



Technology & Humanitarian Aid in Afghanistan:

Using technology for data collection and
communication in a context of conflict

Rodrigo Mena
February 2020



Afghanistan Research and Evaluation Unit

Working paper

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About the Afghanistan Research and Evaluation Unit

The Afghanistan Research and Evaluation Unit (AREU) is an independent research institute based in Kabul that was established in 2002 by the assistance of the international community in Afghanistan. AREU's mission is to inform and influence policy and practice by conducting high-quality, policy relevant, evidence-based research and actively disseminating the results and promote a culture of research and learning. As the top think-tank in Afghanistan and number three in Central Asia according to the Global Go To Think Tank Index Report at the University of Pennsylvania, AREU achieves its mission by engaging with policy makers, civil society, researchers and academics to promote their use of AREU's research-based publications and its library, strengthening their research capacity and creating opportunities for analysis, reflection and debate. AREU is governed by a Board of Directors comprised of representatives of donor organizations, embassies, the United Nations and other multilateral agencies, Afghan civil society and independent experts.

AREU's core donor is the Swedish International Development Cooperation Agency (SIDA). Specific projects in 2020 are being funded by the European Union (EU), Global Challenges Research Fund (GCRF), Central Asia Regional Economic Cooperation Institute (CAREC), The Foundation to Promote Open Society (FPOS), The French Medical Institute for mother and children (FMIC), The Royal United Services Institute (RUSI), Institute for Integrated Transitions (IFIT), and UN Women.

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In 2018, AREU was awarded Best International Social Think Tank by Prospect Magazine.



About this report

This report presents the results of the research project “Humanitarian Aid and the use of Technology for Data Collection: the case of Afghanistan”, developed by the Afghanistan Research and Evaluation Unit (AREU), Afghanistan, as part of its Visiting Scholar Programme, and the International Institute of Social Studies (ISS) of Erasmus University Rotterdam, The Netherlands, as part of the project “When Disasters Meet Conflict”.

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Foreword

The Afghanistan Research and Evaluation Unit (AREU) is very pleased to present its audience with a highly important research paper: “Technology and Humanitarian Aid in Afghanistan: Using technology for data collection and communication in the context of conflict” authored by our Visiting Scholar Dr Rodrigo Mena.

In order to provide humanitarian aid and effectively respond to conflict and disaster, there is always a profound need for the provision of accurate and appropriate information to assess a situation, plan and implement a response, and evaluate any intervention.

Naturally, the collection of data in the areas affected by High-Intensity Conflict (HIC) is not an easy task. Utilizing technology for information collection purposes can be helpful with multiple benefits. Still, at the same time, it is usually accompanied by negative consequences, unexpected impacts or hidden inequalities that deserve to be addressed in terms of research ethics and methodological clarity as well as ways in which data is used.

As indicated in this paper, information collected through technology can be used for non-humanitarian purposes or can be controversial in settings of war or violent conflict, especially concerning geo-positional data that can be used by belligerent actors.

Therefore, it is crucially relevant and particularly to the situation in Afghanistan to understand the use of technology and its risks and benefits for data collection, communication and data management. I am very confident that this research paper will contribute to filling the current information and analysis gap in this area and help the policymakers understand the benefits and risks of using communication for data collection purposes.

I would like to thank AREU visiting scholar Dr Rodrigo Mena for his painstaking work, anonymous peer reviewers and AREU researchers for their significant contribution that further enriched this paper and not the least, all partners in the Netherlands who made this possible by funding this research.



Dr Orzala Nemat,
AREU Director

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Acronyms

ACBAR	Coordinating Body for Afghan Relief and Development
ANDMA	Afghanistan National Disaster Management Authority
AOG	Armed Opposition Group
AREU	Afghanistan Research and Evaluation Unit
FGD	Focus Group Discussion
GPS	Global Positioning System
HIC	High-Intensity Conflict
INGO	International Non-governmental Organization
NGO	Non-governmental Organisation
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
UN	United Nations
WFP	World Food Programme

1. Introduction

‘Data collection technology is a very successful innovation, but at the same time we need to make sure the proper resources and regulations are present to design, process, report and collect information.’

International non-governmental organisation respondent

The provision of humanitarian aid and responding to conflict and disasters both require an appropriate amount of information to assess a situation, plan and implement a response, and evaluate any actions. Collecting this information can be difficult in places affected by high-intensity conflict (HIC).

While technology can bring multiple benefits and solutions for the above,¹ less well known are its negative consequences, unexpected impacts, or hidden inequalities.² Information collected through technology can be used for non-humanitarian purposes, or can be controversial in settings of war or violent conflict, especially with regard to geo-positional data that can be used in belligerent actions.³

Given technology’s benefits and risks for communication and data management, understanding it better is of utmost relevance. Empirical cases can bring awareness among technology users of its benefits and detriments, as well as the political and social aspects of its implementation.

In the case of Afghanistan, multiple communication and data management technologies have been used at the same time that they have been banned or become problematic, as presented in this report. Which technologies are in place, who has access to them, how are they managed, and the political implications of their use, are important questions. This has made Afghanistan a good case study that can shed light about the use of technology by the humanitarian aid sector.

This research reviews digital communication and data management technologies that are used, or have been used, by the humanitarian aid sector in Afghanistan. Further, it explores their challenges, political use, and the role they might play in the conflict as well as how the conflict affects their use, implementation or management.

- 1 J. Belliveau, “Humanitarian Access and Technology: Opportunities and Applications,” *Procedia Engineering* 159, *Humanitarian Technology: Science, Systems and Global Impact 2016*, (2016): 300-306; IFRC, *World Disasters Report: Focus on Technology and the Future of Humanitarian Action* (Geneva: International Federation of Red Cross and Red Crescent Societies, 2013); R. Read, B. Taithe, R. MacGinty, “Data Hubris? Humanitarian Information Systems and the Mirage of Technology,” *Third World Quarterly* 37, no. 8 (2016): 1314-1331.
- 2 L. Fast, “Diverging Data: Exploring the Epistemologies of Data Collection and Use among Those Working on and in Conflict,” *International Peacekeeping* 24, no. 5 (2017): 706-732; K. L. Jacobsen, *The Politics of Humanitarian Technology: Good Intentions, Unintended Consequences and Insecurity* (New York: Routledge Taylor & Francis Group, 2017); C. McGoldrick, “The Future of Humanitarian Action: An ICRC Perspective,” *International Review of the Red Cross* 93, no. 884 (2011): 965-991.
- 3 Fast, “Diverging Data”; Jacobsen, “Politics of Humanitarian Technology”; K. B. Sandvik, Jumbert M. Gabrielsen, J. Karlsrud, et al., “Humanitarian Technology: A Critical Research Agenda,” *International Review of the Red Cross* 96, no. 893 (2014): 219-242.

1.1. Technology, information and humanitarian aid

The humanitarian aid sector (including disaster management, disaster risk reduction, and resilience and development actors) have seen a steady growth of the use of technology for data collection and communication during the last decade.⁴ As presented in the World Disasters Report, developed by the International Federation of Red Cross and Red Crescent Societies (IFRC):

The development of a more technology-oriented approach to humanitarian action is essential - and inescapable - to take advantage of the opportunities to improve, for example, information gathering, analysis, coordination, action or fund-raising.⁵

The use of technology also promises to help humanitarian actors face multiple challenges presented by HIC scenarios, for example, by serving as a mechanism to overcome access and insecurity constraints in the field.⁶ These tools, moreover, “can give beneficiaries the opportunity to make informed decisions in a crisis, give humanitarians better situational awareness and improve aid delivery”.⁷

Box 1. Technology definition

Technology is a very broad term, usually related to the use of techniques, methods, and processes for the provision of services, production of goods, or accomplishment of multiple tasks. **Here, the focus is on digital technology used for the purposes of communication and collection and management of data and information (“technology” hereafter) by humanitarian aid and disaster management actors.** Technology can include emails, the use of biometric systems for registration beneficiaries, mobile phones, the use of electronic payment systems for the distribution of goods, and the use geographic information system and satellite images, including drones and remote management tools.

The introduction of technologies in the humanitarian aid sector resulted in the development of a “digital humanitarianism”, a moment in which humanitarian aid relies strongly on digital technology, especially for knowledge gathering and management.⁸ Its expanded use in the humanitarian sector also relates to a trend toward innovation and, with the use of market strategies in the provision of aid,⁹ a process labelled “humanitarian neophilia”.¹⁰

Similarly, Read et al. added that the increased presence of technologies in the sector has to do with the growing popularity of technocratic elements and of a corporate orientation, where aspects such as efficiency and transparency are emphasized.¹¹ Sandvik et al. raised the argument that technology has always been present in the humanitarian sector and is influenced by realities of professionalism and finance.¹²

4 M. N. Barnett, “Humanitarian Governance,” *Annual Review of Political Science* 16, no. 1 (2013): 379-398; Fast, “Diverging Data”; IFRC, *World Disasters Report*; Jacobsen, “Politics of Humanitarian Technology”; R. Stephenson and P.S. Anderson, “Disasters and the Information Technology Revolution,” *Disasters* 21, no. 4 (1997): 305-334.

5 IFRC, *World Disasters Report*: 9.

6 Jacobsen, “Politics of Humanitarian Technology”.

7 Sandvik et al., “Humanitarian Technology”: 223.

8 R. Burns, “Moments of Closure in the Knowledge Politics of Digital Humanitarianism,” *Geoforum* 53 (2014): 51-62.

9 K. B. Sandvik, “Now Is the Time to Deliver: Looking for Humanitarian Innovation’s Theory of Change,” *Journal of International Humanitarian Action* 2, no. 1 (2017); T. Scott-Smith, “Humanitarian Neophilia: The ‘Innovation Turn’ and Its Implications,” *Third World Quarterly* 37, no. 12 (2016): 2229-2251.

10 Humanitarian neophilia “designates a distinctive approach to aid, which combines an optimistic faith in the possibilities of technology with a commitment to the expansion of markets”; Scott-Smith, «Humanitarian Neophilia»: 2230.

