



Knowledge, evidence
and learning for
development

ICTs and livelihood supports of refugees and IDPs

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Question

- *Identify examples of ICT approaches to address the livelihood needs of those living in IDP and refugee camps.*
- *What are lessons learned from these experiences?*

Contents

1. Summary
2. ICT approaches to support the livelihoods of refugees and IDPs
3. Lessons learned
4. References

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1. Summary

Information and Communication Technologies (ICTs) have great potential to address the urgent needs in enhancing self-reliance of refugees and internally displaced persons (IDPs). This review looks at examples of approaches that use ICTs to improve livelihoods and employability of refugees and IDPs within the camp. Overall, digital tools and technologies could enhance five areas of livelihood supports: finding employment opportunities, skills development, entrepreneurship supports, access to market and finance.

This report includes evidence and case studies from peer-reviewed articles, evaluations and grey literature. It primarily focuses on livelihood support initiatives of those within the refugee and IDP camps but also draws some examples of interventions outside refugee camps.

Key findings include:

- **Mobile and digital based work opportunities**, such as online language teaching, enable refugees to work remotely without entering local labour markets.
- **Mobile devices, apps and online platforms help them find local employment opportunities** and information regarding local regulations and laws.
- **Online learning and mobile content for higher education, vocational and skills development** allow them to access resources and teachers at anytime and from anywhere while creating new networks in learning communities.
- The most prominent trend is **the provision of coding and IT skills to refugees** using onsite and blended learning courses to equip them with skills demanded by the international labour market.
- While not focused on those within the camps specifically, comprehensive **entrepreneurship programmes targeting refugees also employ many ICTs** such as online marketing and digital communication.
- **Workspaces and access to infrastructure** such as the Internet, mobile phones and electricity can be an effective means of enhancing entrepreneurship and business development.
- **E-commerce platforms** help expand market opportunities for refugees and connect them to international markets even from restricted refugee camps.
- **Online crowdfunding, peer-to-peer lending and mobile money** expand access to financial resources for their livelihoods enhancement.
- **Fintech and biometric solutions** allow them to overcome the issues of identification and documentation in accessing financial and basic services.

A number of studies addressed the policy implications of ICT approaches for livelihoods support for refugees. These include the need to:

- Understand legal and regulatory environments;
- Tailor to available resources and infrastructure;
- Conduct cost-benefit analysis and ensure financial sustainability;
- Invest in ICT related infrastructure;
- Mitigate digital divide across different groups of refugees;

- Sustain digital technology interventions;
- Set long-term vision;
- Create partnerships and collaboration;
- Understand local cultural attitudes towards technology and learning;
- Conduct evaluation and share lessons learned;
- Overcome security and privacy issues.

This review found very few ICT approaches for livelihoods enhancement of refugees within camps; more initiatives emerged from the European context, outside camps or in urban settings. Most evidence exists in anecdotal case studies or grey literature; there are limited impact studies on ICT approaches in conflict and displaced settings. In addition, the impact on refugees with different abilities are not discussed in the identified studies. For instance, there is limited literature on the use of technology for refugees with disabilities.

2. ICT approaches to support the livelihoods of refugees and IDPs

Digital and technology solutions have addressed five areas of support to enhance self-reliance and employability of refugees: finding jobs, skills development, entrepreneurship supports, access to market and finance. Table 1 lists examples of these different ICT approaches.

Table1: Type of livelihood supports and ICT approaches

Livelihood supports	Technological solutions
Finding employment opportunities	Mobile and digital based work
	Linking with local employment and self-employment opportunities through digital tools and online platforms
Skill development	Higher education, technical and vocational skills training using online resources and digital tools
	Coding and digital skills training
Entrepreneurship supports	Entrepreneurship support using digital tools and technologies
	Working spaces and access to ICT infrastructure
Access to market	Connecting refugees to markets through e-commerce and digital marketing
Access to finance	Lending through online crowdfunding, peer to peer lending and mobile money
	Fintech and biometric solutions to enhance access to financial services

Source: Author compilation

Mobile and digital based work

Digital work provides refugees and IDPs new employment opportunities. Online tools can connect them to mobile-based work opportunities such as online freelancing and international e-business (Benton & Glennie, 2016, p.9). It allows them to work at a distance and online without entering local labour markets and thereby eases language requirements (Benton & Glennie, 2016, p.1; UNESCO, 2018, p.60). It does not require local work permits that are typically needed for refugees to work in any local company (UNESCO, 2018, p.60).

Samasource

<https://www.samasource.org/>

Country and locality: Kenya, Uganda, India, Haiti

Since: 2008

Implementing organisation: Samasource, a non-profit organisation, based in San Francisco

Objectives: “To move people out of poverty by providing training and Internet-based work that pays a sustainable living wage” (Samasource, 2018, p.2)

Target groups: Refugees, unemployed or those earning less than the living wage within or outside camps

Approaches and activities: Samasource provides corporate clients with data support which requires human contact, such as web research, image tagging and transcription services. Refugees and unemployed people are recruited and provided skills training in areas of digital literacy (the use of computers and software) including professional behavioural skills (UNESCO, 2018, p.60). With their newly acquired skills, the trained refugees undertake IT tasks such as data entry for clients such as Google, CISCO, Yahoo and eBay (UNESCO, 2018, p.60). The refugees also receive their payments through mobile phones.

Impact and results¹: Since 2008, a total of 10,465 people have been employed (Samasource, 2018, p.1). Currently, there are 1,964 people active in the workforce based in Kenya, Uganda and India. A study found that three years after leaving Samasource, workers' earnings were 4.3 times greater than before they started (Samasource, 2018, p.2). 84% of workers continued to work or study; of those working, 97% were in the formal sector (Samasource, 2018, p.2).

Limitations: Samasource encountered difficulties in operating within the refugee camps. They trained 90 refugees in the Dadaab camp in Kenya (UNESCO, 2018, p.60). However, the aid agency which ran the camp opposed the programme's operation (Hegarty, 2011, para.14). The agency was reluctant to set up infrastructure and provide work to refugees because they had no legal status with the authorities and the work might encourage long-term settlement (Hegarty, 2011, para.15).

