

Office of Innovation

Update on the context and trends

Global expenditure on research and development more than tripled from \$675 billion in 2000 to \$2.4 trillion in 2021. Across industries and sectors, innovation is seen as an important investment area for iteration, growth, and impact. As we seek to demonstrate UNICEF's excellence as a public sector innovation leader, innovation is also the shared narrative and operating value that opens new conversations and alignment with a diverse range of private and public partners.

Highlighted in the 2022 Goalkeepers report, seven years on from setting the ambitious 17 Sustainable Development Goals, **the world is on track to achieve almost none of the goals**. It needs to speed up pace of progress five times faster to meet most of the goals – a generous assessment considering the impact of the pandemic on key metrics continues to unfold. The report clearly outlines the need for intentional sustained efforts and investments in radical innovations as the only pathway to reach these objectives.

Last year closed with a call from UNICEF for USD\$ 10.3 billion to support essential programmes for over 110 million children across 155 countries and territories. It concluded a year that saw millions of children reeling from the lingering impacts of the pandemic, far-reaching consequences of the war in Ukraine; rising food insecurity; threats of climate-induced famine and devastating floods in Pakistan.

In this era of compounding crises are opportunities to discover innovative advances with the potential to positively impact children's lives globally. From climate change to the learning crisis to a more intentional dialogue on mental well-being is a vibrant generation of young people who are actively engaged as problem solvers, advocates, solution-shapers and solution-makers across the globe. Game-changing approaches and solutions can become an essential aid to ongoing global efforts to address these challenges while sustaining these pathways of hopeful optimism. Catalytic partnerships with shared human capital, ideas, and resources- from grassroots expertise to international standard-setting bodies- are needed to boldly bend the curve toward a shared mandate of equal opportunity for every child, everywhere.

Global trends show a pivot towards stimulating a culture of innovation. Analysis collated by the Boston Group Consulting, spotlight Morocco's Research and Development (R&D) industries manufacturers to universities; Nigerian start-ups attracting millions of dollars in equity funding, the emergence of fintech hot spots in Kenya and South Africa's dynamic health technology ecosystems hosting more than 120 companies and in Egypt where incubators, entrepreneurship training, investment funds make the country Africa's fastest growing startup ecosystem. Lending to the hopeful optimism innovation can deliver are auspicious strategies like the EU's digital strategy, the national innovation strategy in France and the US Mental Health Strategy.

Innovation is the most plausible approach to restoring the crisis-stricken global society. With innovation embedded in the UNICEF Strategic plan as a key driver for change, OOI galvanized innovative potential within UNICEF and catalyzed external multisectoral partnerships. This came in response to the UNICEF Global Innovation Strategy which required a re-designed business model and the adoption of a portfolio management process focused on iterating to scale following a diversion of resources from early-stage explorations.

In joint management with Programme Group, of USD\$36 million for internally designed and managed innovation, we stimulated a culture of creativity and innovation, strengthening the foundation of a robust governance model and discovering promising solutions primed for 2023 pilot, iteration, growth,

and scale. In 2022, 37 investments in 64 country offices reached or mapped 16 million people.

With funding trends on a trajectory towards increasingly restricted funding from donor sources to UNICEF, delivering on the promise and potential of innovation comes with a clear priority to manage and grow a network of dynamic partners and champions committed to investing in innovation. Last year, investment from the Governments of Denmark and Finland enabled UNICEF to transition its WASH and learning portfolios respectively to better-resourced innovation hubs, including additional human capital as well as linkages to local innovation ecosystems in Copenhagen and Helsinki. The urgent need for innovative solutions to global crises is set against a backdrop of protracted global conflicts, the ongoing war in Ukraine, a hunger crisis pushing a child into severe malnutrition every minute juxtaposed with a rise in childhood obesity and a persistent COVID-19 pandemic. -

As key stakeholders in unraveling the challenges and finding solutions, youth engagement played a significant role in our work. With and for young people, OOI invested in cascading resources globally, from funding to expertise, convening collaborators, and discovering solutions globally. Amplifying youth-led and localized solutions- as advocates, entrepreneurs, social innovators- is one of our central operating mandates.

