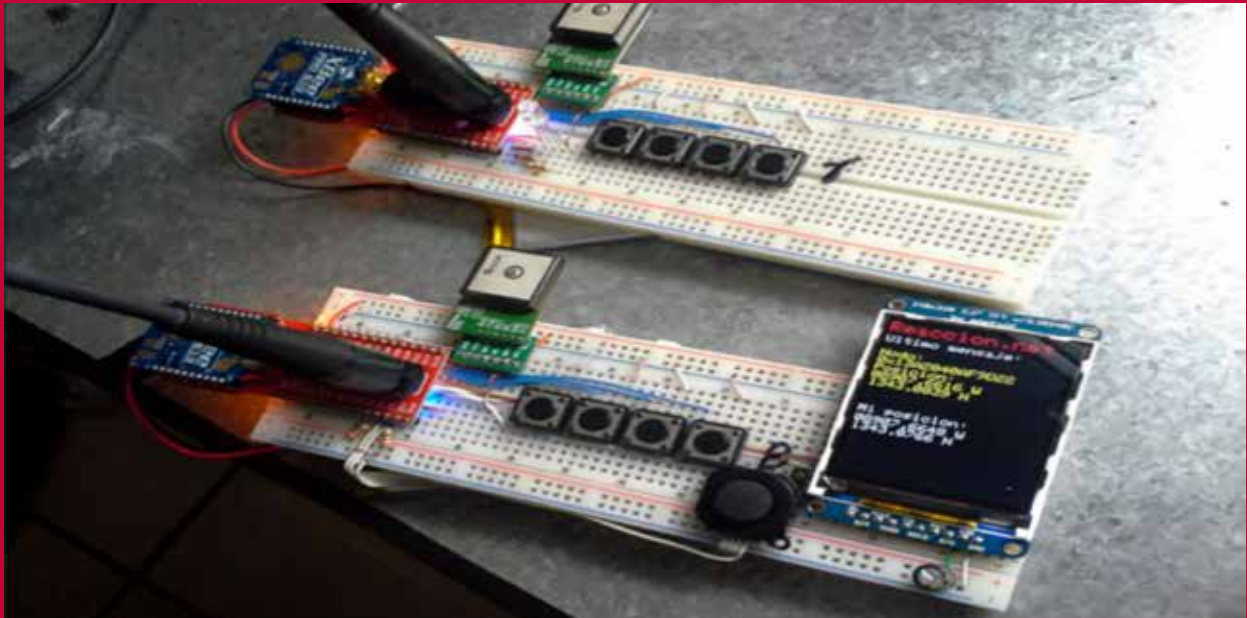


Figure 4. GHL governance structure

“Red de Acción Comunitaria”

An open-source early warning system



Developed and supported by fab labs in San Salvador the solution is fully open-source and can be assembled using inexpensive electronic components. The system creates a network that connects villages, allowing them to alert each other to dangerous meteorological conditions through a standard colour code that signals the level of risk. The system also registers the temperature, acts as a seismograph (thanks to an accelerometer), and includes the option to connect to other data capture devices. Each device includes radio, wi-fi and cellular GRPS antennae.

More info: www.reaccion.net

open-source

Governing Board

The highest governing entity of the GHL is the Governing Board which is constituted of:

- Founding governments
- Founding organisations
- Private sector & venture philanthropy
- Open seat Board members
 - » Academia
 - » Social entrepreneurs & innovators
 - » Selected governments

The Governing Board has the responsibility to set strategic direction, provide oversight and guidance, and approve budgets.

Steering Committee

The Steering Committee is constituted of the head of innovation unit of the founding humanitarian organisations. The goal of the Steering Committee is to set the agenda of the Global Humanitarian Lab, ensure its relevance vis-a-vis the founding humanitarian organisations and the affected populations, prioritise the work of the GHL team. The Steering Committee may decide to invite additional heads of Innovation unit from other humanitarian organisations (national or international) to enrich the dialogue and ensure the largest possible representation of the sector inclusive of affected populations.

The Steering Committee meets on a weekly basis in Geneva with the possibility of joining virtually using online meeting tools. It produces weekly key action and take away points to be captured on any jointly chosen collaborative cloud based tool in order to facilitate the dissemination of information and ensure transparency for the Steering Committee members.

GHL Advisors

The Global Humanitarian Lab enlists the support of technical advisors to help guide the work of the GHL and represent a vast array of competencies, perspectives and situations.

The GHL Advisors are chosen based on proven technical knowledge vetted by their respective field of expertise. The GHL Advisors are asked to participate to key meetings and webinars during the year as well as provide advice on ad hoc basis at the request of the GHL team.