¹ <https://www.samasource.org/impact>

NaTakallam

<https://natakallam.com/>

Country and locality: Lebanon, Turkey, Egypt, Germany, France

Since: 2015

Implementing organisation: NaTakallam, social enterprise

Objectives: To provide income-generating opportunities for refugees by hiring them as online language partners and connecting them to learners around the world

Target groups: Refugees and IDPs (mainly from Syria and Iraq)

Approaches and activities: NaTakallam is an online platform where refugees can work as language teachers and conversation partners (UNESCO, 2018, p.60). The platform matches Syrian refugees in Lebanon, Egypt, Germany, France and the Turkish city of Gaziantep with online Arabic language learners across the globe (UNESCO, 2018, p.60). It works with local NGOs for payments, training and recruitment of refugee teachers. This model creates win-win situations between refugees and users as refugees can earn income and obtain professional skills, and learners can enhance their foreign language skills affordably and conveniently (UNESCO, 2018, p.60). The refugees can also obtain financial support from NaTakallam to pursue formal education (Sara, 2017, para.3). NaTakallam currently generates own revenue by providing language conversation sessions online, translation, editing and social media moderation services (Sara, 2017, para.21).

Impact and results: Since 2015 to date, NaTakallam has paired around 130 displaced persons and over 4,500 individuals in more than 65 countries². In total, refugees have generated over US\$420,000 through this programme. For young women, NaTakallam has an added value as they can work from their home (Sara, 2017, para.3).

Limitations: This approach helps refugees to access job opportunities and earn income only for a short period (UNESCO, 2018, p.61). The scalability is also limited as it is focused on skilled and qualified refugees; moreover, it might encourage occupational downward mobility for well-qualified refugees (UNESCO, 2018, p.61).

Linking with local employment opportunities

Mobile phones and apps and online platforms can be practical tools for seeking employment opportunities in local labour markets (UNESCO, 2018, p.60). Some online platforms work as matchmakers bringing together refugees and local employers (UNESCO, 2018, p.60; Benton & Glennie, 2016, p.11). They can also enhance a better understanding of industrial relations law and rules and regulations, which might be hurdles for refugees to enter into local labour markets (UNESCO, 2018, p.59).

Most of the initiatives reviewed emerged from developed countries, such as “Refugee Talent” (<https://refugeetalent.com/>) in Australia. This is an online platform for matching skilled refugees with long- and short-term job opportunities (UNCTAD, 2018, p.66). In Finland, “Zharity” (<http://zharity.com/>) provides an online platform to connect migrants and refugees with

² <https://natakallam.com/impact/>

employment opportunities that match their professional skills, and with useful resources for potential refugee entrepreneurs (UNCTAD, 2018, p.66).

UNHCR has introduced 'e-Entrepreneurship', which matches refugee youth with employment opportunities such as online marketing and telemarketing of products made in the Kakuma refugee camp in Kenya (UNCTAD, 2018, p.62).

Technical and vocational skill training / Higher education

Technical and vocational skills training can provide opportunities to improve occupation-specific skills for refugees and IDPs and enhance their integration into local labour markets (UNESCO, 2018, p.59). Digital tools and technologies help them access learning resources at any time in any place. They also allow them to record learning experiences and discuss these remotely with tutors (UNESCO, 2018, p.61).

Distance learning, online university courses and open educational resources also make higher education accessible for refugee youth even in refugee settings (Moser-Mercer, 2018, p.41). Some courses are available offline, and the content is accessible from mobile devices such as "Coursera for Refugees" (<https://www.coursera.org/refugees>). Digital learning also helps create new communities and networks with other students and teachers (UNESCO, 2018, p.60).

Teachers for Teachers

<https://www.tc.columbia.edu/refugeeeducation/teachers-for-teachers-kakuma/>

Country and locality: Kenya

Since: 2015

Implementing organisation: Teachers College, Columbia University and Finn Church Aid

Objectives: To support refugee and other teachers and improve their teaching practice and student learning in the camp

Target groups: Teachers within Kakuma camp in Kenya

Approaches and activities: This project incorporates professional teacher training, peer coaching with a mobile mentoring element. After onsite training and coaching, mobile instant messaging via SMS and WhatsApp is used to facilitate the repetition and application of training knowledge as well as provide continuous learning support (UNESCO, 2018, p.39). Global mentors with extensive teaching experience provide mobile mentoring support by facilitating discussions with the teacher trainees, reiterating key lessons from the curriculum and providing short questions and instructive images and videos (UNESCO, 2018, p.39). This approach helps the teacher trainees apply their knowledge into practice, and increases the long-term effects of training and stimulates teachers' motivation and self-reflection (UNESCO, 2018, p.39).

Results and impacts: Since 2015, 130 teachers were trained, and the newly trained teachers taught 30,000 students in 20 primary schools³. An evaluation study also found positive changes in teachers' practices and improved motivation.

³ <https://www.tc.columbia.edu/refugeeeducation/teachers-for-teachers/T4T-FINAL-INFOGRAPHIC-PDF.pdf>

The evaluation study also suggested the high potential for both sustainability and scaling up of the initiative in the future (Dahya, 2016, p.16). Using communication tools like SMS and mobile apps, this project leverages available human resources, increases the effectiveness of onsite teacher training, and connects teacher trainees to people and resources outside of their local settings (Dahya, 2016, p.16).

Jesuit Worldwide Learning (JWL)

<https://www.jwl.org>

Country and locality: 31 community learning centres in 14 countries (Afghanistan, Iraq, Jordan, Myanmar, Sudan, Chad, Malawi, Sri Lanka, Nepal, India, Thailand, Haiti, Dominican Rep, USA)

Since: 2010

Implementing organisation: Jesuit Worldwide Learning (JWL), a non-profit organisation

Objectives: To provide high-quality tertiary learning to people and communities at the margins of society and facilitate the formation of a global community of learners to build a more peaceful and humane world.

Target groups: Refugees or other marginalised groups who do not have opportunities for higher education within refugee camps, in remote villages and urban areas.