Alongside partners shaping the ecosystem for social good, brilliant solutions addressing mitigating the challenges of the climate crisis were discovered; WasteX in Tanzania fuelling a cyclical green economy, Youth Environment Living Labs in Malaysia empowering and connecting youth groups and indigenous communities to reimagine climate action, and North Macedonia's Bio Hack My World unlocking the power of sustainable biowaste management.

Amplifying youth voices, ideas and experiences on a global stage echoed the key role young people play in addressing key issues affecting this and coming generations. At the Transforming Education Summit in Paris, young social innovator Credo Luc from Benin spoke of the importance of equitable access to social innovation accelerator programmes like UPSHIFT of which he graduated. At the international climate summit focusing on the health of the planet and prosperity for all - Stockholm +50- alongside young allies at Fridays for Future Sweden and UNICEF Sweden, OOI hosted young climate innovators and activists from Argentina, Balochistan, Kenya, Sweden and Vietnam, in conversation with policymakers, academia, and corporate executives to an intergenerational exchange of ideas on the addressing the global climate crisis.

In 2022 we built on the dare, like children, to think big. By aligning with a wide range of partners with shared value, common action, and joint accountability we boldly are challenging the prevailing norm that equity goals are pursued as a “levelling up” to the pace of the digital revolution, and that downward trends toward SDG achievement are a pre-determined trajectory.

Major contributions and drivers of results

One year into the implementation of a reimagined business architecture designed by nurturing dynamic partnerships to unlock innovation ecosystems, local to global, 2022 saw UNICEF's Office of Innovation (OOI) driven by the collective movement to leverage innovation as a key driver for social impact.

In an era of far-reaching global inequities and at a time of compounding crises, delivering on the SDG targets and delivering for children urgently demands innovative problem-solving strategies outside pre-existing structures.

Catalytic investments and support from the governments of Denmark, Finland, Spain, Sweden, and Switzerland, as well as numerous private sector partners, are fundamental to UNICEF's mission to

deliver as a public sector innovation leader. It cannot be overstated how much of a life-line this serves towards keeping the hopeful optimism of innovation alive and achievable. Together with our core champions, we have set an ambitious trajectory for achieving transformational results by co-creating, discovering, and scaling bold solutions and approaches for this and coming generations. With their commitment comes incalculable assets in the form of access to a diverse pool of world-class expertise, enabling networks and critical insights all crucial for doing more, better and faster to accelerate results for children.

In 2022 we saw the migration of OOI headquarters from New York to Stockholm mostly complete, an additional hub opened – the Sustainable Water, Sanitation, Hygiene Hub in Copenhagen, Denmark – along with two centers for the Giga Initiative- a Secretariat in Geneva, Switzerland and Technology Centre in Barcelona, Spain. It also saw the development of a three-year strategy for the Learning Innovation and Innovative Finance hubs in Helsinki. A sneak peek to the year ahead, the Learning Innovation Hub will onboard five learning pioneer countries to serve as localized expertise in the diversity of learning needs for children globally; establish a *learning cabinet* co-created with FinCEED and Arm; release a *Digital Learning Framework*. The Innovative Finance Hub will publish and socialise a Child-Lens Investing Framework with impact investing stakeholders; manage an ecosystem to co-design bold fundraising solutions leveraging emerging technology including Web 3; co-create fund structures including a Health Outcomes Fund with UNICEF Nigeria and alongside Finland and UNCDF a Digital Literacy Equity Outcomes Fund for West Africa.

As a creative movement with innovative minds globally, including our UNICEF network across 190 countries, in 2022 we built on the pathways laid in 2021 while also having an eye to shape future trends. A few of our 2022 highlights on co-creation to discover and scale are referenced below.

Co-create to discover and design

Our Learning Innovation Hub, located in Helsinki with support from the Government of Finland and Arm- a leading global tech corporation- collaborated with Extreme Tech Challenge (XTC), the largest global start-up tech competition, on the inaugural UNICEF Ed Tech Award. It led to a callout to the ed tech ecosystem for solutions with the greatest potential to become “Blue Unicorns”, ventures that transform learning experiences for at least 100 million learners.

Over 140 startups from 41 countries applied. The ten finalists represented six countries including India, Nigeria, South Korea and Spain. The award was eventually given to Eduten, a game-based maths learning platform from Finland, which reaches a million teachers and students in more than 50 countries.