11 Read et al, “Data Hubris?”: 1318.

12 Sandvik et al., “Humanitarian Technology”: 225.

When it comes to technology in the humanitarian aid sector, there is a lack of regulatory protocols and guidelines.¹³ For example, The Sphere Handbook, an internationally recognized set of principles and minimum standards for the provision of humanitarian aid, mentions in its fourth Commitment the need to “[e]nsure that communications technology, new and old, is used effectively and safely”.¹⁴ Other brief mentions of the use of technology are present in the handbook, but none set any guidance or protocols.

The United Nations’s (UN) Office for the Coordination of Humanitarian Affairs (OCHA) released a policy document, “Humanitarianism in the Network Age”, which detailed how the reduced presence of regulations and barriers in the use of new technologies favoured their rapid growth, based on their supposed benefits. A quote from Tim McNamara asserted that the world witnessed:

*...not simply a technological shift [but] also a process of rapid decentralization of power. With extremely low barriers to entry, many new entrants are appearing in the fields of emergency and disaster response. They are ignoring the traditional hierarchies, because the new entrants perceive that there is something they can do which benefits others.*¹⁵

In HIC-affected places, moreover, technologies related to warfare can also be more commonly available, which can also augment their use by aid actors. As presented by McGoldrick:

*Just as new technology presents certain risks in terms of evolving means and methods of warfare, it also presents opportunities, in that it will influence more and more how humanitarian actors work, particularly with regard to information gathering and sharing.*¹⁶

Discussions of the benefits and concerns in humanitarian aid technology open a “new dimension to an old ‘Do No Harm’ debate”.¹⁷ At the same time, they prompt a new dimension for the development of relevant policies, regulations and reflections on their use in the aid and development sectors.

13 IFRC, World Disasters Report.

14 Sphere Project (ed.), The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response, Fourth edition (Geneva, Switzerland: Sphere Association, 2018): 63.

15 OCHA, “Humanitarianism in the Network Age: Including World Humanitarian Data and Trends 2012,” Office for the Coordination of Humanitarian Affairs (2013): 16. Available at: https://www.unocha.org/sites/unocha/files/HINA_0.pdf. (accessed 18 June 2018).

16 McGoldrick, “The Future of Humanitarian Action”; 978.

17 Jacobsen, “Politics of Humanitarian Technology”: 144.

1.2. The case of Afghanistan

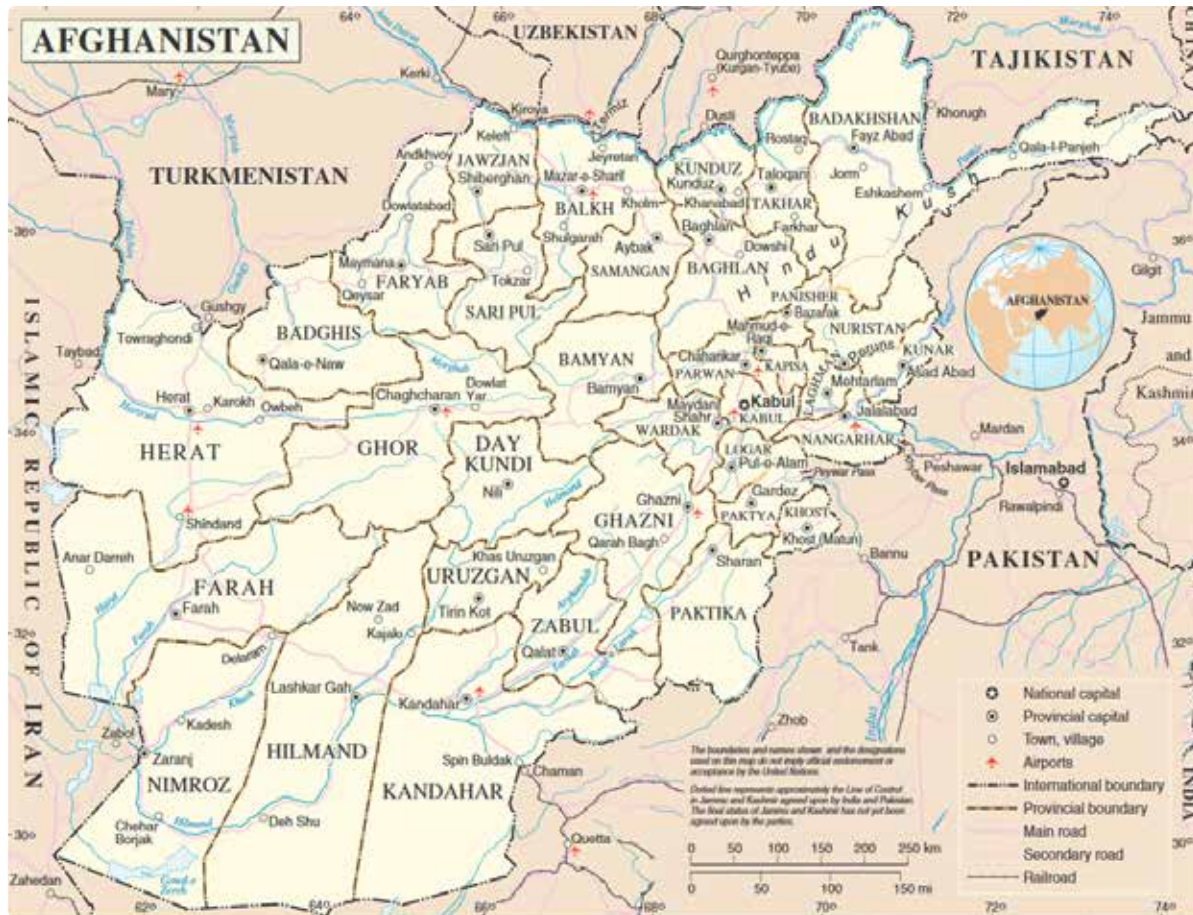
Afghanistan has been affected by conflict for almost 40 years. The Soviet invasion during the 1980s gave way to a civil war that lasted one more decade, until a coalition lead by the United States and the United Kingdom intervened in the country militarily in 2001. As a result, an internationally recognised Government was established in the country, but a vast part of the country remained under the influence of armed opposition groups (AOGs), mainly the Taliban. Nowadays, multiple AOGs are present in Afghanistan, including ISIS and the Taliban, with the latter being the main one, with control, or strong influence, over 40% to 70% of the territory.¹⁸

The years of conflict have resulted in a difficult socio-economic landscape in Afghanistan. With an estimated population of 31.6 million,¹⁹ the country's poverty rate remains at almost 40%²⁰ and it ranks 168th out of 189 countries on the Human Development Index.²¹ Afghanistan also has a fragile system of governance, with high levels of corruption and state fragility. It ranks 172nd out of 180 countries on the Corruption Perceptions Index²² and 171st out of 178 on the Fragile States Index.²³

Disasters related to the presence of earthquakes, landslides, avalanches, droughts, storms and floods, are also present in the country,²⁴ affecting more than 4 million people in 2018,²⁵ with the economic damage resulting just from floods, earthquakes, and droughts estimated at US\$410 million per year.²⁶

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- 18 A. Jackson, *Life under the Taliban Shadow Government*, (Kabul: Overseas Development Institute, 2018). Available at: <https://www.odi.org/sites/odi.org.uk/files/resource-documents/12269.pdf>; S. Qazi and Y. Ritzen, "Afghanistan: Who Controls What," *Al Jazeera*, 24 January 2017. Available at: <http://www.aljazeera.com/indepth/interactive/2016/08/afghanistan-controls-160823083528213.html> (accessed 27 May 2017).
- 19 Government of the Islamic Republic of Afghanistan, *Afghanistan Final Population 1397 (2018-19)*, (Kabul: Central Statistics Organization, Government of the Islamic Republic of Afghanistan, 2018). Available at: <http://cso.gov.af/Content/files/%D8%B1%DB%8C%D8%A7%D8%B3%D8%AA%20%D8%AF%DB%8C%D9%85%D9%88%DA%AF%D8%B1%D8%A7%D9%81%DB%8C/population/Final%20Population%201397.pdf>.
- 20 The World Bank, *Afghanistan Development Update: August 2018*, (Washington, DC: The World Bank, 2018). Available at: <https://openknowledge.worldbank.org/handle/10986/30293>.
- 21 UNDP, *Human Development Indices and Indicators: 2018 Statistical Update*, (New York: United Nations Development Programme, 2018). Available at: <http://hdr.undp.org/en/2018-update/download> (accessed 12 November 2018).
- 22 Transparency International, *Corruption Perceptions Index*. Transparency International (2018). Available at: https://www.transparency.org/news/feature/corruption_perceptions_index_2018
- 23 The Fund for Peace, *The Fragile States Index Annual Report 2018*, (Washington DC: The Fund for Peace, 2018). Available at: <http://fundforpeace.org/fsi/2018/04/24/fragile-states-index-2018-annual-report/>.
- 24 NEPA and UNEP, *Climate Change and Governance in Afghanistan*, (Kabul: National Environmental Protection Agency [NEPA], Islamic Republic of Afghanistan; United Nations Environment Programme [UNEP], 2015); The World Bank and GFDRR, *Disaster Risk Profile: Afghanistan*, (Washington DC: The World Bank, 2017). Available at: <http://documents.worldbank.org/curated/en/284301491559464423/Disaster-risk-profile-Afghanistan>.
- 25 OCHA, *Afghanistan Humanitarian Needs Overview: 2019*. (Afghanistan: UN OCHA, 2018a). Available at: <https://www.humanitarianresponse.info/en/operations/afghanistan/document/afghanistan-humanitarian-needs-overview-2019>.
- 26 World Bank and GFDRR, *Disaster Risk Profile: Afghanistan*.

Map 1. Afghanistan



Source: UN Cartographic Section (2011)

The humanitarian aid sector, needs and technology

In response to the negative outcomes of the protracted conflict, disasters, and humanitarian crisis mentioned above, Afghanistan has an active presence of multiple aid and development actors, including most UN agencies, hundreds of international and Afghan non-governmental organisations (NGOs), development agencies, and more than 30 international donors.²⁷

The number of people with acute humanitarian needs is estimated at 6.3 million in 2019.²⁸ As presented, more than 4 million of these are in need because of the effects of both sudden-onset and slow-onset disasters, chiefly a severe drought affecting areas of the country for over a year.²⁹ Also, 4 million are in need of access to services and are affected directly by conflict.³⁰

27 ATR, Aid Effectiveness in Afghanistan, (Kabul: ATR Consulting, 2018). Available at: https://reliefweb.int/sites/reliefweb.int/files/resources/aid_effectiveness_in_afghanistan_march_2018_0.pdf (accessed 18 July 2019); OCHA, Afghanistan Humanitarian Needs Overview: 2019.