Partnership Committee

The Partnership Committee has initially been constituted by the entities which have pledged their support during the 12th February “Declaration of Interest” meeting held at ICRC HQ in Geneva. Since then additional partners and supporters have joined. The GHL team will continue to seek partners ranging from academia, social innovators, entrepreneurs, venture philanthropy, or other relevant entity that will contribute to the work of the GHL. The Partners are expected to contribute to the GHL either in cash, in-kind and/or in collaboration opportunities.

Project execution: GHL Team

The Global Humanitarian Lab aims to remain an agile and small entity, fit for purpose, leveraging existing capacity and mobilising partners. The GHL Team through its CEO reports to the GHL Governing Board. Under the hosting agreement with UNOPS the GHL will pay for a percentage of staff time to carry out the function of fiduciary management, human resources management (recruitment, entitlement, etc.), procurement and travel.

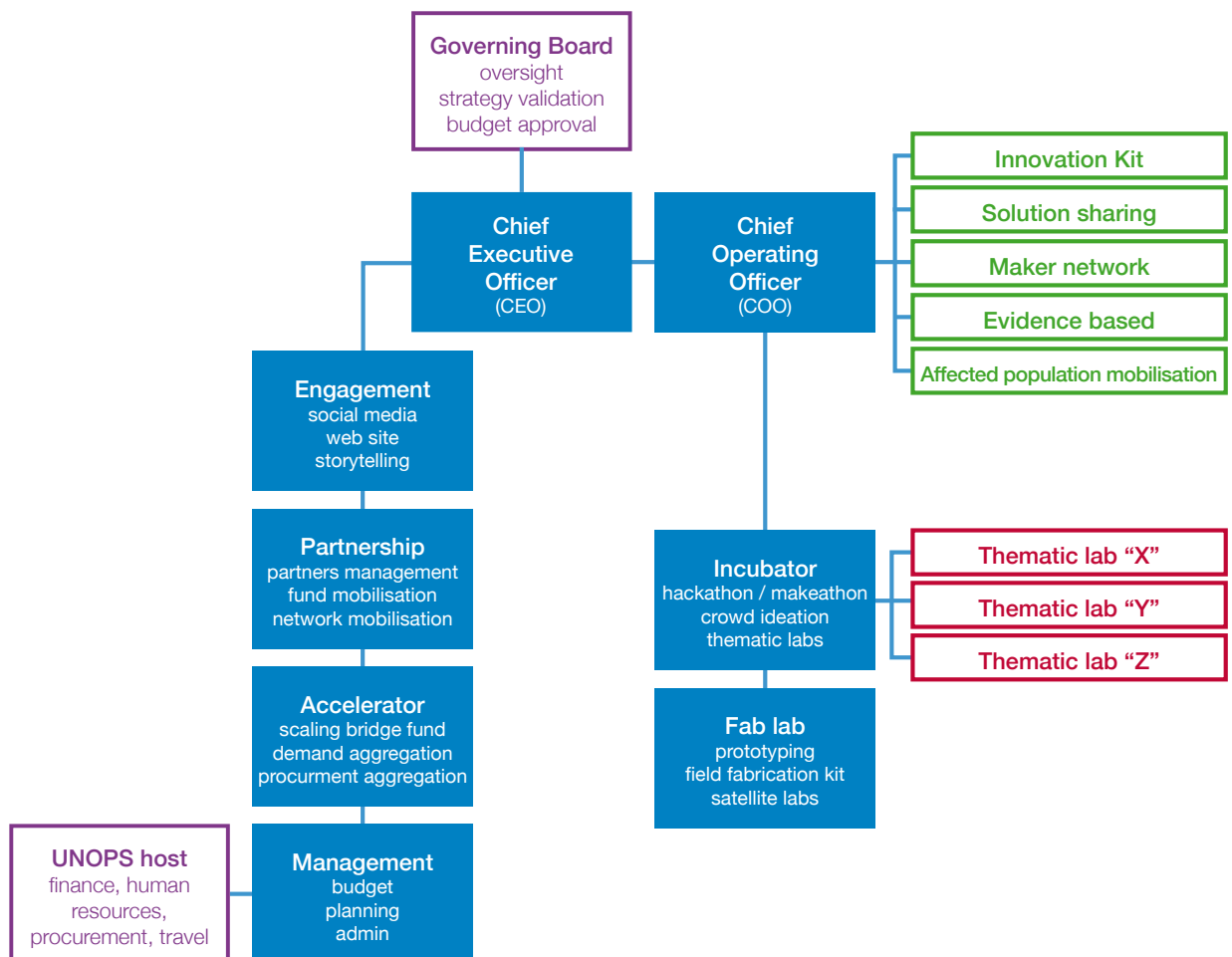


Figure 5. GHL team

Partnership

The GHL is organised under a partnership framework (and not a membership framework) implying an active involvement of its partners.