Approaches and activities: JWL sets up community learning centres within refugee camps to provide tertiary and vocational education for forcibly displaced people (UNESCO, 2018, p.60). JWL offers an Academic Diploma of Liberal Arts to refugees and host community members such as those in Dzaleka refugee camp in Malawi, Kakuma refugee camp in Kenya, and in Amman, Jordan⁴. In addition, professional courses were created to complement the Academic Diploma; these aim to develop their vocational skills and knowledge in areas such as social care, teacher training, healthcare and agriculture (JWL, 2018, p.20). The professional courses are taught in the classroom for a period of three months.

Around 25% of the learning is conducted through digital learning activities using computer labs in the centres (UNESCO, 2018, p.60). The digital content is accessed offline or online. JWL also introduced new online professional courses in partnership with recognised universities (JWL, 2018, p.21).

Results and impacts: Since 2010, over 5,000 forcibly displaced people have studied in the programmes, of whom 50% of them are women⁵. In 2017, in a total of ten countries 619 refugees participated in the professional courses and 350 students the Academic Diploma (JWL, 2018, p.10).

Limitations: According to the interview surveys, diploma students and teachers stressed the need for stable internet access and additional classrooms and computers, given the high number of students (Gladwell et al., 2016, pp.71-72). Other improvements that are needed include building the expertise of local staff as there are challenges in recruiting qualified local teachers.

⁴ <https://www.jwl.org/en/what-we-do>

⁵ <https://www.jwl.org/en/become-a-student>

The contextual knowledge of distance staff about local students is also crucial to deliver contextually appropriate courses (Gladwell et al., 2016, p.72).

Higher education, technical and vocational skill training inside camps

Kenya and Jordan: InZone (<https://www.unige.ch/inzone/who-we-are/>), an initiative of the University of Geneva, this aims to provide technology-supported pedagogical models to enhance higher education and vocational training in refugee camps such as Dadaab and Kakuma Refugee Camps in Kenya and Azraq refugee camp, Jordan (InZone, 2018). In the Dadaab and Kakuma refugee camps in Kenya, it set up the refugee-run, solar-powered Learning Hub that supports virtual and blended learning for formal and informal learning (InZone, 2018). As part of the vocational training in the virtual learning environment, it has provided training for refugees to become interpreters in crisis situations using digital devices. In Azraq refugee camp in Jordan, it provides various higher education and vocational education such as a digital learning programme, which trains refugees to develop top-notch materials for mobile learning platforms, in collaboration with MIT⁶. An evaluation study found that the use of mobile devices contributed to peer learning and regular contact with expert trainers (UNESCO, 2018, p.61).

Kenya: The Borderless Higher Education for Refugees (BHER) (<http://www.bher.org/>) provides teacher training to untrained teachers in Dadaab refugee camp. In addition to the onsite lecturing component, students can use tablets to access a learning management system comprised of learning textbooks, videos and articles.

Iraq: The Connect to Learn (CTL) programme enables Syrian teachers in Domiz refugee camp to access digital learning resources such as literacy and numeracy via a cloud-based server. Teachers can also use technology to share their experiences with peer teachers in schools across different camps.

Source: UNESCO, 2018, p.40

Coding and digital skills training

Developing digital literacy and IT skills expands employment and business opportunities for migrants and refugees (UNCTAD, 2018, p.59). Coding and digital skills are increasingly demanded by global labour markets (UNESCO, 2018, p.61).

Refugee Code Week

<https://digitalskillsfortoday.org/>

Country and locality: Egypt, France, Greece, Iraq, Lebanon, Palestinian Territories, Jordan, Sweden and Turkey

Since: 2016

⁶ <https://www.unige.ch/inzone/what-we-do/regions/middle-east-northern-africa/>

Implementing organisation: “Digital Skills for Today” a collaborative initiative between SAP⁷ and the Galway Education Centre⁸

Objectives: To provide tangible and job-relevant education across Europe, the Middle East and Africa and strengthen the economic and social contribution of migrants to their local communities and host countries

Target groups: Young refugees across camps, community centres and universities

Approaches and activities: The initiative provides free coding workshops and boot camps for young people, particularly within the camps, as well as ‘train the trainer’ sessions and online courses on software code skills. For instance, Refugee Code Week in 2017⁹ provided 704 free coding workshops for 13,448 youth and 202 ‘train the trainer’ sessions for 2,753 trainers across refugee camps, community centres and universities in Egypt, France, Greece, Iraq, Lebanon, Palestinian Territories, Jordan, Sweden and Turkey (Refugee Code Week, 2017).

Results and impacts: Among the youth participating in Refugee Code Week in 2017, 57% were refugees, and 50% were women (Refugee Code Week, 2017). As part of this initiative, 16-week boot camps equipped young refugees with skills and expertise to become software engineers. The boot camps enabled 50 graduates to get jobs, resulting in around 90% job placement (Refugee Code Week, 2017).

Other coding and digital skills training inside and outside camps

Turkey: The Karam Lab (<https://www.karamfoundation.org/karam-house/>) is an educational course for Syrian refugee youth to build their creative and entrepreneurial skills in design, technology and engineering through hands-on training in the use of computers, 3D printers and laser cutters.

Greece: Astro-Lab (<http://astro-lab.org/>) provides refugees and host-community members training in the use of technologies for the innovative design and production of new products.

Jordan: The FabLab Irbid (<https://www.fablabs.io/labs/fablabirbid>) offers Jordanian and Syrian entrepreneurs access to digital fabrication facilities for technical prototyping, as well as a global knowledge-sharing network to enhance learning and collaboration.

Jordan: ReBootKamp (<http://rbk.org/>) is a four-month coding boot camp for refugees and host community members. It also supports students and introduces them to career networking through mentorship from tech professionals.

Source: UNCTAD, 2018, p.65

Entrepreneurship supports

Although not focused exclusively on those in refugee camps, several initiatives use digital tools and technologies to support refugee entrepreneurs and micro-businesses, with activities ranging

⁷ <https://www.sap.com/>

⁸ <https://www.galwayec.ie/>

⁹ <https://digitalskillsfortoday.org/about/2017-report/>

from technical assistance, counselling and mentoring, to business skills training (UNCTAD, 2018, p.59; Benton & Glennie, 2016, p.16).