28 OCHA, Afghanistan Humanitarian Needs Overview: 2019.

29 OCHA, Afghanistan Humanitarian Needs Overview: 2019; OCHA (2018c) Afghanistan Weekly Field Report: 3 to 9 September 2018, (Afghanistan: OCHA, 2018c). Available at: <https://reliefweb.int/report/afghanistan/afghanistan-weekly-field-report-3-9-september-2018>.

30 OCHA, Afghanistan Humanitarian Needs Overview: 2019.

Responding to those needs requires funds. During the last 15 years, Afghanistan has always been one of the largest recipients of humanitarian aid, having been the largest in the world three times between 2004 and 2014.³¹ However, those figures have been decreasing the last couple of years.³² In terms of gross official development assistance, the country was the second-largest global recipient during 2016-2017.³³

The use of technology by the aid sector is growing in relevance and recognition. Relevant information of the “Afghanistan Humanitarian Response Plan (HRP) 2018-2021” is based on satellite imagery,³⁴ and aid actors like the World Food Programme also highlight technology: “[w]ith so many people in need of assistance, the World Food Programme is using technology to get aid rapidly to the families who need it the most”.³⁵

1.3. Methodology

Multiple qualitative research methods were used in the development of this report, including a literature review, a survey, in-depth interviews, and focus group discussions. The literature review of academic work, policy and regulation documents in the country informed the survey questionnaire, interviews, and focus groups, and supported the reading of the results.

The survey and interviews sought to identify the technologies being used, and explore the challenges associated with their use and management. The impact the conflict on the use of technology was also part of the survey, interviews and focus groups.

The survey considered a broad range of actors. Table 1 presents details of the total numbers of participants of the survey (n=60), including local and national representatives from the Government of Afghanistan, the UN, and local, national and international NGOs. The survey was delivered during June and July of 2018 in English and Dari to facilitate the participation of all actors.

Five in-depth key-informant interviews were also conducted with people in managerial positions, including one Minister, one UN Director, one International non-governmental organisation (INGO) Country Director, one National NGO Country Director, and one manager of a private organisation providing satellite and communication solutions. As requested by the participants, the specifics in terms of names and organisations need to remain confidential. Following up on the results from the survey, during December 2018 three focus group discussions (FGDs) were conducted seeking to understand in more detail and context the results obtained.

As presented in Table 1, one FGD was conducted and co-organised with officials from the Afghanistan National Disaster Management Authority (ANDMA) in their facilities. The second one was co-organised with the Agency Coordinating Body for Afghan Relief and Development (ACBAR) and the focus was to hear the voice of non-governmental humanitarian aid actors. It included three United Nations representatives, one participant from ACBAR, two participants from INGOs, and two participants from national and local NGOs. The third discussion focused on governmental actors related to the provision of humanitarian aid and disaster management, and included a representative from different ministries, such as the Ministry of Interior, Ministry of Communication and Information Technology, and Ministry of Defence.

31 Reuters, “The Ten Biggest Recipients of Humanitarian Relief since 2004,” (2015). Available at: <http://news.trust.org//slideshow/?id=cca8cf2e-6d34-4528-a837-21e6965ac7e1> (accessed 11 October 2016); V. Thevathasan, “Top 10 Biggest Recipients of Humanitarian Relief in the Last Decade,” (2015). Available at: <http://www.aidforum.org/disaster-relief/top-10-biggest-recipients-of-humanitarian-relief-in-the-last-decade> (accessed 11 October 2016).

32 ATR, Aid Effectiveness in Afghanistan

33 OECD, Total Official Development Assistance (ODA): 2016-2017, (2018). Available at: <http://www.oecd.org/dac/stats/aid-at-a-glance.htm> (accessed 14 March 2019).

34 OCHA, Afghanistan: Humanitarian Response Plan 2018-2021, United Nations (2018b). Available at: https://reliefweb.int/sites/reliefweb.int/files/resources/afg_2018_2021_hrp_revison_drought_31_may_2018.pdf.

35 WFP, “New Technology Transforms Aid in Afghanistan,” World Food Programme (WFP) (2018). Available at: <https://insight.wfp.org/new-technology-transforms-aid-in-afghanistan-986fd79df0ea>.

Table 1. Methods, Number of Participants and Events

Method	Description participant/event/documents	Code	Total number
In-depth Survey	Government of Afghanistan: National	SURV	2
	Government of Afghanistan: Provincial and local level		2
	UN		3
	NGO		23
	INGO		29
Focus Group Discussions	Officials Afghanistan National Disaster Management Authority (ANDMA)	FGD-AND	5
	Non-governmental humanitarian aid actors	FGD-AA	8
	Governmental humanitarian aid actors	FGD-GOV	8
In-depth interviews	Key-informant Government	INT-GOV	1
	Key-informant UN	INT-UN	1
	Key-informant INGO	INT-INGO	1
	Key-informant NGO	INT-NGO	1
	Key-informant Private sector	INT-PRIV	1
Documents revision	Country policy, regulation, law and relevant document on the topic.	DOC	9

Source: Prepared by the author

The descriptive and exploratory analyses of the survey were done with Excel and QSR-NVivo, and were informed by five themes deriving from the academic literature on the topic: use and users of technology, expectation and perceptions on the use of technology, management and reporting of data collected, technologies and conflict (controversies, barriers, and challenges), and others and cross-cutting issues.

2. Expectations and perceptions: What technology has to offer and why is it being used?

The use of technology in the humanitarian aid sector is commonly adopted with the expectation that will make aid delivery more efficient, accurate or faster. This first section explores the main perceptions and expectations associated with the use of technology for data gathering and management in Afghanistan.

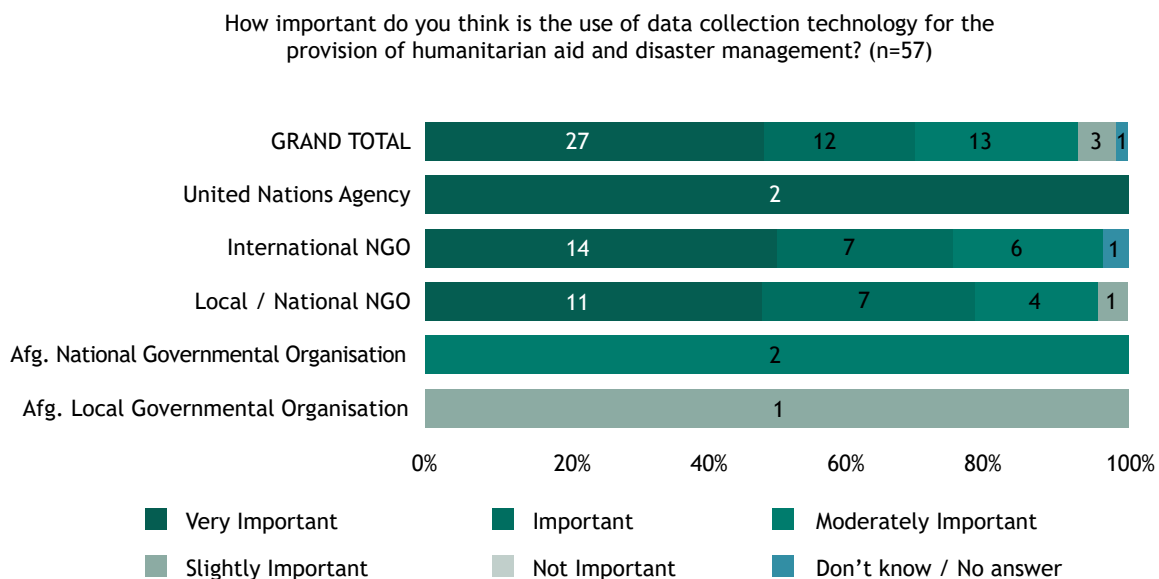
In general terms, most survey respondents and interviewees find the use of data collection technologies for the provision of humanitarian aid and disaster management essential (Figure 1), but this seems to be less the case with Government. The reduced use of technologies was a recurrent concern during the FGDs, with members of the government and one participant raising the issue of infrastructure, as access to electricity, the internet, and other facilities affect their ability to inform and communicate with people (FGD-GOV, Figure 7). In the FGD with ANDMA's staff, it was expressed that, although technology is important, the main problem relates to poor coordination and cooperation between organisations, affecting how data are produced and used (FGD-AND).

On the other side of the spectrum, for the UN and INGOs, the use of technology for data collection and communication is essential in the managing and planning of their programmes (INT-UN, FGD-AA). Although technology is also relevant for Afghan NGOs, they still collect data on paper, and while at some point it becomes digitalised and enters a database, they do not depend on technology for data gathering (FGD-AA). This implies that technology is being used at different moments at different levels according to each organisation's capacity.

One representative from the Ministry of Interior said, "in terms of technology, we do not have any system in place to use for warning and before the disaster" (FGD-GOV), which links with Read et al.'s argument regarding the humanitarian sector tending to operate in reactive ways.

In all the FGDs, the participants expressed the importance of training to guarantee technologies are appropriately used (FGD-AND, FGD-GOV, FGD-AA). The language in which the technology and its tools are offered was also mentioned as an essential element influencing its effectiveness (FGD-AA).

Figure 1. Importance of the Use of Technology (survey mentions)



Despite the differing importance that each particular actor gave to the use of technology, everyone either agrees or strongly agrees that data collection technology is nowadays essential in disaster management and humanitarian aid (Figure 3).

As mentioned, in the literature, the use of technologies is associated with the expectation that aid delivery will be more efficient, accurate or faster, and the case of Afghanistan endorses this idea (FGD-AND/AA, Figure 4). Not only that, the majority believe that because of technology, the amount of data has increased over the last 5 years. On this, Read et al. reflect whether this impression is because data are processed more quickly than before, or the amount of data has increased.