The GHL is meant to be an open and networked structure able to carry global conversations and projects therefore the more diversified geographically and thematically its partners will be the stronger the projects and responses will be.

Having an active partnership network is the key ingredient to the GHL offering. By leveraging the comparative and combined advantages of its partners, the GHL mobilises financial support, capacity building, expertise, in-kind HR and material resources, and access to thematic and local networks. In principle, the network is inclusive and open, however to remain efficient and effective, the following partnership criteria have been put in place:

- Organisations and individuals must have a direct or indirect humanitarian or development focus or interest and must abide by humanitarian innovation principles.
- Partners will have demonstrated support for innovative practices and approaches.
- While activities are optional, partners must remain active and committed.

Funding

Initial funding is required for an initial three-year period to ensure the funding stability of the Global Humanitarian Lab. The funds will be released by funding entities on annual basis based on results. Funding entities are encouraged to adhere to this funding timeframe.

While the initial contribution from the Swiss and Australian governments will cover the costs of the Chief Executive Officer and Chief Operating Officer of the GHL and their administrative support cost, it is envisaged that under the leadership of the CEO and COO the GHL structure will gradually come to live under the agreed pillars and reach at maturity an annual budget comprised between USD 3 to 4 million. This budget will be adopted and revised by the Governing Board of the GHL as required.

The budget will be structured around three components:

- GHL team: leadership, thematic lab coordinators, fab lab management, digital engagement, ideation
- GHL facilities (Geneva, Dubai, Kigali, etc.)
- Thematic labs projects

Sample projects

The following are examples of potential projects emerging from initial discussions with humanitarian organisations. The GHL strives to facilitate and enable the development of bottom-up products, services, systems, mindsets and business models.

Incubate and make

- UNHCR / UNESCO / UNICEF / MSF / ICRC / IFRC temporary multi-purpose structure using Better Shelter panelling system hackathon for school, health facility, community centre, etc.
- Humanitarian Innovation Kit: production of a prototype for a portable, compact and low cost innovation kit for use in the field by humanitarian actors and affected populations. The kit will include conceptual tools and frameworks, as well as digital fabrication tools, power tools and traditional craft tools.
- Online platforms: for development and sharing of humanitarian open source solutions, crowd ideation platform.
- Insulation flooring solution with solar / micro grid heater for temporary shelter.
- Deploy a GHL fab lab in Geneva.
- GHL satellite offices in Dubai, Kigali and other field locations leveraging partnerships and structure overlay.
- Common assessment process leading to challenges for refugees needs on the move.
- Setting up an Ushahidi instance for all partners to map innovation processes.
- MIT GO_LAB / ICRC evaluation and recommendations on crowdsourcing innovation for disability aids - evidence on different forms of innovation.

Accelerate

- Deployment of Field instances of the Global Humanitarian Lab based on the Humanitarian Innovation Kit.
- Better Shelter solution for temporary housing of forcibly displaced.
- MSF / ICRC / TDH learning on diagnostic algorithms for childhood diseases.
- ICRC Makeathon for disabled persons, stage #2 (field testing of 15 prototypes).

Other possible focus areas of partnerships

- Lightweight emergency toilet
- Emergency solar powered induction cook stove
- Under 48hrs emergency cash deployment system
- Humanitarian barcoding system using GS1 standard
- Additional focus areas to emerge from the GHL partnership...

3D printing spare parts

Enabling essential medical equipment to last longer



Nuwakot District Hospital was severely damaged in the massive earthquake that hit Nepal in April 2015. One year on, many key hospital services are being run from tents. To keep medical equipment going, mains power must be run to a specialist electrical unit within the tent from which the equipment can be powered. However, in one tent, the main connector had broken leaving the entire tent without power. The electrical unit had been donated to the hospital by an NGO; there were no spares in the local market and new, imported units and spares were prohibitively expensive. Field Ready were able to 3D print a replacement connector in the hospital at under \$12.

For more info on Field Ready: <http://www.fieldready.org/>

made in the field

Photo credit: Cover and page 1: CC BY-NC-ND / ICRC / Jesus Serrano Redondo

Designed by: Genève Design

The founding organisations of the Global Humanitarian Lab are:



The Global Humanitarian Lab is also supported by:



+ Government of Estonia, swissnex boston, swissnex China, UNOPS and the United Nations Office in Geneva.

GlobalHumanitarianLab

Enabling bottom-up innovation powered by people, partnerships and networks



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