Advancing youth mental well-being and climate change innovations are shared priorities of our Government of Sweden partner, a key supporter and host of the OOI headquarters in Stockholm.

With a purview to engage young people on one of the most critical issues of our times – climate change, At Stockholm+50, Fridays for Future, UNICEF OOI, and UNICEF Sweden co-hosted an event to facilitate a cross-generational exchange of innovative solutions addressing the climate crisis.

Maximising the opportunity for inter-organisational collaboration on climate change, OOI led a UNICEF partnership with UNDP on a Green Shark Challenge. This initiative mobilized intrapreneurs within both organizations to collaborate with national counterparts, youth groups and local communities, to co-create or scale solutions addressing climate change.

In 2022, OOI also leveraged its alignment with World Economic Forum with a call out on its innovation platform UPLINK. Innovators were invited to showcase their diverse youth mental solutions across geographical markets. The challenge sought the most transformational innovations

poised for scale to reduce the stigmatization of mental health and improve young people's well-being. At the World Economic Forum (WEF) in DAVOS in June, **14 winning innovations** to the UNICEF, WEF and other partners' Uplink Youth Mental Health Challenge were announced.

At a time of a gaping trillion-dollar funding gap to meet global development goals and with growing investor demand for enduring social impact, 2022 saw the timely launch of the UNICEF Innovative Finance Strategy co-drafted by OOI. Key to its success is establishing a diverse partnership network.

Alongside nascent collaborations with Development Finance Institutions (DFI) including FinnFund, and with Criterion Institute- a think tank that works with social change-makers to engage with financial systems- our Innovative Finance Hub (located in Helsinki with support from the Government of Finland) is shaping a co-creation of a child-lens investing framework and strategies towards mobilizing 1 per cent of the capital managed by financial institutions.

Building on a multi-year leadership consortium of public and private partners of the Generation Equality Forum, the Government of Finland, UNICEF, and UNCDF are advancing the design of a Digital Literacy Equity Outcomes Fund. The human-centered design of the Fund puts girls and young women at the design table to shape this new investment instrument that will move more capital to the promising pipeline of for-and non-profit intervention models in West Africa closing the gender digital literacy divide.

In 2022, the UNICEF OOI Venture Fund explored and supported emerging tech solutions including blockchain and Artificial Intelligence - so UNICEF and our partners can discover and leverage opportunities within technology markets towards accelerating results for children. Building a unique market advantage with the start-up tech industry, focused on emerging and developing economy ventures, the Fund makes early and growth stage investments in external tech startups and country office projects with the potential to become fundamental Open Source digital solutions and platforms.

In the past year, the Venture Fund made 69 investments in early-stage start-ups, 12 investments in growth-stage solutions, and 55 investments in UNICEF Country Offices in total, reaching 74 countries globally. This work includes exploring blockchain to improve financial inclusion and leveraging big data to ensure access to and delivery of services for every child.

In partnership with the Global Partnership to End Violence Against Children, the Venture Fund is supporting startups developing open source, AI-powered solutions to address digital risks to children. For example, **Tilli**, from Sri Lanka, is a game-based, AI-powered social-emotional learning tool that teaches 5-10-year-olds the skills needed to stay safe and healthy. **Talk2U**, from Brazil, is a behavioral micro-intervention chatbot imparting strategies to users for child online safety, as well as pieces of training on different types of abuse.

Co-create to iterate and scale

As part of the UNICEF Venture Fund's commitment to move open-source, frontier tech solutions to the 'accelerate/promising' stage of the portfolio process, institutional contracts were issued to 32 start-ups in 2022. These included 3 prototype CryptoFund investments, 9 follow-on investments for promising solutions in response to COVID-19, 12 accelerate-stage investments and 8 country office follow-on investments.

With a mission to connect all schools to the internet by 2030, the UNICEF and ITU initiative reached milestones of US\$27m invested in 19 countries, with 1m+ schools mapped and 3,200 connected. To achieve its ambitious – but not impossible – mission comes the need to innovate with new technologies and funding mechanisms to bring down the cost of connecting all schools. In 2023, Giga aims to map the location of 2.5 million schools, reach 40 countries and help 20,000 governments connect school to

the internet. Collective contributions of governments, technology providers and corporations are required to implement long-lasting connectivity solutions.