Consistent with the survey (Figure 3), during FGD-AA and FGD-GOV, the possibility of transmitting data more rapidly was also mentioned as a benefit of technology, not only because of the speed of sharing digital information (almost instantaneously at times), but also because it simplifies sharing and transmitting information.

This has extra benefits also mentioned in the FGDs and some in-depth interviews: Although some technology can be expensive (e.g., GPS equipment, biometric devices), it can also reduce costs. Digitalised information and automation both reduce costs in terms of human resources, operations, and in the “transmission” of the information, or getting the data collected from point A to B, by reducing postal and other fees and services. Finally, the cost of many technologies and devices has been reduced over time, increasing the access to them.

Figure 2. Training for the Use of Technology (survey mentions)

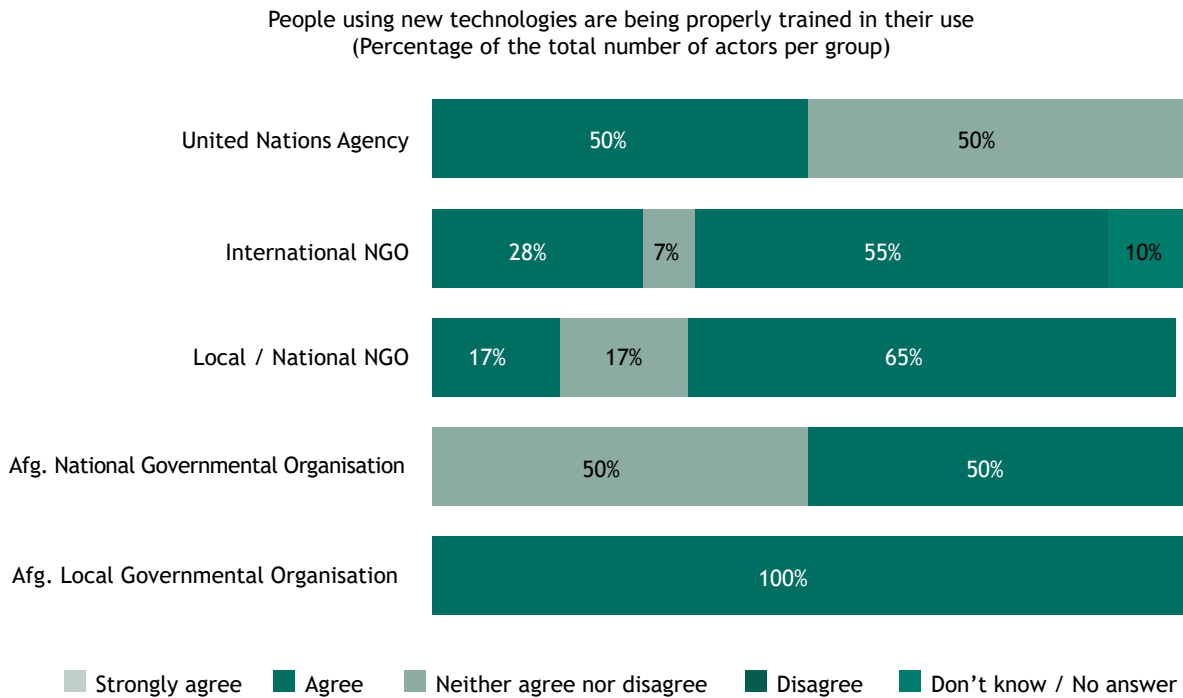


Figure 3. Use of Technology (survey mentions)

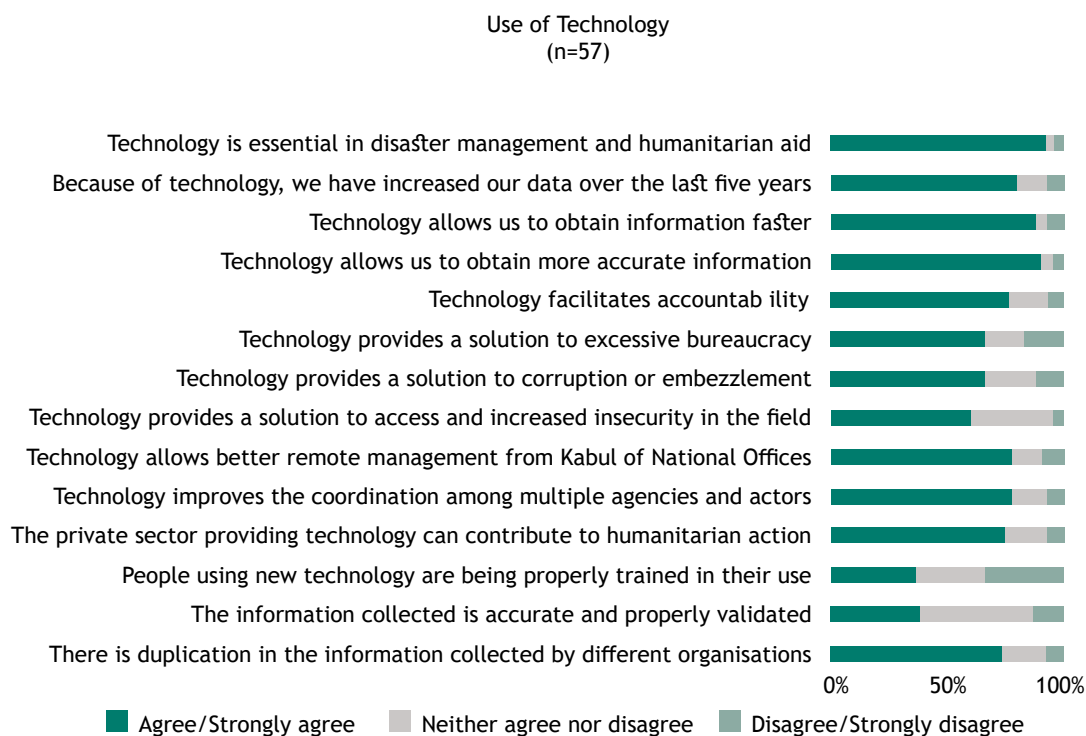


Figure 3 shows that when it comes to assessing whether the information collected is accurate and properly validated, fewer than half of the respondents replied positively. This was supported by FGD-AA/GOV and INT-GOV/INGO/NGO, in both of which it was mentioned that, indeed, technology has the capacity to provide more accurate information, but that is not always the case in Afghanistan.

This seems to be related to the quality of the data generated, which sometimes are duplicated or even inconsistent due to poor cooperation and communication between organisations and communities that, in some cases, are key informants (FGD-AA/GOV). Not only that, this might be related to what Read et al. called the production of “inactionable” data, since there is no previous assessment of which data would improve the response. The expectations around the benefits of the technologies to address the data deficit are clear, but how much those promises are fulfilled is still to be designed/implemented.

Consistent with the previous result, there is the general perception that people are not being properly trained in the use of certain technologies (Figures 2 and 3), with the FGDs and interviews providing some nuance to this result. The main caveat is that there are differences in the training that people from different organisations receive. UN and INGOs are assessed as providing better training than local and national NGOs and Governmental organisations.

A second distinction is in terms of where and who is using the technology. At the level of headquarters and main offices, there is a better knowledge of the use and capabilities of the technology, but people using it at the local level and field activities are perceived as not being properly trained or introduced to its use. As raised by Duffield technology can actually leverage existing inequalities and social differences; for all participants of this research, this is the case of Afghanistan.

For Sandvik et al., data appear to have been collected in excess in crisis situations, which may pose risks to privacy and confidentiality and, in more challenging conditions, create problems with triangulation, putting lives at risk. The survey (Figure 3) also shows that there is a high level of duplication in the information collected by different actors, a result widely ratified in the interviews and FGDs.

The main reasons mentioned for this duplication are: 1) Most information is collected for the management of specific projects in each organisation, and not under the logic of research or sharing information; 2) There are no platforms or strategies in place to share information; 3) There is no public knowledge of who is collecting what information; 4) Most of the data are collected under agreements of confidentiality or anonymity, making it difficult or impossible to share it.

FGD-AND/AA/GOV mentioned the duplication does not occur only between the organisations, but also within organisations, as there is not always a proper mechanism or human capacity to systematise all the information received. Moving in a different direction, participants of the FGD-AND brought up the issue of government entities competing for resources from international donors, which makes them less keen to collaborate.

Also relevant is respondents’ confidence regarding technology’s capacity to address corruption, embezzlement, and excessive bureaucracy, a situation that all FGDs and interviews mentioned as one of the main challenges for the provision of aid and emergency/disaster response in Afghanistan. On average, 60% of respondents are positive about it, while 25% answered that technology might or might not provide a solution to these problems.

Relating to this, the majority also explained that technology facilitates accountability (Figure 3), which may reflect ideas that technology is “less linked to traditional organisations and modes of working”, and is also somehow neutral, which ignores the fact algorithms also have politics.

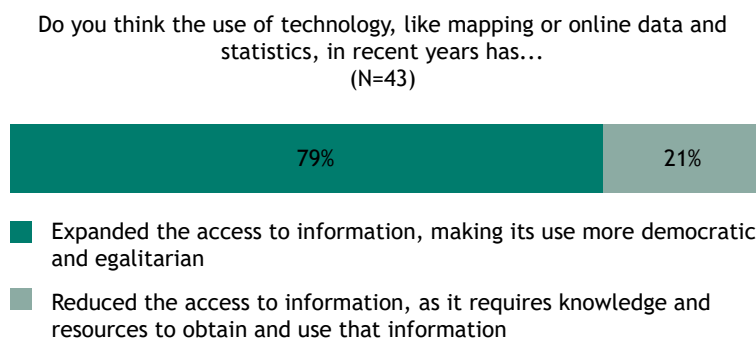
Following the same trend, more than half of the respondents also believe that technology provides a solution to problems of access and increased insecurity in the field. In fact, 78% responded that the use of technology allows better remote management of projects from the capital, Kabul, or national offices. One participant from the FGD-AA said that “using technology makes our life easy instead of putting a lot of efforts on data collection and going to field”.