Programmes supporting refugee entrepreneurship outside camps

Kenya: International Trade Centre and Norwegian Refugee Council (NRC) initiated the **Refugee Employment and Skills Initiative (RESI)** which aims to enhance youth employment and entrepreneurship by providing skills training, business development support and connections to markets (ITC, 2018, p.1, p.10). The project supports online freelancing work opportunities such as basic computer services, data entry, and transcription by offering participants digital skills training.

Turkey: **InnoCampus** is a Turkish non-profit organisation aiming at providing an innovation and entrepreneurship experience to young entrepreneurs. The Start-up Accelerator Programme offers training, mentor support and investor pitches. It targets the local population and refugees who want to become entrepreneurs. Trucks with special containers travel from city to city and offer training in entrepreneurship, innovation and technologies. (<http://innocampus.org/>)

Malaysia: The **Micro-Entrepreneurship Development (MED)** is a programme by NGO National Association of Woman Entrepreneurs of Malaysia (<https://www.nawem.org.my/>). Funded by UNHCR Malaysia, this project aims to increase economic self-sufficiency and facilitate microenterprise businesses of refugees in the Klang Valley through the provision of technical skills training, business coaching and grants (UNCTAD, 2018, p.121). 50% of the target group was Rohingya refugees in 2017. As part of a wide range of activities, the MED programme assists participants in using technology to market their businesses through the creation of business cards, flyers and Facebook pages.

Argentina: The **MIRARES Foundation** (<http://www.mirares.com.ar/>) works to strengthen entrepreneurship capacities of about 3,360 asylum seekers and refugees from various countries such as Armenia, Colombia, Cuba, Haiti, and India. MIRARES has provided them with a Technology Access Room for searching for information, finding employment opportunities and developing business tools along with co-production spaces. It offers a variety of technical and financial support for micro-entrepreneurs. As a result, as of 2017, 50 of 200 people who attended, had started businesses using MIRARES support and UNHCR seed capital.

Source: UNCTAD, 2018, p.61

Working spaces and access to infrastructure

Providing refugees and IDPs with workspaces and access to infrastructure such as the Internet, mobile phones and electricity, can be an effective means to enhance entrepreneurship and develop their business ideas (UNCTA, 2018, p.63). Working spaces include office and workshop space, retail space or farmland depending on the different types and stages of business (UNCTA, 2018, p.63). Co-working spaces and 'hubs' also enable refugee entrepreneurs to work with other entrepreneurs or host community members and facilitate the exchange of information, knowledge and ideas, enhance collaboration and social integration (UNCTA, 2018, p.63).

UNHCR Community Technology Access (CTA)

Country and locality: 26 countries¹⁰ including Yemen, Nepal, Bangladesh, Kenya and Rwanda

Since: 2010

Implementing organisation: UNHCR

Objectives: To enhance empowerment, self-reliance and employability of refugees through access to education, vocational training and livelihoods via technology

Target groups: Between 2010 and 2012, UNHCR opened 54 Community Technology Access (CTA) centres for refugees and IDPs within the camps, and across rural or urban areas such as Nakivale refugee settlements in Rwanda, and Nyapara camp in Bangladesh.¹¹

Approaches and activities: The CTA centres allow refugees and host community members to have access to computers, the Internet, software and education curriculum for training courses (Anderson, 2013, p.22). The centres offer basic IT classes, vocational and life skills training, distance learning and language courses. The CTA centres are also used to access social networking sites and communication tools so that displaced refugees can connect to their families and original communities outside of the settlement (Anderson, 2013, p.22). A train-the-trainer program is also implemented to scale the benefits throughout the camp (Microsoft, 2010, p.2). The CTA centres are expected to become fiscally and operationally self-dependent after the fifth year of the programme (Anderson, 2013, p.22).

Impact and results: Each year, around 20,000 people benefit from the CTA programmes (Anderson, 2013, p.22). A case study shows some positive impacts of the CTA on refugees' livelihoods. In the Nakivale settlement in Rwanda, one young Congolese refugee used the CTA centre as a central point for starting his business (HIP, 2013, p.23). Using a rental computer in the centre, he had access to electrical power and the Internet to use social media such as Facebook, learn new editing software, and download images for CD covers, enabling his video editing business to start up (HIP, 2013, p.13). In Georgia, participants of the CTA courses used the IT certificates they received upon course completion to obtain jobs as secretaries (Anderson, 2013, p.24). A participant in Argentina used the centre's computer to find a job, and Iraqi refugees in Armenia used the CTA centre to advertise their businesses online (Anderson, 2013, p.24).

Limitations: The evaluation report provides only anecdotal evidence on livelihoods outcomes of CTA graduates, which makes it difficult to examine the causes of positive outcomes (Anderson, 2013, p.24). The report also highlighted that access to technology through CTAs is not enough to improve livelihoods opportunities (Anderson, 2013, p.26). The centres lack systematic education curricula and life skills training; they focus on basic IT skills, which are not enough to find employment opportunities (Anderson, 2013, p.26).

Another challenge is to maintain the CTA centres (Anderson, 2013, p.26). When repairs were needed for equipment such as computers, Internet facilities, software and solar panels, it

¹⁰ <https://www.uschamberfoundation.org/corporate-citizenship-center/refugee-crisis>

¹¹ <http://www.unhcr.org/publications/maps/4cc1998c6/unhcrs-community-technology-access-cta-locations-worldwide-31-december.html>

required significant amount of time because of a lack of expertise among local companies (Anderson, 2013, p.26).

Other programmes creating workspaces and access to infrastructure

Global: Libraries Without Borders (<https://www.librarieswithoutborders.org/>) aims to stimulate social entrepreneurship within refugee camps and host communities by providing mobile co-working spaces and access to informational and educational resources. Since its start in 2007, the projects have been implemented in many refugee camps in Jordan, Iraq, Burundi, Kenya, Rwanda and more.