In an intra-organizational collaboration with Programme Group, OOI's thematic portfolio approach managed US\$36 million – a large internal innovation funding that signaled prioritization and commitment to robustly advance UNICEF's strategic plan (2022-25) adoption of innovation as a driver for results. It showed an organizational commitment to catalyzing ingenuity across our 190 country offices in iterating toward scaling the most promising homegrown solutions to ardent challenges facing children.

This collaboration incentivized and stimulated an innovation culture across headquarters, and country and regional offices globally. It is focused on the iterations of innovations on a pathway to scale, serving as a gateway to demand in new geographical markets.

To date, UNICEF has reached or mapped 16 million beneficiaries across 30 solutions, with an organic growth potential to impact a further 19 million in a year. 54 per cent of the solutions in over 50 countries raised additional funding to support solution scale.

In 2022, three of nine thematic innovation portfolios were populated with promising and priority solutions reaching multi-country scale of over 1 million. There are also promising pipeline for an additional 22 solutions to operate at a multi-country scale.

One example is FunDoo, a digital life coach offering a bite-sized and gamified curriculum to empower youth with critical 21st century skills through real world tasks. It leverages tech for education without deepening digital divides as it is designed for low bandwidth and mobile literacy. FunDoo is currently in 13 countries reaching 750K adolescents with 3 million learning tasks. With continued investment and support, solutions in this pipeline can continue toward scale success.

A lens on illustrative sectors, internal UNICEF, and the tech ecosystem

To further illustrate how OOI is delivering with partners for and with children and youth, below are selected 2022 results showcasing innovation as an accelerator for transformational change in a few sectors, efforts to strengthen the innovation culture inside UNICEF, and contributing to the shaping of the tech and digital ecosystem.

Education and learning

The impact of the UNICEF Venture Fund's initial investments in 74 countries is reaching beneficiaries across 100+ countries. An example of this is the implementation of Egyptian startup, VRapeutic's cognitive learning platform in Vietnam. The Virtual Reality (VR) solution provides virtual therapy for children with ADHD using games modules on VR glasses to improve attention skills.

UPSHIFT, our social innovation accelerator for young people, is now operational in 46 countries – with Bangladesh, Bhutan, Maldives and Turkey added in 2022.-The accelerator programme has reached 2.2 million young people with over 45 million learning hours, delivering human-centered design skills and social innovation entrepreneurial experiences.

In 2022 in Ukraine, promising young UPSHIFT graduate innovators rose above the difficulties to implement powerful social initiative. For example, a training course of pre-medical aid for young people and volunteers from local communities, to help build lifesaving skills in times of emergency.

In 2022 OOI also continued to support the development of UNISOLVE, a promising digital solution to

facilitate integrating UPSHIFT at scale via education systems, including primary and vocational education platforms. After the initial 2021 pilot UNISOLVE was scaled to three additional states in India in 2022.

The Learning Innovation Hub facilitated key inter-sectoral exchanges in the Nordic region to bridge expertise in education pedagogy with ed tech solution design, iteration and scale. In November, the Learning Innovation Hub convened colleagues from UNICEF Vietnam and Bhutan Country Offices and the regional offices in South Asia, and Europe and Central Asia with global edtech experts at Slush – leading global event for start-ups - to explore the pathways to unlocking innovative solutions to improve the learning experiences of all children.

Sustainable environment and Water, Sanitation and Hygiene (WASH)

OOI invested close to US\$4.5m in promising WASH innovations that demonstrated potential for global scale. One such example is the *More Water More Life* initiative. The affordable groundwater mapping solution improves access to water in communities experiencing water shortages and raises borehole drilling success rate from 30% to 92%. Successful pilots in Ethiopia and Madagascar have mapped groundwater to enable cost-effective water provision for over 1.1 million children. The scaling phase of this project could enable 40 million children to get cost-effective access to water in East and Southern Africa.