This last sentence is very representative of what Duffield calls the new mode of engagement of humanitarian actors, where we see the “rise of data-based smart technology and remote management techniques”. As much as remoteness can be beneficial in some instances, it has normally led to staff withdrawing from the field and outsourcing the risks to local people.

Beyond the benefits in terms of project management, the majority of respondents mentioned that technology has helped to improve the coordination of disaster response and humanitarian aid among multiple agencies and actors (Figure 3).

Finally, Figure 4 and FGD-AA highlighted that the use of technology has expanded access to information in Afghanistan, making it more democratic and egalitarian.

Figure 4. Technology and Access to Information (survey mentions)



3. The aid sector use of technology in Afghanistan

3.1. Who is using what?

When it comes to which data collection technologies are used or have been used in Afghanistan as part of humanitarian action, Figure 5 highlights the use of mobile phones, Skype/WhatsApp or similar applications for day-to-day management, and GPS.

Between different actors, there are important differences. National actors (Governmental and NGOs) responded in the survey and FGDs that traditional mobile phones (not smartphones) are by far the main means they use to collect information, validate data, and communications. Social media were mentioned to have been used for needs assessment, getting information, and informing the population about projects, relevant events and emergencies. In particular, Facebook is highlighted as the leading platform in use by all Afghan NGOs and the Government. Finally, the use of online forms for accountability or reporting was also mentioned, indicating that sending forms via email is also considered a way of reporting, especially when it relates to international actors.

Regarding the last point, the use of email communication and sending relevant information digitally by national actors, the FGD-AND and INT-GOV revealed that, by law in Afghanistan (Law on Access to Information), only physical documents with the proper correlated number and stamp are legal. Email does not represent a formal way of communication, which usually ends with delays or discoordination in the management of programmes. On the other hand, for international actors, communication via email and other digital platforms can be as formal (and legal) as any other means. In this sense, the use of these technologies can facilitate processes and procedures for some actors, but not for others, and are not always a factor facilitating the coordination between multiple actors.

During the FGD-AA, the use of KoBo was highlighted by international NGOs and UN actors for data collection. These actors have been formally trained in the use of KoBo, and its use via tablet devices in the field is presented as relevant. National and local actors, however, know about the existence of KoBo, but they do not use it or have been trained in its use. One participant of the FGD-AA also raised the challenging issue of using technological tools in general, as it poses a danger when travelling to certain areas of the country.

The use of satellite imagery, as presented in Figure 5, while recognised as a presence in the country, is not used regularly by most of the actors. Despite this, satellite imagery plays an important role in the aid sector when it comes to calculating needs assessment. As presented in the following extract from the “Afghanistan Humanitarian Response Plan (HRP) 2018-2021”, the use of these technologies is part of the data collection mechanism used to develop the country situation analysis:

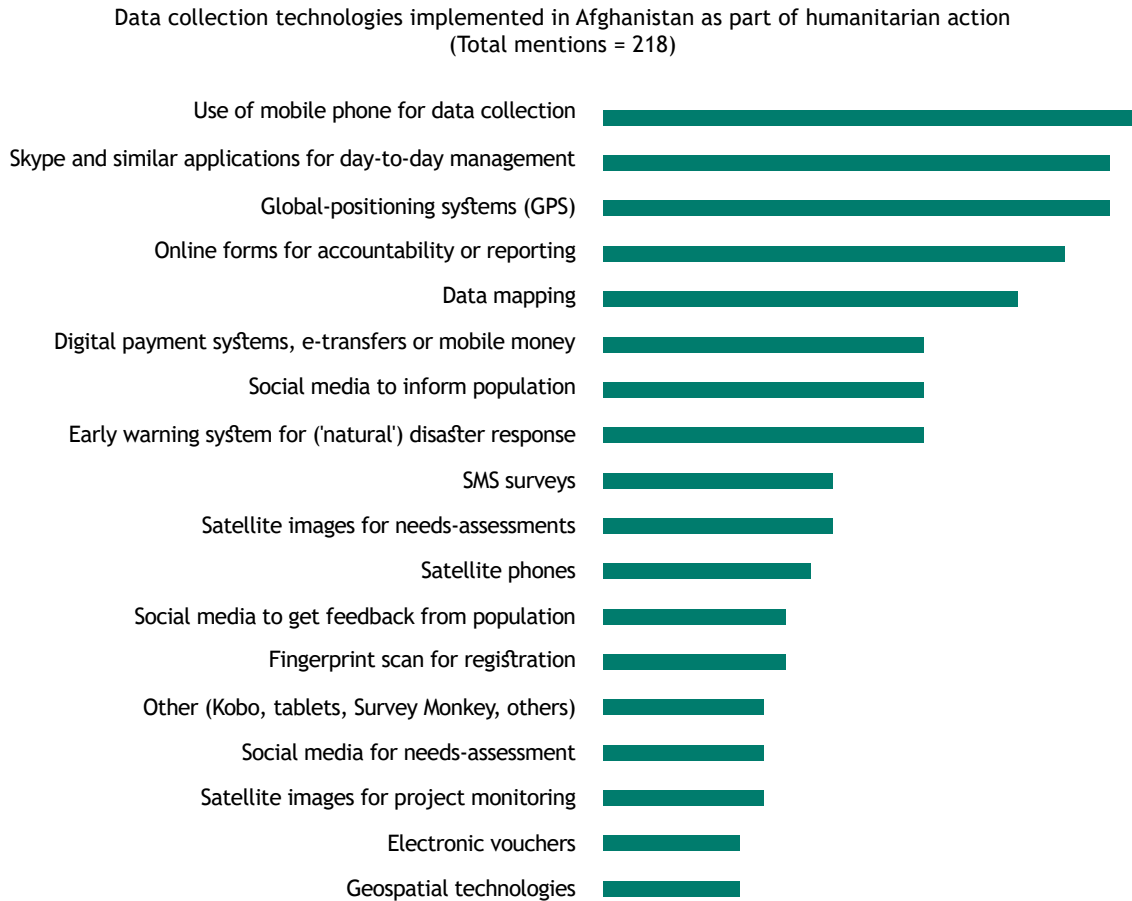
The revised Afghanistan [Humanitarian Response Plan] includes evidence from satellite imagery and data analyses carried out by iMMAP and FEWSNET, as well as findings from FAOs Rapid Assessment of the 2018 Winter Dry Spell conducted over the last two weeks of February, and observations from operational agencies and actors in the field.

GPS is probably the most controversial of all the technologies being used. Mapping and satellite images share some of the same concerns. In the FGD-GOV, one participant said of these technologies that they are “something which is not allowed for all the governmental organisations, NGOs, and UN organisations by the [National Directorate of Security]. Currently, we can’t use GPS in all the areas that we need because of the conflict in the country”. In most AOG-controlled areas, the use of any GPS device or devices tracking GPS coordinates, like KoBo, is prohibited. In some Government-controlled areas, the same situation occurs. The authorities fear the misuse of that information for military or belligerent actions and strategies (all FGD and interviews), as “technology can simultaneously be a medium of violence and of humanitarian action”. Therefore, getting up-to-date satellite images is difficult for local actors, including national governmental organisations like ANDMA and most national and local NGOs (FGD-AND/AA, INT-GOV/NGO).

Biometric tools, including the use of fingerprint and eye scans, are mainly being used by UN agencies. The World Food Programme, for example, highlights the use of these technologies for the registration and tracking of its beneficiaries:

Developed by the World Food Programme, SCOPE securely stores biometric data for individual beneficiaries and includes a platform for tracking the assistance they receive.

Figure 5 Data Collection Technology in Use (survey mentions)



The difficulties of using some technologies in certain places can potentially increase the gap between places receiving aid and those that do not. If technology is perceived as a set of tools that could improve access to a target population, the incomplete fulfilment of what Read et al. call the instrumentalist perspective of technology might result in areas that are not connected to technological tools “risk[ing] becoming an invisible part of the humanitarian space”.

Another relevant result is the existence of a disparity on who has the means to use the technology available. The clearest difference is between international and national actors, as presented in Figure 6 (and ratified in all FGDs), indicating that international actors, to a great extent, use data collection technologies, but national actors use very little. The same tendency is present when it comes to access to electricity and the internet, both elements that all the interviews, FGDs and surveys (Figure 7, 8, and 9) mentioned as being essential, but not every actor has equal access to them. Here the differences are not only at the level of international and national actors, but predominantly between people in urban areas (like Kabul, Herat or Mazar-i-Sharif) and rural areas of the country.

Figure 6. Technology Usage by Actors (survey mentions)

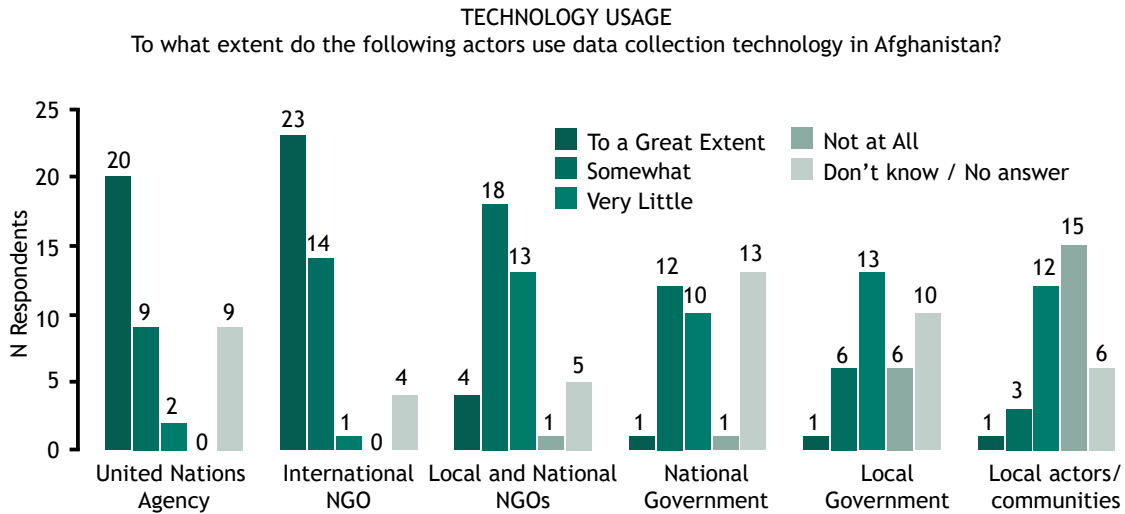


Figure 7. Internet Access (survey mentions)