Greece: The Refugee Bus (<https://www.refugeeinfobus.com/>) provides Wi-Fi access and phone-charging stations to refugees within camps in Greece to facilitate their communication and access to information.

Source: UNCTAD, 2018, p.63

Access to markets

E-commerce platforms help refugees expand market opportunities and connect them to international markets even when they have limited mobility (UNCTAD, 2018, p.59). Digital communication tools and the Internet also enhance effective marketing. The development of e-mails and e-marketplaces support small-scale local producers in exporting products as this creates shared infrastructure and resources that overcome regulatory compliance (UNCTAD, 2018, p.59).

Indego Africa, Rwanda

<https://indegoafrica.org/>

Country and locality: Rwanda, Mahama

Since: 2016

Implementing organisation: Indego Africa (non-profit design company)

Objectives: To improve the livelihoods of female camp refugees and create income-generating opportunities through vocational and business skills training to produce high-quality handmade artisanal products for local and international markets (UNCTAD, 2018, p.114).

Target groups: Female Burundi refugees in the Mahama Refugee Camp who already have artisanal skills

Approaches and activities: Originally, Indego Africa worked with local Rwandan women's cooperatives and since 2007 has trained over 1,000 Rwandan women through free-of-charge vocational training and business education (UNCTAD, 2018, p.114). Indego Africa designs products and places purchase orders to the 27 local partner cooperatives. The finished products are shipped by Indego Africa to the United States or sold online. Because of its success, they introduced the same business model to support a female cooperative of Burundi refugees in the Mahama Refugee Camp.

Impact and results: In the last 12 months, the cooperative of Burundi refugees earned US\$5,770 for Indego Africa and US\$1,898 for local sales (UNCTAD, 2018, p.114). All artisans have opened a bank account at a Rwandan commercial bank.

Limitations: This model requires specialist knowledge and established networks and platforms for exporting local artisanal products (UNCTAD, 2018, p.115). Since e-commerce works in the international markets, commercial risks need to be taken into account. For instance, Indego Africa paid the cooperatives for the products in advance and bore the commercial risk if the products were not sold (UNCTAD, 2018, p.115). A similar project can be implemented if there are well-equipped workspaces, and the refugee camps are accessible for raw materials supply, trainers and staff (UNCTAD, 2018, p.115).

Other programmes supporting e-commerce in the camps

Global: MADE51 (Market Access, Design and Empowerment of refugee artisans) by UNHCR (<https://www.made51.org/>) supports refugee artisans by connecting them with international retail brands and buyers. It works in Burkina Faso, Pakistan, Afghanistan, Myanmar, Kenya, Rwanda, Thailand, Jordan, Lebanon, Tanzania and Egypt for refugees from Mali, Myanmar, Afghanistan, Burundi, Syria, Sudan, South Sudan and Ethiopia, many of whom are within the refugee camps. The project partners with local social enterprises that work directly with refugee artisans to develop products, and manage orders, production and logistics according to fair trade practices (UNHCR, 2018c). Currently, MADE 51 partners with 12 local social enterprises¹².

MADE 51 employs many technologies such as mobile apps to track efficient production, tablets to help refugee artisans manage orders and control quality, and e-learning tools for training (UNHCR, 2018c). Refugee artisanal products are sold through online market platforms.

Jordan: SEP Jordan (<https://sepjordan.com/>) is a local social enterprise, which was set up within Jerash Camp in Jordan in 2013 (SEP Jordan, 2018, p.11). SEP Jordan is part of MADE 51. SEP Jordan employs over 350 Palestinian and Syrian refugee women artists in Jerash and Azraq refugee camps (SEP Jordan, 2018, p.15). After women refugees started working with SEP Jordan, 70% of them were able to pay down their past debt, and 80% improved their home conditions (SEP Jordan, 2018, p.11).

Syrian Arab Republic: A social enterprise, **I Love Syria**, empowers internally displaced Syrian women by teaching them new skills and providing them with opportunities to earn an income from the production of handmade jewellery and accessories. They are sold in international markets while operating in a conflict zone. The International Trade Centre (ITC) supported their use of e-commerce platforms (UNCTAD, 2018, p.66).

Access to finance

Crowdfunding enables refugees and migrants to access resources crowded from local and global communities to fund their livelihood activities (UNCTAD, 2018, p.72). **Peer-to-peer lending** is a mechanism that matches people who can offer resources with refugees in need, enabling scaling of funding and social investment (UNCTAD, 2018, p.72). **Mobile money** such as M-PESA helps transfer money to borrowers without local bank accounts or Internet

¹² <https://www.made51.org/made51-strategic-partners/>

connections (UNCTAD, 2018, p.73). This financial capital allows refugees and migrants to start up their business, secure working capital and save financial resources.

Although not focused on supporting refugees' livelihoods specifically, **Fintech and biometric solutions** allow migrants and refugees to **overcome the challenges of identification and documentation in accessing financial products** and managing their finances (UNCTAD, 2018, pp.74-75). The blockchain technology helps provide digital ID, which is crucial for refugees to enter local labour markets, start their business and access essential services (UNESCO, 2018, p.60; Talhouk et al., 2018, p.2).

World Refugee Fund (WRF)

<https://go.kiva.org/refugees/>

Country and locality: Colombia, Jordan, Lebanon, Palestine and Rwanda

Since: 2016

Implementing organisation: Kiva, an international non-profit organisation

Objectives: To provide refugees access to financial loans that address the longer-term needs of refugees and allow them to start a business, pay for critical medical needs, or continue their education

Target groups: Refugees and IDPs inside and outside camps

Approaches and activities¹³: Using the online crowdfunding platform, WRF mobilises individual lenders around the world. WRF works with local partners such as non-profit organisations and microfinance institutions which can support refugee borrowers and administer loans. Borrowers or the local field partners apply for a loan to Kiva, and the loan details are posted on the Kiva website. The individual lenders lend money through the website in amounts from US\$25 and crowdfund the loan in increments of US\$25 or more. Crowdfunded microloans are distributed to and repaid by refugee borrowers through the local partners at 0% interest (Kiva, 2018a, p.3).