In West and Central Africa, a revolving funds mechanism for sanitation micro-credit was introduced to offer credit to 5,000 households previously unable to afford toilets, to purchase them from local sanitation businesses. The initiative has been proven to contribute towards ending open defecation and has shown a five-fold return on the initial investment. It has the potential to be rolled out to 24 countries in West and Central Africa by 2026.

Only 34% of national climate policies are child-sensitive, despite children and young people suffering the most serious consequences of climate change. With the World Resources Institute and Climate Watch, UNICEF, co-led by OOI and the Climate, Energy, Environment, and Disaster Risk Reduction team, has built an innovative platform to track child-sensitive commitments and identify gaps and opportunities for governments to deliver them.

Systems to strengthen the internal innovation culture at UNICEF

In 2022, OOI continued to explore global system-strengthening initiatives to support UNICEF to deliver as a public sector innovation leader. These initiatives recognize, support and reward staff in all business units across the world who are designing and delivering innovative solutions to the challenges facing children around the world.

The inaugural Spark Incubator and Awards in 2022 invited colleagues to submit proposals of innovative solutions in three categories; humanitarian response, climate change, and UPSHIFT entrepreneurial ideas poised for scale. With participation from about 10 per cent of the staff globally, it signals a catalyst for ingenuity and ideation within the organisation. 115 promising solutions were submitted, and 9 winning finalists were announced at the end of 2022 to receive coaching, mentoring and seed money.

Additionally, OOI, in partnership with the Information and Communication Technology Division (ICTD), continued to develop *INVENT*, UNICEF's global inventory for innovation and technology for development, with nearly 3,000 registered UNICEF staff member users in 2021. This database is a one-stop-shop for the hundreds of innovative solutions deployed in communities around the world. A total of 109 out of 127 UNICEF Country Offices (86 per cent) have at least one initiative/project on INVENT.

Actively unlocking the tech and digital ecosystem for children

In 2022, OOI progressed its co-leadership of the Digital Public Goods (DPG) Alliance which now hosts a pipeline of over 600 DPGs across different Sustainable Development Goals (SDGs), 86 of which have been fully vetted and feature in a public repository. The Alliance operates in alignment with the Secretary General's Roadmap for Digital Cooperation toward greater access of DPGs for governments across the globe.

A rapidly growing part of OOI's work is its long-term exploration of the use of digital currencies for good. Through the pioneering CryptoFund – a vehicle of the broader OOI Venture Fund – UNICEF is receiving, holding, and disbursing cryptocurrency in a first for the UN system, introducing unprecedented, full and real-time transparency to funding flows, with <1% transaction costs on disbursements.

In January 2022, with support from Snowcrash, the Giga initiative launched Patchwork Kingdoms, the United Nation's largest collection of non-fungible tokens (NFTs). NFTs are digital records that represent ownership of unique items such as digital artworks. Backed by blockchain technology, NFTs have unlocked a market for digital goods, such as art, music and virtual land, allowing these goods to be bought, sold and traded publicly.

The Patchwork Kingdoms collection, created by Nadieh Bremer, is composed of 1,000 unique and colourful pieces of art based on data from 283,000 schools mapped by Giga. With half of the world's schools still offline and 1.3 billion children still without Internet access at home, these artworks provide a striking illustration of this global digital divide.

The collection was popular among NFT collectors, with the pieces selling out within three hours. Moreover, each time NFTs are exchanged in secondary sales, additional funds are raised for connecting schools. Secondary sales are ongoing, and the project has so far raised more than US\$700,000 for school connectivity. Given this pilot's unprecedented success, Giga is building a second NFT collection, which explores how NFTs could be used to represent every school in the world, with the aim of building the world's largest decentralized school database.

Lessons Learned and Innovations

In 2022 our Office business model grounded on establishing frontier partnerships to unlock local and global innovation ecosystems to bring better opportunity for every child, everywhere, began to show the sustainable and scalable impact we envisioned. The combination of collective influence, ideas and investments holds immense promise to close the significant gaps we currently face to achieving the SDGs.

As we move forward, we need to continue to expand the diversity of our frontier partnerships and be a broker of expertise across the wide spectrum of global social development stakeholders. This diversity includes grassroots expertise, a shifting development and trade intersection of government partners, a wide smorgasbord of philanthropic, private and public capital markets, as well as an expanding array of digital, tech and design corporations and industries.