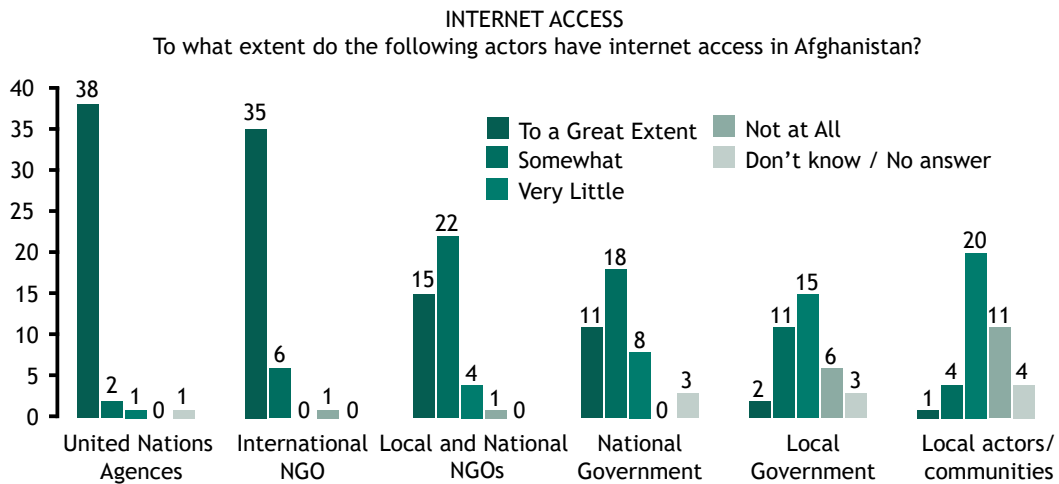


Figure 8. Internet Dependency of Technology (survey mentions)

How many of the data collection technologies that your organisation uses depend on the internet?
(n=46)

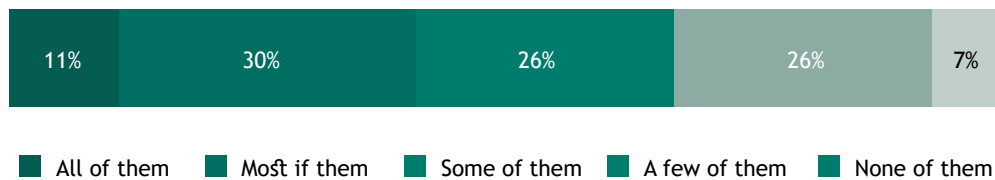
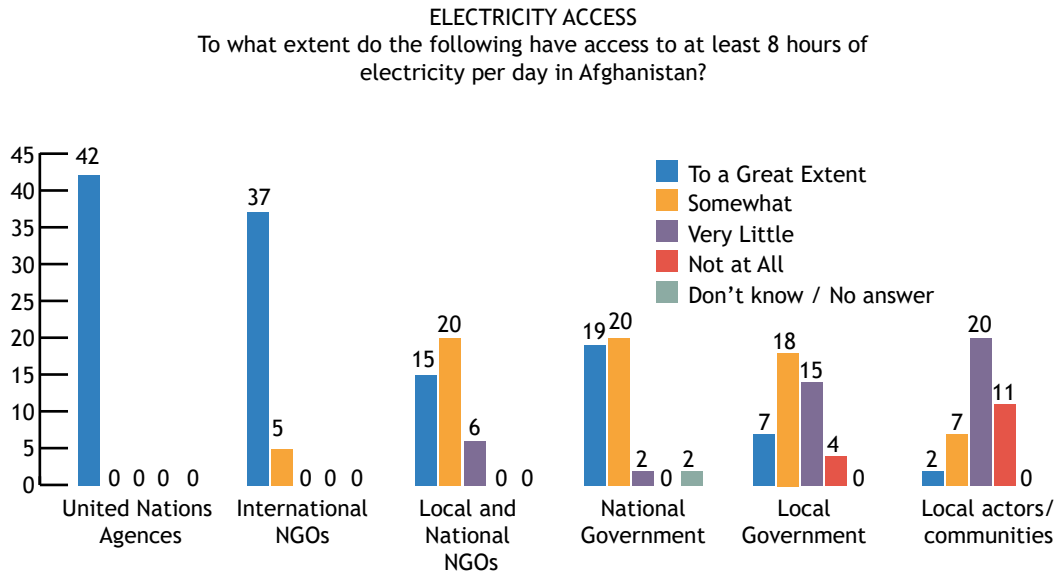


Figure 9. Electricity Access (survey mentions)



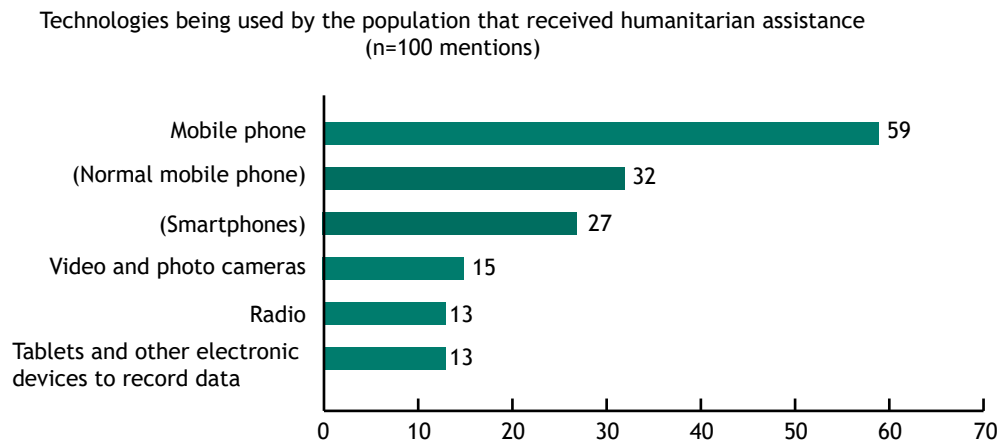
The FGDs also mentioned the concern that technology will replace people in the future, reducing the number of humanitarian actors. One interviewee mentioned that some people see this positively in HIC scenarios, as it reduced the number of people at risk.

The FGD-AA discussed a relevant aspect of the use of technology not addressed in the survey or interviews: language. Most of the technology being used has manuals and training programmes in English. FGD-AND also mentioned how this situation prevents many of their people from using the different technologies in place. A second aspect is that the information collected and the reports coming from it are also in English, which restricts the proper use of that information or limits the future actions.

When it comes to knowing which technologies most of the beneficiaries of humanitarian aid have access to, the survey (Figure 10) and FGDs show the same result: the use of regular phones, and then smartphones. Some beneficiaries also have photo cameras and video recorders, with which they collect data that is shared with aid agencies, but the use of telephones for communication is the most relevant technology. The use of smartphones, although not uncommon, it is still sensitive in many areas of the country, since it could be used for taking pictures, making videos, and tracking locations.

Radio and television did not show up in the survey as relevant, but during the FGDs it was mentioned that radio plays an important role to inform the population and beneficiaries of aid about programmes and emergency responses. The use of television, on the contrary, is associated with the urban population, while most beneficiaries of emergency and disaster response are in rural areas or camps for refugees and internally displaced people (FGD-AA/AND).

Figure 10. Technology Use by Aid Beneficiaries (survey mentions)



Note: ‘Normal mobile phone’ and ‘Smartphone’ in blue are presented in a compound way as ‘Mobile phone’.

3.2. How is technology being used?

As presented before, there is a general perception of duplication in the information collected in Afghanistan by different organisations. This relates to what is shown in Figure 11 and mentioned in FGD-AA/AND, that the humanitarian aid sector there collects more information than what is really used. The combining of replies from the FGD and interviews was necessary to understand the general discourse by the respondents about the sufficiency of the information collected (Figure 11): We have enough information for running and managing our projects, some information is collected excessively, even collected more than once by different programmes in the same organisation or between different organisations, but there is still a lot that we do not know and we need to know to operate and deliver aid properly.

Regarding how the information is being used, the general perception is that organisations are not making the best use of it. Even regarding the case of the UN, which presents positive results in the survey (Figure 12), it was mentioned in FGD-AA and INT-UN that the information collected could be analysed in greater depth. INT-INGO also said that the amount of analysis that exists between different reports or different groups of information is almost nil. Each set of information is analysed only for the purposes that were collected and then saved somewhere.

Figure 11. Sufficiency of the Information Collected (survey mentions)

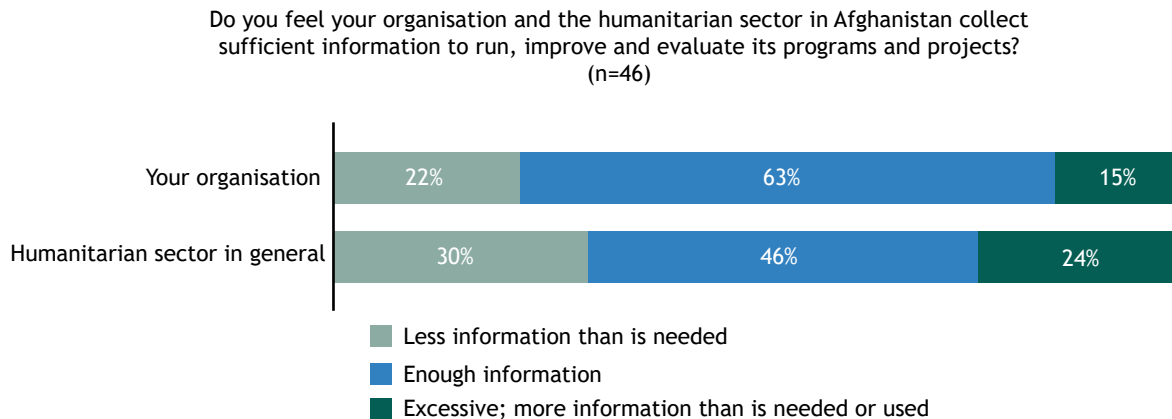
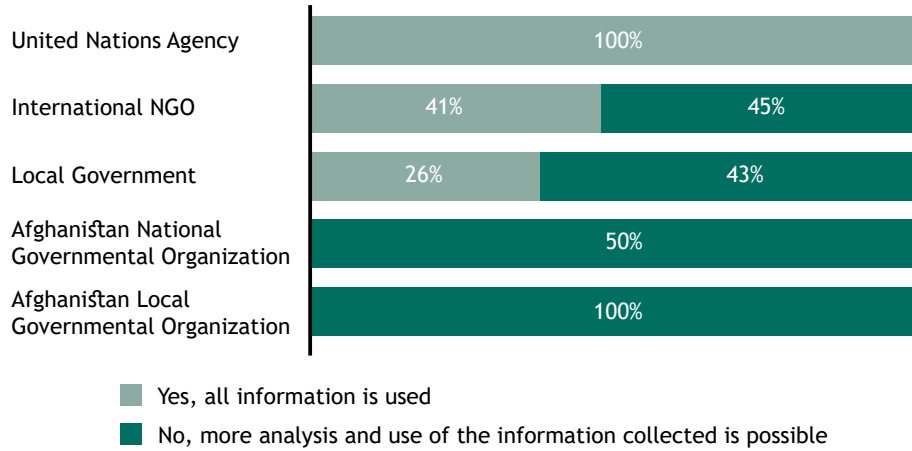