Impact and results: Since 2016 to date, WRF has provided a total \$6.6 million to 7,800 refugees and IDPs in Colombia, Jordan, Lebanon, Palestine and Rwanda (Kiva, 2018a, pp.4-5). The programme's impact report shows that refugee and IDP borrowers had a high repayment rate of 96.6% that is on par with 96.8% for all non-refugee loans (Kiva, 2018a, p.4). 55% of refugee borrowers are women (Kiva, 2018b, p.2).

In Rwanda, their lending within refugee camps has shown a 100% repayment rate (Kiva, 2018a, p.8). In Lebanon and Jordan, local lending partners, who were initially reluctant to lend to Syrian refugees due to the risk of defaults, changed their perception and now are willing to lend to refugees given their high repayment rates (Kiva, 2018a, p.8).

¹³ <https://www.kiva.org/about/how>

Give Directly

<https://www.givedirectly.org/refugees>

Country and locality: Uganda

Since: 2009

Implementing organisation: Give Directly, a not-for-profit organisation

Objectives: To empower refugees to rebuild and reconstruct their own lives by providing unconditional cash transfers

Target groups: Refugees from the Democratic Republic of Congo and Rwanda in the Kyaka II refugee settlement in South-Western Uganda, and neighbour Ugandan nationals living in direct proximity to the settlement (Williams & Cooke, 2018, p.5).

Approaches and activities: Give Directly provides refugees unconditional cash transfers that are not restricted to spending on certain goods (Coleman, 2018, para.4). Firstly, supporters can donate money (from US\$50 upwards) through the online platform using credit/debit cards or PayPal. The cash amount is relatively larger than those of other humanitarian cash programmes, enabling refugees to save and invest the money for their livelihoods enhancement (Coleman, 2018, para.5). Transfers are delivered through the MTN mobile money payments platform or a bank owned by the Government of Uganda (Williams & Cooke, 2018, p.5). The beneficiaries are chosen from among the poorer households using specific criteria.

Impact and results: 4,371 refugees and host community households received US\$660 in Uganda (Coleman, 2018, para.3). The survey found that 87% of the recipients increased their income, 43% obtained greater access to education, and 95% decided to continuously use mobile money (Coleman, 2018, para.9).

While not targeting refugees, the impact evaluations using randomised controlled trials on the same model by Give Directly found that recipients in Kenya increased their earnings by US\$270, assets by US\$430, and nutrition spending by US\$330 (Haushofer & Shapiro, 2016, p.36).

Limitations: The evaluation report suggested that it is operationally feasible to deliver large cash transfers to refugees within the refugee settlement (Williams & Cooke, 2018, p.17). The recipients could safely receive money through both traditional banking and mobile money (Williams & Cooke, 2018, p.17). However, the positive impacts on livelihoods might not be found in settings where refugees' mobility and work are restricted (Williams & Cooke, 2018, p.5). In Uganda, refugees have the right to work, start businesses and farming, allowing them to invest the money (Williams & Cooke, 2018, p.5).

Fintech and biometric solutions to enhance access to finance

Jordan: Boloro MENA (a USA-based global payments gateway platform) and BanQu (a blockchain economic identity platform company) developed a portable payment system that will allow refugees to have a unique identity, a legal source of funds, and enable the purchase of goods and services online and offline (Boloro, 2016, p.1). (<http://www.boloro.com/>)

Jordan: UNHCR, in partnership with Cairo-Amman Bank, provides cash assistance directly to refugees' bank accounts, the refugees can withdraw the cash from ATMs and manage their finances securely using biometric-based identification technology (<http://www.unhcr.org/596331dd7.pdf>)

Lebanon and Jordan: MasterCard and the World Food Programme have created pre-paid cards that enable refugees to purchase foods at registered shops. The electronic payment system allows them to make food choices and benefit the local economies. (<http://www1.wfp.org/mastercard>)

Myanmar: Rohingya Projects (<http://rohingyaproject.com/>) has provided each Rohingya with a digital ID that is recorded on the blockchain. It aims to empower the Rohingya diaspora by providing the foundation for access to services (Rohingya Project, 2018). Pilot activities run in Bangladesh, Malaysia, and Saudi Arabia.

Source: UNCTAD, 2018, p.75

3. Lessons learned

Some studies addressed the policy implications of ICT approaches for livelihoods support for IDPs and refugees in camps and settlements. The main findings include:

Understand legal and regulatory environments

More effort is needed to **understand the policy and regulatory frameworks for refugees' access to services and labour markets in host communities in the design of projects**. For instance, regulatory restrictions on refugees' access to local SIM cards have prevented UNHCR from providing them with mobile networks connections (UNHCR, 2018b, p.10). Trained refugees in UNHCR's Community Technology Access centres had limited access to the local labour market because of the lack of legal provisions and mobility (Anderson, 2013, p.25).

Tailor to available resources and infrastructures

The studies reviewed recommended **conducting a greater assessment of infrastructure and examine what types and forms of technology would work best with the infrastructure available** (UNESCO, 2018, pp.53-54). Appropriate technical approaches for connectivity, electricity and hardware vary according to the context, and it should not be assumed that the same approach will work in all refugee settings even when it has previously worked well in another location (Gladwell et al., 2016, p.76).

In circumstances where ICT infrastructure is not reliable, projects need to increase its flexibility (UNESCO, 2018, p.61). The Community Technology Access centres in the UNHCR project designed software that was easy to maintain in an environment with little Internet access and

less technical assistance (Microsoft, 2010, pp.2-3). The Internet centres need to have open spaces for users to obtain free training materials and tools without Internet access (Pakzad, 2017, p.8).

Conduct cost-benefit analysis and ensure financial sustainability

Cost-benefit analysis should be undertaken (UNESCO, 2018, p.59). It is essential to understand that ICT approaches are not always cost-effective relative to livelihood outcomes, particularly given the limited resources and infrastructure in refugee camps (Tauson & Stannard, 2018, p.52). **It requires cost-saving approaches** such as reducing energy input and decentralising service provision, combined with other income-generating options (Anderson, 2013, p.26). The Community Technology Access centres have used green technologies such as solar powered classrooms to ensure low operating costs (Microsoft, 2010, pp.2-3). In addition, the centres have user fees for the training course and Internet café. These attempts generate enough income to run and maintain the centres including consumable items such as paper for printing and salaries for staff who manage the centres (Anderson, 2013, p.23). When resources, including laptops and smartphones, are pooled from community members this will enhance their accountability to sustain the projects (UNHCR, 2018b, p.9).