And as we broker connections and bring in new partners, our mission of equity and opportunity for every child must continue to be central to our priorities and actions. Moving into 2023 our Learning Innovation hub is working alongside 5 countries to be learning pioneers in being early adopters to test and learn what works and doesn't work in ed tech solutions on a pathway to scale.

In 2022 we welcomed the launch of the Adolescent Girls Programme Strategy (2022-25) and see this as an emerging opportunity for us to continue to expand and shape bold and adventurous innovations such as the Digital Literacy Equity Outcomes Fund.

Equipped with the right skills and opportunities, the 600 million adolescent girls in the world today can become the largest generation of female entrepreneurs, leaders and changemakers in history. 48 per cent of video game players are girls, yet only 24 per cent of those working in the gaming industry are women. In 2023 we are teaming up with the gaming industry to equip a generation of girls to become the coders, designers and leaders of a more inclusive, diverse and safer digital future.

Ensuring today's youth generation is at the forefront of designing and building an accessible, equitable and human-centered digital ecosystem is an opportunity we will continue to prioritize in 2023. The status quo is unmanageable if we are to reach the SDG ambition.

We are on the cusp of a period of immense opportunity. We see it in breakthroughs in climate science and the growing demand for more sustainable societies. And we see it in the incredible ingenuity, ambition and commitment of the world's young people.

Tying these reasons for optimism together is technology and digitalization. We are amid a powerful, global, digital transformation. One that is — in turn — transforming our communities and our economies.

Together, with our youth architects- as entrepreneurs, employers and employees of the future- we can boldly deliver a blueprint of SDG solutions.

The Global Digital Compact (GDC) aims to generate a 360-degree look at the digital world today, and a roadmap to better organize ourselves to build a digital future that is open, inclusive, and secure. This includes a lens on the digital technologies of the future with all their implications, not only identifying the great opportunities they present, but also considering challenges and risks they may pose to human rights, fundamental freedoms, and human agency. The GDC will enable a diverse international community across development and trade industries to coalesce around a common goal to ensure our digital future is accessible and equitable.

Critical components of an equitable digital future include Digital Public Goods (DPGs) and Digital Public Infrastructure (DPI). Together, DPGs and DPIs engage a wide public and private partner ecosystem with shared interest to form a digital ecosystem of solutions and platforms built on principles of collaboration, coordination, and equity.

An equitable digital future needs tomorrow's voices, today. Our Office is aligning with the UN Youth Envoy's Office to actively find multiple pathways and moments to bring young tech entrepreneurs, activists, and citizens into the GDC shaping, especially brokering the intergenerational conversations that are key.

As the global community aligns to shape a Global Digital Compact (GDC)- under the coordination leadership of the Governments of the Republic of Rwanda and Sweden- that ensures our digital future is accessible and equitable, we must facilitate collaborations, and lead to bring all voices and valuable contributions together. This includes a lens on the promise of youth-led and localized digital solutions to unlock SDG outcomes.

With ongoing efforts to stimulate a culture of innovation, UNICEF must be intuitively agile to evolve as an organisation appropriately connected to innovative ecosystems in the markets and sectors in which we operate. This inclination to iterate, co-create and scale would mitigate against reinventing the wheel and accelerate transformational change by capitalizing on existing knowledge and insights. With further development existing tools like INVENT, when embedded within relevant operating functions and workflows can become components of investment mechanisms to maximise donor engagement.

We need dedicated focus on refining innovation governance across the organization. Refining how innovation priorities are identified and governed at global, regional and country level. We should set

goals to implant the notion of innovation as a discipline at the heart of CPD programmes. This should come with clear priority valves for investment in innovation in areas and sectors where an urgent step change in progress, and exacting demands on the demonstrated impact of the tested solutions.

Addressing skill gaps globally is a shared interest not only in the entrepreneurship ecosystem, but the talent gaps faced by many leading industries reliant on global trade- including technology and gaming. Our Office looks forward to facilitating a tipping point of shared commitment to mobilize an even wider coalition committed to equipping today's digital-native youth generation with the skills and opportunities to become a growing pipeline of entrepreneurs and employees designing and delivering our open, inclusive, and secure digital future.