Figure 12. Best Use of Technology (survey mentions)

Do you feel that your organisation makes the best use of the information gathered?
(Percentage of the total number of actors per group)



The data collected are analysed in most of the cases at the country’s national office (Figure 13, FGD-AA/AND). Some respondents explained in the FGDs and interviews that some technologies process the information automatically while being collected, which would explain the result in Figure 13.

Most of the respondents involved in the survey and the FGDs mentioned there is not a person or organisation exclusively analysing the data collected (Figure 14). Only the UN and some international NGOs mentioned the existence of a person in charge of analysing the information. If we consider what was previously mentioned, that most people are not properly trained in the analysis and management of data, the fact that each person or organisation internalises its own data, or that managers analyse the data, could explain the perception of the lack of accuracy of the data being collected.

Figure 13. Data Analysis: Where (survey mentions)

The majority of the information collected by your organisation is analysed:
(N=43)

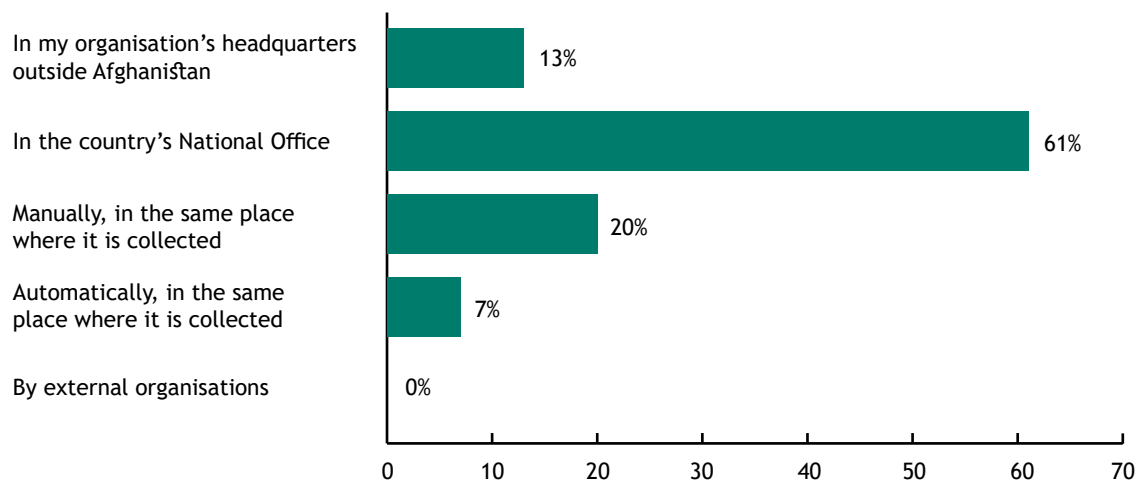
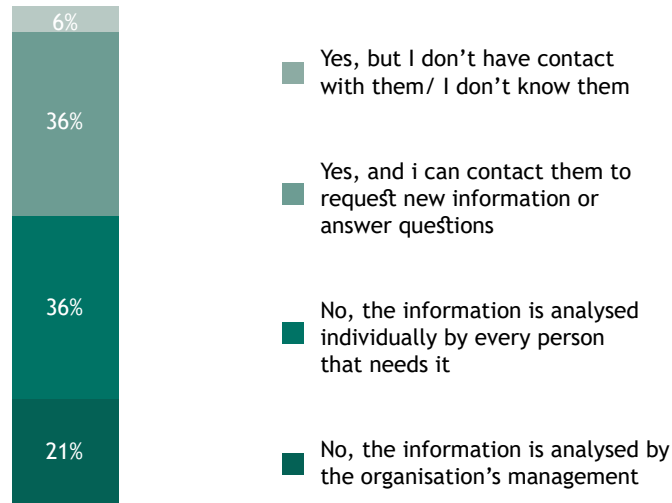


Figure 14. Data Analysis: Who (survey mentions)

Does your organisation have a specific person or team responsible for analysing the information collected? (n=47)



In terms of the privacy, sensitivity and the regulations associated with the management of the information collected, for every respondent, the data collected need to be used and protected appropriately. Figure 15 shows, however, that almost 40% of people think information is used (or might be used) without safeguarding privacy. Likewise, during the interviews and the FGDs, most actors mentioned knowing how they and their organisation handle and safeguard data, but they do not know how others do it. This indicates that, despite 62% of participants having mentioned that information is collected safeguarding people's privacy (Figure 15), there is no proper communication among aid actors on how this occurs. When asked about examples on how they safeguard the privacy and data collected from not being misused or taken by others, participants mentioned they use systems that require a username and password, restricting who can access the data.

Figure 15. Privacy and Sensitivity (survey mentions)

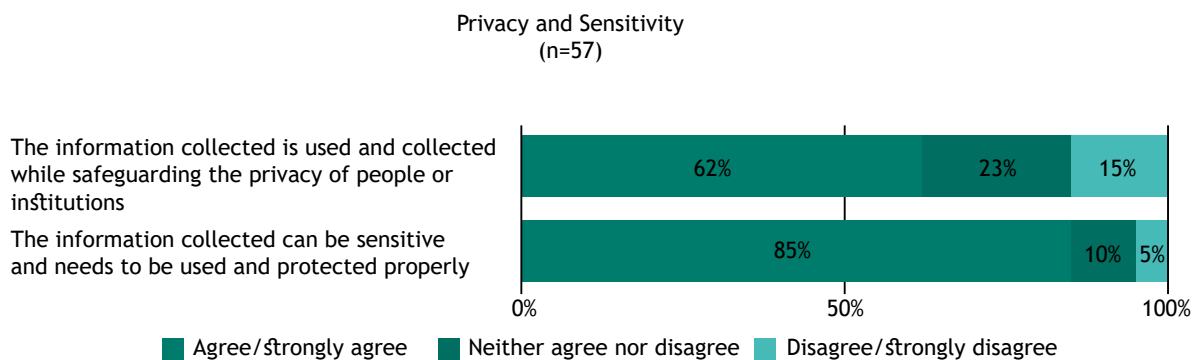
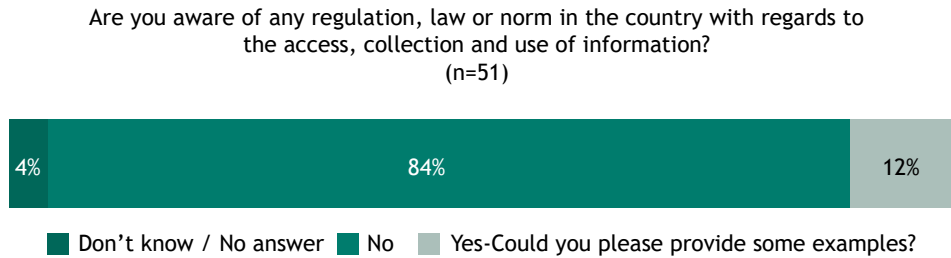


Figure 16. Regulation and Laws on Data Collection and Management (survey mentions)



The interviews, survey (Figure 16), and FGD results were conclusive indicating that there is no specific national regulation on data collection and management operating in the country. One person mentioned the Ministry of Communication and Information Technology has some regulations associated with the use of some technologies, but they are not aware of any regulation about data management.

The Ministry of Communication and Information Technology publishes national regulations, policies and strategies, and several laws like the Telecommunication Law, the Internet Crime Law, and the Telecom and ICT Policy, but no information about the management of the data collected and privacy matters, although its growing relevance is recognised by the Government:

The Government of Afghanistan recognizes that knowledge, information and communication are at the core of human progress, endeavour and wellbeing, and therefore have a vital role in the reconstruction and development of our devastated country. The dramatic increase in the volume, speed and ubiquity of information flows, which has been made possible through new information and communication technologies, has already brought about profound changes in peoples' lives and is creating enormous new opportunities around the world.

Specific regulations associated with the use of technology and data gathering by the humanitarian and development sector are also not present. Afghanistan is not alone on this, as other places in the Global South tend to have absent or weak laws and regulations on this regard, making it an “unregulated commercial laboratory” for technological tools.

Some participants mentioned regulations and norms from their own organisations about the management, storage, and sharing of information collected with partners and stakeholders (FGD-GOV/AA, INT-UN/INGO).