Invest in ICT related infrastructure

Further efforts need to be taken to invest in ICT backbone infrastructure, particularly in the most reliable infrastructure available in the context to ensure the use of digital tools and technologies (UNCTAD, 2018, p.59; UNHCR, 2018b, p.8; Pakzad, 2017, p.8; Gladwell et al., 2016, p.76). The most common barrier cited in the literature is the lack of ICT and necessary infrastructure such as electricity, buildings and Internet (Tauson & Stannard, 2018, p.53). For instance, around 65 million refugees and IDPs live without reliable Internet and network connectivity (UNHCR, 2016, p.8). Rural refugees, in particular, have less access to mobile and Internet connectivity than those in urban areas (UNHCR, 2016, p.12). While mobile broadband has penetrated in urban areas, many of these mobile broadband networks only have 2G or 3G connectivity, which is not sufficient to run an internet-based business and use online training materials and videos (Pakzad, 2017, p.7).

Large-scale infrastructure investment for reliable power and energy around the camps has the potential to employ refugees and benefit host communities (UNHCR, 2016, p.9; Pakzad, 2017, p.8). Partnership with private companies would help bring Wi-Fi connections to the refugee camps (Pakzad, 2017, p.8). Advocacy with governments and technology companies for infrastructure development is needed to ensure the availability of network infrastructure and reliable electricity (UNHCR, 2016, p.9).

Mitigate digital divide across different groups of refugees

Digital literacy, and access to mobile devices and the Internet vary across gender, age, and social and economic groups (Pakzad, 2017, p.8). It is essential to **develop a better understanding of such gaps and specific causes so as to prevent further digital divide**. In the context of emergencies and displaced settings, gender, social and cultural disparities are easily intensified (Tauson & Stannard, 2018, p.56).

For instance, there is an apparent gender gap in the use of technology. A literature review by Tauson & Stannard (2018, p.56) found that women and girls are less likely to use technology for

learning and other purposes. Potential causes include cultural and structural inequalities, social and material barriers, and time restrictions due to their responsibilities for housework (Tauson & Stannard, 2018, p.56). Among Somali and Sudanese refugee communities in the Kakuma refugee camp, women and girls had significant household responsibilities, and this led to male users outnumbering female users in Community Technology Access centres (Anderson, 2013, p.26). Digital initiatives such as digital jobs, coding skills training and online learning programmes also tend to benefit only highly educated and digitally proficient refugees as they require specific capacity, knowledge and skills relating to digital technology (Benton & Glennie, 2016, p.1, p.3).

Preliminary assessments of the digital divide can help to design inclusive programmes and training that close this gap (Pakzad, 2017, p.9). Increasing outreach to women and disadvantaged groups, and providing digital and IT training exclusively for these marginalised groups, can enhance their equal participation (Anderson, 2013, p.26; Gladwell et al., 2016, p.76).

Sustain digital technology interventions

The sustainability of any intervention has to be established to ensure long-term effects. Firstly, it is essential to **take into consideration the full costs of sustaining ICT systems in the long term**. Otherwise, technology could become a burden on the refugee camps and local communities (Tauson & Stannard, 2018, p.52). Some studies found that broken equipment and laptops tended to go unrepaired (Tauson & Stannard, 2018, p.53). It is important to factor in how staff and maintenance costs are to be covered and how broken equipment can be maintained (Tauson & Stannard, 2018, p.53; Gladwell et al., 2016, p.76).

Procurement and maintenance of computers and Internet service can be purchased locally (Anderson, 2013, p.26). Local procurement reduces operational delays due to transportation and customs issues and allows timely troubleshooting by local companies (Anderson, 2013, p.26).

Participation and capacity building of beneficiaries, host communities and local providers are crucial to mitigate project inefficiencies and develop greater ownership and willingness to maintain ICTs (UNHCR, 2018a, p.4; UNHCR, 2018b, p.9). For instance, mobile phone charging stations in the Community Technology Access centres were simply large relative to the number of users, yet such issues can be addressed if adequate community consultation and feedback are in place throughout the project cycle (UNHCR, 2018b, p.9).

Set long-term visions

It is crucial to **understand that the adaptation of technology takes a long time**. Tauson and Stannard (2018, p.52) found that the integration of technology in the education sector takes roughly ten years even in the context of developed countries. When the programmes support refugees and IDPs to start e-commerce businesses or become freelance coders, technical knowledge and digital literacy such as web design, database management and digital security will not be acquired within a short time (Pakzad, 2017, p.8).

Additionally, **ICT approaches need to enhance sustainable and stable livelihoods of refugees for the long-term**. While digital and technology related jobs can help refugees earn a living in the short-term, they might not be sustainable (UNESCO, 2018, p.61). The sustainability of e-commerce programmes also depends on how to ensure enough demand from the international market (UNCTAD, 2018, p.115).

Create partnerships and collaboration

Effective partnerships and sustainable collaborations are crucial to reduce unnecessary competition and mitigate duplicating existing work among aid institutions. A number of studies reviewed highlighted the issue of duplication of similar initiatives by NGOs, aid organisations and private sector entities, such as a high number of competing digital services and platforms targeting refugees (Benton & Glennie, 2016, p.2; Pakzad, 2017, p.9). For instance, as of October 2016, there are approximately 200 refugee-related mobile apps on Google Play, in which 57% of these applications had less than 500 downloads, indicating low sustainability of such digital services (Pakzad, 2017, p.9). **An open-source online platform for data-sharing** such as the Digital Humanitarian Network¹⁴ **can be established to enhance cross-organisation coordination** (Pakzad, 2017, p.9).

Creation of technological solutions in refugee camps also **requires bringing own expertise of public, private and non-profit agencies.** In coding skills training initiatives such as Refugee Code Week, universities could engage more young people in the programmes and tech-related companies could provide tech-related skills such as coding (UNCTAD, 2018, p.139). The Community Technology Access centre has also been a positive example. UNHCR has managed implementation in the camps and provided guidance on refugee needs, while Microsoft provided the technology specifications and software, and other private partners such as PricewaterhouseCoopers helped with project management and funding (Microsoft, 2010, p.2). **Partnership with host governments is crucial** since they can incentivise private companies to expand mobile and Internet connectivity and affordability into refugee and IDP communities (UNHCR, 2016, p.27).

Understand local cultural attitudes towards technology and learning

It is important **to consider the broader cultural backgrounds of refugees and IDPs** since they have been displaced into a different cultural setting and could have a distinct approach to learning and use of technology (Tauson & Stannard, 2018, p.51). **Preliminary consultations and open discussions with a target population** would help achieve a better understanding of which interventions are more suitable for their social and cultural background (Tauson & Stannard, 2018, p.51). For instance, the case study of Indego Africa found that training for refugees was successful because of cultural and linguistic similarities between the Burundi refugees and the Rwandan training teams (UNCTAD, 2018, p.118).

Conduct evaluation and share lessons learned

Rigorous monitoring and evaluation are crucial to facilitate the adoption of ICT tools by refugees and IDPs for their livelihood support. There is a general lack of evaluations and impact studies on ICT tools in emergency settings (UNESCO, 2018, p.61; Tauson & Stannard, 2018, p.21). ICT related projects tend to kick-start many pilot activities rather than evaluating the impacts on livelihood outcomes (UNHCR, 2018b, p.12). By contrast, the successful digital work outsourcing company, Samasource, has collected high-quality monitoring data with a credible methodology and iterated its business model systematically and regularly based on the monitoring data (Impact Matters, 2017, pp.5-6). **Smartphone and mobile applications can**

¹⁴ <http://digitalhumanitarians.com/>

even collect monitoring and evaluation data remotely, which can be used to inform the intervention design (UNESCO, 2018, p.59).

Overcome security and privacy issues

More attention needs to be paid to surveillance, privacy and security issues associated with digital tools, services and platforms (Pakzad, 2017, p.9). Security risks arise when refugees reveal their identities online, particularly for those who are politically at risk (UNHCR, 2016, p.20). Data security, including safeguards to protect aid organisations holding sensitive data against cyber-attacks, is crucial (UNHCR, 2016, p.20). To mitigate such security issues, digital and vocational training programs should incorporate minimum digital security training into their programme so that refugee users understand how to use their private data online responsibly (UNHCR, 2016, p.25). The training needs to be easy to understand for those who have low levels of digital literacy: current available resources and training tend to require certain levels of digital and Internet knowledge (Pakzad, 2017, p.10).

General recommendations for refugees' livelihoods support

The case studies also highlighted recommendations that enhance livelihood support projects of refugees. These include:

- **Conduct a preliminary assessment of local labour markets and strategic mapping of income-generating opportunities**

The assessment results will enable the programme to offer the most relevant skills, knowledge and training for refugees and host communities to enhance their livelihoods (Anderson, 2013, p.25). If there is not enough labour demand, skills training programmes tend to lead to oversaturation in specific categories of professions because of limited business and employment opportunities in fragile situations (UNESCO, 2018, p.59). The case studies show one of the critical success factors of livelihood support is to focus on local economic sectors that have the potential for economic growth (UNCTAD, 2018, p.149).

- **Consider the benefits of the interventions on host communities**

Many studies recommended considering the impacts and benefits of the project on host communities (Kiva, 2018a, p.6). It is crucial to improve the livelihoods of both refugees and members of the host community in order to mitigate tensions and increase social cohesion (ITC, 2018, p.5; Coleman, 2018, para.7).

- **Tailor to the specific needs of refugees and IDPs**

For instance, Kiva tailored their financial services to refugees' needs by offering smaller loan sizes than their other clients, expanding the type of documents acceptable as proof of identifications and loosening collateral and guarantor requirements (Kiva, 2018a, p.6). Staff who have similar language and culture of refugees may be better able to design and facilitate such projects (UNCTAD, 2018, p.96).

- **Offer comprehensive supports for entrepreneurs and businesses**

Comprehensive support is needed to enhance the livelihoods and employability of refugees (UNCTAD, 2018, p.148). A combination of microcredit, mentoring and coaching, business skills development and the incubation of innovative ideas would help them start-up their businesses (Anderson, 2013, pp.25-26). For financial services, the provision of other livelihood support helps build trust from lenders (Kiva, 2018a, p.6).

- **Provide accredited recognition for online education and training**

Online educational and training programmes need to be translated into accredited recognition that future employers will value (Pakzad, 2017, p.9). For instance, JWL provided refugee students with an academic diploma in Liberal Studies, awarded by Regis University which is regionally accredited by the Higher Learning Commission in the United States (JWL, 2018, p.22). Internationally recognised certifications motivate many students as they create further educational and employment opportunities (Gladwell et al., 2016, p.23). It is also important to inform students about the recognition and transferability of different programmes in their current and potential future locations (Gladwell et al., 2016, p.73).

Some online learning programmes can also convert into credits towards formal university programmes when mobility restrictions are overcome (Benton & Glennie, 2016, p.1). Micro credentialing and certifications would also help IDPs/refugees to advance further career pathways as a means to demonstrate and assess their qualifications, expertise and competence (Pakzad, 2017, p.2).

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Key websites

- An international network for education in emergencies: <http://www.ineesite.org/>
- Connected Learning Consortium: <http://www.connectedlearning4refugees.org/>
- Digital humanitarian networks: <http://digitalhumanitarians.com/>
- Human safety net: <https://www.thehumansafetynet.org/newsroom>
- Innovate for Refugee: <https://innovateforrefugees.mitefarab.org/>
- Promising practices in refugee education: <https://www.promisingpractices.online/>
- Techfugees: <https://techfugees.com/>
- The mEducation Alliance: <http://www.meducationalliance.org/>

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