4. Technology in a context of conflict

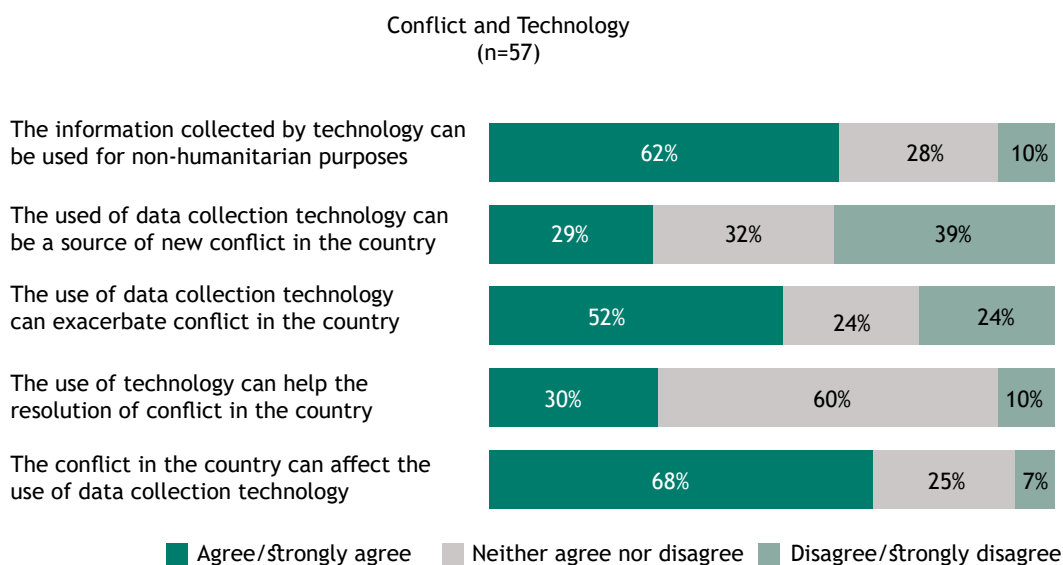
Data and technology likewise affect the work of those who intervene in conflict - peacekeepers and aid workers - as well as those who research and write about violence. Modern technologies facilitate the collection of data and communication between remote locations and capitals, between field offices and headquarters, as well as with communities affected by violence.

The previous sections presented the different technologies being used, who is using them, and how they are being used. It also mentioned that different ways in which technologies can be controversial or the source of conflict or problems.

During the survey, interviews and FGDs, it was suggested by different actors that, although the use of technology can be a source new conflict in the country, in most of the cases it is more that these technologies can exacerbate a conflict that already exists. The most common example given was the misuse of these technologies by military or belligerent purposes by the government or AOGs. Figure 18 shows other instances where the use of technology has been controversial.

For the vast majority of the respondents, the information collected can also be used for non-humanitarian purposes, sometimes bringing conflict or disagreement between different actors (Figure 17). FGD-AA mentioned the example of mapping information collected by humanitarian organisations for the allocation of programmes, which later was used by government-related organisations for non-humanitarian purposes. Moreover, as mentioned by Duffield, there is also the risk of using data for commercial purposes in the future.

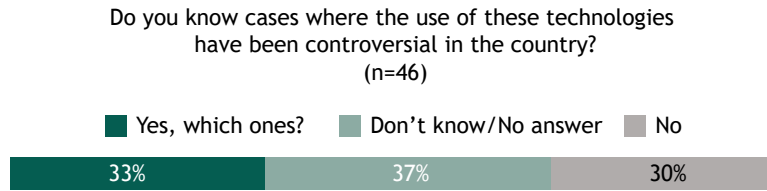
Figure 17. Conflict and Technology (survey mentions)



Although most respondents did not mention that technology helps with the resolution of conflict at different levels, the vast majority are aware that the existence of conflict influences the possibilities of using data collection technologies. As was mentioned by one interviewee, this leads to relevant reflections:

The conflict in the country makes us think two times before we use any technology; we need to be responsible for using, managing the information that we collect, we need to be careful of the consequences of using it improperly at the same time that we want to keep engaging with it because it makes our life and work much easier (FGD-INT).

Figure 18. Controversial Use of Technology in Afghanistan (survey mentions)



Yes: Examples

- “Data collection in the field can sometimes be misinterpreted as something else and put staff at risk by carrying the devices with them”
- “In AOG-controlled areas, there are more limitations on how you can collect data safely; for example, Smartphones are prohibited in some areas”
- “There is scepticism towards the use and carrying of tablets, smartphones, cameras, laptops, and satellite phones in AOG, checkpoint, and militarise areas.”
- “Taking pictures and videos can be avoided by community members”
- “GPS is controversial with Government and AOG groups (security reason regarding their presence and institutions)”
- “Smartphones and technology draw attention and can put staff at risk of robbery”
- “Using of fingerprints for registration of beneficiaries”
- “The use of GPS and other technology creates an image you are with militarized groups”

Research conducted by Jacobsen also concluded with the importance of being reflective in the use of new technologies. In her study on the implications and risk of the use of biometric technology (specifically, iris recognition) by the UN High Commission on Refugees in the repatriation of Afghan refugees, she reflects that:

Prior to humanitarian uses of biometrics, it would seem advisable to revisit underlying assumptions about what technology is and does, and subsequently to reflect cautiously on the potential risks that the introduction of biometrics may entail for the implicated refugee population.³⁶

Similar reflections were raised during two in-depth interviews. In one of them, it was mentioned that, in the context of conflict of the country, the use of technology without considering adverse possible outcomes might be creating more harm than the one aid actors are expecting to reduce (INT-UN).

36 Jacobsen, “Politics of Humanitarian Technology”.

5. Conclusion and Recommendations

As presented by Barnett, “over the past several years, the aid community has increasingly relied on new informational and social technologies to improve the delivery of aid”, as well as to assess situations, and improve the communication with target communities.³⁷ Afghanistan is not the exception and, as this report has shown, multiple technologies are being used by aid the humanitarian aid sector in the country.

Relevant conclusions are that technology is highly present in the humanitarian sector in Afghanistan. All humanitarian actors have mentioned its importance and use; however, there are important differences in the access, management and training in the use of technology. There are relevant differences not only between international and national actors, but also between urban and rural actors.

Regarding training and the inclusion of new technologies, there are remaining questions, not only on how to use those technologies, but how to do so safely in conflict-affected zones.

The bias in the use and access to technology needs to be reflective, as it might reinforce structural inequalities present in the society.³⁸ Likewise, the introduction of new technologies should also assess the impact that they might have in the conflict dynamics of the country and in the long-term dynamics of the society of the places where they are going to be implemented.

Some concerns need to be considered: With the growing use of technology, places with no connectivity can be left out of the humanitarian space, as warned by Sandvik.³⁹ Similarly, when people were asked during the interviews and FGD about an alternative to these technologies, the vast majority mentioned that there are not. Now that these technologies are implemented, “there is no way back”, resulting in dependency and over-reliance of the aid and response sector on the use of these technologies and their providers.

Data are not neutral, and the use of technological tools is not an effortless process. For some respondents, it only makes sense to collect it if it could potentially be used for a specific goal. For others, as mentioned in one interview, data are many times “just to fill reports” or just a sort of guide. One important takeaway is the need to assess the real needs of data, to optimise when they are collected and promoting dialogue between actors to avoid duplication, because “(i) nformation-gathering capabilities of some humanitarian actors outstrip their capacity to deal with the information”.⁴⁰

Technology is also subject of being instrumentalised and used for purposes beyond its humanitarian ones,⁴¹ potentially affecting its underlying imperative of do-no-harm and the principles of neutrality, impartiality and humanity. Technology is not neutral or impartial, and its growing use for remote management might increase invisibility of certain groups and lose essential aspects of face-to-face interaction.⁴²

The engagement of private and military corporations should be assessed with caution in this regard, too, especially concerning privacy and data ownership. Although many of the technologies are managed and provided by aid groups themselves, many of them depend on private actors. The role and dependency that the aid sector might be developing in Afghanistan need to be monitored closely,

37 Barnett, “Humanitarian Governance”: 388.

38 Jacobsen, “Politics of Humanitarian Technology”; Sandvik, “Humanitarian Technology”.

39 Sandvik et al., “Humanitarian Technology”.

40 Read et al., “Data Hubris?”: 1325.

41 Jacobsen, “Politics of Humanitarian Technology”; K. B. Sandvik, “Now is the Time to Deliver: Looking for Humanitarian Innovation’s Theory Of Change”, *Journal of International Humanitarian Action* 2, no. 1 (2017).

42 Sandvik et al., “Humanitarian Technology”: 235.

especially when there are still legal and regulatory vacuums in the use of these technologies and management of the information collected.

The focus of this research on digital technology for the purposes of communication and data management prevented the analysis of the implications of the use of other technologies in the humanitarian aid sector (e.g., anti-personnel landmine detection sensors). However, most of the reflections, precautions and benefits of using technology presented here might also apply to those other cases. Therefore, future research projects on the use of these other technologies, in the case of Afghanistan or different HIC scenario, is highly invited.

The future outcomes of the use of actual and new technologies, compounded with their fast development, and expanding fields in which they are implemented, invite a recurrent assessment of the use and implementation of digital technology for data gathering, management and communication. As Stephenson and Anderson reflect, “(m)any of the possible outcomes are only vaguely perceived, and many may seem very remote to many readers at present, especially those in countries where this technology has not yet penetrated”.⁴³

Action on the use of technology for the purposes of communication, collection, and management of data needs to be taken in order to overcome the challenges and concern that the use of technology entails in the country, and enhance its positive outcomes. Some recommendations are:

- Advance the development of regulations in Afghanistan with regard to the use and management of technology. Issues of privacy, access and handling of the information collected need to be carefully assessed.
- The Government needs to advance the development of structures and organisms that allow monitoring to ensure that the regulations are met according to standards, by all actors, both national and international.
- The Government can promote and foster discussions on the ethics and rules related to data protection.
- Aid actors need to apply humanitarian principles to the use of technologies.
- More training and knowledge transference to local and national organisations, both NGOs and Government, in the use of technology needs to be promoted in Afghanistan.
- Better training of local actors and field personnel on the use of technology.
- It is also necessary to developed mechanisms and training so technology can be adapted or used safely in HIC, like Afghanistan, and conflict-affected zones in general.
- Mechanisms to assess the context and implications of the use of technologies need to be integrated into the acquisition and implementation processes of communication, data collection and data management solutions.
- Regulations and policies related to the use and management of technology need to consider and integrate adequately with related policies and regulation in the country, for instance, the Access to Information Law.

⁴³ Stephenson and Anderson, “Disasters and the Information Technology Revolution”: 332.

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